INFORMATION TECHNOLOGY FOR BUSINESS AND MANAGEMENT

Study material

COMPLEMENTARY COURSE

For

II SEMESTER BBA

(2011 Admission)

UNIVERSITY OF CALICUT

SCHOOL OF DISTANCE EDUCATION

CALICUT UNIVERSITY P.O. MALAPPURAM, KERALA, INDIA - 673 635

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Information Technology for Business and Management

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Module-1
OFFICE AUTOMATION SYSTEM

Introduction to Information Technology

Data leads to information, information leads to knowledge, knowledge leads to wisdom, and wisdom is the key to existence of human civilizations. Our need of accuracy and revolution towards processing of information has led us to 'Information Revolution'. Computers and IT tools can take humans to the peak of new millennium or destroy human civilization. In simple words 'IT' means collection, storage, dissimilation and use of information. It includes any technology used in capturing, storing and processing data into information and communicating that information to people. Computer and communication technologies are integral parts of today's information technology. Today IT has impacted every aspects of human life with incredible effect. IT is not confined to hardware and software but acknowledgement of importance of man and the goals he sets to the technology.

Major activities that expedited the information age:

A. In 1820's Charles Babbage invented the ever first computer called Babbage machine. It was based on mechanical gears and discs. This was the first step of human mankind towards computer.

B. From 1890 to 1900, abundant and rapid development of electricity.

C . In 1928, electron movement thesis came that opened various aspects towards pristine fields. Invention of electronic equipments fueled the revolutionary scenario of IT.

D. In 1943, transistor was developed.

E. In 1948, ENIAC, the first computer of modern age was invented by US; it was based on Vacuum Tubes.

F. In 1958, transistors were used (Advantage: less power consumption, more accurate. Computers accommodated 100s and 1000s of transistors. Result: Computers size was as big as room).

G. ICs replaced transistors. ICs evolved during last 35 years and have now become multi tasking, sophisticated algorithm design based chips. Computers of human types are replacing ICs by neuron type chips and neural networks.

Technological aspects of IT:

Enabling Technologies: Enabling Technologies involves:-

a. Data Generation

b. Data Processing

c. Data Transportation

d. Data Storage

e. Data Retrieval

f. Data Representation

Major Technologies evolved in the entire activity:

i) Data Processing and storage by computers. In the form of silicon based IC (integrated circuit) technology.

ii) Communication technology: Optical fibre communication resulting fibre optic link around the globe.

iii) Memory technologies – Laser disc and CD-ROM.

iv) Display technologies – LCD and digital.

Applications of IT: IT applications are almost ubiquitous; key coverage areas include:

i. Education and training systems

ii. E-governance

iii. Industrial sector

iv. Improvement in social interaction and it is expected that manufacturing discrimination will disappear

v. Employment to multitude of people.

Office automation

The history of modern office automation began with the typewriter and the copy machine, which mechanized previously manual tasks. Today, however, office automation is increasingly understood as a term that refers not just to the mechanization of tasks but to the conversion of information to electronic form as well. The advent of the personal computer revolutionized office automation, and today, popular operating systems and user interfaces dominate office computer systems. This revolution has been so complete, and has infiltrated so many areas of business, that almost all businesses use at least one commercial computer business application in the course of daily activity. Even the smallest companies commonly utilize computer technology to maintain financial records, inventory information, payroll records, and other pertinent business information. "Workplace technology that started as handy (but still optional) business tools in the 1980s evolved into a high-priority requirement in the 1990s,

The integration of office information functions, including word processing, data processing, graphics, desktop publishing and e-mail. Office automation was a popular term in the 1970s and 1980s as the desktop computer exploded onto the scene. The backbone of office automation is the company's local area network (LAN). All office functions, including dictation, typing, filing, copying, fax, microfilm and records management and the telephone switchboard, fall into this category. Office automation refers to the varied computer machinery and software used to digitally create, collect, store, manipulate, and relay office information needed for accomplishing basic tasks .Raw data storage, electronic transfer, and the management of electronic business information comprises the basic activities of an office automation system. Office automation helps in optimizing or automating existing office procedures.

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The backbone of office automation is a LAN, which allows users to transmit data, mail and even voice across the network. All office functions, including dictation, typing, filing, copying, fax, Telex, microfilm and records management, telephone and telephone switchboard operations, fall into this category. Office automation was a popular term in the 1970s and 1980s as the desktop computer exploded onto the scene.

Definition

Application of information technology to the typical clerical and secretarial tasks such as communication, correspondence, documenting, and filing. The use of computer systems to execute a variety of office operations, such as word processing, accounting, and e-mail. Office automation almost always implies a network of computers with a variety of available programs. A general technology term that is used to describe any process being automated through the use of computers and computer software. Processes that have been automated require less human intervention and less human time to deliver.

Objectives of Office Automation
1. To improve customer relation
2. To achieve better management control
3. To simplify operations and minimize computational errors
4. To improve quality of output in terms of presentation and reduction in processing time
5. Documents preparation
6. Data management
7. planning of activities
8. Presentation
9. Dissemination of Information
10. Communication

Features of Office Automation
1. Improvement in quality of output
2. Improved productivity/ efficiency
3. Optimal utilization of resources
4. Reduction in time taken in execution of activities
5. Better Information sharing/ Transparency
6. Better way of delivery of information to user at a place convenient to him/her
7. Reduction in dependency on human beings
8. Look for simplification of procedures
9. Better customer support etc

Document generation and facilitating equipments
A document is a written statement giving information, proof, evidence etc. document is a written or printed paper that bears the original, official, or legal form of something and can be used to furnish decisive evidence or information. It is writing that provides information (especially information of an official nature)

Document processing is the creation, handling, labeling, and modification of text documents, such as in word processing and in the indexing of documents for retrieval based on their content. Following are the important equipment concerned with document generation.

Dictation system

Dictation system records voice inputs. This system has a microphone to capture voice inputs. Executive can use it to speed up document generation and to save their time since they are not going to dictate to their secretaries. **Digital dictation** is a method of recording and editing the spoken word in real-time for transcription and maximum intelligibility in a digital audio format. In some cases speech is recorded where sound quality is paramount and transcription unnecessary.

Digital dictation offers several advantages over traditional cassette tape based dictation:

➢ The user can instantly rewind or fast forward to any point within the dictation file to review or edit.

➢ The random access ability of digital audio allows inserting audio at any point without overwriting the following text.

➢ Dictation produces a file which can be transferred electronically, e.g. via WAN, LAN, USB, e-mail, telephony, BlackBerry, FTP, etc.

➢ Large dictation files can be shared with multiple typists.

➢ Sound may be CD quality and can improve transcription accuracy and speed [citation needed].

➢ Digital dictation provides the ability to report on the volume or type of dictation and transcription outstanding or completed within an organization.

Electronic typewriter
Typewriter is an instrument for writing by means of type, a type wheel, or the like, in which the operator makes use of a sort of keyboard, in order to obtain printed impressions of the characters upon paper. A typewriter whose operation is enhanced through the use of microprocessor technology to provide many of the functions of a word-processing system but which has at most a partial-line visual display. Also known as memory typewriter. Today's world typewriters have been replaced by inexpensive personal computers which have the advantage of having word processing software and can be used with a variety of printers available.

Document distribution and related Equipments

Following are the important equipments in connection with document distribution;

Copier

Copier is a machine that makes copies of printed or graphic matter. This is a machine which makes exact copies of writing or pictures on paper, usually by a photographic process. It is an apparatus that makes copies of typed, written or drawn material.

A xerographic copier is duplicator that copies graphic matter by the action of light on an electrically charged photoconductive insulating surface in which the latent image is developed with a resinous powder. It is also called as Xerox machine

Telex

A telex is a teletypewriter. They are to consoles (or more, in a network), sitting at opposite ends of a phone line. What is typed on one machine is automatically relayed, and typed by the machine on the other one. The machines can be in the same building, or at opposite ends of the globe. In other words it is a character printer connected to a telegraph that operates like a typewriter.

Facsimile

Facsimile is duplicator that transmits the copy by wire or radio. This is a system of telecommunication for the transmission of fixed images with a view to their reception in a permanent form.

Fax is a process by which fixed graphic material including pictures, text, or images is scanned and the information converted into electrical signals which are transmitted via telephone to produce a paper copy of the graphics on the receiving fax machine.

Personal computers

A small, relatively inexpensive computer designed for an individual user. All are based on the microprocessor technology that enables manufacturers to put an entire CPU on one chip. Businesses use personal computers for word processing, accounting, desktop publishing, and for running spreadsheet and database management applications. At home, the most popular use for personal computers is for playing games. Personal computers first appeared in the late 1970s. One of the first and most popular personal computers was the Apple II, introduced in 1977 by Apple Computer. During the late 1970s and early 1980s, new models and competing operating systems seemed to appear daily. Then, in 1981, IBM entered the fray with its first personal computer, known as the IBM PC.

Work station for PC

A workstation is a place where work gets done. It refers to a computer (and often the surrounding area) that has been configured to perform a certain set of tasks, such as photo editing, audio recording, or video production. An office may have several workstations for different purposes, which may be assigned to certain employees. For example, one workstation may be used for scanning and importing images, while another is used for editing images. While workstations are often part of a network, they can be standalone machines as well. Even a home computer can be a workstation if it is used for certain kinds of work. So if you want to sound professional, the next time you send an e-mail to a friend from your home PC, you can let him know you are sending it from your home workstation.

Printers

A printer is an output device that produces text and graphics on paper. Printers can be divided into two main groups, impact printer and non-impact printer. Impact printer produces text and images when tiny wire pins on print head strike the ink ribbon by physically contacting the paper. Non-impact printer produces text and graphics on paper without actually striking the paper.

Printers can also be categorized based on the print method or print technology. The most popular ones are inkjet printer, laser printer, dot-matrix printer and thermal printer. Among these, only dot-matrix printer is impact printer and the others are non-impact printers.

Some printers are named because they are designed for specific functions, such as photo printers, portable printers and all-in-one / multifunction printers. Photo printers and portable printers usually use inkjet print method whereas multifunction printers may use inkjet or laser print method.

Inkjet printers and laser printers are the most popular printer types for home and business use. Dot matrix printer was popular in 70's and 80's but has been gradually replaced by inkjet printers for home use. However, they are still being used to print multi-part forms and carbon copies for some businesses. The use of thermal printers is limited to ATM, cash registers and point-of-sales terminals. Some label printers and portable printers also use thermal printing.

Due to the popularity of digital camera, laptop and SoHo office (small office / home office), the demand for photo printers, portable printers and multifunction printers has also increased substantially in recent years.

Popular Printers: Inkjet printer, Laser printer

 Less Popular Printers: Dot matrix printer, Thermal printer

 Specialty Printers: Photo printer, Portable printer, Multifunction printer

Storage technologies

A computer storage device is any type of hardware that stores data. The most common type of storage device, which nearly all computers have, is a hard drive (hard disk). The computer's primary hard drive stores the operating system, applications, and files and folders for users of the computer. While the hard drive is the most ubiquitous of all storage devices, several other types are common as well. Flash memory devices, such as USB keychain drives and iPod nanos are popular ways to store data in a small, mobile format. Other types of flash memory, such as compact flash and SD cards are popular ways to store images taken by digital cameras.

External hard drives that connect via Fire wire and USB are also common. These types of drives are often used for backing up internal hard drives, storing video or photo libraries, or for simply adding extra storage. Finally, tape drives which use reels of tape to store data are another type of storage device and are typically used for backing up data.

The most common storage devices are:

Floppy Disk – They are plastic square disks, usually with a silver or black sliding piece going across the top. These disks come in a variety of colors and they hold about 144 million bytes. (Bytes are characters, symbols and letters).

Zip Disk – They look like a floppy disk, but they are a little thicker. This disk also comes in a variety of colors and holds about 200 MB of data.

CD + RW Disc (Compact Disc Rewriteable) – This disc looks like a regular CD. The only difference is that you can write on this disc and erase it as many times as you want. It works just like a floppy disk or a zip disk. A CD + RW disc holds about 650 MB.

CD + R Disc (Compact Disc Recordable) – This one is a CD that you can record on. It's mostly used to record audio and once it's been written on, you cannot rewrite or erase anything off of it. This compact disc comes in different sizes, but they are usually silver in color. (Some CDs are black in color and they actually don't get as many scratches on them as the silver ones do. They are also a lot less fragile).

A DVD – R Disc (Digital Video Recordable) – These discs hold the space of about 4.7 GB and are used to record movies on.

The more uncommon storage devices are:

Removable Hard Drive – This is a disk drive in which a plastic or metal case surrounds the hard drive. It can be inserted and removed just like a floppy disk. It holds about 2 GB of data.

Internet Hard Drive – This one is a service on the Internet that provides storage space to computer users. This service offers about 25 MB of space, but it could be more, depending on the service type.

Flash Drive – This a storage device that comes in many colors and has a stick shape to it. They are very small in size, but they can hold anywhere between 256 MB and 3 GB of material on them.

PC Card – This is a thin credit card size device that fits into a PC card slot, usually on a notebook computer. This card simply adds storage to most notebooks.

Smart Cards – These are the size of an ATM card. When inserted into a smart card reader, they can read and update data for you.

Storage Tape – This one is a magnetically coated ribbon of plastic, capable of storing large amounts of data at a very low cost. Usually, storage tapes are a little bigger than audio tapes. Older computers used tape and tape drives, but even today, some people still back their systems up with storage tape. These tapes hold between 20 GB to about 110 GB of data. An external tape drive can be purchased separately as well, but those are even harder to find.

Miniature Mobile Storage Media – This is used mostly with handheld computers and digital cameras.

Memory Stick – This is a rectangular shaped disk that is used mostly with digital cameras and notebook computers. They hold approximately 128 MB as well.

Micro Drive – This is a square disk that has 1 GB of space and is used with digital cameras and handheld computers.

Smart Media Disc – This is a square disk that has 2 MB to about 128 MB of space on it. It's used with digital cameras, handheld computers and photo printers

Computer Networks

A **computer network**, often simply referred to as a network, is a collection of hardware components and computers interconnected by communication channels that allow sharing of resources and information. Where at least one process in one device is able to send/receive data to/from at least one process residing in a remote device, then the two devices are said to be in a network.

A computer network is the practice of linking two or more computing devices and share data. Networks are built with a mix of hardware and software. This interconnected system to share services and interact through a communication link.

A computer network is very useful in a business. Most of the time the company will have more of an integrated team and often very beneficial for all network desktops. A local area network (LAN) will link the computers of your company. This will allow the participation rate and the exchange of different information.

Before the advent of computer networks that were based upon some type of telecommunications system, communication between calculation machines and early computers was performed by human users by carrying instructions between them. Many of the social behaviors seen in today's Internet were demonstrably present in the 19th century and arguably in even earlier networks using visual signals.

Computer networks -advantages

Facilitate communications

Using a network, people can communicate efficiently and easily via email, instant messaging, chat rooms, telephone, video telephone calls, and video conferencing.

Permit sharing of files, data, and other types of information

In a network environment, authorized users may access data and information stored on other computers on the network. The capability of providing access to data and information on shared storage devices is an important feature of many networks.

Share network and computing resources

In a networked environment, each computer on a network may access and use resources provided by devices on the network, such as printing a document on a shared network printer. Distributed computing uses computing resources across a network to accomplish tasks.

Disadvantages
May be insecure

A computer network may be used by computer hackers to deploy computer viruses or computer worms on devices connected to the network, or to prevent these devices from normally accessing the network (denial of service).

May interfere with other technologies

Power line communication strongly disturbs certain forms of radio communication, e.g., amateur radio. It may also interfere with last mile access technologies such as ADSL and VDSL

May be difficult to set up

A complex computer network may be difficult to set up. It may also be very costly to set up an effective computer network in a large organization or company

Networks Types

Local Area Network.

A Local Area Network (LAN) is a network that is confined to a relatively small area . It is generally limited to a geographic area such as a writing lab, school, or building. Computers connected to a network are broadly categorized as servers or workstations. Servers are generally not used by humans directly, but rather run continuously to provide "services" to the other computers (and their human users) on the network. Services provided can include printing and faxing, software hosting, file storage and sharing, messaging, data storage and retrieval, complete access control (security) for the network's resources, and many others.

Workstations are called such because they typically do have a human user which interacts with the network through them. Workstations were traditionally considered a desktop, consisting of a computer, keyboard, display, and mouse, or a laptop, with integrated keyboard, display, and touchpad. With the advent of the tablet computer, and the touch screen devices such as iPad and iPhone, our definition of workstation is quickly evolving to include those devices, because of their ability to interact with the network and utilize network services.

On a single LAN, computers and servers may be connected by cables or wirelessly. Wireless access to a wired network is made possible by wireless access points (WAPs). These WAP devices provide a bridge between computers and networks. A typical WAP might have the theoretical capacity to connect hundreds or even thousands of wireless users to a network, although practical capacity might be far less.

Nearly always servers will be connected by cables to the network, because the cable connections remain the fastest. Workstations which are stationary (desktops) are also usually connected by a cable to the network, although the cost of wireless adapters has dropped to the point that, when installing workstations in an existing facility with inadequate wiring, it can be easier and less expensive to use wireless for a desktop.

Wide Area Network

Wide Area Networks (WANs) connect networks in larger geographic areas, such as Florida, the United States, or the world. Dedicated transoceanic cabling or satellite uplinks may be used to connect this type of global network.

Using a WAN, schools in Florida can communicate with places like Tokyo in a matter of seconds, without paying enormous phone bills. Two users a half-world apart with workstations equipped with microphones and a webcams might teleconference in real time. A WAN is complicated. It uses multiplexers, bridges, and routers to connect local and metropolitan networks to global communications networks like the Internet. To users, however, a WAN will not appear to be much different than a LAN.

Personal area network

A personal area network (PAN) is a computer network used for communication among computer and different information technological devices close to one person. Some examples of devices that are used in a PAN are personal computers, printers, fax machines, telephones, PDAs, scanners, and even video game consoles. A PAN may include wired and wireless devices. The reach of a PAN typically extends to 10 meters. A wired PAN is usually constructed with USB and Firmware connections while technologies such as Bluetooth and infrared communication typically form a wireless PAN.

Metropolitan area network

A Metropolitan area network (MAN) is a large computer network that usually spans a city or a large campus.

Frame-relay network
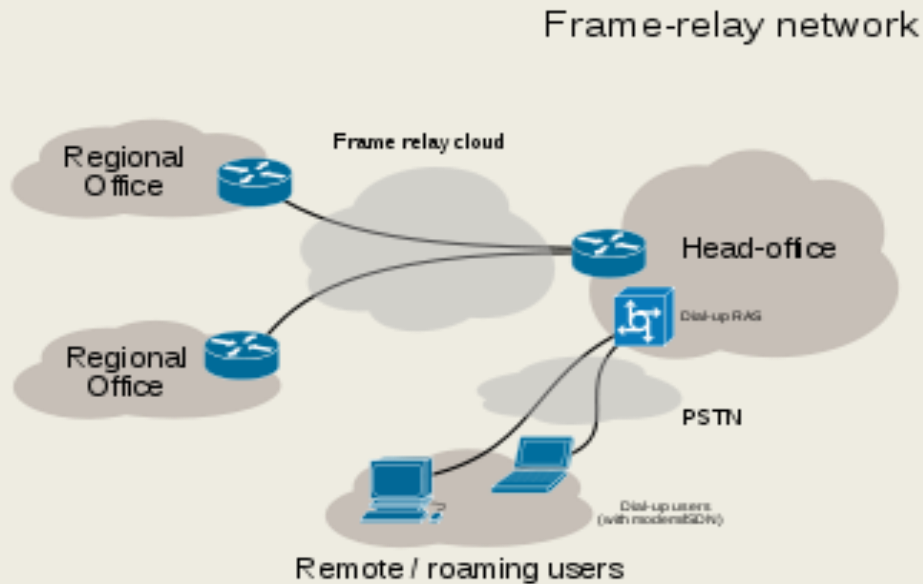
Virtual private network

A virtual private network (VPN) is a computer network in which some of the links between nodes are carried by open connections or virtual circuits in some larger network (e.g., the Internet) instead of by physical wires. The data link layer protocols of the virtual network are said to be tunneled through the larger network when this is the case. One common application is secure communications through the public Internet, but a VPN need not have explicit security features, such as authentication or content encryption. VPNs, for example, can be used to separate the traffic of different user communities over an underlying network with strong security features.VPN may have best-effort performance, or may have a defined service level agreement (SLA) between the VPN customer and the VPN service provider. Generally, a VPN has a topology more complex than point-to-point.
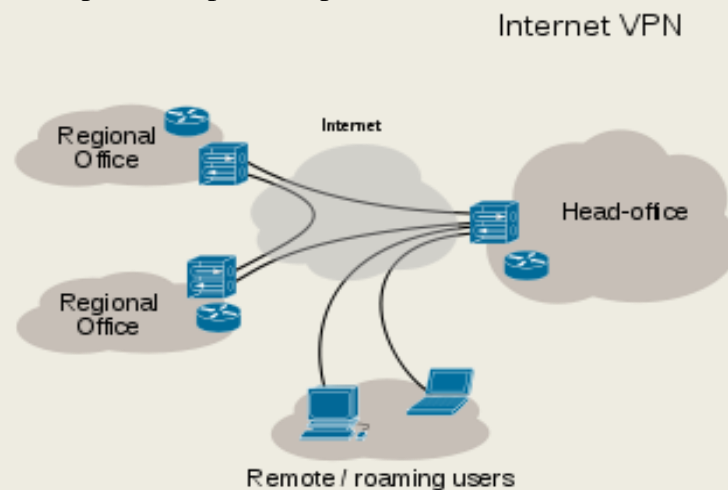
Internet VPN

Intranets and extranets

Intranets and extranets are parts or extensions of a computer network, usually a LAN. An **intranet** is a set of networks, using the Internet Protocol and IP-based tools such as web browsers and file transfer applications that are under the control of a single administrative entity. That administrative entity closes the intranet to all but specific, authorized users. Most commonly, an intranet is the internal network of an organization. A large intranet will typically have at least one web server to provide users with organizational information.

An extranet is a network that is limited in scope to a single organization or entity and also has limited connections to the networks of one or more other usually, but not necessarily, trusted organizations or entities—a company's customers may be given access to some part of its intranet—while at the same time the customers may not be considered trusted from a security standpoint. Technically, an extranet may also be categorized as a CAN, MAN, WAN, or other type of network, although an extranet cannot consist of a single LAN; it must have at least one connection with an external network.

ISDN

ISDN stands for Integrated Services Digital Network. It is a design for a completely digital telephone/telecommunications network. It is designed to carry voice, data, images, and video, everything you could ever need. It is also designed to provide a single interface (in terms of both hardware and communication protocols) for hooking up your phone, your fax machine, your computer, your videophone, your video-on-demand system (someday), and your microwave. ISDN is about what the future phone network, and information superhighway, will look like (or would have looked like).

ISDN offers the speed and quality that previously was only available to people who bought expensive, point-to-point digital leased lines. Combined with its flexibility as a dial-up service, ISDN has become the service of choice for many communications applications. Popular ISDN applications include:

- Internet access
- Telecommuting/remote access to corporate computing
- Video conferencing
- Small and home office data networking

E-mail

Electronic mail, commonly known as email or e-mail, is a method of exchanging digital messages from an author to one or more recipients. Modern email operates across the Internet or other computer networks. Some early email systems required that the author and the recipient both be online at the same time, in common with instant messaging. Today's email systems are based on a store-and-forward model. Email servers accept, forward, deliver and store messages. Neither the users nor their computers are required to be online simultaneously; they need connect only briefly, typically to an email server, for as long as it takes to send or receive messages.

An email message consists of three components, **the message envelope, the message header, and the message body**. The message header contains control information, including, minimally, an originator's email address and one or more recipient addresses. Usually descriptive information is also added, such as a subject header field and a message submission date/time stamp.

Advantages of using Email:

Managing Email is Easy -You can manage all your correspondence on screen and so can your customers. Your proposal can be answered, revised, stored, and sent to others, all without reams of paper involved.

Email is Fast- Mail is delivered instantly...from your office to anywhere in the world. No other method of delivery can provide this service. Timely buying and selling decisions can be made in a heartbeat.

Email is Inexpensive- Compared to telephone calls, faxes, or overnight courier service, Email is less expensive.

Email is Easy to Filter- The subject line on an Email makes it easy to prioritize messages. The reader can identify critical correspondence quickly and dealt with it immediately. Unlike regular mail which needs to be opened and reviewed, or voice mail which requires you to either listen to or scan all your messages for those that require immediate attention.

Transmission is Secure and Reliable -The level of security in transmitting Email messages is very high, and the industry continues to strive to develop even tighter security levels. Email is private. Often telephone and fax messages are not. If the address information is correct, rarely does an Email go astray. Fax machines can be out of order or out of paper and this prevents an important message from being delivered in a timely manner.

Email is an Internet marketing tool that is fast, easy to use, inexpensive and effective. Email levels the playing field between the big corporations and small businesses. No longer is it just the big boys who have the resources to access the big advertising houses. Anyone can get their word out there using Email as the method of delivering the message.

Messaging systems

It is the Software that provides an electronic mail delivery system. It is made up of the following functional components, which may be packaged together or independently.

Mail User Agent-The mail user agent (MUA or UA) is the client e-mail program, such as Outlook, Eudora, Mac Mail or Mozilla Thunderbird, which is used to compose, send and receive messages.

Message Transfer Agent-The message transfer agent (MTA), also called the "mail transfer agent," either forwards the message from user agents (MUAs) and other mail servers (MTAs) or delivers it to its own message store (MS) if the recipient is local. Send mail and Microsoft Exchange are the most widely used MTAs on the Internet. In a large enterprise, there may be several MTA servers (mail servers) dedicated to Internet e-mail while others support internal e-mail. **Message Store-**The message store (MS) holds the mail until it is selectively retrieved and deleted by an access server. In the Internet world, a local delivery agent (LDA) writes the messages from the MTA to the message store, and the primary mailbox access protocols used to retrieve the mail are POP and IMAP (see POP3 and IMAP4).

The Internet's SMTP-Internet e-mail, the most ubiquitous messaging system in the world, is based on the SMTP protocol. Prior to the Internet's enormous growth in the late 1990s, numerous proprietary messaging systems were widely used, including cc: Mail, Microsoft Mail, PROFS and DISOSS. See messaging middleware and SMTP.

Computer conference

Computer conference is a communication session, facilitated by means of a computer network, between several participants, each of them having access to all messages submitted. Note: Messages, in general, have no specified recipient, but are sent to the entire membership. Messages may contain text, video, audio, graphics, software, or a combination thereof. Some of these may be contained in the message and may be stored on line for future retrieval. Computer conferencing can be conducted either in real time or in store-and-forward mode.

Video conference means conducting a conference between two or more participants at different sites by using computer networks to transmit audio and video data. For example, a point-to-point (two-person) video conferencing system works much like a video telephone. Each participant has a video camera, microphone, and speakers mounted on his or her computer. As the two participants speak to one another, their voices are carried over the network and delivered to the other's speakers, and whatever images appear in front of the video camera appear in a window on the other participant's monitor.

Desk top publishing (DTP)

Desktop publishing is the use of the computer and specialized software to create documents for desktop or commercial printing. Desktop publishing refers to the process of using the computer to produce documents such as newsletters, brochures, books, and other publications that were once created manually using a variety of non-computer techniques along with large complex phototypesetting machines. Today desktop publishing software does it all - almost. But before PageMaker and other desktop publishing software there were e-scales, paste-up, and other non-desktop computer ways of putting together a design for printing.

Today innovate, we can define the Desktop publishing is the use of the computer and software to create visual displays of ideas and information. Desktop publishing documents may be for desktop or commercial printing or electronic distribution including PDF, slide shows, email newsletters, and the Web.

Information retrieval system

It is the technique and process of searching, recovering, and interpreting information from large amounts of stored data. It is the process of locating in a certain set of texts (documents) all those devoted to a requested subject or that contain facts or information necessary to the user. Information retrieval is accomplished by means of an information retrieval system and is performed manually or with the use of mechanization or automation. Human beings are indispensable in information retrieval. Depending on the character of the information contained in the texts output by the information retrieval system, information retrieval can be documentary, including bibliographic, or factual. Information retrieval must be distinguished from logical information processing, without which directs a reply to the questions posed by a human being is impossible. In information retrieval, only the information that was input to the information retrieval system is sought—only that information can be found.

Questions

1. What is information technology?
2. What is office automation system?
3. What are the objectives of OAS?
4. Briefly discuss the evolution of IT?
5. What is DTP?
6. What is information retrieval?
7. Explain the equipments and devices facilitating office automation?
8. What are networks? Explain its types   9. What is email? What are the advantages of email?

Module- 2
Word Processing

Originally "writing" was a painful skill to learn and closely related to figurative art; then the printing system turned it into a dull standard of symbols; finally writing became a graphic art in this century. Now the computers have brought the potentials of professional printing to the average PC user.

A WORD PROCESSOR is a modern version of paper, pen, typewriter, eraser, dictionary and thesaurus….all in one. They were introduced in the market in the 1960s and became a typical office tool by the 1970s. Word processor is a programme used to type documents. Document can be saved, closed and be opened again to continue working on them. The keyboard of word processor is similar to that of a typewriter, but its capabilities extend for beyond the typewriters. For example, you don't have press the Return or Enter key at the end of every line-in word processing, the line "wraps around" when it reaches the margin you have set and allows you to continue typing without stopping, you only press Enter (Or Return) when you want to start a new paragraph or insert blank lines. If you make a mistake while typing use backspace or delete to erase it.

Let us consider an office scene. Many letters are typed in the office. The officer dictates a letter. The typist first types a draft copy of the letter. The officer goes through it to check mistakes regarding spelling errors, missing words, etc. and suggests corrections. The typist changes the letter as suggested by the officer. This is a simple example of word processing.

 Word processing is one of the most popular applications of computer. It means the process of manipulation of text using computer. It includes entering, editing, formatting and manipulation of text on a computer screen and printing of the processed text. Word processing on computer significantly reduced the labour effort in document creation, communication and management.

Features of word processing

Software companies have launched on the market many word processors that have similar features. Some brands names are better known than others. There are many commercial word processing programs; **Open office writer, Microsoft Word, Coral word Perfect** etc… All modern word processors share some basic features;

1. Basic editing tasks Easy to carry out.

2. A pre-view window to see what the document really looks like.

3. Possibility to store the document with a meaningful name.

4. Document suitably formatted to be sent by fax or e-mail

5. WYSIWIG features (What you see is what you get).

Some Common Word Processing Packages

The followings are examples of some popular word processor available

>   1. Soft word
>   2. WordStar
>   3. Word perfect
>   4. Microsoft word

Advantages of word processing

1. Mistakes can be corrected easily without leaving any trace;
2. Much better presentation of text is possible with formatting features such as different font styles and sizes, coloured text and justification;
3. Text can be easily inserted, deleted or rearranged without having to start again;
4. Documents can be saved on disk and used again whenever necessary;
5. Pictures, graphs, tables and charts can be easily included alongside text;
6. Multiple copies of the same document can be easily produced;
7. Standard letters can be mass-produced very quickly using mail merge;
8. Documents can be transferred instantly anywhere in the world via electronic communications links;
9. Spelling and grammar can be checked automatically.

2.1 MICROSOFT-WORD

There are many software packages to do the job of word processing. Some of them work in DOS environment. Examples are WordStar, Word Perfect and Professional Write. But in these days working in WINDOWS is becoming more and more popular. So let us consider software for word processing which works in WINDOWS. Our choice is MS-WORD because it is the most popular software in these days. MS-WORD is a part of the bigger package called MS OFFICE, which can do much more than word processing. In fact when you open up MS OFFICE you will find four main components in it. They are MS-WORD (for word processing), MS EXCEL (for spreadsheet), MS ACCESS (for database management) and MS POWERPOINT (for presentation purposes)

Microsoft Word 2007 Window and its Parts/components

Microsoft Word is a word processing software package. You can use it to type letters, reports, and other documents. Microsoft Word 2007 is so different from previous versions of Microsoft Word; even experienced users may find it as more user-friendly.

Advanced features/components of MS Word 2007

The Microsoft Office Button

In the upper-left corner of the Word 2007 window is the Microsoft Office button. When you click the button, a **menu** appears. You can use the menu to create a new file, open an existing file, save a file, and perform many other tasks.

The Quick Access Toolbar

Next to the Microsoft Office button is the Quick Access toolbar. The Quick Access toolbar provides you with access to commands you frequently use. By default Save, Undo, and Redo appear on the Quick Access toolbar. You can use Save to save your file, Undo to rollback an action you have taken, and Redo to reapply an action you have rolled back.

The Title Bar

Next to the Quick Access toolbar is the Title bar. The Title bar displays the title of the document on which you are currently working. Word names the first new document you open Document1. As you open additional new documents, Word names them sequentially. When you save your document, you assign the document a new name.
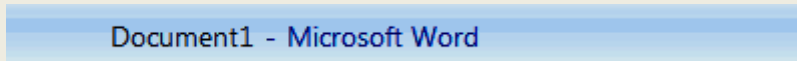
The Ribbon

You use commands to tell Microsoft Word what to do. In Microsoft Word 2007, you use the Ribbon to issue commands. The Ribbon is located near the top of the screen, below the Quick Access toolbar. At the top of the Ribbon are several tabs; clicking a tab displays several related command groups. Within each group are related command buttons. You click buttons to issue commands or to access menus and dialog boxes. You may also find a dialog box launcher in the bottom-right corner of a group. Clicking the dialog box launcher gives you access to additional commands via a dialog box.
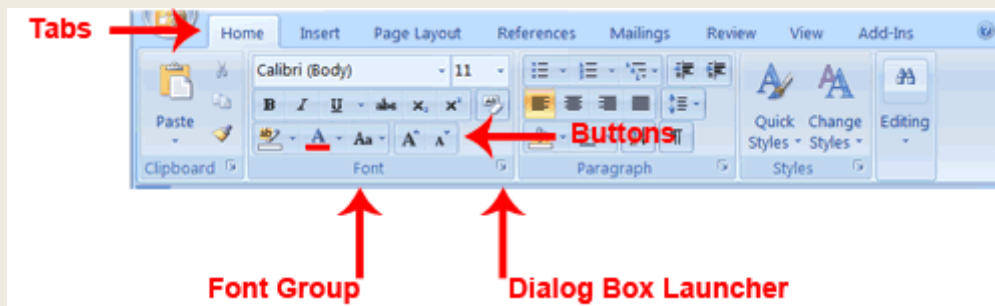
The Ruler

The ruler is found below the Ribbon.
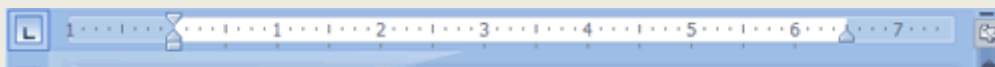
You can use the ruler to change the format of your document quickly. If your ruler is not visible, follow the steps listed here:
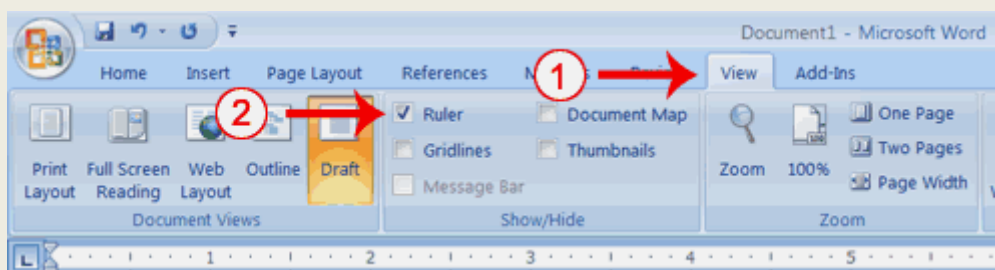
1. Click the View tab to choose it.
2. Click the check box next to Ruler in the Show/Hide group. The ruler appears below the Ribbon.

The Text Area

Just below the ruler is a large area called the text area. You type your document in the text area. The blinking vertical line in the upper-left corner of the text area is the cursor. It marks the insertion point. As you type, your text displays at the cursor location. The horizontal line next to the cursor marks the end of the document.
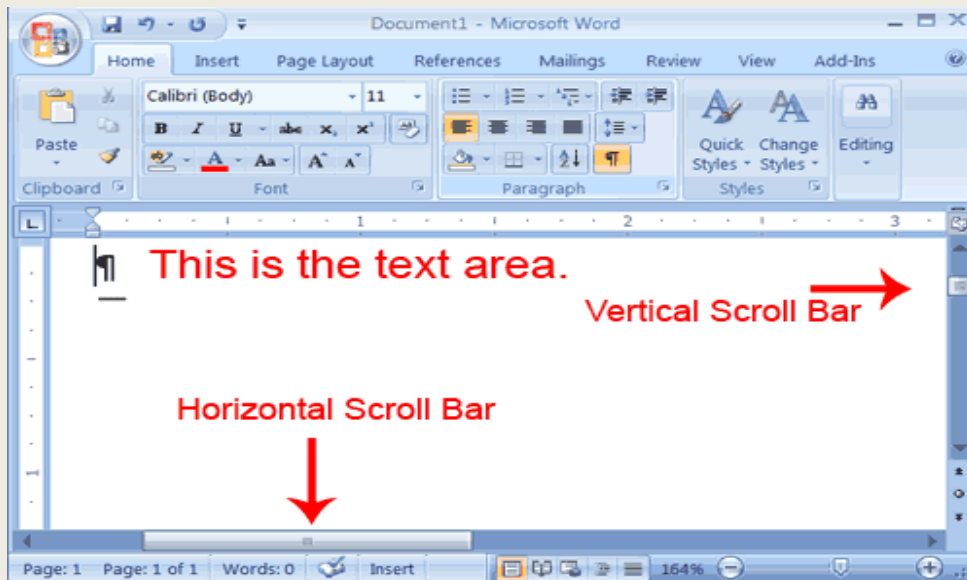
The Vertical and Horizontal and Vertical Scroll Bars

The vertical and horizontal scroll bars enable you to move up, down, and across your window simply by dragging the icon located on the scroll bar. The vertical scroll bar is located along the right side of the screen. The horizontal scroll bar is located just above the status bar. To move up and down your document, click and drag the vertical scroll bar up and down. To move back and forth across your document, click and drag the horizontal scroll bar back and forth. You won't see a horizontal scroll bar if the width of your document fits on your screen.

The Status Bar

The Status bar appears at the very bottom of your window and provides such information as the current page and the number of words in your document. You can change what displays on the Status bar by right-clicking on the Status bar and selecting the options you want from the Customize Status Bar menu. You click a menu item to select it. You click it again to deselect it. A check mark next to an item means it is selected.

Create a New Document

There are several ways to create new documents, open existing documents, and save documents in Word:

- Click the **Microsoft Office Button** and Click **New** or
- Press CTRL+N (Depress the CTRL key while pressing the "N") on the keyboard

You will notice that when you click on the Microsoft Office Button and Click **New**, you have many choices about the types of documents you can create. If you wish to start from a blank document, click **Blank**. If you wish to start from a template you can browse through your choices on the left, see the choices on center screen, and preview the selection on the right screen.
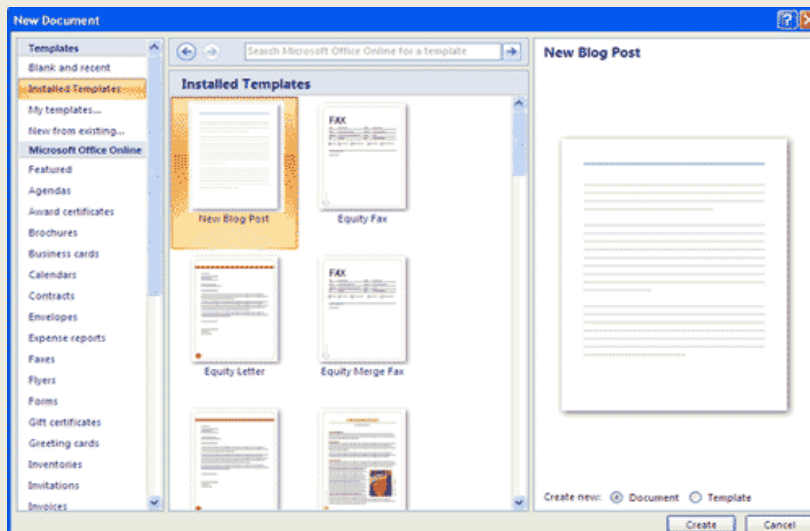
Opening an Existing Document

- Click the **Microsoft Office Button** and Click **Open,** or
- Press CTRL+O (Depress the CTRL key while pressing the "O") on the keyboard, or
- If you have recently used the document you can click the **Microsoft Office Button** and click the name of the document in the **Recent Documents** section of the window Insert picture of recent docs

Saving a Document

- Click the **Microsoft Office Button** and Click **Save** or **Save As** (remember, if you're sending the document to someone who does not have Office 2007, you will need to click the **Office Button**,
  click **Save As**, and Click **Word 97-2003 Documen**t), or
- Press CTRL+S (Depress the CTRL key while pressing the "S") on the keyboard, or
- Click the **File** icon on the Quick Access Toolbar
-
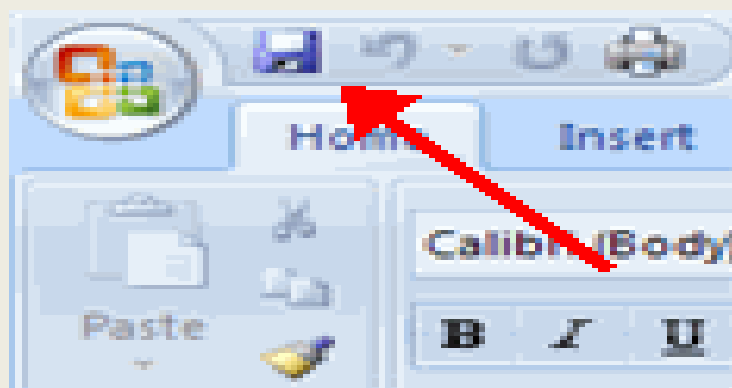
Renaming Documents
To rename a Word document while using the program:

- Click the **Office Button** and find the file you want to rename.
- Right-click the document name with the mouse and select **Rename** from the shortcut menu.
- Type the new name for the file and press the **ENTER** key.

Working on Multiple Documents

Several documents can be opened simultaneously if you are typing or editing multiple documents at once. All open documents will be listed in the **View Tab** of the Ribbon when you click on Switch Windows. The current document has a checkmark beside the file name. Select another open document to view it.
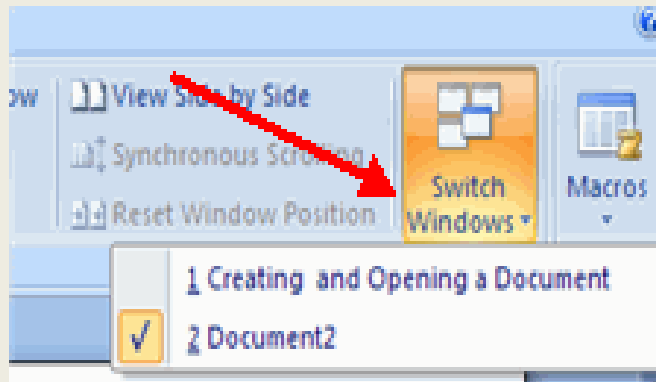
Document Views

In Word 2007, you can display your document in one of five views: Draft, Web Layout, Print Layout, Full Screen Reading, or Online Layout

- **Print Layout**: This is a view of the document as it would appear when printed. It includes all tables, text, graphics, and images.
- **Full Screen Reading**: This is a full view length view of a document. Good for viewing two pages at a time.
- **Web Layout**: This is a view of the document as it would appear in a web browser.
- **Outline**: This is an outline form of the document in the form of bullets.
- **Draft**: This view does not display pictures or layouts, just text. For selecting draft view follow the procedure below
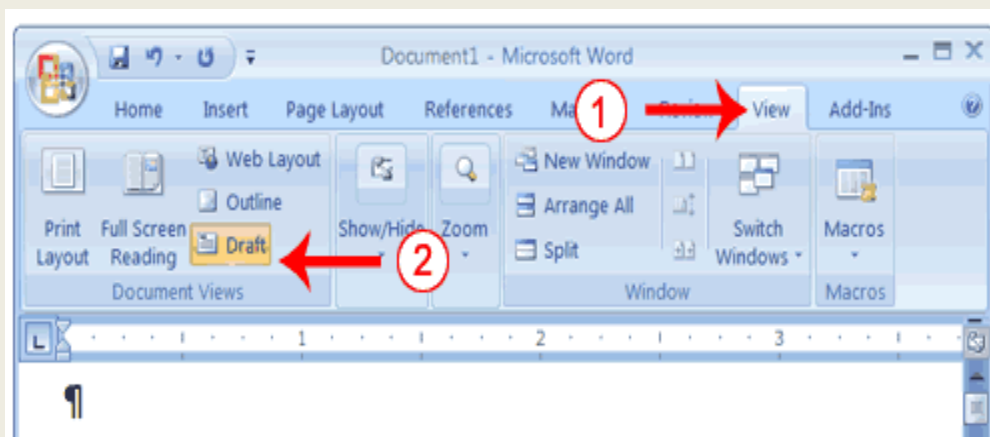
1. Click the View tab.
2. Click Draft in the Document Views group. When the Draft option is selected it appears in a contrasting color.

Click

To view a document in different forms, click the document views shortcuts at the bottom of the screen
 or:
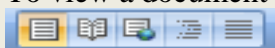
- Click the **View Tab** on the Ribbon
- Click on the appropriate document view.
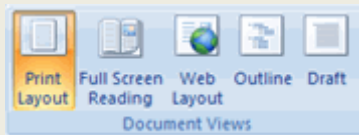
Close a Document

To close a document:

- Click the **Office Button**
- Click **Close**

Nonprinting Characters

Certain characters, called nonprinting characters, do not print and will not appear in your printed document but do affect your document layout. You can elect to see these characters on the screen as you type or you can elect to have them remain invisible. For these lessons, opt to see them onscreen. This table describes most of them:

To view nonprinting characters:
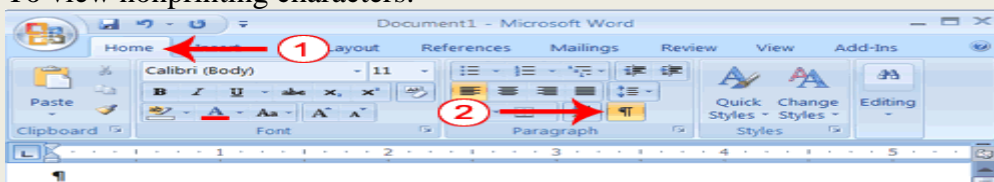
Typing and inserting Text

To enter text, just start typing! The text will appear where the blinking cursor is located. Move the cursor by using the arrow buttons on the keyboard or positioning the mouse and clicking the left button. The keyboard shortcuts listed below are also helpful when moving through the text of a document:

Move Action	Keystroke
Beginning of the line	HOME
End of the line	END
Top of the document	CTRL+HOME
End of the document	CTRL+END

Selecting Text

To change any attributes of text it must be highlighted first. Select the text by dragging the mouse over the desired text while keeping the left mouse button depressed, or hold down the **SHIFT** key on the keyboard while using the arrow buttons to highlight the text. The following table contains shortcuts for selecting a portion of the text:

Selection	Technique
Whole word	double-click within the word
Whole paragraph	triple-click within the paragraph
Several words or lines	drag the mouse over the words, or hold down **SHIFT** while using the arrow keys
Entire document	choose **Editing	Select	Select All** from the Ribbon, or press **CTRL+A**

De select the text by clicking anywhere outside of the selection on the page or press an arrow key on the keyboard.

Inserting Additional Text

Text can be inserted in a document at any point using any of the following methods:

- **Type Text**: Put your cursor where you want to add the text and begin typing

- **Copy and Paste Text**: Highlight the text you wish to copy and right click and click **Copy**, put your cursor where you want the text in the document and right click and click **Paste**.

- **Cut and Paste Text**: Highlight the text you wish to copy and right click and click **Cut**, put your cursor where you want the text in the document and right click and click **Paste**.

- **Drag Text**: Highlight the text you wish to move, click on it and drag it to the place where you want the text in the document.
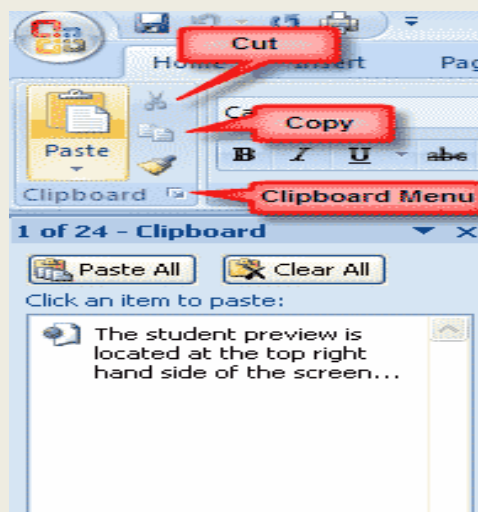
You will notice that you can also use the Clipboard group on the ribbon.

Rearranging Blocks of Text

To rearrange text within a document, you can utilize the **Clipboard Group** on the **Home Tab** of the Ribbon.

Insert picture of clipboard group labeled

- **Move text**: Cut and Paste or Drag as shown above
- **Copy Text**: Copy and Paste as above or use the Clipboard group on the Ribbon
- **Paste Text**: Ctrl + V (hold down the CTRL and the "V" key at the same time) or use the Clipboard group to Paste, Paste Special, or Paste as Hyperlink
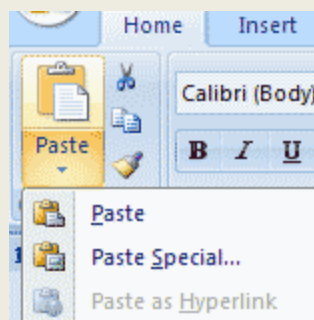
Deleting Blocks of Text

Use the **BACKSPACE** and **DELETE** keys on the keyboard to delete text. Backspace will delete text to the left of the cursor and Delete will erase text to the right. To delete a large selection of text, highlight it using any of the methods outlined above and press the **DELETE** key.

Search and Replace Text

To find a particular word or phrase in a document:

- Click **Find** on the **Editing Group** on the Ribbon
- To find and replace a word or phrase in the document, click **Replace** on the **Editing Group** of the Ribbon.

Undo Changes

To undo changes: Click the **Undo Button** on the Quick Access Toolbar

There are many features to help you proofread your document. These include: Spelling and Grammar, Thesaurus, AutoCorrect, Default Dictionary, and Word Count.

Bold, Italicize, and Underline

When creating a document, you may need to emphasize particular words or phrases by bolding, underlining, or italicizing. Also, certain grammatical constructs require that you bold, underline, or italicize. You can bold, underline, and italicize when using Word. You also can combine these features. In other words, you can bold, underline, and italicize a single piece of text.

When you need to perform a task in Microsoft Word, you can usually choose from several methods. The exercises that follow show you how to bold, underline, or italicize using four different methods: using the launcher, the Ribbon, the Mini-toolbar/context menu, and the keyboard.

Bold with the Dialog Box Launcher

1. On the line that begins with Launcher, select the word "Bold." You can place the cursor before the letter "B" in "Bold." Press the Shift key; then press the right arrow key until the entire word is highlighted.
2. Choose the Home tab.
3. Click the dialog box launcher in the Font group. The Font dialog box appears.
4. Click Bold in the Font Style box.
   Note: You can see the effect of your action in the Preview window. To remove the bold, click Regular.
5. Click OK to close the dialog box.
6. Click anywhere in the text area to remove the highlighting. You have bolded the word bold.

Italicize with the Dialog Box Launcher

1. On the line that begins with Launcher, select the word "Italicize." You can place the cursor before the letter "I" in "Italicize." Press the Shift key; then press the right arrow key until the entire word is highlighted.
2. Choose the Home tab.
3. Click the dialog box launcher in the Font group. The Font dialog box appears.
4. Click Italic in the Font Style box.
   Note: You can see the effect of your selection in the Preview window. To remove the italics, click Regular in the Font Style box.
5. Click OK to close the Font dialog box.
6. Click anywhere in the text area to remove the highlighting. You have italicized the word Italicize.

Underline with the Dialog Box Launcher

You can underline when using Word. Word provides you with many types of underlines from which to

choose. The following are some of the underlines that are available if you use the dialog box launcher:

1. On the line that begins with "Launcher," select the words "Underline these words."
2. Choose the Home tab.
3. Click the dialog box launcher in the Font group. The Font dialog box appears.
4. In the Underline Style box, click the down arrow to open the pull-down menu.
5. Click the type of underline you wish to use.
   Note: To remove an underline, you select none from the pull-down menu.
6. Click OK to close the dialog box. The underline you selected appears under the words.
7. Click anywhere in the text area to remove the highlighting.

Proofing the document
This includes checking and correcting spelling and grammar, thesaurus, Research and translate options

Spelling and Grammar
To check the spelling and grammar of a document

- Place the cursor at the beginning of the document or the beginning of the section that you want to check
- Click the **Review** Tab on the Ribbon
- Click **Spelling & Grammar** on the Proofing Group.
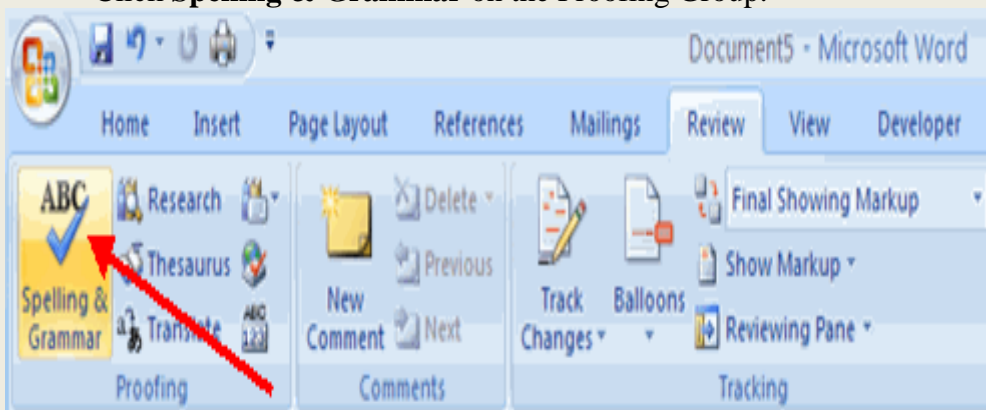
- Any errors will display a dialog box that allows you to choose a more appropriate spelling or phrasing.
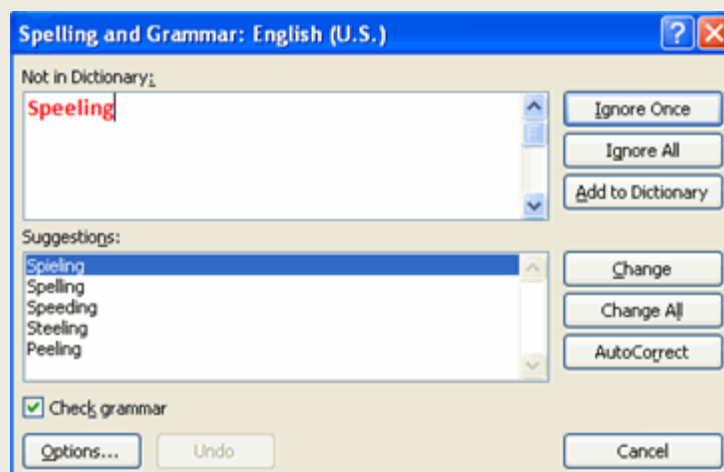
If you wish to check the spelling of an individual word, you can right click any word that has been underlined by Word and choose a substitution.
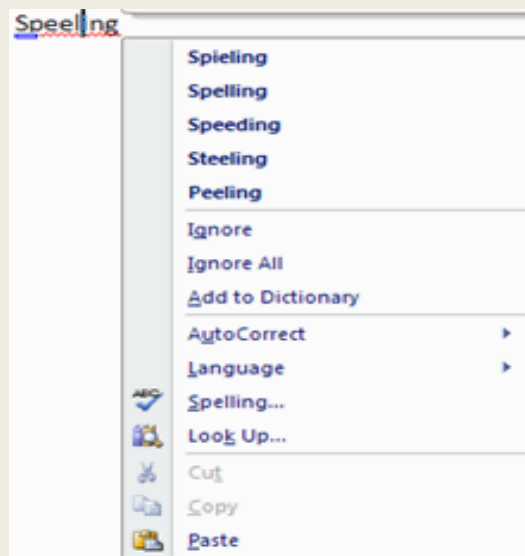
Thesaurus -The Thesaurus allows you to view synonyms. To use the thesaurus:

- Click the **Review** Tab of the Ribbon

- Click the **Thesaurus** Button on the Proofing Group.

- The thesaurus tool will appear on the right side of the screen and you can view word options.
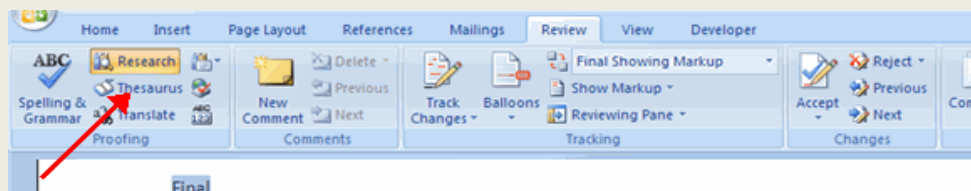
You can also access the thesaurus by right-clicking any word and choosing **Synonyms** on the menu.
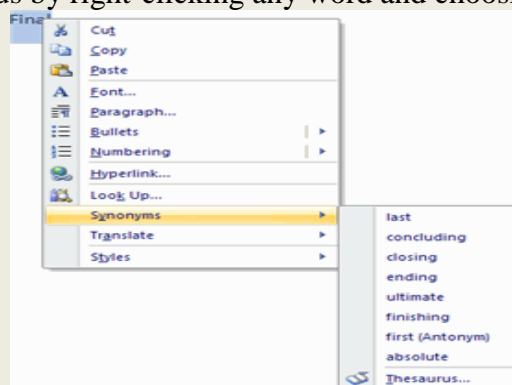
Customize AutoCorrect

You can set up the AutoCorrect tool in Word to retain certain text the way it is. To customize AutoCorre

- Click the **Microsoft Office** button

- Click the **Word Options** Button

- Click the **Proofing** tab

- Click **AutoCorrect Options** button
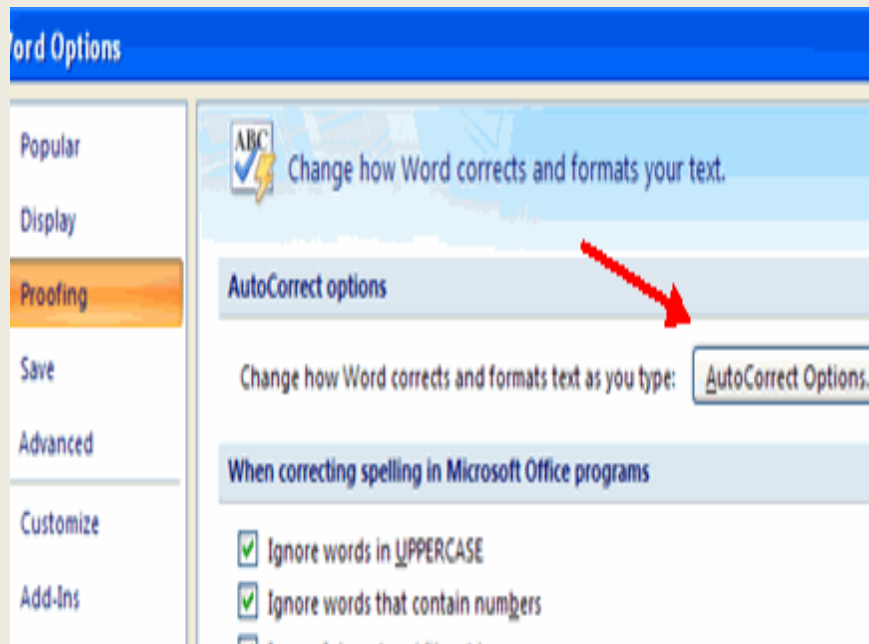
- On the **AutoCorrect Tab**, you can specify words you want to replace as you type
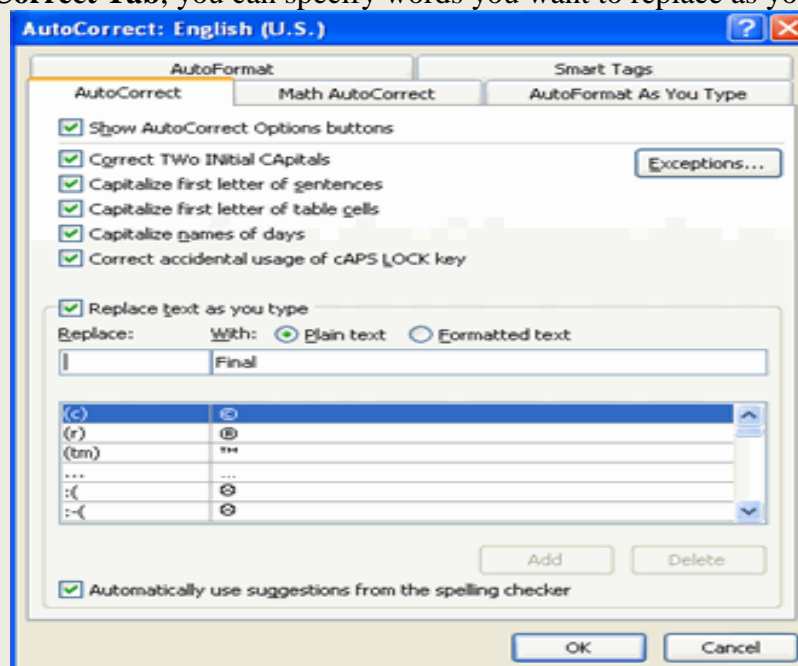
Create a New Default Dictionary

Often you will have business or educational jargon that may not be recognized by the spelling and/or grammar check in Word. You can customize the dictionary to recognize these words.

- Click the **Microsoft Office** button
- Click the **Word Options** Button
- Click the **Proofing** tab
- Click the **When Correcting Spelling** tab
- Click **Custom Dictionaries**
- Click **Edit Word List**
- Type in any words that you may use that are not recognized by the current dictionary.
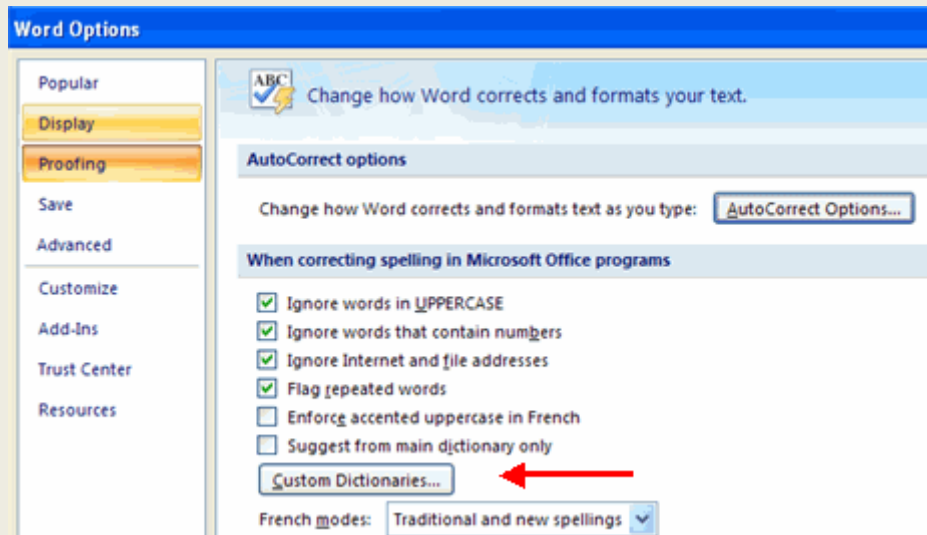
Check Word Count

To check the word count in Word 2007 look at the bottom left corner of the screen. It will give you a total word count or if you have text highlighted it will tell you how many words are highlighted out of the total.
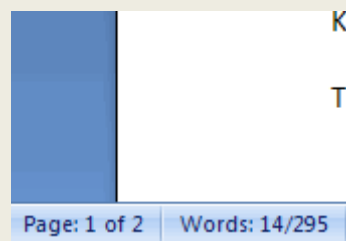
Formatting a Paragraph

Formatting paragraphs allows you to change the look of the overall document. You can access many of the tools of paragraph formatting by clicking the **Page Layout** Tab of the Ribbon or the **Paragraph** Group on the Home Tab of the Ribbon.
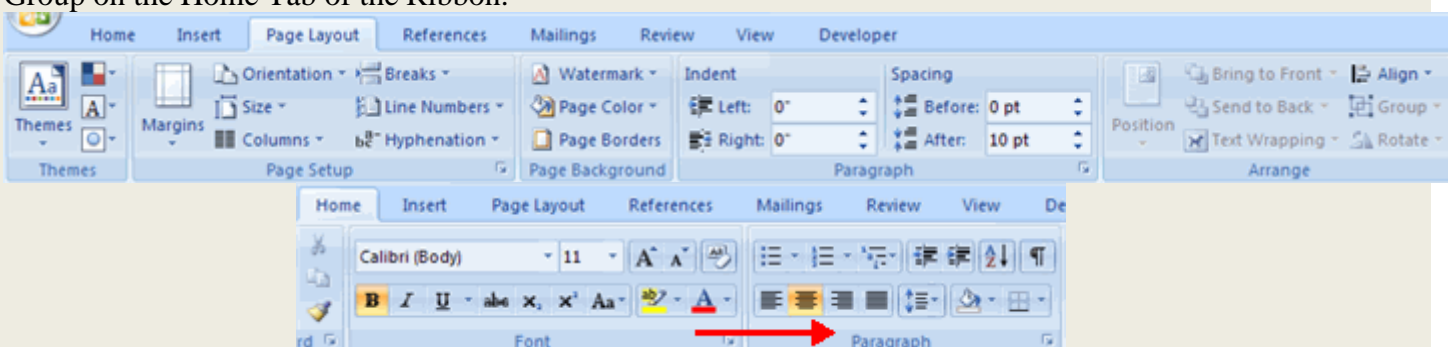
Change Paragraph Alignment

The paragraph alignment allows you to set how you want text to appear. To change the alignment:

- Click the **Home Tab**
- Choose the appropriate button for alignment on the Paragraph Group.
    - **Align Left**: the text is aligned with your left margin
    - **Center**: The text is centered within your margins
    - **Align Right**: Aligns text with the right margin
    - **Justify**: Aligns text to both the left and right margins.
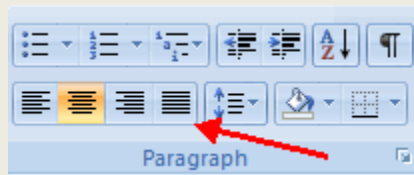
Indent Paragraphs

Indenting paragraphs allows you set text within a paragraph at different margins. There are several options for indenting:

- **First Line**: Controls the left boundary for the first line of a paragraph
- **Hanging**: Controls the left boundary of every line in a paragraph except the first one
- **Left**: Controls the left boundary for every line in a paragraph
- **Right**: Controls the right boundary for every line in a paragraph

To indent paragraphs, you can do the following:

- Click the **Indent** buttons to control the indent.
- Click the I**ndent** button repeated times to increase the size of the indent.
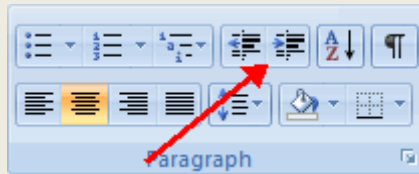
- Click the dialog box of the **Paragraph** Group
- Click the **Indents and Spacing** Tab
- Select your indents
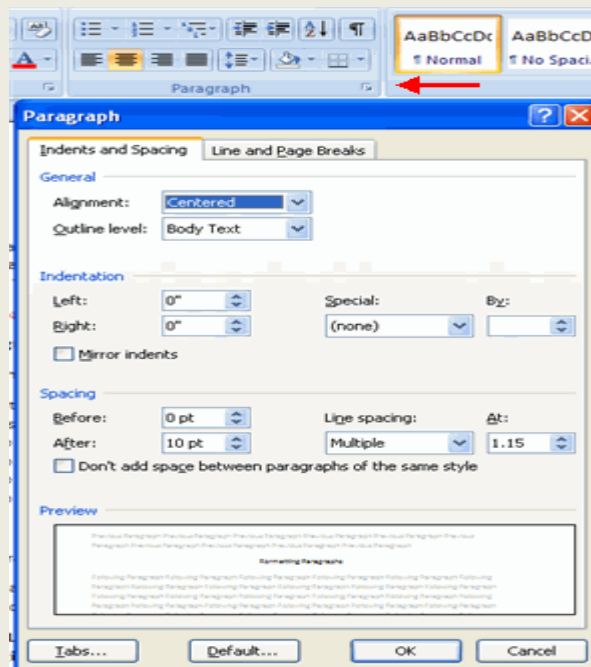
Add Borders and Shading

You can add borders and shading to paragraphs and entire pages. To create a border around a paragraph or paragraphs:

- Select the area of text where you want the border or shading.
- Click the **Borders** Button on the Paragraph Group on the Home Tab
- Choose the **Border and Shading**
- Choose the appropriate options
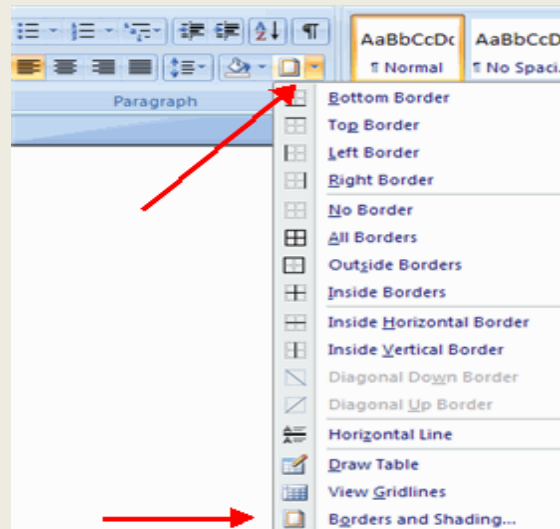
Apply Styles

Styles are a present collection of formatting that you can apply to text. To utilize **Quick Styles:**

- Select the text you wish to format.
- Click the dialog box next to the **Styles Group** on the Home Tab.
- Click the style you wish to apply.
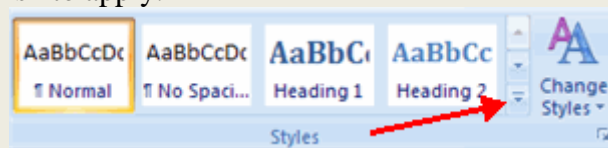
Create Links

Creating links in a word document allows you to put in a URL that readers can click on to visit a web page. To insert a link:

- Click the **Hyperlink Button** on the Links Group of the Insert Tab.
- Type in the text in the "Text to Display" box and the web address in the "Address" box.
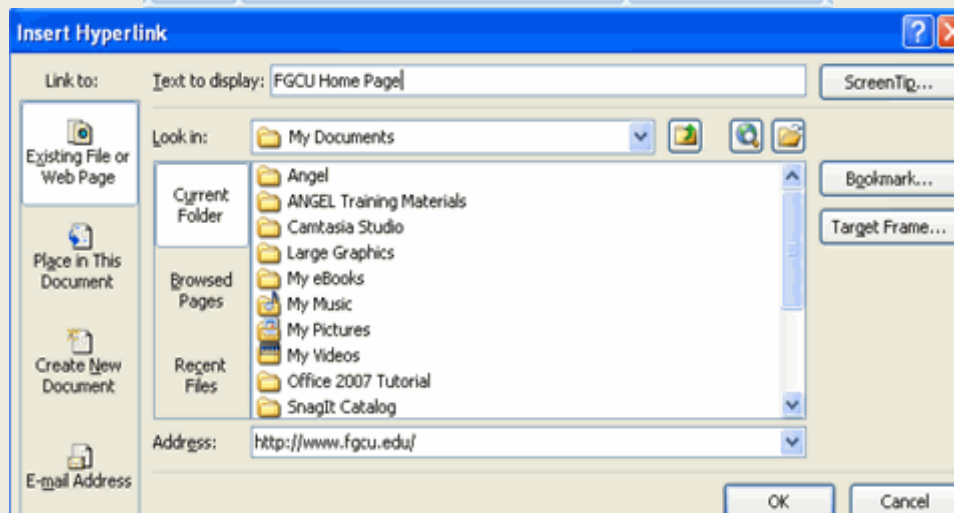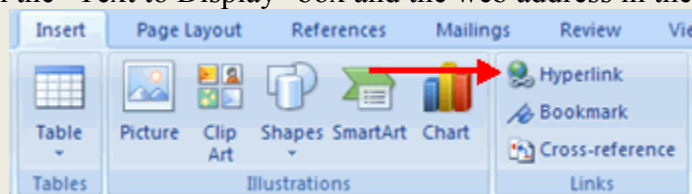
Change Spacing Between Paragraphs and Lines

You can change the space between lines and paragraphs by doing the following:

- Select the paragraph or paragraphs you wish to change.
- On the Home Tab, Click the **Paragraph** Dialog Box
- Click the **Indents and Spacing** Tab
- In the **Spacing** section, adjust your spacing accordingly
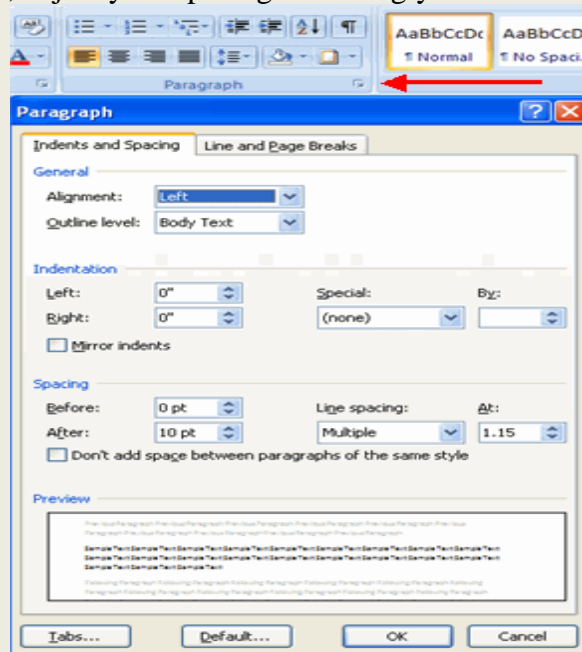
Creating and Bulleted Numbered Lists

Lists allow you to format and organize text with numbers, bullets, or in an outline. Bulleted lists have bullet points, numbered lists have numbers, and outline lists combine numbers and letters depending on the organization of the list. To create one of your own, do the following.

- Highlight the last three lines in your Crime Statistics document
- On the **Home** ribbon at the top of Microsoft Word, locate the **Paragraph** panel
- On the Paragraph panel, locate the three bullet options:
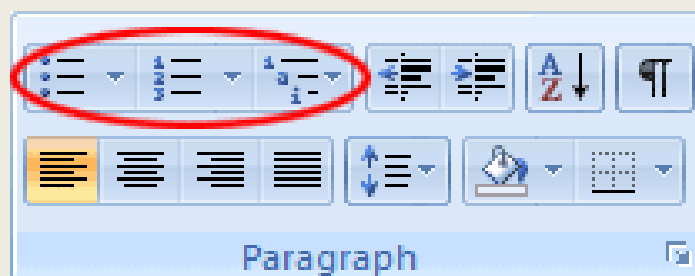
The first of the three is for bullets that are not numbers or letter. The default for the first option is to have round bullets. If this is all you want then simply click the first option, after you have highlighted your text. You can, however, have other symbols for your bulleted list. Click the arrow next to the first bullet option to see the following:

You can select any of the bullets in the Bullet Library. Move your mouse over each one and you'll see a preview on your page. Click with the left mouse button to choose a particular bullet.

You have a wider range of choices if you click the link at the bottom that says "**Define New bullet**".
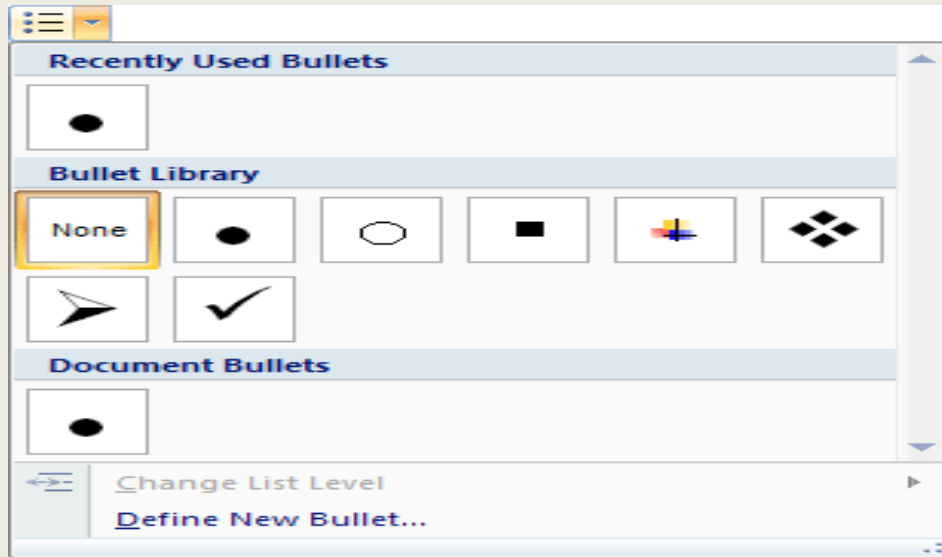
Click the **Symbol button** at the top to see the symbol screen:

Select the symbol you want and then click OK. You'll then be returned to the Define New Bullet dialogue box. If you like the Preview, click OK on this dialogue box, as well. You can however, select a picture, or a font as your bullet. Click the buttons at the top to see how these work.

The second bullet option on the Paragraph panel is for numbers and letters. The default is for consecutive numbers starting from 1. Again, click the arrow to see more options:
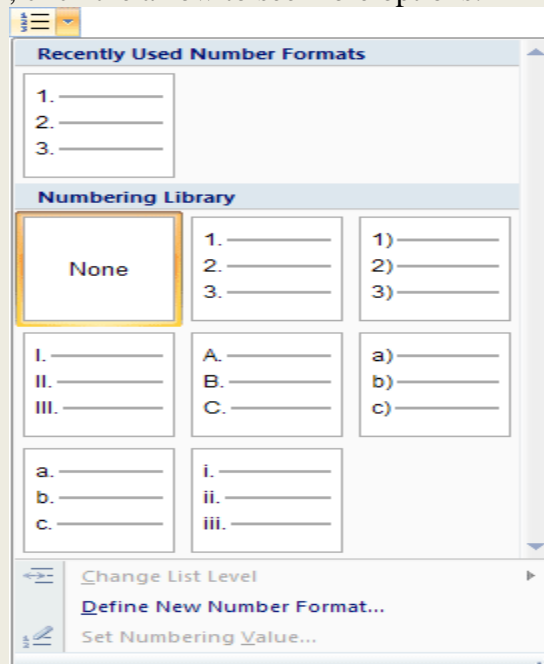

So if you wanted lowercase letters instead of numbers, select this option from the list. You can also set your own style by clicking the "Define New Number Format" link at the bottom. This opens a dialogue box similar to the one you've just seen.

The third bullet option on the Paragraph panel is for lists that are more complex - bullets within bullets. A list like this, for example:

To get the list above, we first typed the text "**Heading One".** After highlighting this text, we clicked the third bullet option on the Paragraph panel to see this:
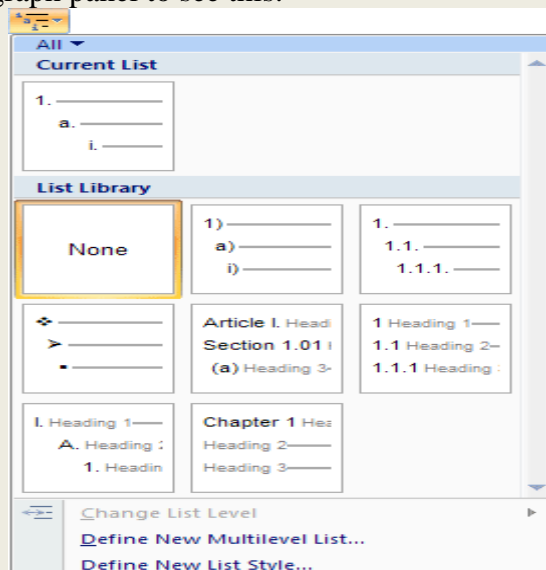
Clicking the first option got us the number 1 as a bullet. We then typed the next two items. However, this gets you a numbered list, 1 to 3. To change the list into the one above, highlight an item on your list. Then click the link at the bottom that says "Change List Level". You'll then see the following:
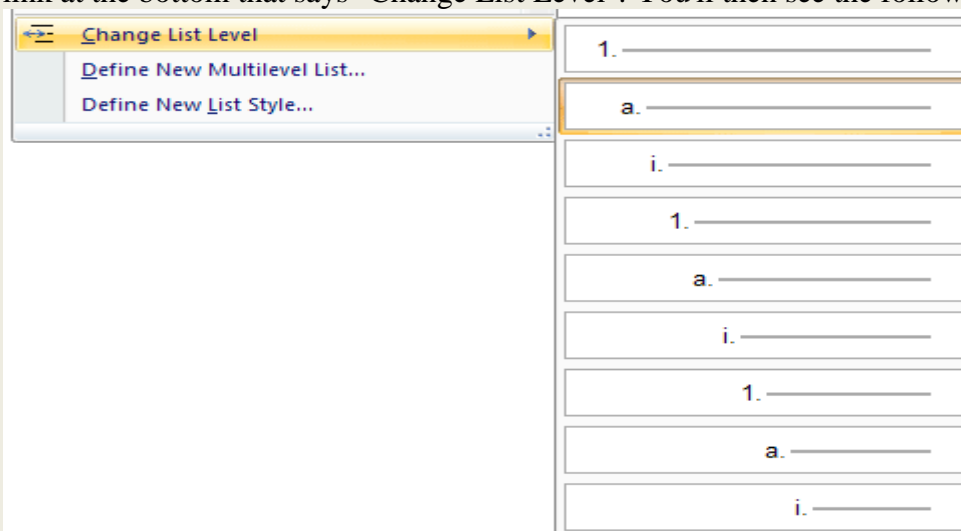

Select the List Level you want. Do the same for any other items on your list.

TABLES

Tables are used to display data in a table format. In other words, the table are facilities where the data structure is divided into too many rows and columns to provide better analysis and presentation

To Create a Table

- Place the cursor on the page where you want the new table
- Click the **Insert** Tab of the Ribbon
- Click the **Tables** Button on the Tables Group. You can create a table one of four ways:
  o Highlight the number of row and columns
  o Click **Insert Table** and enter the number of rows and columns
  o Click the **Draw Table**, create your table by clicking and entering the rows and columns
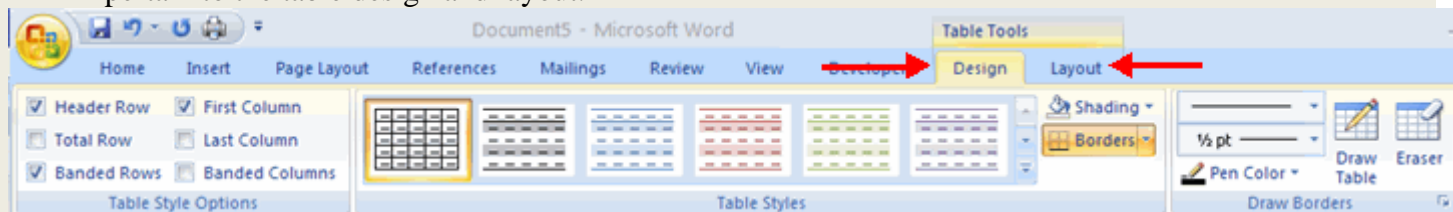 o Click **Quick Tables** and choose a table
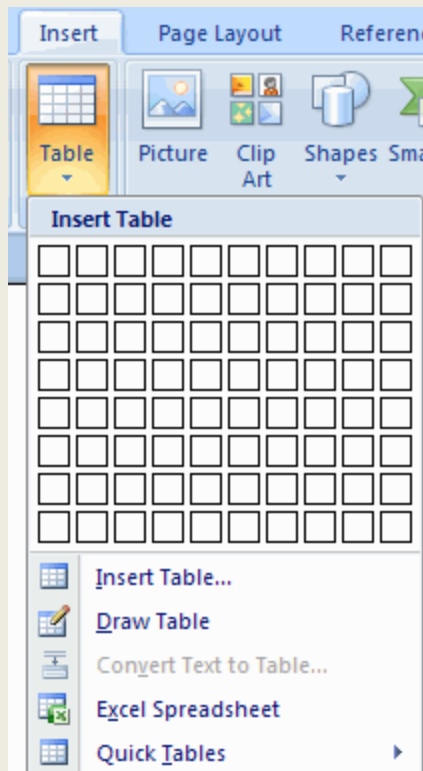
Enter Data in a Table

Place the cursor in the cell where you wish to enter the information. Begin typing.

Modify the Table Structure and Format a Table

To **modify** the structure of a table:

- Click the table and notice that you have two new tabs on the Ribbon: **Design and Layout**. These pertain to the table design and layout.


On the Design Tab, you can choose:

- **Table Style Options**
- **Table Styles**
- **Draw Borders**

To **format** a table, click the table and then click the **Layout** Tab on the Ribbon. This Layout tab allows you to:

- **View Gridlines and Properties** (from the Table Group)
- **Insert Rows and Columns** (from the Rows & Columns Group)
- **Delete the Table, Rows and/or Columns** (from the Rows & Columns Group)
- **Merge or Split Cells** (from the Merge Group)
- **Increase and Decrease cell size** (Cell Size Group)
- **Align text within the cells and change text directions** (Alignment Group)
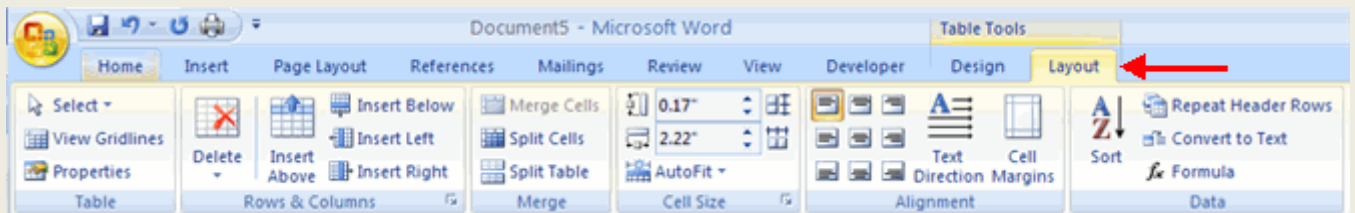
Page Formatting
Set the Orientation
Before you print your document, you may want to change the orientation of your pages. There are two orientations you can use: portrait and landscape. Paper, such as paper sized 8 1/2 by 11, is longer on one edge than it is on the other. If you print in Portrait, the shortest edge of the paper becomes the top of the page. Portrait is the default option. If you print Landscape, the longest edge of the paper becomes the top of the page.
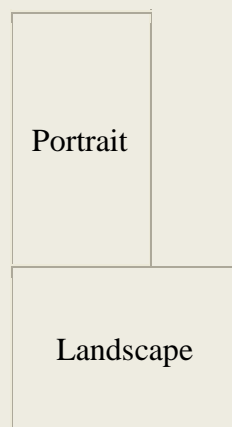
Set the Orientation
1. Choose the Page Layout tab.
2. Click Orientation in the Page Setup group. A menu appears.
3. Click Portrait. Word sets your page orientation to Portrait.
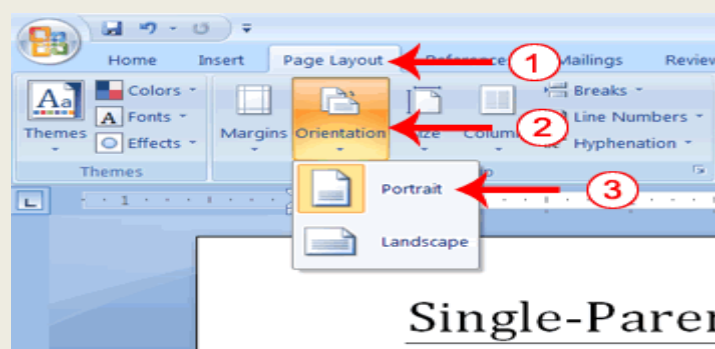
Set the Page Size
Paper comes in a variety of sizes. Most business correspondence uses 8 1/2 by 11 papers which is the default page size in Word. If you are not using 8 1/2 by 11 papers, you can use the Size option in the Page Setup group of the Page Layout tab to change the Size setting.
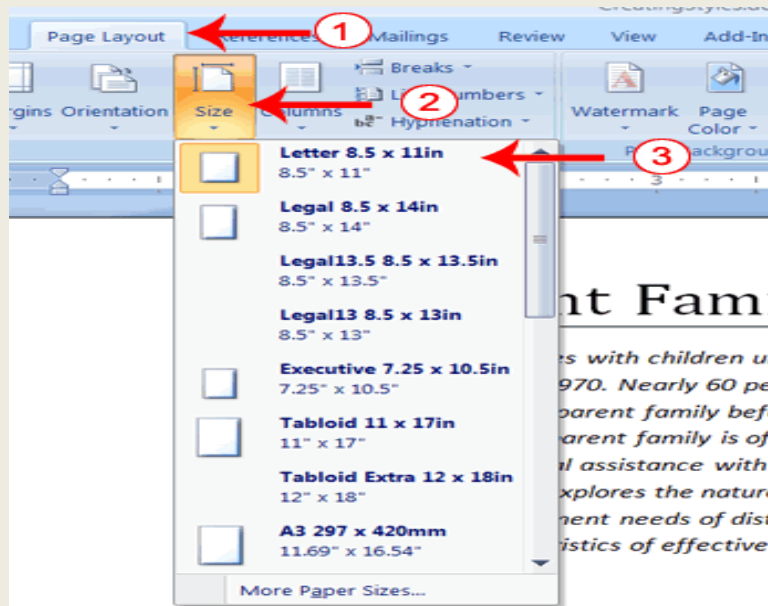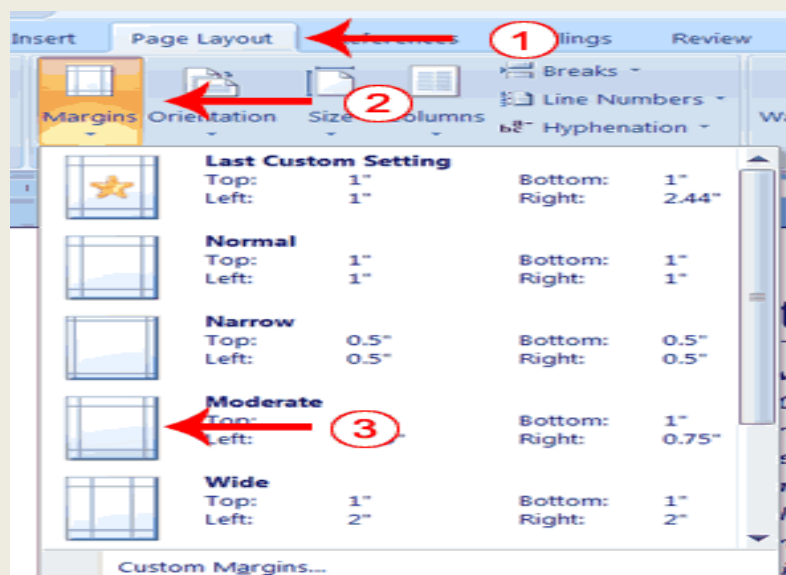
1. Choose the Page Layout tab.
2. Click Size in the Page Setup group. A menu appears.
3. Click Letter 8.5 x 11in. Word sets your page size.

Set the Margins

Margins define the amount of white space that appears at the top, bottom, left, and right edges of your document. The Margin option in the Page Setup group of the Page Layout tab provides several standard margin sizes from which you can choose.

1. Choose the Page Layout tab.
2. Click Margins in the Page Setup group. A menu appears.
3. Click Moderate. Word sets your margins to the Moderate settings.

Add Page Numbers

Page numbers help you keep your document organized and enable readers to find information quickly. You can add page numbers to the top, bottom, or margins of your pages, and you can choose where the numbers appear. For example, numbers can appear at the top of the page, on the left, right, or center of the page. Word also offers several number styles from which you can choose.
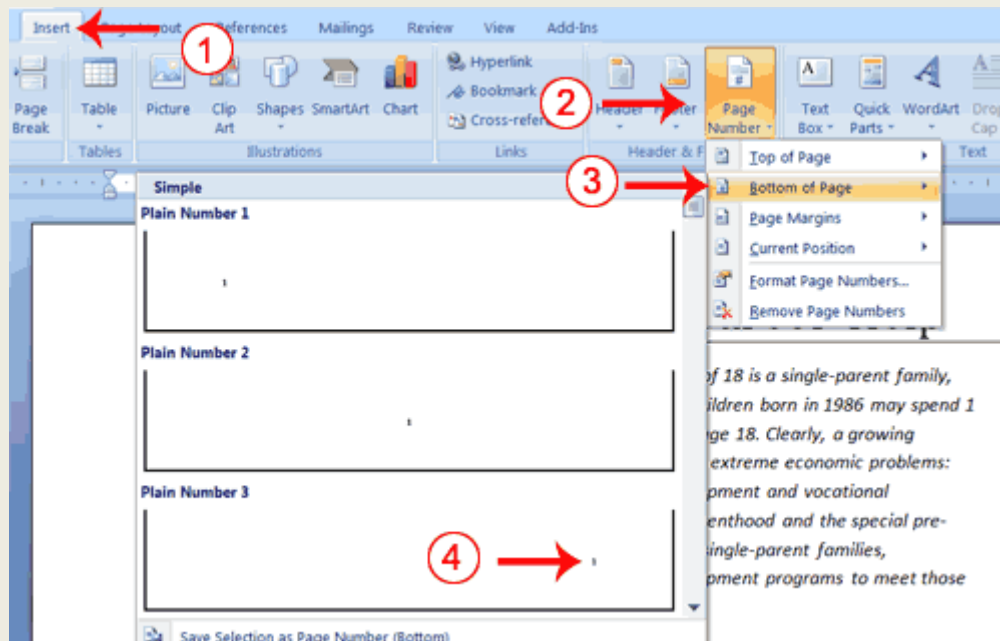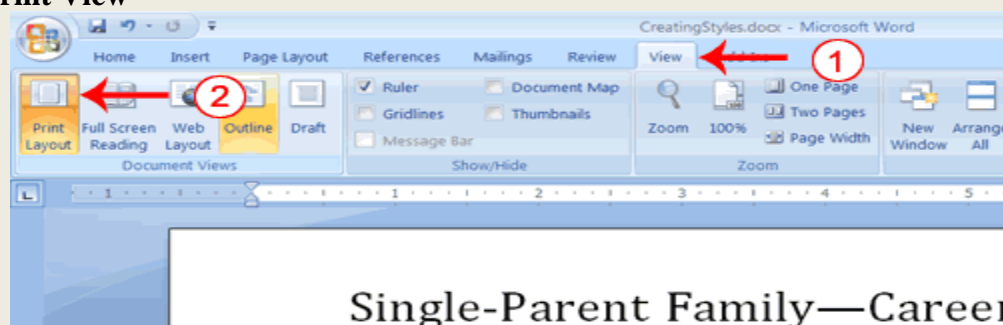
1. Choose the Insert tab.
2. Click the Page Number button in the Header & Footer group. A menu appears.
3. Click Bottom of Page.
4. Click the right-side option.

Insert Page Breaks

As you learned in earlier, you can display your document in any of five views: Draft, Web Layout, Print Layout, Full Screen Reading, or Online Layout. In Print Layout view you see your document as it will appear when you print it. You can clearly see where each page ends and a new page begins.

As you review your document, you may find that you want to change the point at which a new page begins. You do this by inserting a page break. For example, if a page heading appears on one page and the first paragraph under the heading appears on the next page, you may want to insert a page break before the heading to keep the heading and the first paragraph together.

Change to Print View

1. Choose the View tab.
2. Click Print Layout in the Document Views group. Your document changes to the Print Layout view.

Insert Page Breaks

1. Place your cursor before the D in "Displaced Homemakers"
2. Choose the Insert tab.
3. Click Page Break. Word places a page break in your document.

To delete a page break, you select the page break and then press the Delete key.

Modify Page Margins and Orientations

The page margins can be modified through the following steps:

- Click the **Page Layout** Tab on the Ribbon
- On the **Page Setup** Group, Click **Margins**
- Click a **Default Margin**, or
- Click **Custom Margins** and complete the dialog box.
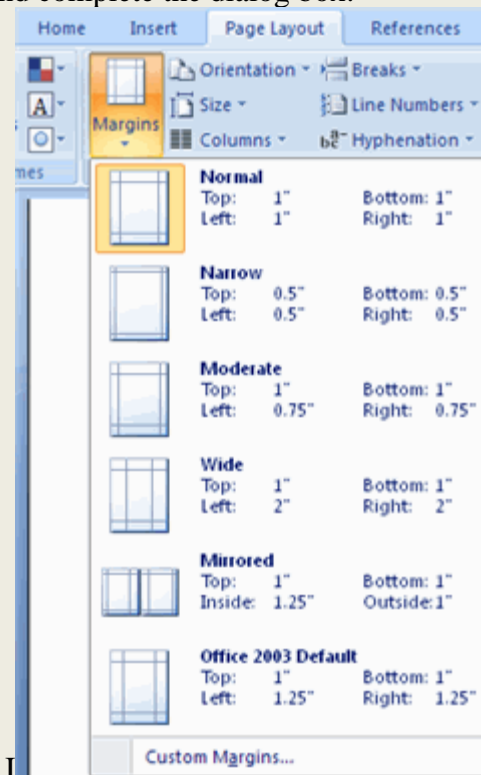
To change the Orientation, Size of the Page, or Columns:

- Click the **Page Layout** Tab on the Ribbon
- On the Page Setup Group, Click the **Orientation**, **Size**, or **Columns** drop down menus
- Click the appropriate choice
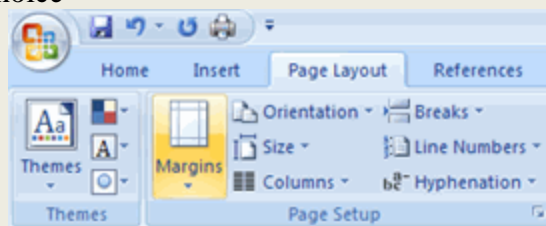
Apply a Page Border and Color

To apply a page border or color:

- Click the **Page Layout** Tab on the Ribbon
- On the Page Background Group, click the **Page Colors** or **Page Borders** drop down menus
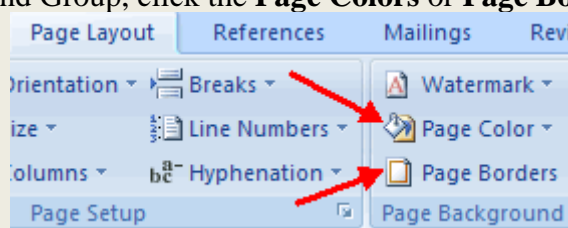
Insert Common Header and Footer Information

To insert Header and Footer information such as page numbers, date, or title, first, decide if you want the information in the header (at the top of the page) or in the Footer (at the bottom of the page), then:
- Click the **Insert** Tab on the Ribbon
- Click **Header or Footer**
- Choose a style

- The **Header/Footer Design** Tab will display on the Ribbon
- Choose the information that you would like to have in the header or footer (date, time, page numbers, etc.) or type in the information you would like to have in the header or footer
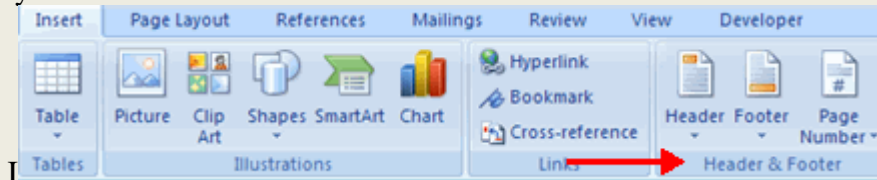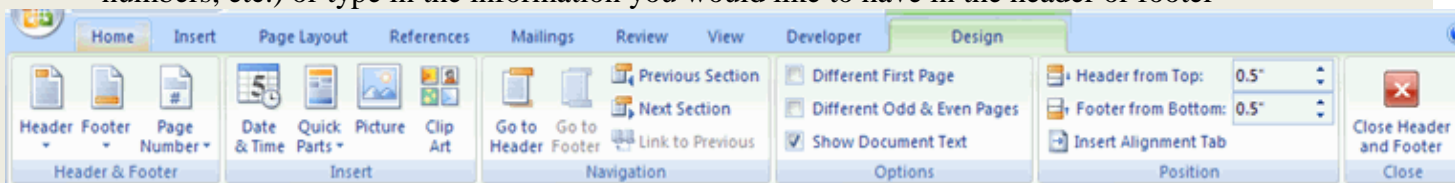

Create a Page Break
To insert a page break:
- Click the **Page Layout** Tab on the Ribbon
- On the **Page Setup** Group, click the **Breaks Drop Down Menu**
- Click **Page Break**

Preview and Print Documents

When you have your margins, tabs, and so on the way you want them, you are ready to print. In Word, You can preview your document before you print. In the Preview mode, you can review each page, view multiple pages at the same time, zoom in on a page, and access the Size, Orientation, and Margin options.

If you press the Zoom button while you are in Preview mode, the Zoom dialog box appears. In the Zoom dialog box you can set the sizes of the pages that display as well as the number of pages that display.

When you are ready to print, you use the Print dialog box. In the Print Range area, choose All to print every page of your document, choose Current Page to print the page you are currently on, or choose Pages to enter the specific pages you want to print. Type the pages you want to print in the Pages field. Separate individual pages with commas (1,3, 13); specify a range by using a dash (4-9).

Print Preview
1. Click the Microsoft Office button. A menu appears.
2. Highlight the Print option. The Preview and Print the Document menu appears.
3. Click Print Preview. The Preview window appears, with your document in the window.
4. Click One Page to view one page at a time. Click Two Pages to view two pages at a time.
5. To view your document in normal size, click 100%.
6. Click the Zoom Button. The Zoom dialog box appears.
7. Select an option and then click OK. Perform this task for each option and note the results.

MACROS

Macros are advanced features that can speed up editing or formatting you may perform often in a Word document. They record sequences of menu selections that you choose so that a series of actions can be completed in one step. Simply put, a macro is a series of commands that is recorded so it can be played back, or executed, later

Recording a Macro
To record a Macro:
- Click the **View** Tab on the Ribbon
- Click **Macros**
- Click **Record Macro**
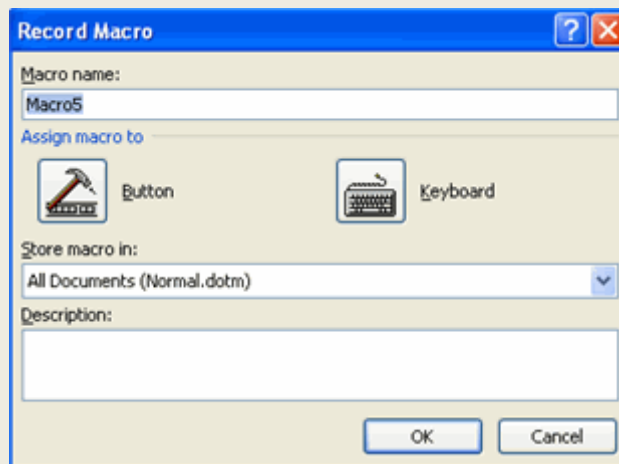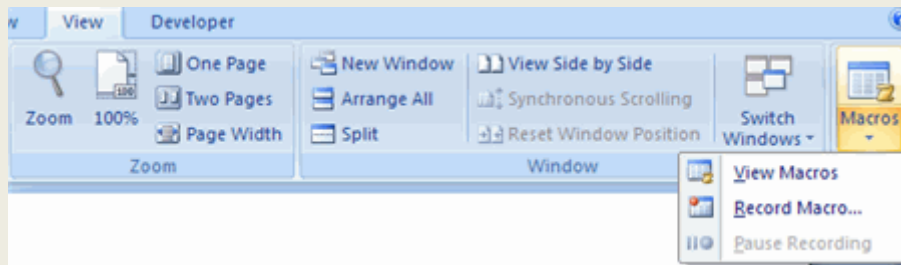
- Enter a name (without spaces)
- Click whether you want it assigned to a **button** (on the Quick Access Toolbar) or the **keyboard** (a sequence of keys)
- To assign the macro a **button** on the Quick Access Toolbar:
   o Click **Button**
   o Under the **Customize Quick Access Toolbar**, select the document for which you want the Macro available
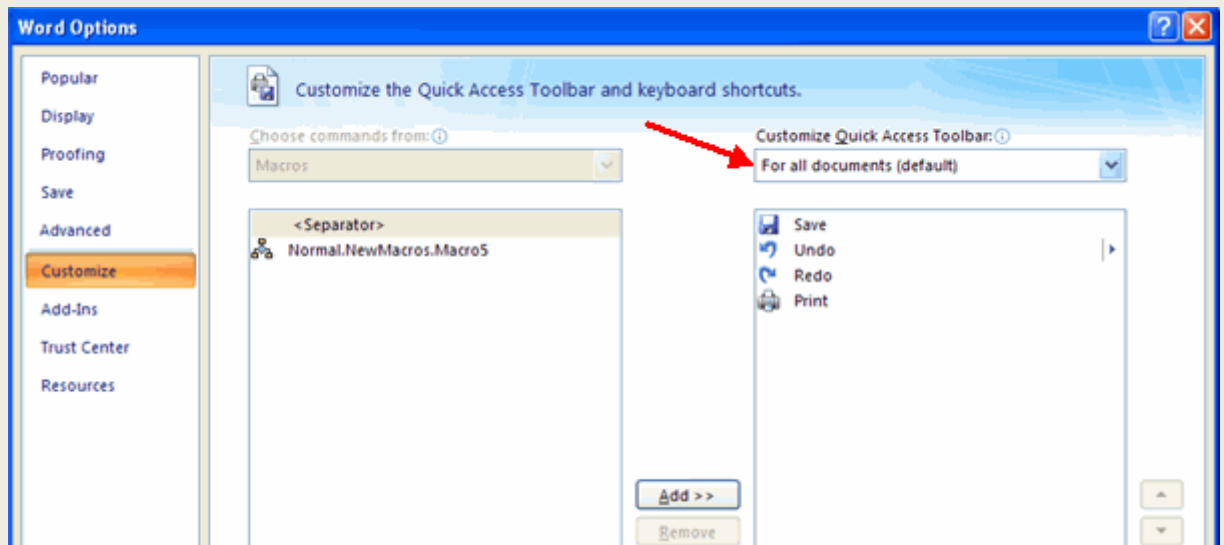
- o Under Choose Commands: Click the **Macro** that you are recording
- o Click **Add**
- o Click **OK** to begin Recording the Macro
- o Perform the actions you want recorded in the Macro
- o Click on **Macros**
- o Click on **Stop Recording Macros**
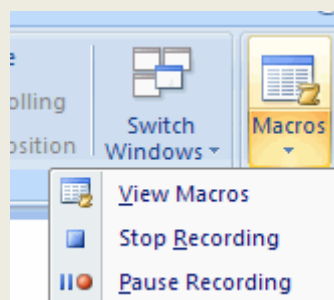
- To assign a macro button to a **keyboard shortcu**t:
  - o Click **Keyboard**
  - o In the **Press New Shortcut Key** box, type the key sequence that you want and click **Assign**
  - o Click **Close** to begin recording the Macro
  - o Perform the actions you want recorded in the Macro
  - o Click on **Macros**
  - o Click on **Stop Recording Macros**

Running a Macro

Running a macro depends on whether it's been added to the Quick Access Toolbar or if it's been given a Keyboard Shortcut.

- To run a Macro from the Quick Access Toolbar, simply click the **Macro Icon**

- To run a Macro from the Keyboard shortcut, simply **press the keys** that you have programmed to run the Macro.

Mail Merge/Merge printing

Mail Merge is an automated feature of MS Word that enables you to merge a data source(a file that stores fields and records of information, like first name, last name, etc...) into a copy of a document to customize or personalize the document.

The Word 2007 Mail Merge toolbar looks as follows:
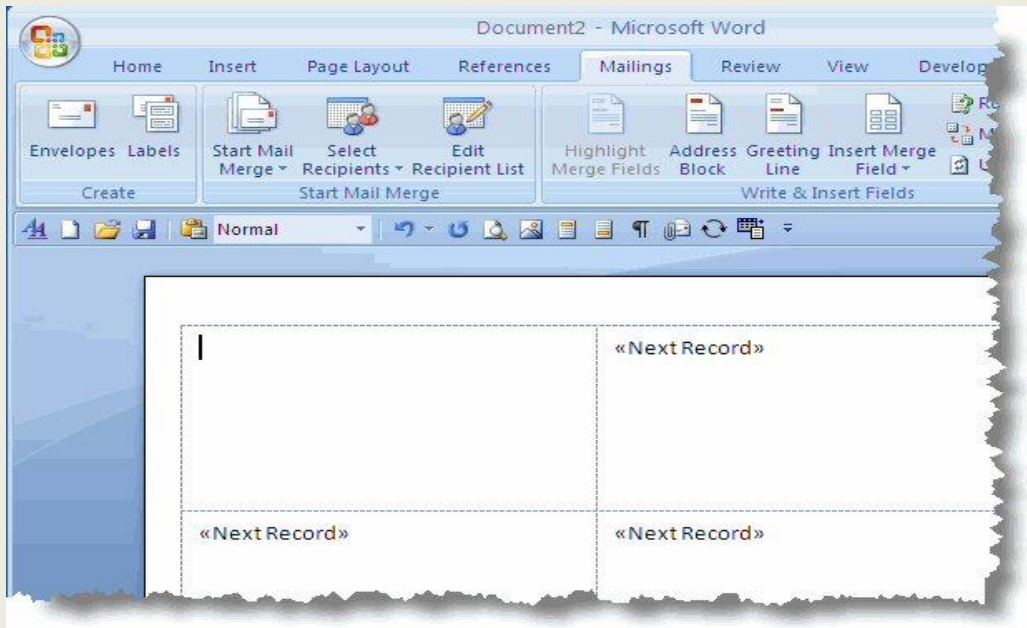
Mail Merge in Word is accomplished by the following steps:

<u>**Step 1:**</u> **Set the data document type.**
        The data document holds the text that repeats for all merged documents. In the **Mailings** tab, click **Start Mail Merge** and select the document type.

Word offers the following types of documents:
- **Letters**:
  Use this option for composing and designing mass mailings for which only the recipient information varies.   This document type is also used when sending out a form letter or invoice.
- **E-mail Messages**:
  Using e-mail merge, multiple addresses in the To, Cc or Bcc fields can be avoided. Each recipient can receive a personalized e-mail.
- **Envelopes**:
  Use this option for producing envelopes.
- **Labels:**
  Use this option to print sheets of labels. Many addresses can be printed on the same page, in different label formats.
- **Directory:**
  Use this option when printing a catalog or any other document that requires printing multiple records per page.

Step 2: Associate a data source with the document: In the **Mailings** tab, choose **Select Recipients**. The various options are:
- **Use Existing List:**
- The **Select Data Source** dialog box appears when you choose this option. Navigate to and select a data source file. Typically, the data source is created in Excel or Access.
- **Type New List**: If you choose this, click **create**, and then use the dialog box that appears to enter names and addresses. If you don't plan to use the entire database, you can use the **Mail Merge Recipients** dialog box, to select just the recipients you want. To open the dialog box, click **Edit Recipient list** in the **Start Mail Merge** group of the **Mailings** tab.
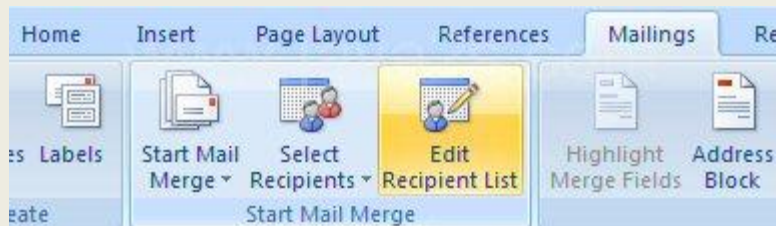
The recipient list can be refined by **Sort**, **Filter**, **Find Duplicates**, **Find Recipient** and **Validate addresses**.

- **Select from Outlook Contacts**.

Step 3: Design your data document by combining ordinary document features with Word merge fields.

Place holders can be used when designing the data document for information pertaining to the intended recipient. When you are done, edit your document and substitute Merge Fields for the placeholders. To insert a merge field, position the insertion point where you want the field to appear. In the **Mailings** tab, choose **Insert Merge Field** in the **Write & Insert Fields** group. Click on the field you want to insert. Special sets of merge fields like **Address Block** and **Greeting Line** can be inserted to save time!
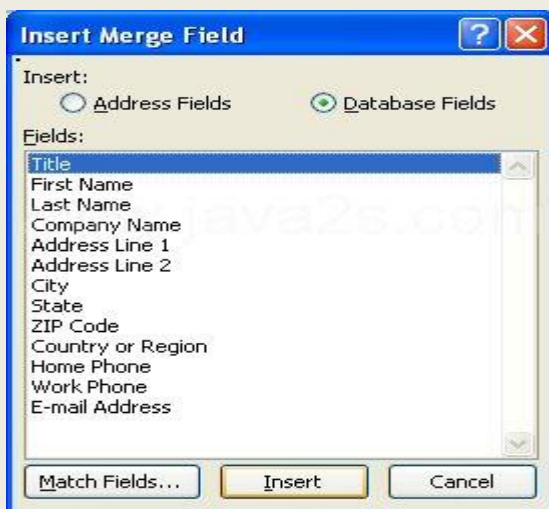
Step 4: Preview the finished document by testing to see how it looks with different data records.

Click the **Preview Results** button in the **Preview Results** group of the **Mailings** tab.

Navigation   buttons help you to traverse through the records.
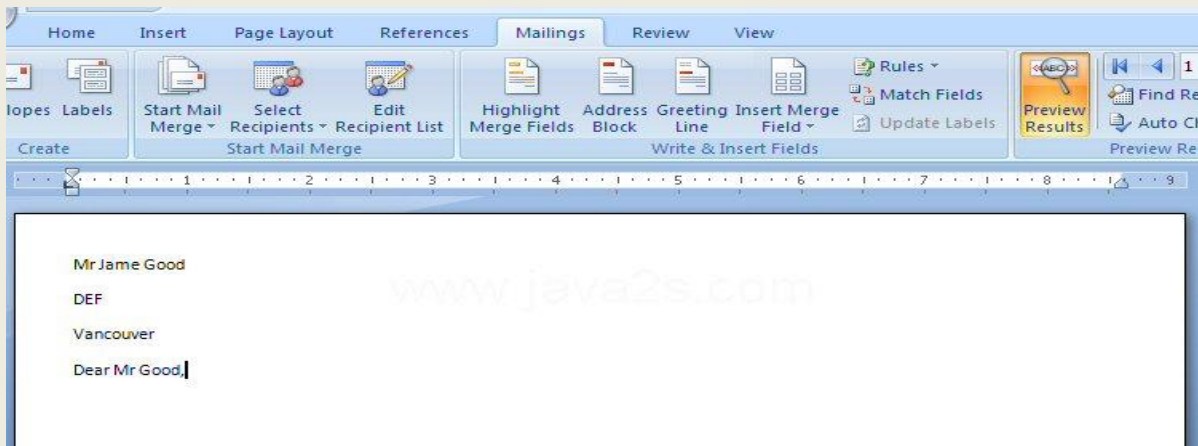
Step 5: Finish the process. Merge the data document with the data source, creating a printed result, a saved document or an e-mailed
document.

Your other option is to use the Mail Merge Wizard! In the **Start Mail Merge** group of the **Mailings** tab, click the **Start Mail Merge** button and choose **Step by Step Mail Merge Wizard.**
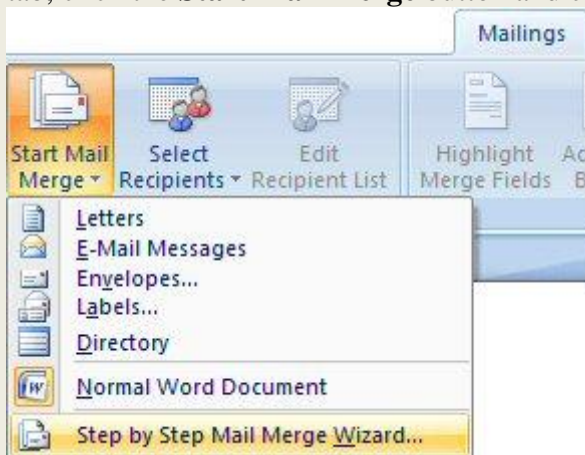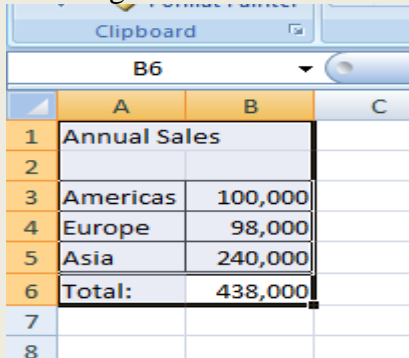
Inserting Excel Data in a Word 2007 Document

If you're using Word to create business documents such as reports and business plans, it is inevitable that you will need to insert data created in Excel. While it is an easy process, you have to be aware of your options and the limitations inherent in each of the options.

The first option is to insert a link to an Excel worksheet in your Word document. For users who want to ensure that the information is updated every time a change is made to the spreadsheet, this is the way to go. A one-way link is created that feeds the data from Excel into the Word document. It will also keep your Word file trim, as the data itself is not actually saved with the document.

Selecting Excel Data to Insert in Your Word Document

In Excel, click and drag over a region of cells to select it. Be sure to include the entire Excel data you would like to link to in your Word 2007 document.

> 1. Open the Excel document that contains the data you would like to link to in your Word document.
> 2. Select the data you would like to link to in your Word document. Press Ctrl+C to copy it.
> 3. After you have copied the data, you can minimize Excel.

Linking to an Excel Worksheet

To insert a link to an Excel file to Word, follow these steps:

1. Open both the Word document and the Excel spreadsheet
2. In Excel, copy the range of cells you want to include (if you plan to insert more columns or rows into your spreadsheet, select the entire worksheet by clicking the box at the juncture of the row numbers and column letters)
3. In your Word document position the cursor where you would like the table inserted
4. On the **Edit** menu, select **Paste Special…**
5. Click the radio button beside **Paste link**
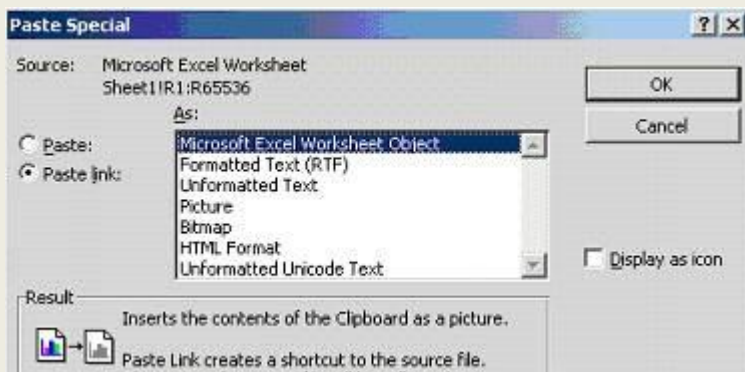
6. Under the label **As:**, select **Microsoft Excel Worksheet Object**
7. Click **OK**

Inserting PowerPoint slides to MS Word

There are two ways to copy and paste slides from PowerPoint to Word:

- To copy an entire presentation:
  1. Start PowerPoint.
  2. Open your PowerPoint presentation.
  3. Send the presentation to Word.
     - Click the Office button.
     - From the drop-down list, select Publish.
     - Select Create Handouts in Microsoft Office Word.
  4. Select the radio button that corresponds to the page layout that you want to use.

5. Select the Paste radio button.
6. Click OK.
- To copy individual slides:
    1. Start PowerPoint
    2. Open your PowerPoint presentation.
    3. Select the slide you want to insert into your Word document.
    4. Copy the slide.
        - Select the Home tab.
        - In the Clipboard group, click the Copy icon.
    5. Start Word.
    6. Open the document into which you want to paste the slide.
    7. Place the cursor where you would like to insert the slide.
    8. Paste the slide.
        - Select the Home tab.
        - In the Clipboard group, click the Paste icon

Microsoft Word shortcut keys
Below is a listing of all the major shortcut keys in Microsoft Word.

Shortcut Keys	Description
Ctrl + 0	Adds or removes 6pts of spacing before a paragraph.
Ctrl + A	Select all contents of the page.
Ctrl + B	<u>Bold</u> highlighted selection.
Ctrl + C	<u>Copy</u> selected text.
Ctrl + E	Aligns the line or selected text to the center of the screen.
Ctrl + F	Open find box.
Ctrl + I	<u>Italic</u> highlighted selection.
Ctrl + J	Aligns the selected text or line to justify the screen.
Ctrl + K	Insert link.
Ctrl + L	Aligns the line or selected text to the left of the screen.
Ctrl + M	Indent the paragraph.
Ctrl + P	Open the print window.
Ctrl + R	Aligns the line or selected text to the right of the screen.
Ctrl + T	Create a hanging indent.
Ctrl + U	Underline highlighted selection.
Ctrl + V	<u>Paste</u>.
Ctrl + X	<u>Cut</u> selected text.

Ctrl + Y	Redo the last action performed.
Ctrl + Z	Undo last action.
Ctrl + Shift + L	Quickly create a bullet point.
Ctrl + Shift + F	Change the font.
Ctrl + Shift + >	Increase selected font +1pts up to 12pt and then increases font +2pts.
Ctrl +]	Increase selected font +1pts.
Ctrl + Shift + <	Decrease selected font -1pts if 12pt or lower, if above 12 decreases font by +2pt.
Ctrl + [	Decrease selected font -1pts.
Ctrl + / + c	Insert a cent sign (¢).
Ctrl + ' + <char>	Insert a character with an accent (grave) mark, where <char> is the character you want. For example, if you wanted an accented è you would use **Ctrl + ' + e** as your shortcut key. To reverse the accent mark use the opposite accent mark, often on the tilde key.
Ctrl + Shift + *	View or hide non printing characters.
Ctrl + <left arrow>	Moves one word to the left.
Ctrl + <right arrow>	Moves one word to the right.
Ctrl + <up arrow>	Moves to the beginning of the line or paragraph.
Ctrl + <down arrow>	Moves to the end of the paragraph.
Ctrl + Del	Deletes word to right of cursor.
Ctrl + Backspace	Deletes word to left of cursor.
Ctrl + End	Moves the cursor to the end of the document.
Ctrl + Home	Moves the cursor to the beginning of the document.
Ctrl + Spacebar	Reset highlighted text to the default font.
Ctrl + 1	Single-space lines.
Ctrl + 2	Double-space lines.
Ctrl + 5	1.5-line spacing.
Ctrl + Alt + 1	Changes text to heading 1.
Ctrl + Alt + 2	Changes text to heading 2.
Ctrl + Alt + 3	Changes text to heading 3.
Alt + Ctrl + F2	Open new document.
Ctrl + F1	Open the Task Pane.

Ctrl + F2	Display the print preview.
Ctrl + Shift + >	Increases the highlighted text size by one.
Ctrl + Shift + <	Decreases the highlighted text size by one.
Ctrl + Shift + F6	Opens to another open Microsoft Word document.
Ctrl + Shift + F12	Prints the document.
F1	Open Help.
F4	Repeat the last action performed (Word 2000+)
F5	Open the find, replace, and go to window in Microsoft Word.
F7	Spell-check and grammar check selected text or document.
F12	Save as.
Shift + F3	Change the text in Microsoft Word from uppercase to lowercase or a capital letter at the beginning of every word.
Shift + F7	Runs a Thesaurus check on the word highlighted.
Shift + F12	Save.
Shift + Enter	Create a soft break instead of a new paragraph.
Shift + Insert	Paste.
Shift + Alt + D	Insert the current date.
Shift + Alt + T	Insert the current time.

In addition to the above shortcut keys users can also use their mouse as a method of quickly do something commonly performed. Below some are examples of mouse shortcuts.

Mouse shortcuts	Description
Click, hold, and drag	Selects text from where you click and hold to the point you drag and let go.
Double-click	If double-click a word, selects the complete word.
Double-click	Double-clicking on the left, center, or right of a blank line will make the alignment of the text left, center, or right aligned.
Double-click	Double-clicking anywhere after text on a line will set a tab stop.
Triple-click	Selects the line or paragraph of the text the mouse triple-clicked.
Ctrl + Mouse wheel	Zooms in and out of document.

Questions

1. What is word processing? What are the advantages of computer based word processing.
2. What are the features of word processing?

3. What are the text formatting facilities available in MS word?

4. What is proofing? What are the facilities available under proofing?

5. Explain page set up and its options in MS word?

6. Explain the parts of word window and its features?

7. Explain mail merge in MS word?

  8. Discuss the formatting of paragraph?

 9. How do you insert header and footer?

 10 how do you insert table in MS Word?

2.2. MICROSOFT EXCEL
Spreadsheet

Electronic spreadsheet or worksheet stores information in the memory of computer performs data manipulation and displays results quickly. it can be saved, moved or printed. It can cater the needs of wide range of computer users. Application of spreadsheets includes:

- Preparation of reports
- Payrolls management
- Preparation of bills
- Income statements
- Budget analysis
- Loan analysis
- Investment analysis
- Inventory control
- Production analysis etc.,

Advantages of   spread sheet

Following are the important benefit of using spreadsheet.

- It produces accurate results.
- Easy and quick calculation
- Worksheet data can be displayed and manipulated
- Data can be converted into graph
- Entire worksheet or parts can be printed
- Facilities carrying "what if" analysis
- Data in a worksheet can be transferred to other programmes easily.

There are many spread sheet packages and of them Microsoft Excel is the most popular one

MS EXCEL

Microsoft Excel is an electronic spreadsheet. As with a paper spreadsheet, you can use Excel to organize your data into rows and columns and to perform mathematical calculations. Spreadsheets can do more than perform simple arithmetic calculations. A spreadsheet can translate complicated data and reports into a combination of numbers and graphs. Modern versions include an extensive list of financial calculators, such as interest calculations, loan amortization, even calculations for Treasury bill rates. Statistical functions from common calculations (Chi Square, Pearson Coefficient of Correlation and Standard Deviation) to abstruse functions like the hyper geometric Distribution and the Poisson distribution return needed values with no pain. There are at least 100 of these formulas included in contemporary spreadsheets.

Excel 2007

Parts of the Excel 2007 Screen
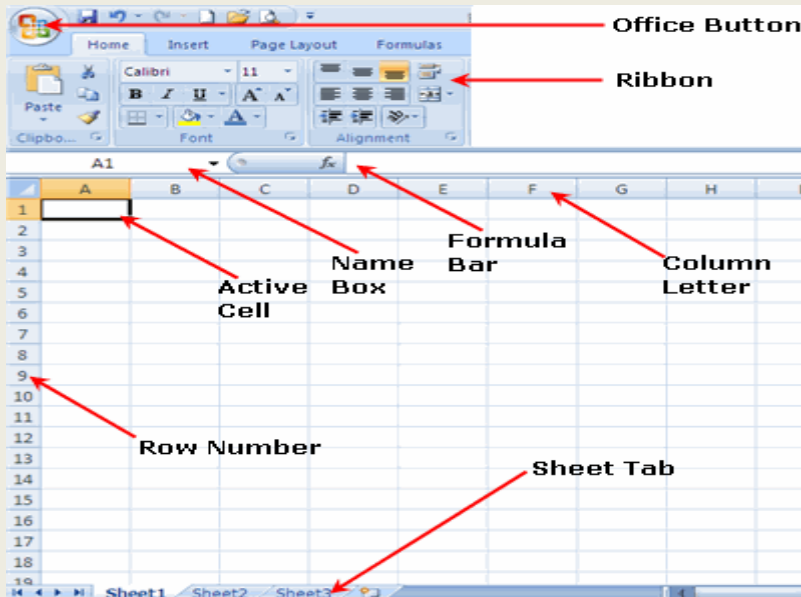
Parts of the Excel 2007 Screen

Active Cell

In an Excel 2007 worksheet, the cell is with the black outline. Data is always entered into the active cell.

Column Letter

Columns run vertically on a worksheet and each one is identified by a letter in the column header.

Formula Bar

Located above the worksheet, this area displays the contents of the active cell. It can also be used for entering or editing data and formulas.

Name Box

Located next to the formula bar, the Name Box displays the cell reference or the name of the active cell.

Row Numbers

Rows run horizontally in a worksheet and are identified by a number in the row header.

Together a column letter and a row number create a cell reference. Each cell in the worksheet can be identified by this combination of letters and numbers such as A1, F456, or AA34.

Sheet Tabs

By default there are **three** worksheets in an Excel file.

The tab at the bottom of a worksheet tells you the name of the worksheet - such as Sheet1, Sheet2 etc.

Switching between worksheets can be done by clicking on the tab of the sheet you wish to access.

Renaming a worksheet or changing the tab color can make it easier to keep track of data in large spreadsheet files.

Quick Access Toolbar

This customizable toolbar allows you to add frequently used commands. Click on the down arrow at the end of the toolbar to display the available options.

Office Button

clicking on the Office Button displays a drop down menu containing a number of options, such as open, save, and print. The options in the Office Button menu are very similar to those found under the File menu in previous versions of Excel.

Ribbon

The Ribbon is the strip of buttons and icons located above the work area in Excel 2007. The Ribbon replaces the menus and toolbars found in earlier versions of Excel.

The Microsoft Office Button

In the upper-left corner of the Excel 2007 window is the Microsoft Office button. When you click the button, a <u>menu</u> appears. You can use the <u>menu</u> to create a new file, open an existing file, save a file, and perform many other tasks.
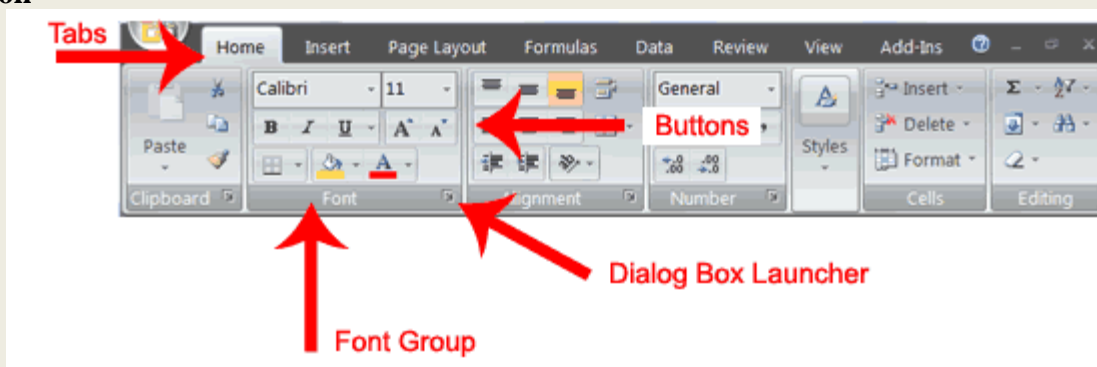
The Quick Access Toolbar

Next to the Microsoft Office button is the Quick Access toolbar. The Quick Access toolbar gives you with access to commands you frequently use. By default, Save, Undo, and Redo appear on the Quick Access toolbar. You can use Save to save your file, Undo to roll back an action you have taken, and Redo to reapply an action you have rolled back.
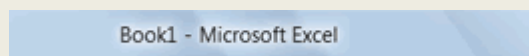
The Title Bar

Next to the Quick Access toolbar is the Title bar. On the Title bar, Microsoft Excel displays the name of the workbook you are currently using. At the top of the Excel window, you should see "Microsoft Excel - Book1" or a similar name.

The Ribbon

You use commands to tell Microsoft Excel what to do. In Microsoft Excel 2007, you use the Ribbon to issue commands. The Ribbon is located near the top of the Excel window, below the Quick Access toolbar. At the top of the Ribbon are several tabs; clicking a tab displays several related command groups. Within each group are related command buttons. You click buttons to issue commands or to access menus and dialog boxes. You may also find a dialog box launcher in the bottom-right corner of a group. When you click the dialog box launcher, a dialog box makes additional commands available.

To start MS EXCEL-To start Microsoft Excel, from the Taskbar, click

Start > (All) Programs -> Microsoft Office -> Microsoft Office Excel

 Worksheets
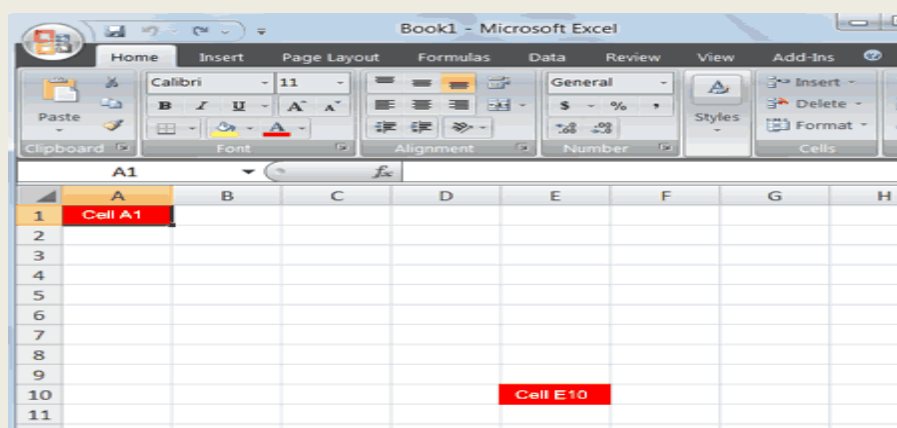
Microsoft Excel consists of **worksheets**. Each worksheet contains **columns** and **rows**. The columns are lettered A to Z and then continuing with AA, AB, AC and so on; the rows are numbered 1 to 1,048,576. The number of columns and rows you can have in a worksheet is limited by your computer memory and your system resources. A box formed by the intersection of column and row is called as **Cells**

Work Book

Work book is a collection of worksheets used in a single file. In otherwords, each file in a Microsoft excel is known as work book.

The combination of a column coordinate and a row coordinate make up a cell address. For example, the cell located in the upper-left corner of the worksheet is cell A1, meaning column A, and row 1. Cell E10 is located under column E on row 10. You enter your data into the cells on the worksheet.

The Formula Bar

Formula Bar

If the Formula bar is turned on, the cell address of the cell you are in displays in the Name box which is located on the left side of the Formula bar. Cell entries display on the right side of the Formula bar. If you do not see the Formula bar in your window, perform the following steps:

1. Choose the View tab.
2. Click Formula Bar in the Show/Hide group. The Formula bar appears.The current cell address displays on the left side of the Formula bar.

The Status Bar
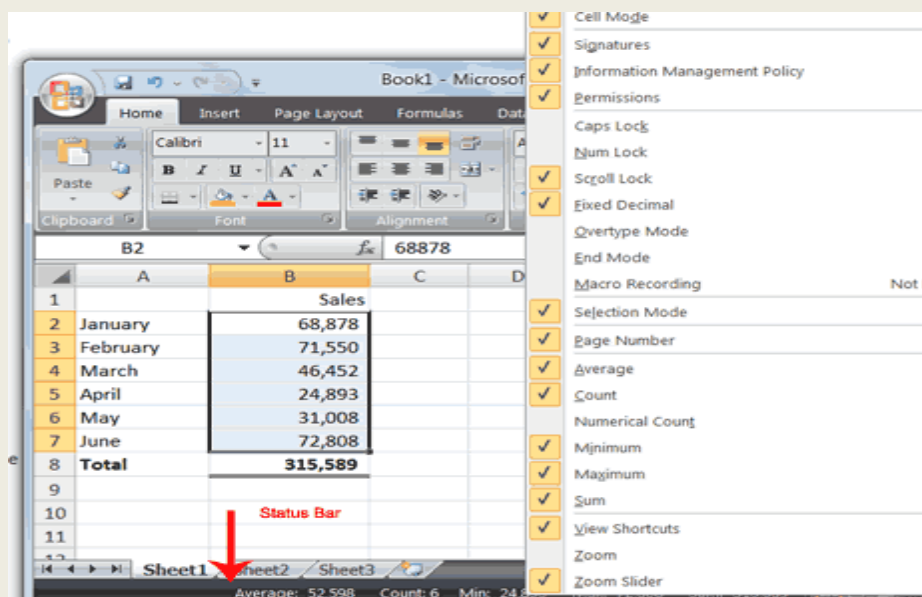
The Status bar appears at the very bottom of the Excel window and provides such information as the sum, average, minimum, and maximum value of selected numbers. You can change what displays on the Status bar by right-clicking on the Status bar and selecting the options you want from the Customize Status Bar menu. You click a menu item to select it. You click it again to deselect it. A check mark next to an item means the item is selected.

Move around a Worksheet

By using the arrow keys, you can move around your worksheet. You can use the down arrow key to move downward one cell at a time. You can use the up arrow key to move upward one cell at a time. You can use the Tab key to move across the page to the right, one cell at a time. You can hold down the Shift key and then press the Tab key to move to the left, one cell at a time. You can use the right and left arrow keys to move right or left one cell at a time. The Page Up and Page Down keys move up and down one page at a time. If you hold down the Ctrl key and then press the Home key, you move to the beginning of the worksheet.

Move around the Worksheet
The Down Arrow Key
- Press the down arrow key several times. Note that the cursor moves downward one cell at a time.

The Up Arrow Key
- Press the up arrow key several times. Note that the cursor moves upward one cell at a time.

The Tab Key
1. Move to cell A1.
2. Press the Tab key several times. Note that the cursor moves to the right one cell at a time.

The Shift Tab Keys
- Hold down the Shift key and then press Tab. Note that the cursor moves to the left one cell at a time.

The Right and Left Arrow Keys
1. Press the right arrow key several times. Note that the cursor moves to the right.
2. Press the left arrow key several times. Note that the cursor moves to the left.

Page Up and Page Down
1. Press the Page Down key. Note that the cursor moves down one page.
2. Press the Page Up key. Note that the cursor moves up one page.

The Ctrl-Home Key
1. Move the cursor to column J.
2. Stay in column J and move the cursor to row 20.
3. Hold down the Ctrl key while you press the Home key. Excel moves to cell A1.

Go To Cells Quickly
The following are shortcuts for moving quickly from one cell in a worksheet to a cell in a different part of the worksheet.

For eg: Go to G5
The G5 function key is the "Go To" key. If you press the G5 key, you are prompted for the cell to which you wish to go. Enter the cell address, and the cursor jumps to that cell.
1. Press G5. The Go To dialog box opens.
2. Type **J3** in the Reference field.
3. Press Enter. Excel moves to cell J3.

The Name Box
You can also use the Name box to go to a specific cell. Just type the cell you want to go to in the Name box and then press Enter.
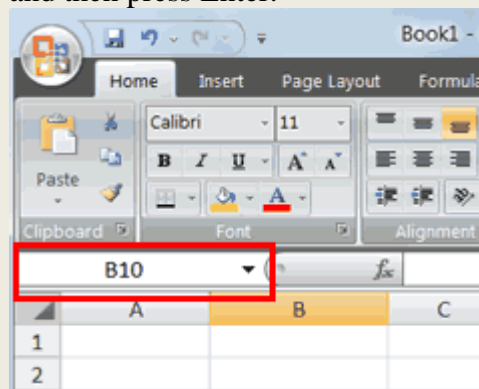
1. Type **B10** in the Name box.
2. Press Enter. Excel moves to cell B10.

Select Cells
If you wish to perform a function on a group of cells, you must first select those cells by highlighting them. The exercises that follow teach you how to select.

To select cells A1 to E10:
1. Go to cell A1.
2. Press the F8 key. This anchors the cursor.
3. Note that "Extend Selection" appears on the Status bar in the lower-left corner of the window. You are in the Extend mode.
4. Click in cell E10. Excel highlights cells A1 to E10.
5. Press Esc and click anywhere on the worksheet to clear the highlighting.

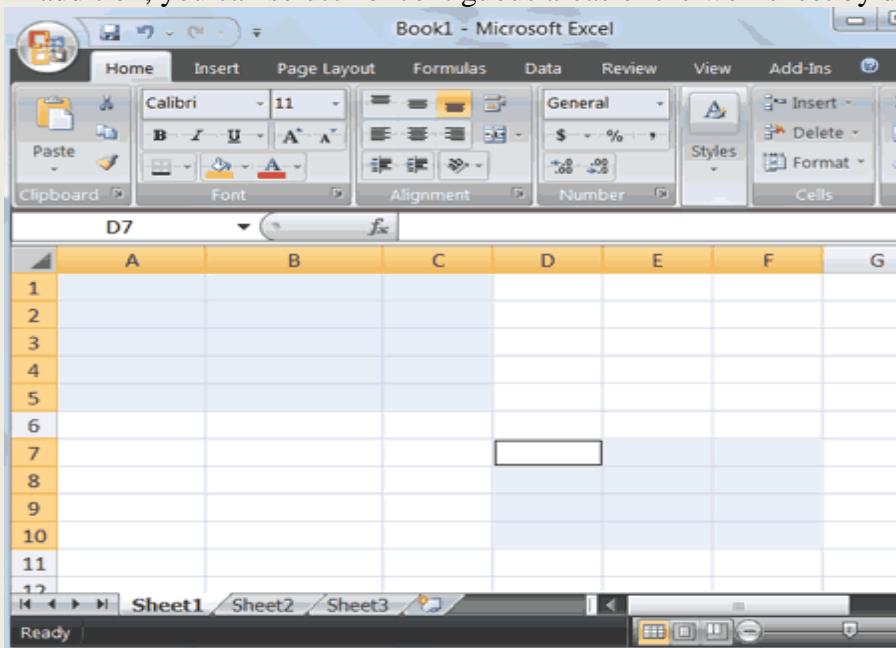**Alternative Method: Select Cells by Dragging**
You can also select an area by holding down the left mouse button and dragging the mouse over the area. In addition, you can select noncontiguous areas of the worksheet by doing the following:

1. Go to cell A1.
2. Hold down the Ctrl key. You won't release it until step 9. Holding down the Ctrl key enables you to select noncontiguous areas of the worksheet.
3. Press the left mouse button.
4. While holding down the left mouse button, use the mouse to move from cell A1 to C5.
5. Continue to hold down the Ctrl key, but release the left mouse button.
6. Using the mouse, place the cursor in cell D7.
7. Press the left mouse button.
8. While holding down the left mouse button, move to cell F10. Release the left mouse button.
9. Release the Ctrl key. Cells A1 to C5 and cells D7 to F10 are selected.
10. Press Esc and click anywhere on the worksheet to remove the highlighting.

Enter Data
In order to enter data, first, place the cursor in the cell in which you want to start entering data. Type some data, and then press Enter. If you need to delete, press the Backspace key to delete one character at a time.
1. Place the cursor in cell A1.
2. Type **Manohar**. Do not press Enter at this time.

Delete Data
The Backspace key erases one character at a time.
*Press the Backspace key until **Manohar** is erased.

Edit a Cell

After you enter data into a cell, you can edit the data by pressing F2 while you are in the cell you wish to edit.

Change "John" to "Jones."

1. Move to cell A1.
2. Press F2.
3. Use the Backspace key to delete the "n" and the "h."
4. Type **nes**.
5. Press Enter.

Editing a Cell by Using the Formula Bar

You can also edit the cell by using the Formula bar. You change "Jones" to "Joker" in the following exercise.
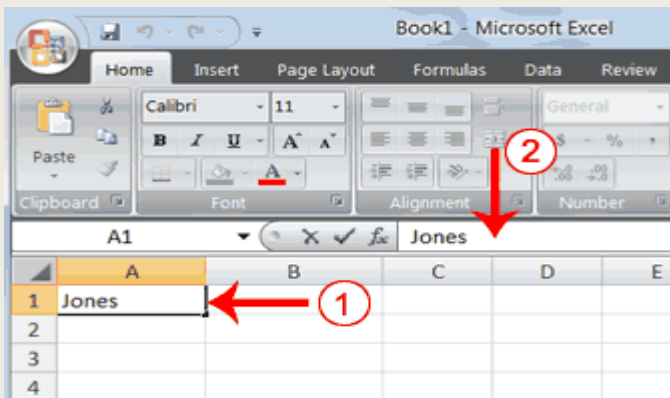
1. Move the cursor to cell A1.
2. Click in the formula area of the Formula bar.
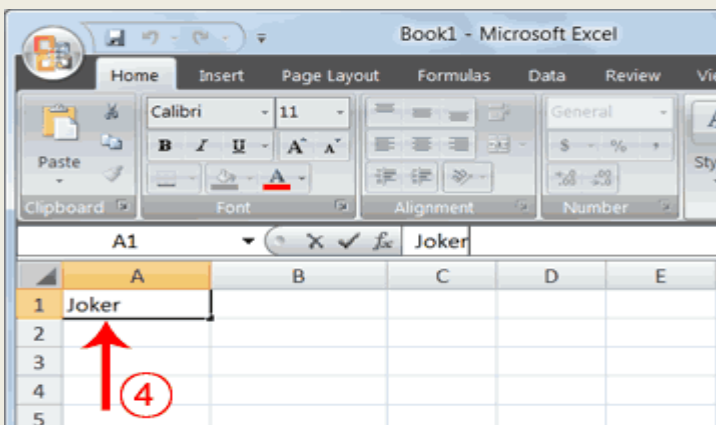
3. Use the backspace key to erase the "s," "e," and "n."
4. Type **ker**.
5. Press Enter.

By Double-Clicking in the Cell

You can change "Joker" to "Johnson" as follows:
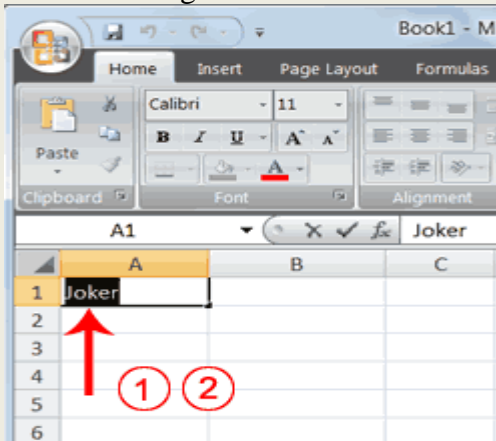
1. Move to cell A1.
2. Double-click in cell A1.
3. Press the End key. Your cursor is now at the end of your text.
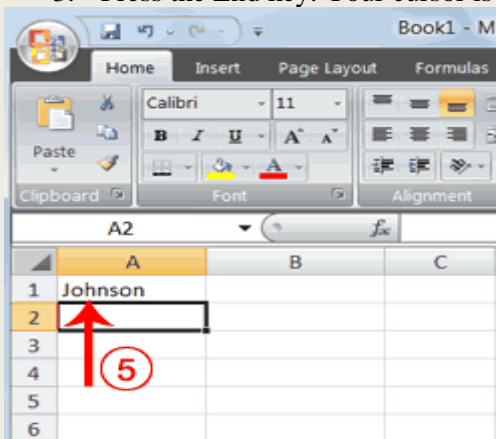
3. Use the Backspace key to erase "r," "e," and "k."
4. Type **hnson**.
5. Press Enter.

Wrap Text

When you type text that is too long to fit in the cell, the text overlaps the next cell. If you do not want it to overlap the next cell, you can wrap the text.

Move to cell A2.
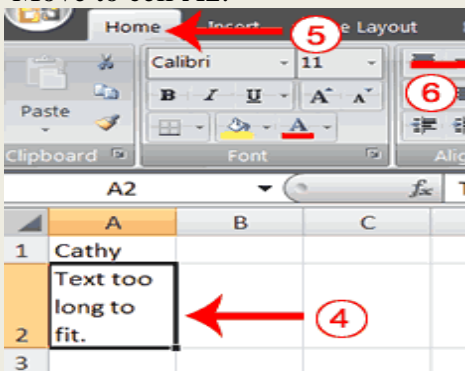
1. Type **Text too long to fit**.
2. Press Enter.
3. Return to cell A2.
4. Choose the Home tab.
5. Click the Wrap Text button . Excel wraps the text in the cell.

Delete a Cell Entry

To delete an entry in a cell or a group of cells, you place the cursor in the cell or select the group of cells and press Delete.

1. Select cells A1 to A2.

2. Press the Delete key.

Save a File

To save your file:

1. Click the Office button. A menu appears.

2. Click Save. The Save As dialog box appears.

3. Go to the directory in which you want to save your file.

4. Type **name of file** in the File Name field.

5. Click Save. Excel saves your file.

Close Excel

Close Microsoft Excel.

1. Click the Office button. A menu appears.

2. Click Close. Excel closes.

Formatting of Work sheet

Convert Text to Columns

Sometimes you will want to split data in one cell into two or more cells. You can do this easily by utilizing the Convert Text to Columns Wizard.

- Highlight the column in which you wish to split the data

- Click the **Text to Columns** button on the **Data** tab

- Click **Delimited** if you have a comma or tab separating the data, or click fixed widths to set the data separation at a specific size.

Modify Fonts

Modifying fonts in Excel will allow you to emphasize titles and headings. To modify a font:

- Select the cell or cells that you would like the font applied

- On the **Font** group on the **Home** tab, choose the font type, size, bold, italics, underline, or color
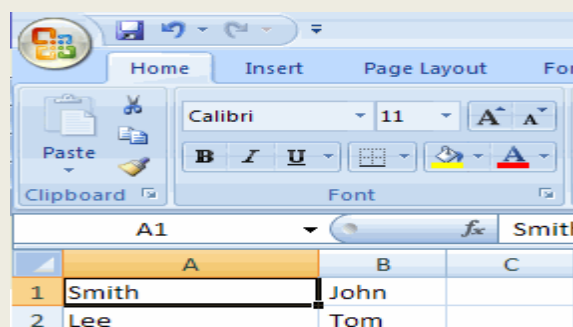
Format Cells Dialog Box

In Excel, you can also apply specific formatting to a cell. To apply formatting to a cell or group of cells:

- Select the cell or cells that will have the formatting
- Click the **Dialog Box** arrow on the **Alignment** group of the **Home** tab
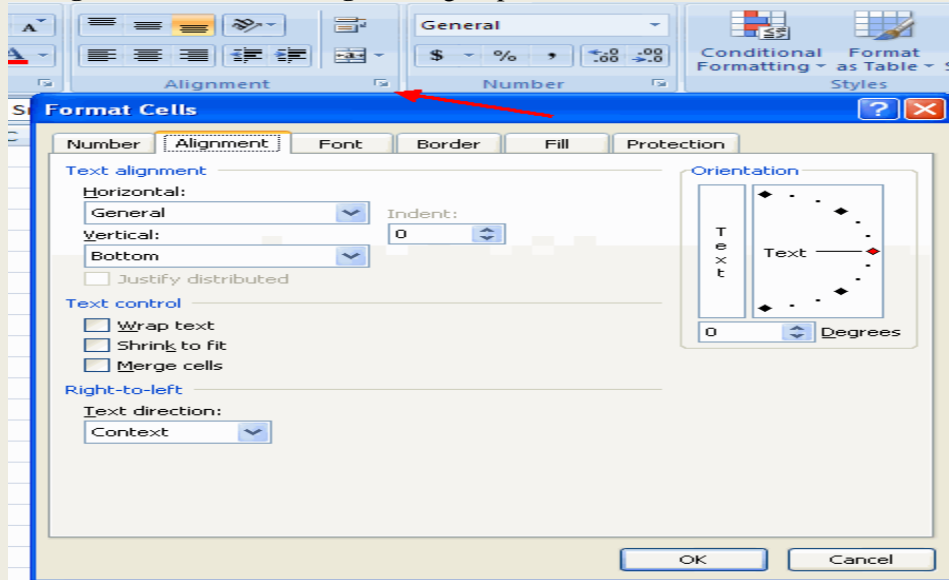
There are several tabs on this dialog box that allow you to modify properties of the cell or cells.

Number: Allows for the display of different number types and decimal places

Alignment: Allows for the horizontal and vertical alignment of text, wrap text, shrink text, merge cells and the direction of the text.

Font: Allows for control of font, font style, size, color, and additional features

Border: Border styles and colors

Fill: Cell fill colors and styles

Add Borders and Colors to Cells

Borders and colors can be added to cells manually or through the use of styles. To add borders manually:

- Click the **Borders** drop down menu on the **Font** group of the **Home** tab
- Choose the appropriate border

To apply colors manually:

- Click the **Fill** drop down menu on the **Font** group of the **Home** tab
- Choose the appropriate color

To apply borders and colors using styles:

- Click **Cell** Styles on the **Home** tab
- Choose a style or click **New Cell Style**
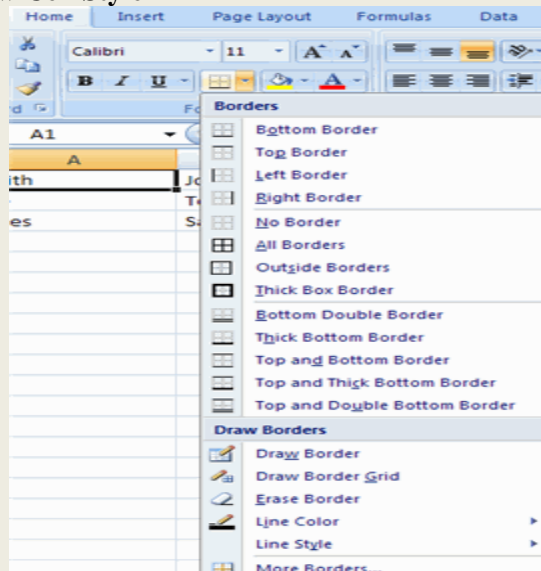
Change Column Width and Row Height

To change the width of a column or the height of a row:

- Click the **Format** button on the **Cells** group of the **Home** tab
- Manually adjust the height and width by clicking **Row Height** or **Column Width**
- To use **AutoFit** click **AutoFit Row Height** or **AutoFit Column Width**
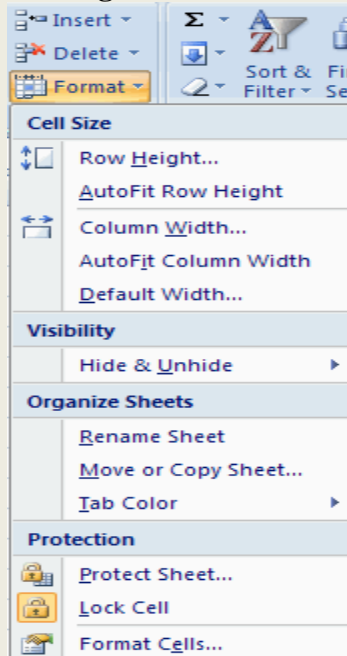
Hide or Unhide Rows or Columns

To hide or unhide rows or columns:

- Select the row or column you wish to hide or unhide
- Click the **Format** button on the **Cells** group of the **Home** tab
- Click **Hide & Unhide**
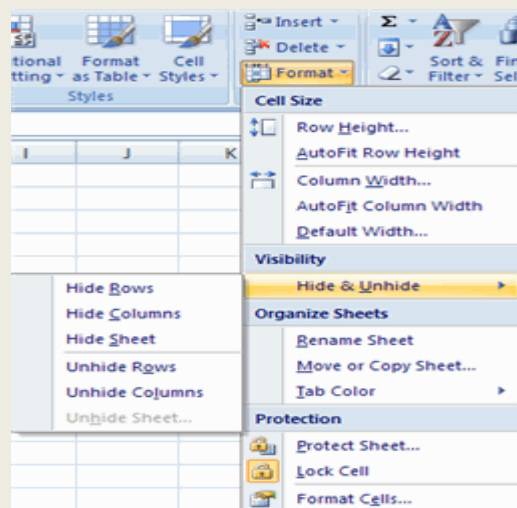
Merge Cells

To merge cells select the cells you want to merge and click the **Merge & Center** button on the **Alignment** group of the **Home** tab. The four choices for merging cells are:

Merge & Center: Combines the cells and centers the contents in the new, larger cell

Merge Across: Combines the cells across columns without centering data

Merge Cells: Combines the cells in a range without centering

Unmerge Cells: Splits the cell that has been merged
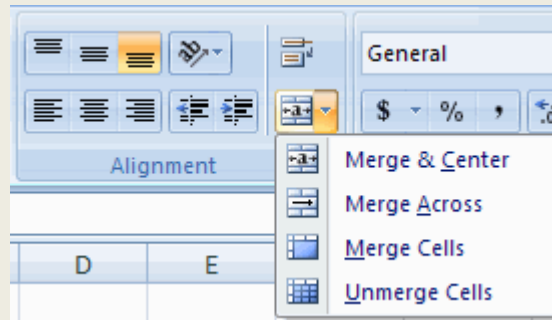
Align Cell Contents

To align cell contents, click the cell or cells you want to align and click on the options within the
Alignment group on the **Home** tab. There are several options for alignment of cell contents:
Top Align: Aligns text to the top of the cell
Middle Align: Aligns text between the top and bottom of the cell
Bottom Align: Aligns text to the bottom of the cell
Align Text Left: Aligns text to the left of the cell

Center: Centers the text from left to right in the cell

Align Text Right: Aligns text to the right of the cell
Decrease Indent: Decreases the indent between the left border and the text
Increase Indent: Increase the indent between the left border and the text
Orientation: Rotate the text diagonally or vertically
Insert and Delete Columns and Rows
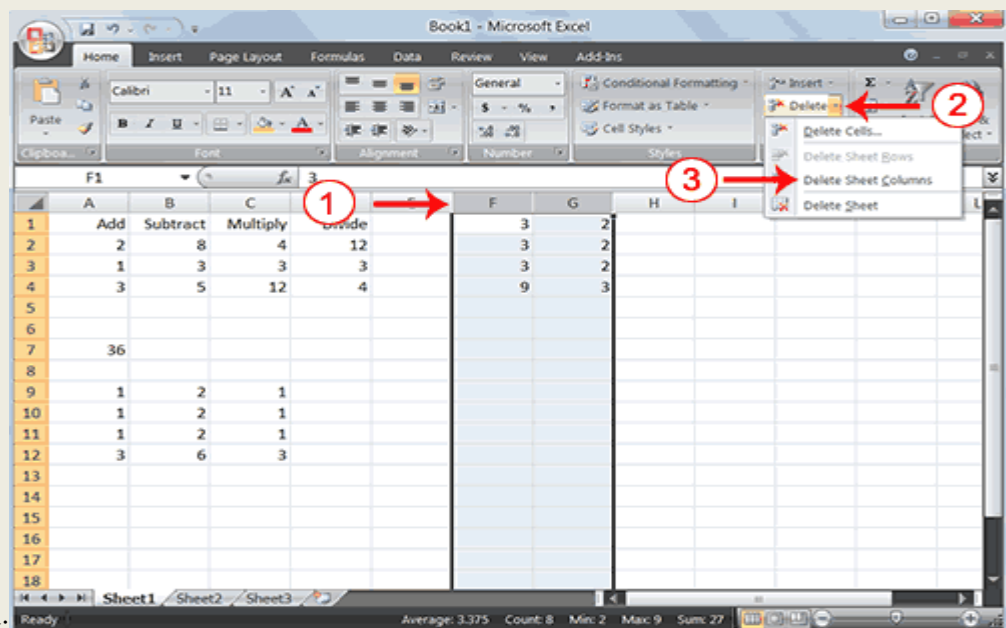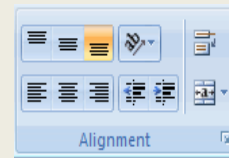
To delete columns F and G:

1. Click the column F indicator and drag to column G.
2. Click the down arrow next to Delete in the Cells group. A menu appears.
3. Click Delete Sheet Columns. Excel deletes the columns you selected.
4. Click anywhere on the worksheet to remove your selection.

To delete rows 7 through 12:

1. Click the row 7 indicator and drag to row 12.
2. Click the down arrow next to Delete in the Cells group. A menu appears.
3. Click Delete Sheet Rows. Excel deletes the rows you selected.
4. Click anywhere on the worksheet to remove your selection.
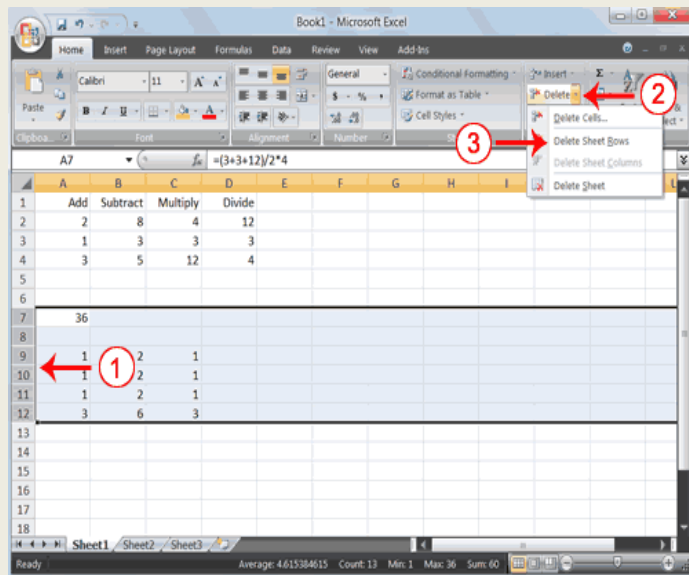
To insert a column:
1. Click on A to select column A.
2. Click the down arrow next to Insert in the Cells group. A menu appears.
3. Click Insert Sheet Columns. Excel inserts a new column.
4. Click anywhere on the worksheet to remove your selection.

To insert rows:
1. Click on 1 and then drag down to 2 to select rows 1 and 2.
2. Click the down arrow next to Insert in the Cells group. A menu appears.
3. Click Insert Sheet Rows. Excel inserts two new rows.
4. Click anywhere on the worksheet to remove your selection.

Your worksheet should look like the one shown here.

Printing the worksheet

To print a work sheet, open the workbook containing the worksheet. Click the sheet tab of the worksheet to be printed.

Click **"print"** on file menu

Excel displays the print dialogue box. Excel allows printing a range of selected active worksheet or the entire work book. It is also possible to print a range of pages in excel.

.FUNCTIONS AND FORMULAS IN EXCEL

A function is a predetermined formula in excel. It performs calculation by using specific values, called arguments, in a particular order, or structure. For example, the "SUM" function adds values or ranges of cells and the "PMT" function calculates the loan payments based on the interest rate, length of loan and the principal amount etc.

The way to enter a Function in Excel is through the panels on the Ribbon, there is a function library consisting of tabs of function wizard, auto sum, recently used functions, financial, logical, text, date &time, math& trig etc., This is more user friendly.

- Click the **Formulas** menu at the top of Excel
- Locate the **Function Library** panel:
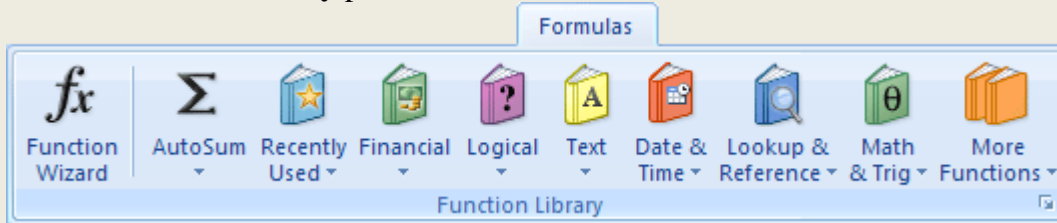
.**Performing Mathematical Calculations**

A major strength of Excel is that you can perform mathematical calculations and format your data. In Microsoft Excel; you can enter numbers and mathematical formulas into cells. Whether you enter a number or a formula, you can reference the cell when you perform mathematical calculations such as addition, subtraction, multiplication, or division. When entering a mathematical formula, precede the formula with an equal sign. Use the following to indicate the type of calculation you wish to perform:+ Addition,- Subtraction,* Multiplication,/ Division,^ Exponential etc.,

Addition
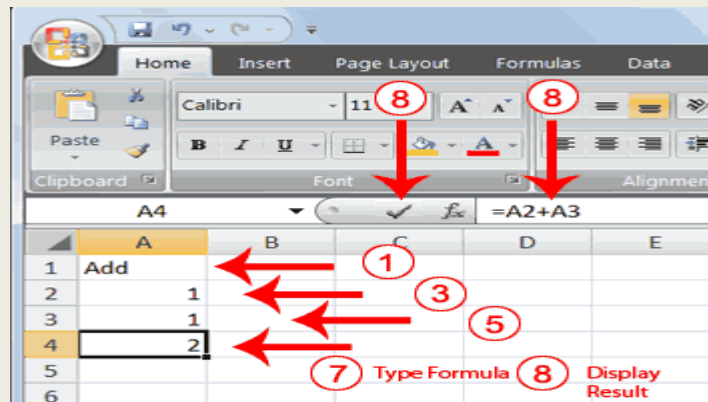
1. Type **Add** in cell A1.
2. Press Enter. Excel moves down one cell.
3. Type **1** in cell A2.
4. Press Enter. Excel moves down one cell.
5. Type **1** in cell A3.
6. Press Enter. Excel moves down one cell.
7. Type **=A2+A3** in cell A4.
8. Click the check mark on the Formula bar. Excel adds cell A1 to cell A2 and displays the result in cell A4. The formula displays on the Formula bar.

Subtraction

1. Press F5. The Go To dialog box appears.
2. Type **B1** in the Reference field.
3. Press Enter. Excel moves to cell B1.
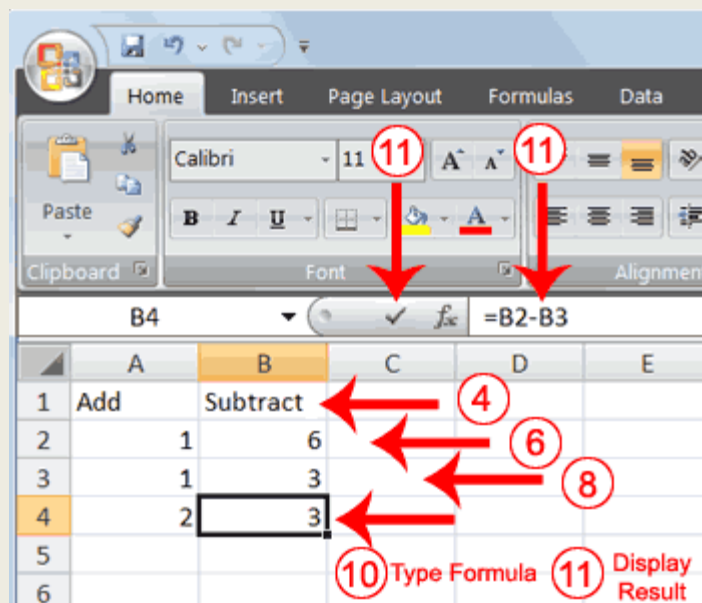
4. Type **Subtract**.
5. Press Enter. Excel moves down one cell.
6. Type **6** in cell B2.
7. Press Enter. Excel moves down one cell.
8. Type **3** in cell B3.
9. Press Enter. Excel moves down one cell.
10. Type **=B2-B3** in cell B4.
11. Click the check mark on the Formula bar. Excel subtracts cell B3 from cell B2 and the result displays in cell B4. The formula displays on the Formula bar.

Multiplication
1. Hold down the Ctrl key while you press "g" (Ctrl+g). The Go To dialog box appears.
2. Type **C1** in the Reference field.
3. Press Enter. Excel moves to cell C1
4. Type **Multiply**.
5. Press Enter. Excel moves down one cell.
6. Type **2** in cell C2.
7. Press Enter. Excel moves down one cell.
8. Type **3** in cell C3.
9. Press Enter. Excel moves down one cell.
10. Type **=C2*C3** in cell C4.
11. Click the check mark on the Formula bar. Excel multiplies C1 by cell C2 and displays the result in cell C3. The formula displays on the Formula bar.

Division
1. Press F5.
2. Type **D1** in the Reference field.
3. Press Enter. Excel moves to cell D1.
4. Type **Divide**.
5. Press Enter. Excel moves down one cell.
6. Type **6** in cell D2.
7. Press Enter. Excel moves down one cell.
8. Type **3** in cell D3.
9. Press Enter. Excel moves down one cell.
10. Type **=D2/D3** in cell D4.
11. Click the check mark on the Formula bar. Excel divides cell D2 by cell D3 and displays the result in cell D4. The formula displays on the Formula bar.

When creating formulas, you can reference cells and include numbers. All of the following formulas are valid:

=A2/B2

=A1+12-B3

=A2*B2+12

=24+53

AutoSum

You can use the AutoSum button Σ on the Home tab to automatically add a column or row of numbers. When you press the AutoSum button Σ , Excel selects the numbers it thinks you want to add. If you then click the check mark on the Formula bar or press the Enter key, Excel adds the numbers. If Excel's guess as to which numbers you want to add is wrong, you can select the cells you want.

The following illustrates AutoSum:
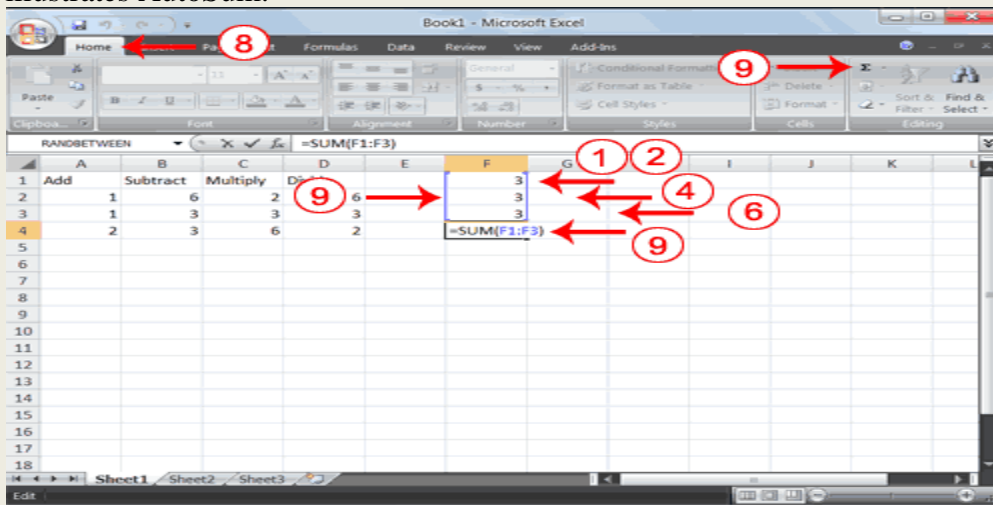
1. Go to cell F1.
2. Type **3.**
3. Press Enter. Excel moves down one cell.
4. Type **3**.
5. Press Enter. Excel moves down one cell.
6. Type **3**.
7. Press Enter. Excel moves down one cell to cell F4.
8. Choose the Home tab.
9. Click the AutoSum button Σ in the Editing group. Excel selects cells F1 through F3 and enters a formula in cell F4.

10. Press Enter. Excel adds cells F1 through F3 and displays the result in cell F4.

Perform Automatic Calculations

By default, Microsoft Excel recalculates the worksheet as you change cell entries. This makes it easy for you to correct mistakes and analyze a variety of scenarios. Make the changes described below and note how Microsoft Excel automatically recalculates.
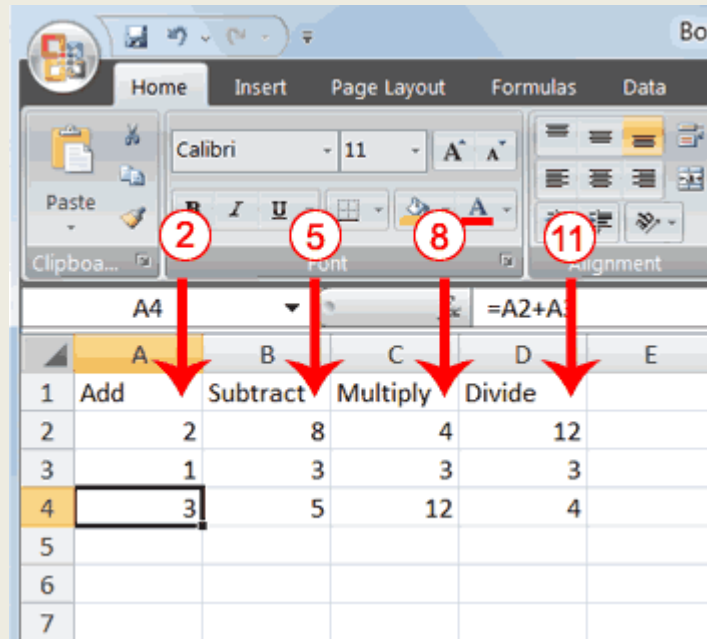
1. Move to cell A2.
2. Type **2**.
3. Press the right arrow key. Excel changes the result in cell A4. Excel adds cell A2 to cell A3 and the new result appears in cell A4.
4. Move to cell B2.
5. Type **8**.
6. Press the right arrow key. Excel subtracts cell B3 from cell B3 and the new result appears in cell B4.
7. Move to cell C2.
8. Type **4**.
9. Press the right arrow key. Excel multiplies cell C2 by cell C3 and the new result appears in cell C4.
10. Move to cell D2.
11. Type **12**.
12. Press the Enter key. Excel divides cell D2 by cell D3 and the new result appears in cell D4.

Advanced Calculations

1. Move to cell A7.
2. Type **=3+3+12/2*4**.
3. Press Enter.

Microsoft Excel divides 12 by 2, multiplies the answer by 4, adds 3, and then adds another 3. The answer, 30, displays in cell A7.
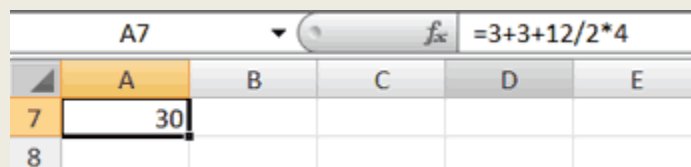
To change the order of calculation, use parentheses. Microsoft Excel calculates the information in parentheses first.

1. Double-click in cell A7.
2. Edit the cell to read **=(3+3+12)/2*4**.
3. Press Enter.
   Microsoft Excel adds 3 plus 3 plus 12, divides the answer by 2, and then multiplies the result by 4. The answer, 36, displays in cell A7.

A7		▼		*fx*	=(3+3+12)/2*4	
◢	A	B	C	D	E	
7	36					
8						

Absolute Cell Addressing

You make a cell address an absolute cell address by placing a dollar sign in front of the row and column identifiers. You can do this automatically by using the F4 key. To illustrate:

1. Move to cell C12.
2. Type =.
3. Click cell C9.
4. Press F4. Dollar signs appear before the C and the 9.
5. Type +.
6. Click cell C10.
7. Press F4. Dollar signs appear before the C and the 10.
8. Type +.
9. Click cell C11.
10. Press F4. Dollar signs appear before the C and the 11.
11. Click the check mark on the formula bar. Excel records the formula in cell C12.

C12		▼		*fx*	=$C$9+$C$10+$C$11	
◢	A	B	C	D	E	F
9	1	2	1	2		
10	1	2	1	2		
11	1	2	1	2		
12	3	6	3			
13						
14						

Financial functions

Microsoft Excel provides a series of functions designed to perform various types of financially related operations. These functions use common factors depending on the value that is being calculated. Many of these functions deal with investments or loan financing.

Present Value – It is the current value of an investment or a loan. The initial value that the customer deposits or has in the account is the Present Value. If the customer is making deposits, this value must be negative. If the customer is receiving money (interest, rent, lottery installments, etc), then this value should be positive.

Future Value- it is the value the loan or investment will have when the loan is paid off or when the investment is over. To calculate the future value of an investment, you can use the **FV()** function. The syntax of this function is:

Function **FV (Rate, Periods, Payment, Present Value, Payment Type)** As Currency

The **Number of Periods** is the number of payments that make up a full cycle of a loan or an investment.

The Interest **Rate** is a fixed percent value applied during the life of the loan or the investment. The rate does not change during the length of the **Periods**.

It is very important to understand how these two arguments are passed to a function. The period could be the number of months of a year, which is 12; but it could be another length. Suppose a customer is getting a car loan that would be financed in 5 years. This is equivalent to 5 * 12 = 60 months. In the same way, a cash loan can stretch from 0 to 18 months, a carpenter truck loan can have a life financing of 40 months, and a condominium can be financed for 15 years of 12 months plus an additional 8 months; this is

equivalent to (15 * 12) + 8 = 188 months. Here is the tricky part, especially as far as Microsoft Excel deals with its finance functions. If you pass the number of **Periods** in terms of years, such as 5 for a car loan that stretches over 5 years, then you can pass the **Rate** as a percentage value, such as 8.75%. If you pass the number of **Periods** in terms of months, for example you can pass it as 44 for a car that is financed in 3 years and 8 months, then you must communicate this to the Rate argument by dividing the Rate by 12. In other words, a Rate of 8.75% would be passed as 8.75%/12. If the **Rate** was typed in a cell named B2 that displays 8.75%, you can pass it as B2/12.

For deposits made in a <u>savings account</u>, because their payments are made monthly, the rate is divided by the number of **Periods** of a year, which are 12. If an investment has an interest rate set at 14.50%, the **Rate** would be 14.50/12 = 1.208. Because the **Rate** is a percentage value, its actual value must be divided by 100 before passing it to the function. For a loan of 14.50% interest rate, this would be 14.50/12 = 1.208/100 = 0.012.

The **Payment** is the amount the customer will be paying. For a savings account where a customer has pledged to pay a certain amount in order to save a set (goal) amount, this would be the amount the customer would pay every month. If the customer makes payments (car loan, mortgage, deposits to a savings account, etc) then this value must be negative. If the customer is receiving money (lottery installment or annuity, family inheritance, etc) this value must be positive.

The **Payment Type** specifies whether the payment is made at the beginning or the end of the period. For a monthly payment of an item financed like a car, a boat, a guitar, or a house this could be the end of every month.

1. Start a new workbook and fill up Sheet1 as follows:

	A	B	C	D
1				
2		**Affordable Car Center**		
3				
4		Loan Amount	14500	
5		Interest Rate	0.125	
6		Regular Payment	215	
7		Years	5	
8		Future Value		
9				

2. Save it as **Business**
3. Double-click Sheet1 to put its label into edit mode. Type **Future Value** and press Enter
4. Click cell C8
5. On the Ribbon, click Formulas.
   In the Function Library section, click Financial and click FV.
6. Move the Function Arguments dialog box so you can see the values on the worksheet
7. Click the box to the right of Rate and, on the worksheet, click cell C5 and type **/12**
8. In the Function Arguments dialog box, click the box to the right of Nper and, on the worksheet, click cell C7
9. In the Function Arguments dialog box, click the box to the right of Pmt and type -
10. On the worksheet, click cell C6
11. In the Function Arguments dialog box, click the box to the right of Pv and type -
12. On the worksheet, click cell C4
13. Since this is a loan, the payments are expected at the end of the month. Therefore, in the Function Arguments dialog box, click the box to the right of Type and type 0
14. Click OK

The **Number of Periods** (NPER) is the number of payments that make up a full cycle of a loan or an investment

To calculate the number of periods of an investment or a loan, you can use the **NPER()** function. Its syntax is: Function **NPER (Rate, Payment, Present Value, Future Value, Payment Type)** As Currency

15.

Here is an example:

Investment or Loan Payment

The **PMT()** function is used to calculate the regular payment of loan or an investment. Its syntax is:

Function **PMT (Rate, Periods, Present Value, Future Value, Payment Type)** As Currency

In the following example, a customer is applying for a car loan. The cost of the car will be entered in cell C4. It will be financed at a rate entered in cell C6 for a period set in cell C7. The dealer estimates that the car will have a value of $0.00 when it is paid off.

Calculating the Monthly Payments of a Loan

1. Double-click Sheet3 to put it in edit mode. Type **Payments Amount** and press Enter

2. Complete the worksheet as follows

▲	A	B	C	D
1				
2		**Affordable Car Center**		
3				
4		Car Price	18500	
5		Future Value	0	
6		Interest Rate	8.75%	
7		Nbr of Payments	60	
8		Monthly Payment		
9				

3. Click cell C8 and type **=PMT(**
4. Click cell C6 and type **/12,**
5. Click cell C7 and type **,-**
6. Click cell C4 and type **,**
7. Click cell C5
8. Type **,0)** and, on the Formula Bar, click the Enter button ✓

The Amount Paid As Interest During a Period

The **IPMT ()** function is used to calculate the amount paid as interest on a loan during a period of the lifetime of a loan or an investment. It is important to understand what this function calculates. Suppose a customer is applying for a car loan and the salesperson decides (or agrees with the customer) that the loan will be spread over 5 years (5 years * 12 months each = 60 months). The salesperson then applies a certain interest rate.

The syntax of the **IPMT ()** function is:

Function **IPMT (Rate, Period, NPeriods, Present Value, Future Value, Payment Type)** As Double

The *Rate* argument is a fixed percent value applied during the life of the loan.

The *Present Value* is the current value of the loan or investment. It could be the marked value of the car, the current mortgage value of a house, or the cash amount that a bank is lending.

The *Future Value* is the value the loan or investment will have when the loan is paid off.

The *NPeriods* is the number of periods that occur during the lifetime of the loan. For example, if a car is financed in 5 years, this value would be (5 years * 12 months each =) 60 months. When passing this argument, you must remember to pass the right amount.

The *Period* argument represents the payment period. For example, it could be 3 to represent the 3rd year of a 5 year loan. In this case, the **IPMT()** function would calculate the interest earned in the 3rd year only.

The *Payment Type* specifies whether the periodic (such as monthly) payment of the loan is made at the beginning (1) or at the end (1) of the period.

The *Future Value* and the *Payment Type* arguments are not required.

Calculating the Monthly Payments of a Loan

1. To add a new worksheet, click the button on the right side of the Payment Amounts tab
2. Double-click the new Sheet4 tab to put it in edit mode
3. Type **Periodic Interest Earned** and press Enter

4. Complete the worksheet as follows

5. Click cell C9 and type **=IPMT(**
6. Click cell C5 and type **/12,**
7. Click cell C6 and type **,**
8. Click cell C7 and type **,-**
9. Click cell C4 and type **,**
10. Click cell C8 and type **,0)**

11. On the Formula Bar, click the Enter button ✔
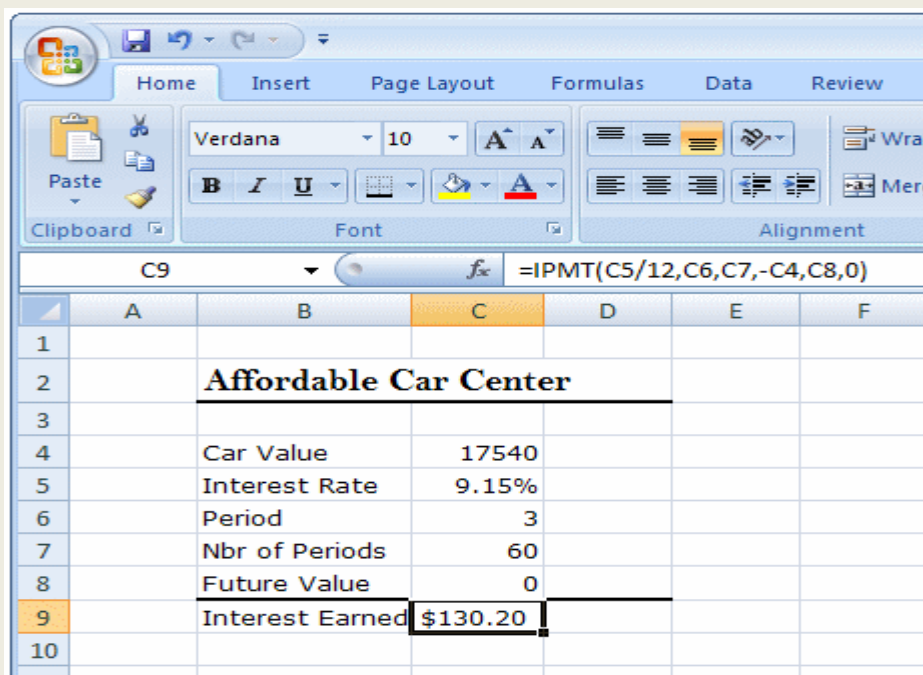
12. Save the workbook

The Amount Paid as Principal

While the **IPMT()** function calculates the amount paid as interest for a period of a loan or an investment, the **PPMT()** function calculates the actual amount that applies to the balance of the loan. This is referred to as the principal. Its syntax is:

Function **PPMT (Rate, Period, NPeriods, Present Value, Future Value, Payment Type)** As Currency

The arguments are the same as described in the previous sections.

Evaluating amount paid as principal

Change the **Periodic Interest Earned** worksheet as follows

1. Click cell C10 and type **=PPMT(**
2. Click cell C5 and type **/12,**
3. Click cell C6 and type **,**
4. Click cell C7 and type **,-**
5. Click cell C4 and type **,**
6. Click cell C8 and type **,**
7. Type **,0)** and, on the Formula Bar, click the Enter button ✔
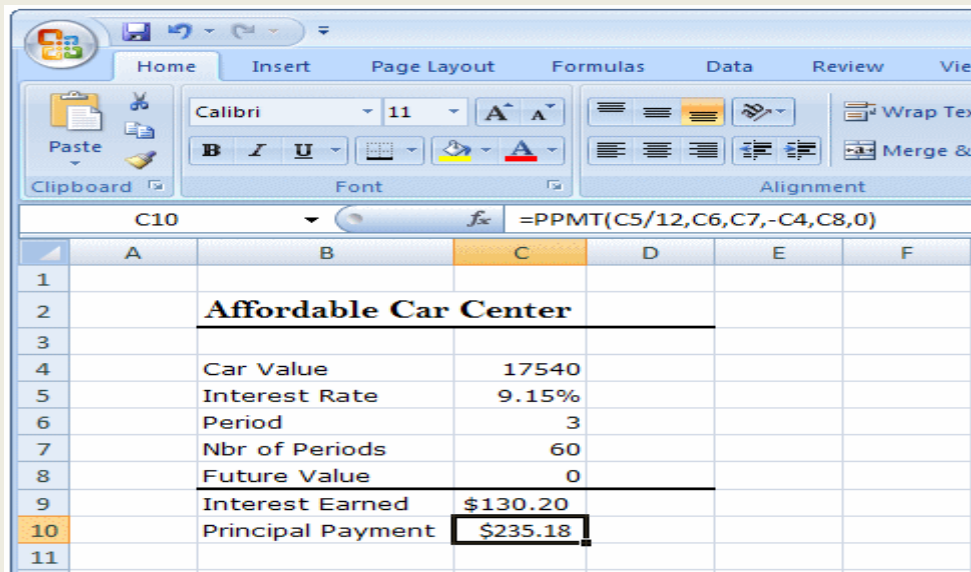
8. Save the workbook

The **PV()** function calculates the total amount that a future investment is worth currently. Its syntax is:
Function **PV (Rate, NPeriods, Payment, Future Value, Payment Type)** As Currency
The arguments are the same as described earlier.
RATE() function is used to calculate the interest applied on a loan or an investment. Its syntax is:
Function **RATE (NPeriods, Payment, Present Value, Future Value, Payment Type, Guess)** As Double
All of the arguments are the same as described for the other functions, except for the *Guess*. This argument allows you to give some type of guess for a rate. This argument is not required. If you omit it, its value is assumed to be 10.

Calculating the interest rate

1. To add a new worksheet, click the button on the right side of the Periodic Interest Earned tab
2. Double-click the new Sheet5 tab to put it in edit mode
3. Type **Interest Rate** and press Enter

4. Change the **Interest Rate** worksheet as follows

	A	B	C	D
1				
2		**Affordable Car Center**		
3				
4		Car Value	16500	
5		Future Value	0	
6		Monthly Payment	285	
7		Nbr of Periods	48	
8		Interest Rate		
9				

5. Click cell C8 and type =**-RATE(**
6. Click cell C7 and type **,**
7. Click cell C6 and type **,-**
8. Click cell C4 and type **,**
9. Click cell C5 and type **,0)*12** and, on the Formula Bar, click the Enter button ✔

C8   *fx*   =-RATE(C7,C6,-C4,C5,0)*12

	A	B	C	D	E
1					
2		**Affordable Car Center**			
3					
4		Car Value	16500		
5		Future Value	0		
6		Monthly Payment	285		
7		Nbr of Periods	48		
8		Interest Rate	0.08887		
9					

10. Use the Percent Style button in the Number section of the Home tab of the Ribbon to make the value display as a percentage value
11. Save the workbook

The IRR () function
This function is used to calculate an internal rate of return based on a series of investments. Its syntax is:
Function **IRR (Values, Guess)** As Double
The *Values* argument is a series (also called an array or a collection) of cash amounts that a customer has made on an investment. For example, a customer could make monthly deposits in a savings or credit union account. Another customer could be running a business and receiving different amounts of money as the business is flowing (or losing money). The cash flows don't have to be the same at different intervals but they should (or must) occur at regular intervals such as weekly (amount cut from a paycheck), bi-weekly (401k directly cut from paycheck), monthly (regular investment), or yearly (income).
The *Values* argument must be passed as a collection of values, such as a range of selected cells, and not an amount. Otherwise you would receive an error.

The *Guess* parameter is an estimate interest rate of return of the investment.

Calculating the Internal Rate of Return

1. To add a new worksheet, click the button on the right side of the other tab sheets
2. Double-click the new Sheet1 tab to put it in edit mode. Type **Internal Rate of Return** and press Enter
3. Change the worksheet as follows

	A	B	C	D
1				
2			Yugo & Associates	
3				
4			Investment Goal	-7500.00
5			1st Month	1500.00
6			2nd Month	2050.00
7			3rd Month	1800.00
8			4th Month	1250.00
9			5th Month	2400.00
10			6th Month	2450.00
11			Guess	
12		Internal Rate of Return		
13				

4. Click cell D12 and type =**IRR(**
5. Select cells D4:D10 and, on the Formula Bar, click the Enter button ✔
    In cell D11, type **12** and click cell D12
6. In the Formula Bar, change the function to =**IRR(D4:D10, D11)** and press Enter (you shouldn't see any significant difference unless you change the range of cells such as D4:D8)
7. Save the workbook

The Net Present Value

The **NPV ()** function uses a series of cash flows to calculate the present value of an investment. Its syntax is:

Function **NPV (Rate, Value1, Value2 ...)** As Currency

The *Rate* parameter is the rate of discount during one period of the investment.

Any payment made in the past should have a positive value (because it was made already). Any future payment should have a negative value (because it has not been made yet).

Calculating the Net Present Value

1. To add a new worksheet, click the button on the right side of the other tab sheets
2. Double-click the new Sheet7 tab to put it in edit mode
3. Type **Net Present Value** and press Enter

4. Complete the worksheet as follows:

	A	B	C	D	E
1					
2			Yugo & Associates		
3					
4			Lottery Settlement	-2,438,000.00	
5			1st Month	525,000.00	
6			2nd Month	348,000.00	
7			3rd Month	246,000.00	
8			4th Month	180,500.00	
9			5th Month	245,000.00	
10			6th Month	258,000.00	
11			7th Month	260,000.00	
12			8th Month	380,000.00	
13			Discount Rate	7.85%	
14			Net Present Value		
15					

5. Click cell D14 and type **=-NPV(**
6. Click cell D13 and type **,**
7. Select cells D4:D12 and, on the Formula Bar, click the Enter button ✔
8. Save the workbook

ISPMT function

It calculates the interest paid during a specific period of an investment. Its syntax is given below

= ISPMT (Rate, Per, Nper, PV)

Rate –interest rate for the investment

Per – period for which we want to find the interest, and must be between 1 and nper

Nper- total number of payment period

PV – is the present value of investment.

Excel Statistical Functions

Excel's Statistical Functions can be used to analysis the data in a spreadsheet. For example, they can be used to tell you the number of data entries you have or the average value of your data. There are number of statistical functions in excel. The uses of some of the statistical functions are explained below.

Covar

In Excel, the Covar function returns the covariance, the average of the products of deviations for two data sets. The syntax for the Covar function is: **Covar (array1, array2)** array1 and array are two ranges or arrays of integer values. For example: Let's take a look at an example: =Covar({1,2;3,4}, {5,6;7,8}) The above example would return 1.25.

Forecast

In Excel, the Forecast function returns a prediction of a future value based on existing values provided. The syntax for the Forecast function is: Forecast(x-value, known_y_values, known_x_values) x-value is the x-value used to predict the y-value. Known_y_values is the known y-values used to predict the y-value.

Intercept

In Excel, the Intercept function returns the y-axis intersection point of a line using x-axis values and y-axis values. The syntax for the Intercept function is: Intercept (known_y_values, known_x_values) known_y_values is the known y-values used to calculate the intersect. Known_x_values is the known x values used to calculate the intercept.

	A	B	C	D	E	F	G	H
1								
2	known Y vales	known X values						
3	75	30	type formula in A11 as =INTERCEPT(A3:A8,B3:B8)					
4	65	25						
5	50	20	Excel return the point at which a line intersect y axis by using specified known data					
6	35	15						
7	25	10						
8	20	5						
9								
10	formula							
11	4							
12								

Median

In Excel, the Median function returns the median of the numbers provided. The syntax for the Median function is: Median (**number1, number2, number_n**) number1, number2, number_n are numeric values - they can be numbers, named ranges, arrays, or references to numbers. There can be up to 30 values entered.

Percentile

In Excel, the Percentile function returns the nth percentile from a set of values. The syntax for the Percentile function is: **Percentile (array, nth_percentile)** array is a range or array from which you want to return the nth percentile. Nth_percentile is the percentile value. It can be a value between 0 and 1. Note: If nth_percentile is not a numeric value, the Percentile function will return the #VALUE! error. If nth_percentile is a value greater than 1 or less than 0, the Percentile function will return the #NUM! error.

Quartile

In Excel, the Quartile function returns the quartile from a set of values. The syntax for the Quartile function is: **Quartile (array, nth_quartile)** array is a range or array from which you want to return the nth quartile. Nth_quartile is the quartile value that you wish to return. It can be one of the following values: Value Explanation 0 Smallest value in the data set 1 First quartile (25th percentile) 2 Second quartile (50th percentile) 3 Third quartile (75th percentile) 4 largest value in the data set Note: If nth_quartile is not an integer, it will be truncated.

Rank

In Excel, the Rank function returns the rank of a number within a set of numbers. The syntax for the Rank function is: **Rank (number, array, order)** number is the number to find the rank for. Array is a range or array of numbers to use for ranking purposes. Order is optional. It specifies how to rank the numbers. If order is 0, it ranks numbers in descending order. If order is not 0, it ranks numbers in ascending order. If the order parameter is omitted, the Rank function assumes order is 0 (descending order)

StDev

In Excel, the StDev function returns the standard deviation of a population based on a sample of numbers. The syntax for the StDev function is: **StDev (number1, number2 ... number_n)** number1, number2, ... number_n are numeric values - they can be numbers, named ranges, arrays, or references to numbers. There can be up to 30 values entered.

CORREL

In Excel, CORREL calculates the correlation coefficient of the array of cell ranges. In other words this function returns the correlation coefficient of two sets of variables. Its syntax is **;=CORREL (array1, array2) .** An example is given below
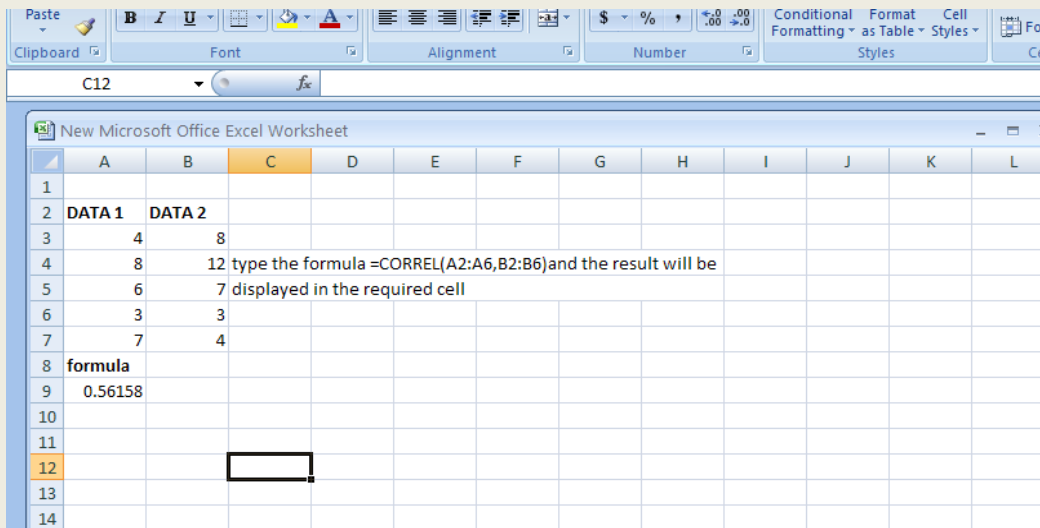
Finding large, small, average etc in EXCEL

MAX	Returns the largest value from a list of supplied numbers **= MAX (number1, number2,)**
MAXA	Returns the largest value from a list of supplied values, counting text and the logical value FALSE as the value 0 and counting the logical value TRUE as the value 1
MIN	Returns the smallest value from a list of supplied numbers **=MIN (number1,number2,)**
MINA	Returns the smallest value from a list of supplied values, counting text and the logical value FALSE as the value 0 and counting the logical value TRUE as the value 1
LARGE	Returns the Kth LARGEST value from a list of supplied numbers, for a given value K
SMALL	Returns the Kth SMALLEST value from a list of supplied numbers, for a given value K
AVERAGE	Returns the Average of a list of supplied numbers **=AVERAGE (number1,number2,…….)**
AVERAGEA	Returns the Average of a list of supplied numbers, counting text and the logical value FALSE as the value 0 and counting the logical value TRUE as the value 1
AVERAGEIF	Calculates the Average of the cells in a supplied range, that satisfy a given criteria
AVERAGEIFS	Calculates the Average of the cells in a supplied range, that satisfy multiple criteria

Database in worksheet

Database is a collection of related data organized in a meaningful manner. Data are stored in tables in database. A table is a collection of related records. Each record contains a number of fields. Only flat database can be created in excel. In a flat database, column represents fields and row represents record. A database can be created anywhere in a worksheet. But it must be separated from other data in the worksheet so as to recognize the database. Following rules must be observed for creating database in excel.

- The first row of DB must be used for field names(column headings)

- Field name must be unique.
- Records must be entered without leaving any empty row between field names and the first record in the DB
- Each row must contain one full record

Let us see an inventory database

A number of database functions are available in excel.Excel Database Functions are used to interrogate lists of data held on a worksheet. For a selected table they will perform their processing only on records (or rows) which meet specified criteria. These functions make Excel Project very versatile spreadsheet software indeed. Some of database function in excel are given here;

DAverage

In Excel, the DAverage function averages all numbers in a column in a list or database, based on a given criteria. The syntax for the DAverage function is: **DAverage (range, field, criteria)** range is the range of cells that you want to apply the criteria against. Field is the column to average the values. You can either specify the numerical position of the column in the list or the column label in double quotation marks. Criteria are the range of cells that contains your criteria.

DCount

In Excel, the DCount function returns the number of cells in a column or database that contains numbers and meets a given criteria. The syntax for the DCount function is: DCount(range, field, criteria)

DCountA

In Excel, the DCountA function returns the number of cells in a column or database that contains nonblank values and meets a given criteria. The syntax for the DCountA function is: **DCountA (range, field, criteria)** range is the range of cells that you want to apply the criteria against.

DGet

In Excel, the DGet function retrieves from a database a single record that matches a given criteria. The syntax for the DGet function is: DGet (database, field, criteria) database is the range of cells that you want to apply the criteria against. Field is the column to retrieve.

DMax

In Excel, the DMax function returns the largest number in a column in a list or database, based on a given criteria. The syntax for the DMax function is: **DMax(database, field, criteria)**

DMin

In Excel, the DMin function returns the smallest number in a column in a list or database, based on a given criteria. The syntax for the DMin function is: **DMin (database, field, criteria)** database is the range of cells that you want to apply the criteria against.

DProduct

In Excel, the DProduct function returns the product of the numbers in a column in a list or database, based on a given criteria. The syntax for the DProduct function is: **DProduct (database, field, criteria)** database is the range of cells that you want to apply the criteria against.

DStDev

In Excel, the DStDev function returns the standard deviation of a population based on a sample of numbers in a column in a list or database, based on a given criteria. The syntax for the DStDev function is: **DStDev(database, field, criteria)** database is the range of cells that you want to apply the criteria against.

DStDevP

In Excel, the DStDevP function returns the standard deviation of a population based on the entire population of numbers in a column in a list or database, based on a given criteria. The syntax for the DStDevP function is: **DStDevP (database, field, criteria)** database is the range of cells that you want to apply the criteria against.

DSum

In Excel, the DSum function sums the numbers in a column or database that meets a given criteria. The syntax for the DSum function is: **DSum (range, field, criteria)** range is the range of cells that you want to apply the criteria against. Field is the column to sum the values.

DVar

In Excel, the DVar function returns the variance of a population based on a sample of numbers in a column in a list or database, based on a given criteria. The syntax for the DVar function is: **DVar (database, field, criteria)** database is the range of cells that you want to apply the criteria against.

DVarP

In Excel, the DVarP function returns the variance of a population based on the entire population of numbers in a column in a list or database, based on a given criteria. The syntax for the DVarP function is: **DVarP(database, field, criteria)**

Goal Seek in Excel

Goal Seek is used to get a particular result when you're not too sure of the starting value. For example, if the answer is 56, and the first number is 8, what is the second number? Is it 8 multiplied by 7,or 8 multiplied by 6? You can use Goal Seek to find out. We'll try that example to get you started, and then have a go at amore practical example.

Create the following Excel spreadsheet

In the spreadsheet above, we know that we want to multiply the number in B1 by the number in B2.Thenumber in cell B2 is the one we're not too sure of. The answer is going in cell B3. Our answer is wrong at the moment, because we have a Goal of 56. To use Goal Seek to get the answer, try the following:

- From the Excel menu bar, click on **Data**
- Locate the **Data Tools** panel and the **What if Analysis** item. From the What if Analysis menu, select **Goal Seek**
- The following dialogue box appears:
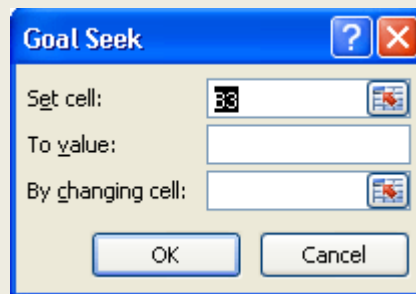
The first thing Excel is looking for is "Set cell". This is not very well named. It means "Which cell contains the Formula that you want Excel to use". For us, this is cell B3. We have the following formula in B3:

= B1 * B2

So enter B3 into the "Set cell" box, if it's not already in there. The "To value" box means "What answer are you looking for"? For us, this is 56. So just type 56 into the "To value" box The "By Changing Cell" is the part you're not sure of. Excel will be changing this part. For us, it was cell B2. We're weren't sure which number, when multiplied by 8, gave the answer 56. So type B2 into the box. You Goal Seek dialogue

box should look like:
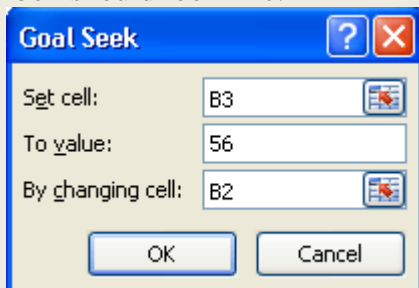
Click OK and Excel will tell you if it has found a solution:

Click OK again, because Excel has found the answer. Your new spreadsheet will look like this one:

B3			f_x	= B1 * B2	
	A	B	C	D	
1	Number Certain	8			
2	Number Unsure	7			
3	Answer We Want	56			
4					

As you can see, Excel has changed cell B2 and replace the 6 with a 7 - the correct answer.

Scenarios in Excel

. Scenarios come under the heading of "What-If Analysis" in Excel. They are similar to tables in that you are changing values to get new results. For example, What if I reduce the amount I'm spending on food? How much will I have left then? Scenarios can be saved, so that you can apply them with a quick click of the mouse. A Scenario offers you different ways to view a set of figures, and allows you to switch between them quite easily.

To create scenarios in Excel 2007,carry out the following steps:

- Create the values on the basis of which you wish to create the original scenario.
- Select the cells in which the data is likely to change.
- .Go to the **'Data'** tab.
- Click 'What - If Analysis' tool appearing under the 'Data Tools' group.
- Click the **'Scenario Manager** ....' option from the drop-down list.
- Click the **'Add'** button appearing on the 'Scenario Manager' dialog box.
- Enter a scenario name and click 'OK' to close the dialog box.
- Check the values that are assigned to the scenario.

Creating Charts in excel

Charts helps by converting numeric data into visual display. Once the numbers are converted into charts and graphs, it is easy to identify its trend and pattern. In Microsoft Excel, you can represent numbers in a chart. On the Insert tab, you can choose from a variety of chart types, including column, line, pie, bar, area, and scatter. The basic procedure for creating a chart is the same no matter what type of chart you choose.

As you change your data, your chart will automatically update.

Create a Column Chart
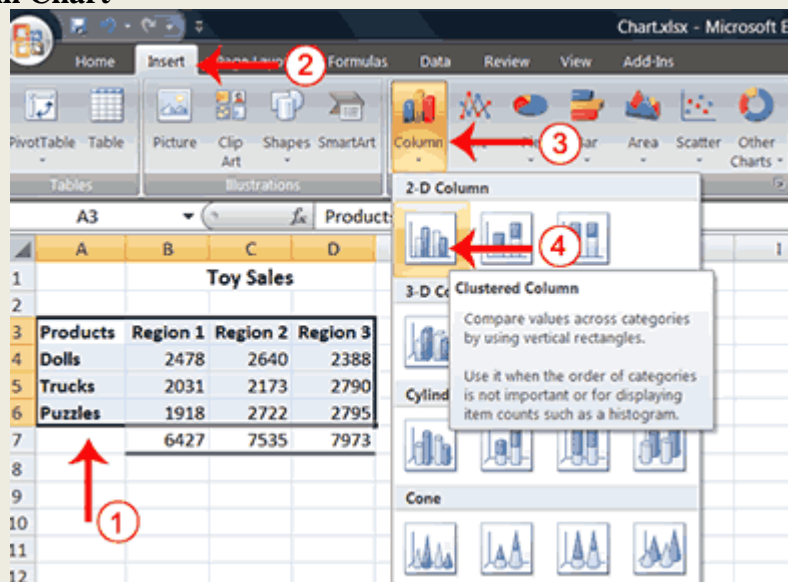
1. Select cells A3 to D6. You must select all the cells containing the data you want in your chart. You should
2. Also include the data labels.
3. Choose the Insert tab.
4. Click the Column button in the Charts group. A list of column chart sub-types types appears.
5. Click the Clustered Column chart sub-type. Excel creates a Clustered Column chart and the Chart Tools
6. Context tabs appear.

Apply a Chart Layout

Context tabs are tabs that only appear when you need them. Called Chart Tools, there are three chart context tabs: Design, Layout, and Format. The tabs become available when you create a new chart or when you click on a chart. You can use these tabs to customize your chart. You can determine what your chart displays by choosing a layout. For example, the layout you choose determines whether your chart displays a title, where the title displays, whether your chart has a legend, where the legend displays, whether the chart has axis labels and so on. Excel provides several layouts from which you can choose

Apply a Chart Layout

1. Click your chart. The Chart Tools become available.
2. Choose the Design tab.
3. Click the Quick Layout button in the Chart Layout group. A list of chart layouts appears.
4. Click Layout 5. Excel applies the layout to your chart.

Add Labels

When you apply a layout, Excel may create areas where you can insert labels. You use labels to give your chart a title or to label your axes. When you applied layout 5, Excel created label areas for a title and for the vertical axis.
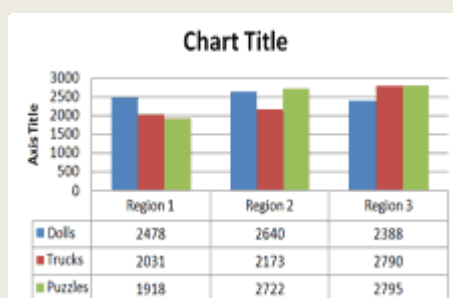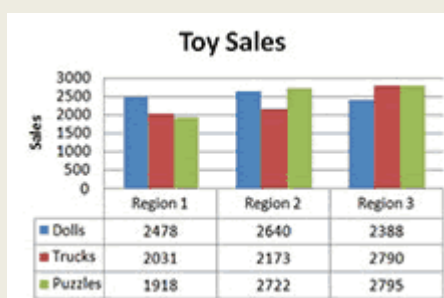
Before   After

1. Select Chart Title. Click on Chart Title and then place your cursor before the C in Chart and hold down the Shift key while you use the right arrow key to highlight the words Chart Title.
2. Type **Toy Sales**. Excel adds your title.
3. Select Axis Title. Click on Axis Title. Place your cursor before the A in Axis. Hold down the Shift key while you use the right arrow key to highlight the words Axis Title.
4. Type **Sales.** Excel labels the axis.
5. Click anywhere on the chart to end your entry.

Switch Data

If you want to change what displays in your chart, you can switch from row data to column data and vice versa
1. Click your chart. The Chart Tools become available.
2. Choose the Design tab.
3. Click the Switch Row/Column button in the Data group. Excel changes the data in your chart.

Change the Style of a Chart

A style is a set of formatting options. You can use a style to change the color and format of your chart. Excel 2007 has several predefined styles that you can use. They are numbered from left to right, starting with 1, which is located in the upper-left corner.
1. Click your chart. The Chart Tools become available.
2. Choose the Design tab.
3. Click the More buttons in the Chart Styles group. The chart styles appear.
4. Click Style you want. Excel applies the style to your chart.

Change the Size and Position of a Chart

When you click a chart, handles appear on the right and left sides, the top and bottom, and the corners of the chart. You can drag the handles on the top and bottom of the chart to increase or decrease the height of the chart. You can drag the handles on the left and right sides to increase or decrease the width of the chart. You can drag the handles on the corners to increase or decrease the size of the chart proportionally. You can change the position of a chart by clicking on an unused area of the chart and dragging.
1. Use the handles to adjust the size of your chart.
2. Click an unused portion of the chart and drag to position the chart beside the data.

Change the Chart Type

Any change you can make to a chart that is embedded in a worksheet, you can also make to a chart sheet. For example, you can change the chart type from a column chart to a bar chart
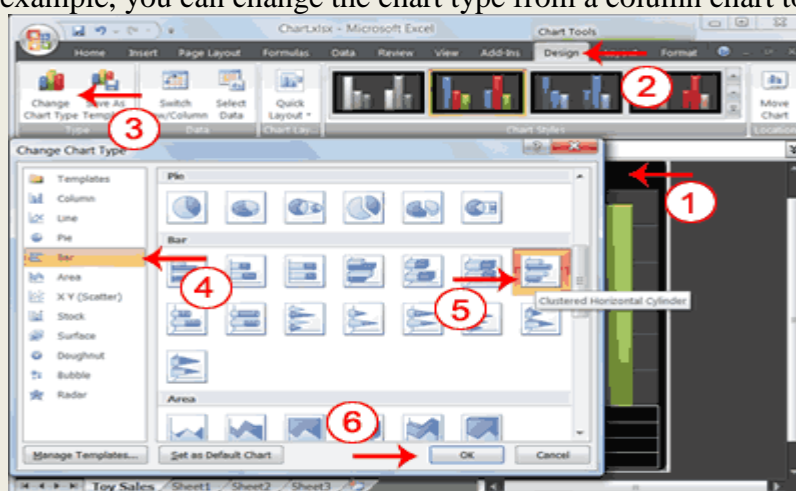
1. Click your chart. The Chart Tools become available.
2. Choose the Design tab.
3. Click Change Chart Type in the Type group. The Chart Type dialog box appears.
4. Click Bar.
5. Click Clustered Horizontal Cylinder.
6. Click OK. Excel changes your chart type.

Questions

1. What is spread sheet? What are its features?

2. What are the parts of a worksheet?

3. What are the mathematical functions in excel?

4. What are the important financial function in excel?

5. Explain some of the statistical functions in excel?

6. explain about Goalseak and Scenario functions in excel?

7. How do you create a chart and graph in excel?

8. How do you format a worksheet in excel?

2.3 Microsoft PowerPoint

Microsoft PowerPoint is a software product used to perform computer-based presentations. It helps in quickly creating effective slide show presentation. There are various circumstances in which a presentation is made: teaching a class, introducing a product to sell, explaining an organizational structure, etc.There are two main kinds of presentations you can deliver: before an audience or not. The preparation and the actual delivery of each are quite different. Various term in connection with PPPare given here

Presentation:

The primary type of file PowerPoint is used to create. Presentations typically have the file extension .ppt; however, you can also save PowerPoint presentations as Adobe Acrobat documents with the file extension .pdf. Finally, you can save your presentation as a web page, with the file extension .html or .htm.

Slides:

Individual parts of a presentation. Slides are similar to the individual pages in a print document, and can contain text, graphics, and animation.

Layout:

The specific arrangement of text and images on a slide. Layouts can be very simple, consisting of simple titles and text, or they can be more complex and include elaborate colors and images. You can also include animation, sounds, and other multimedia objects in your layout.

View:

Microsoft PowerPoint has three main views: **normal view, slide sorter view, and slide show view**. Normal view is the main editing view. Slide sorter view is an exclusive view of your slides in thumbnail form, helpful for rearranging the order of your slides. Slide show view takes up the full computer screen, like an actual slide show presentation. In this full-screen view, you see your presentation the way your audience will.

Design Template:

The specific "look" of a slide or group of slides. A design template can be very basic - with black text on a white background - or it can be very colorful and complex. Typically, PowerPoint presentations have the same design template for all slides, although it is possible to select a different design template for each slide. Later, I'll show you how to select different design templates.

Slide Show:

The way a presentation appears when you are presenting it. When you display your slides in a slide show, the slides typically take up the whole screen, and they appear in sequence.

Placeholder:

Boxes with dotted or hatch-marked outlines that appear when you create a new slide. These boxes act as "placeholders" for objects such as the slide title, text, clip art, charts, and tables. Placeholders are sometimes called "text boxes."

Sizing handles:

Small circles that appear along the edges of the selection rectangle around an object on your slide. You drag a sizing handle to change the shape or size of an object. To maintain the proportions of an object while resizing, simply drag a corner handle.

Creating PowerPoint Presentation

You create your PowerPoint presentation on slides. You use layouts to organize the content on each slide. PowerPoint has several slide layouts from which to choose. Themes are sets of colors, fonts, and special effects. Backgrounds add a colored background to your slides. You can add themes and backgrounds to your slides. After you complete your slides, you can run your presentation.
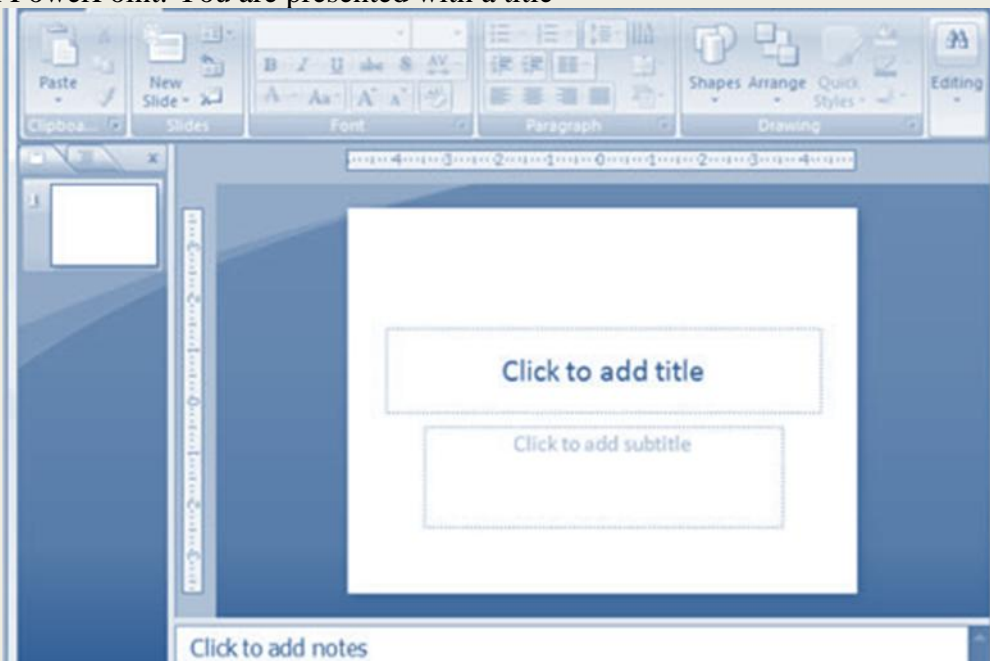
Create a Title Slide

When you start PowerPoint, PowerPoint displays the title slide in the Slide pane. You can type the title of your presentation and a subtitle on this slide. To enter text:

- Click and type the title of your presentation in the "Click to add title" area.
- Click and type a subtitle in the "Click to add subtitle" area.

If you do not wish to use the title slide, click the Delete Slide button in the Slides group on the Home tab. To create a Title Slide

1. Open PowerPoint. You are presented with a title

slide.

2. Enter the information shown here. Type **College Scholarships and Financial Aid** in the Click to Add Title text box. Type **Paying for College** in the Click to Add Subtitle text box.

Create New Slides

After completing your title slide, you can create additional slides. To create a new slide:

1. Choose the Home tab.
2. Click the New Slide button in the Slides group. The Office Theme dialog box appears and displays several layout templates.
3. Click the layout you want. The layout appears in the Slide pane of the PowerPoint window.
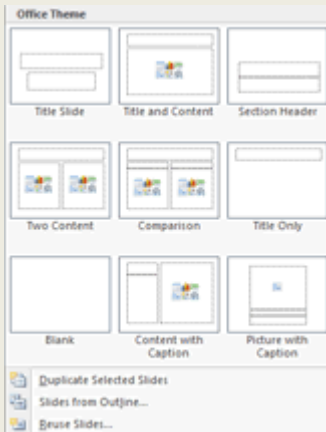
4To add text, click inside the placeholder and type.

5To add an additional slide to your presentation, do one of the following:

Right-click the slide layout. A menu appears. Click Layout and then click the layout you want.

Choose the Home tab, click the New Slide button , and then choose the slide layout you want.

1. Choose the Home tab.

2. Click the New Slide button in the Slides group. The Office Theme dialog box appears.

3. Click the Title and Content Layout. The slide appears on the Slides tab.
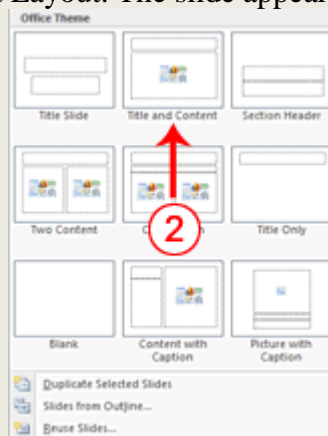
4. Enter the information shown here. Type **Here is what to do:** (including the colon) in the Click to Add Title text box. Type the bulleted text in the Content text box.
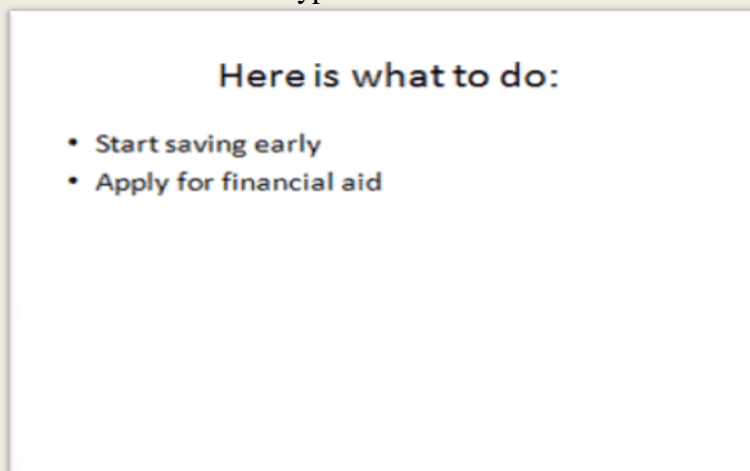
Create an Outline

If you need to present the information in your slide in outline form, you can easily create an outline by using the Increase List Level button ⊞ to create a hierarchy.

1. Choose the Home tab.
2. Click the New Slide button [New Slide ▾] in the Slides group. The Office Theme dialog box appears.
3. Click the Title and Content layout.
4. Enter the information shown here. Click the Increase List Level button ⊞ in the Paragraph group to indent the bullets for Stafford Loans and PLUS Loans. If you ever need to decrease an indent, use the Decrease List Level button ⊞ in the Paragraph group.

Use Two-Column Text

You can also place text in two separate columns.

1. Choose the Home tab.
2. Click the New Slide button [New Slide ▾] in the Slides group. The Office Theme dialog box appears.
3. Click the Two Content layout.
4. Enter the information shown here.

Make Changes to Your Slides

After creating a slide, if you want to add text:

1. Place the mouse pointer at the point at which you would like to add text.
2. Type the information you want to add.

If you would like to change text:

1. Select the text you want to change.
2. Type the new text.

You can use the Backspace key to delete text. You can also delete text by highlighting the text and pressing the Delete key.

Apply a Theme

A theme is a set of colors, fonts, and special effects. Themes provide attractive backgrounds for your PowerPoint slides.
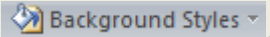
To apply a theme to all of the slides in your presentation:

1. Choose the Design tab.
2. Click the More button ⯆ in the Themes group.
3. Click the design you want.

To apply a theme to selected slides:

1. Click the Slides tab, located on the left side of the window.
2. Hold down the Ctrl key and then click to select the slides to which you want to apply a theme.
3. Choose the Design tab.
4. Click the More button ⯆ in the Themes group.
5. Right-click the theme you want to apply. A menu appears.
6. Click Apply to Selected Slides. Excel applies the theme to the slides you selected.

You can add a dramatic effect to your theme by applying a background.

1. Choose the Design tab.
2. Click the Background Styles button .
3. Click the background you want.

Apply a Theme
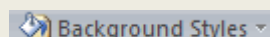
1. Choose the Design tab.
2. Click the More button ⯆ in the Themes group.
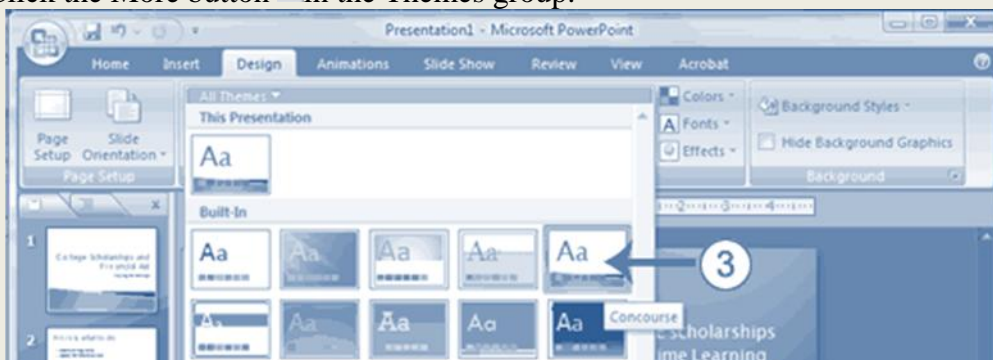
3. Click the theme you want. PowerPoint applies the theme to all of the slides in your presentation.

Add a Background

1. Choose the Design tab.
2. Click the Background Styles button .
3. Click the background you want. PowerPoint applies the background to your slides.

Header and Footer on PowerPoint slides
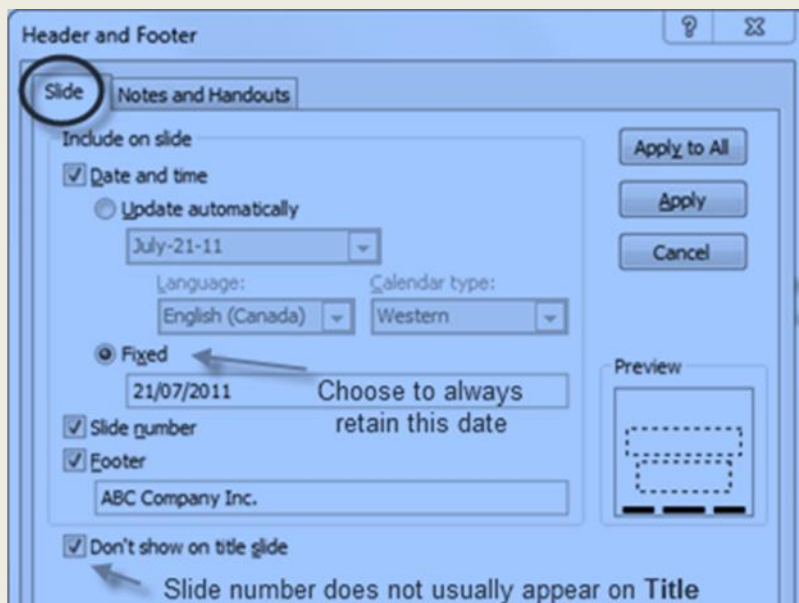
In the **Header and Footer** dialog box, there are options for placing footers on slides, and both a header and footer on handouts and notes pages.

Add Footers to Slides

1. Click on the **Slide** tab of the *Header and Footer* dialog box, if it is not already selected.
2. Select any options for your slides including:
   ➢ *Date and Time (Update automatically)-* If you would like the date and/or time to show the current date each time the presentation file is opened, click on this option. You can then select the format that you would like the date to appear on the slide from the drop down box - for example: July 21, 2011 or 21/07/2011. This option is helpful if you always want your presentation to appear current.
   ➢ *Date and Time (Fixed)* - Type the date. This date will be retained permanently (unless you choose to change it later). This option is helpful if you want to keep track of the creation date of the presentation.
   ➢ *Slide number* - This option will add numbers to the slides. These slide numbers will be placed in the footer area of the slide, but the location on the slide will vary, depending on which design theme you choose for this presentation.
   ➢ *Footer* - Choose this option to add a custom footer which will print on the slide(s). This selection is often chosen to brand the company name to the slides.
   ➢ *Don't show on title slide* - Most presenters prefer that these settings are not added to the title slide. If that is the case for this presentation, then check that box.
3. Click on the **Apply to All** or **Apply** button.

Run PowerPoint Slide Show

After you create your slides, you can run your slide show:

1. Do any one of the following:
   ➢ Press F5.
   ➢ Choose the Slide Show tab. Click the From Beginning button in the Start Slide Show group.
   ➢ Click the Slide Show icon in the bottom-right corner of your screen.

Your slide show appears on your screen.

Navigating the Slide Show	
Task	**Procedure**
Go to the next slide.	Do one of the following: • Press the Right Arrow key. • Press the Enter key. • Press the Page Down key. • Left-click the slide.
Go to the previous slide.	Do one of the following: • Press the Left Arrow key. • Press the Backspace key. • Press the Page Up key.
End the slide show and return to PowerPoint.	Press the Esc key.

Run Your Slide Show
1. Press F5 to run the slide show.
2. Use the arrow keys on your keyboard to move forward and backward through your slides.
3. Use the Esc key to return to Normal

Animations, Transitions, Spell Check, Outline Tab, Slides Tab, Sorter View, and Printing
Animations control how objects move onto, off of, and around your slides. Transitions control how your presentation moves from one slide to the next.

Add Animations
You can animate the objects on your PowerPoint slides. PowerPoint provides four types of animations: Entrance, Emphasis, Exit, and Motion Paths.

An **Entrance animation** determines the manner in which an object appears on a slide; for example, an object can move onto a slide.

An **Emphasis animation** does something to draw attention to an object; for example, the object can become larger.

An **Exit animation determines** the manner in which an object leaves a slide; for example, an object can move off a slide.

A **Motion Paths animation** determines how an object moves around a slide; for example, an object can move from left to right.

After you add an animation, you can use the Custom Animation pane to modify it by choosing an effect. Choosing an effect enables you to define what starts the animation, its properties (such the direction from which an object moves onto the slide), and control the speed of the animation. In addition, you can have an animation start when you click the mouse, start along with the previous animation, or start at a specified time after the previous animation.

If the Auto Preview box is checked on the Custom Animation pane, PowerPoint provides you with preview of your animation after you create it and each time you modify it. You can also use the Play button ► Play on the Custom Animation pane to preview an animation.

To choose an effect:

1. Select the object you want to animate.
2. Choose the Animations tab.
3. Click the Custom Animation button ![Custom Animation]. The Custom Animation pane appears.
4. Click the Add Effect button![Add Effect ▼]. A menu appears.
5. Choose the type of effect you want. A submenu appears.
6. Click the effect you want. PowerPoint applies the effect.

To modify an effect:
1. Click the down arrow next to the Start field on the Custom Animations pane and then select the start method you want.
2. Click the down arrow next to the Property field on the Custom Animations pane and the select the property you want. The Property field might be labeled Direction, Size, or some other property.
3. Click the down arrow next to the Speed field on the Custom Animations pane and then select the speed you want to apply to your animation. To preview the animation, click the Play button ![▶ Play] on the Custom Animations pane.

Add an Animation to a Slide
1. Click Slide 2 on the Slides tab.
2. Select "Start saving early."
3. Choose the Animations tab.
4. Click the Custom Animation button ![Custom Animation]. The Custom Animation pane appears.
5. Click the Add Effect button![Add Effect ▼]. A menu appears.
6. Choose Entrance. A submenu appears.
7. Click Fly In. PowerPoint applies the effect. If the Auto preview box is checked, PowerPoint automatically provides you with a preview of the animation.
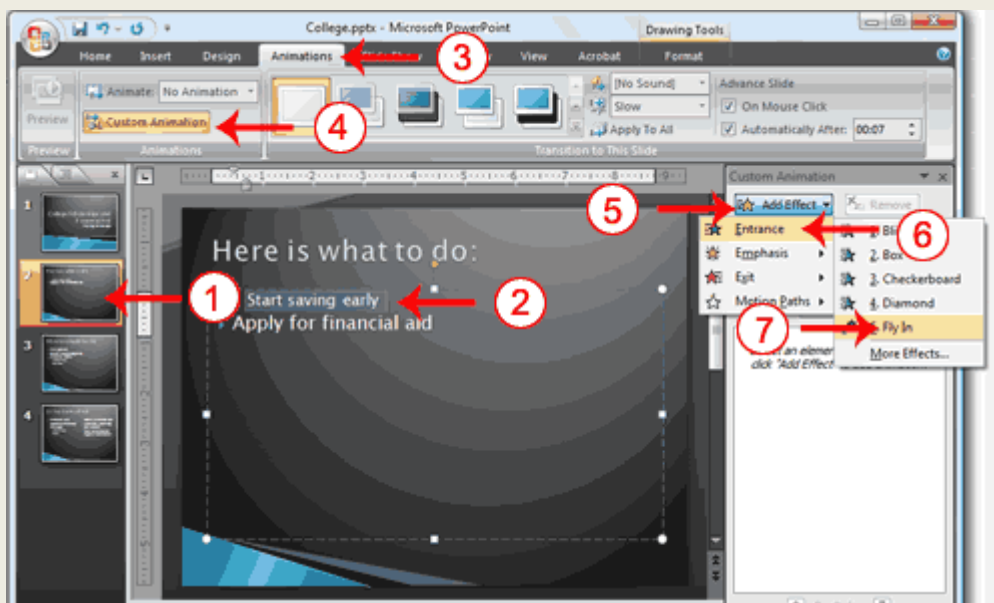
8. Click Slide 2 on the Slides tab.
9. Select "Start saving early."
10. Choose the Animations tab.
11. Click the Custom Animation button ![Custom Animation]. The Custom Animation pane appears.

12. Click the Add Effect button . A menu appears.
13. Choose Entrance. A submenu appears.
14. Click Fly In. PowerPoint applies the effect. If the Auto preview box is checked, PowerPoint automatically provides you with a preview of the animation.

Modify the Effect
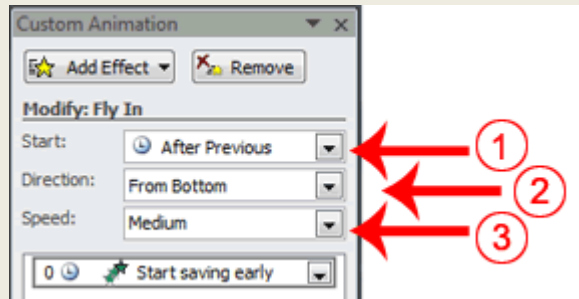
1. Click the down arrow next to the Start field and then select After Previous.
2. Click the down arrow next to the Direction field and then select From Bottom.
3. Click the down arrow next to the Speed field and then select Medium.

Add another Animation

1. Select "Apply for financial aid."
2. Click the Add Effect button . A menu appears.
3. Choose Entrance. A submenu appears.
4. Click Fly In. PowerPoint applies the effect. If the Auto preview box is checked, PowerPoint automatically provides you with a preview of the animation.

Modify the Animation

1. Click the down arrow next to the Start field and then select After Previous. The Apply for Financial Aid field appears in the center of the Custom Animation pane.
2. Click the down arrow next to the Apply for Financial Aid field and then click Timing. The Fly In dialog box appears.
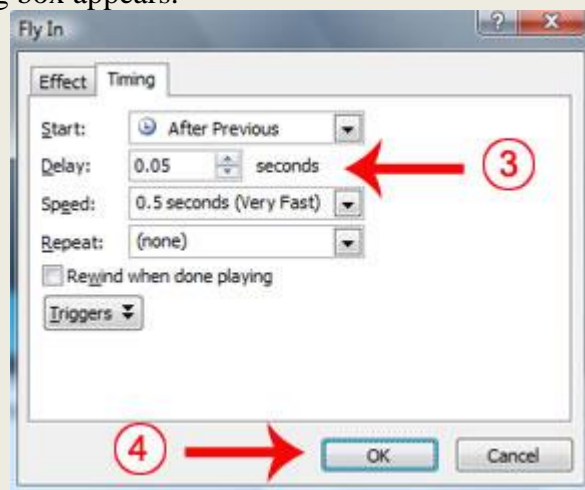
3. Type **0.05** in the Delay text box.
4. Click OK.
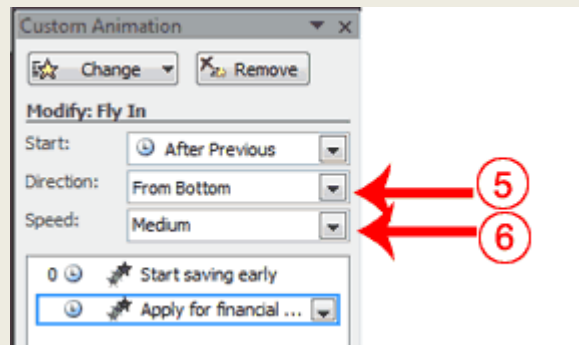
5. Click the down arrow next to the Direction field and then select From Bottom.
6. Click the down arrow next to the Speed field and then select Medium. If the Auto preview box is checked, PowerPoint automatically provides you with a preview of the animation. You can click the Play button ▶ Play on the Custom Animation pane at anytime to preview an animation.

Add Transitions

Transitions determine how your presentations move from one slide to the next. For example, a slide can move up onto the screen and replace the previous slide. PowerPoint provides several transition methods. You can add sound to a transition and you can control its speed. You can apply a transition to selected slides or to all of the slides in your presentation.

A transition can occur when the presenter clicks the mouse or after the amount of time you specify.

To apply a transition to selected slides:

1. On the Slides tab, hold down the Ctrl key and then click the slides to which you want to apply the transition.
2. Choose the Animations tab.
3. Click the More button ▼ in the Transition to this Slide group. A menu of transitions appears.
4. Click the transition you want to apply. PowerPoint applies the transition. As you roll your pointer over each transition, PowerPoint provides you with a live preview of the transition.

To apply a transition to all slides:

1. Choose the Animations tab.
2. Click the More button ▼ in the Transition to this Slide group. A menu of transitions appears.
3. Click the transition you want to apply. As you roll your pointer over each transition, PowerPoint provides you with a live preview of the transition.
4. Click the Apply to All button ➡ Apply To All in the Transition to This Slide group.

To add a sound to a transition:

1. Choose the Animations tab.
2. Click the down arrow next to the Transition Sound field and then click the sound you want. As you roll your pointer over each sound, PowerPoint plays the sound.

To set the speed of a transition:

1. Choose the Animations tab.
2. Click the down arrow next to the Transition Speed field and then click the speed you want.

.Add Transitions

1. Choose the Animations tab.
2. Click the More button ⊻ in the Transition to this Slide group. A menu of transitions appears.
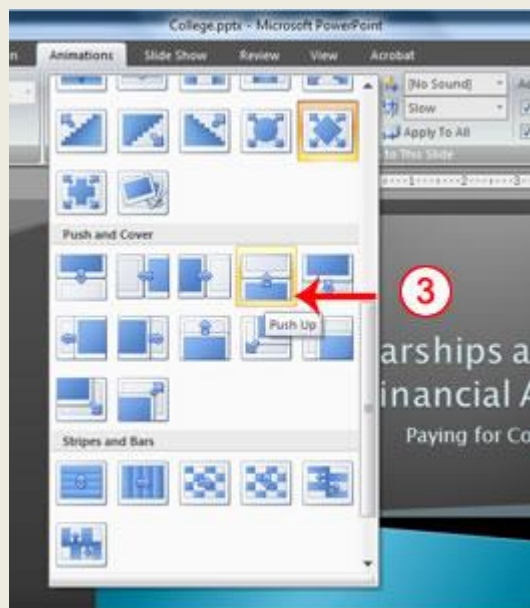
3. Click the Push Up transition. As you roll your pointer over each transition, PowerPoint provides you with a live preview of the transition.

Add Sound and Set the Speed

1. Click the down arrow next to the Transition Sound field and then click Click.
2. Click the down arrow next to the Transition Speed field and then click Slow.

Advance Slide
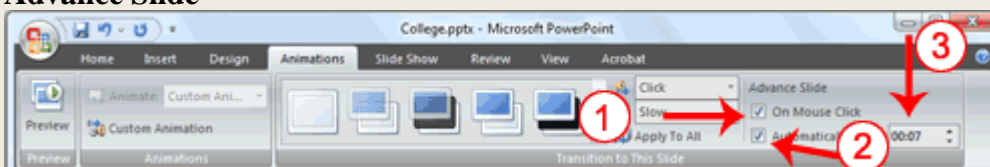
1. Check the On Mouse Click check box.
2. Click the Automatically After check box.
3. Type **00:07** in the Automatically After text box.
4. Click the Apply to All button [Apply To All]. PowerPoint applies all of your changes to all of the slides.
5. Click Slide 1 on the Slides tab.
6. Type **00:03** in the Automatically After text box. PowerPoint changes the timing for Slide 1.

Spell Check

PowerPoint checks you're spelling as you type and display errors with a red wavy line under the misspelled word. You can right-click and then select the correct spelling from the list of offerings on the menu that appears or select Spelling to open the Spelling dialog box. If you need to, you can initiate a spell check anytime you like. To start a spell check, do one of the following:

- Press F7.
- Choose the Review tab and then click the Spelling button.

Spell Check

1. Press F7
2. Correct any spelling errors PowerPoint finds. If PowerPoint does not find any errors, the Spelling Check is Complete message box appears. Click OK.

Use the Outline and Slides Tabs

By default, the Outline and Slides tabs are located on the left side of your PowerPoint window. The Outline tab displays the text contained in your presentation. The Slides tab displays a thumbnail of all your slides. You click the thumbnail to view the slide in the Slide pane.

1. Choose the Slides tab to view thumbnails of your slides.
2. Choose the Outline tab to view the text of your presentation as an outline.

Use Slide Sorter View

After you have created your PowerPoint slides, you can move, cut, copy, paste, duplicate, navigate, and view them in Sorter view. To view the slides in Sorter view, do one of the following:

- Choose the View tab and then click the Slide Sorter button in the Presentation Views group.
- Click the Slide Sorter button in the bottom-right corner of the PowerPoint window.

Slide Sorter View	
Task	**Procedure**
Move to first slide.	Use Ctrl+Home.
Move to last slide.	Use Ctrl+End.
Move to next slide.	Use the right arrow.
Move to previous slide.	Use the left arrow.
Select a slide.	Single-click the slide.
Open a slide in Normal view.	Double-click the slide.
Select slides.	Select a single slide: 1. Click the slide you want to select.

	Select multiple slides: 1. Hold down the Ctrl key. 2. Click the slides you want to select.
Delete a slide.	1. Select the slide or slides you want to delete. 2. Press the Delete key.
	1. Select the slide or slides you want to delete. 2. Choose the Home tab and then click the Delete button ⬚.
Copy a slide.	1. Select the slide. 2. Choose the Home tab. 3. Click the Copy button ⬚ in the Clipboard group.
	1. Select the slide. 2. Press Ctrl+C.
Paste a slide.	1. Select the slide after which you want the new slide or slides to appear. 2. Choose the Home tab. 3. Click the Paste button ⬚ in the Clipboard group.
	1. Select the slide after which you want the new slide or slides to appear. 2. Press Ctrl+V.
Cut a slide.	1. Select the slide or slides you want to cut. 2. Choose the Home tab. 3. Click the Cut button ⬚ in the Clipboard group.
	1. Select the slide or slides you want to cut. 2. Press Ctrl+X.
Move a slide.	1. Select the slide (or slides) you want to move. 2. Drag it to the new location.
Duplicate a slide.	1. Select the slide (or slides) you want to duplicate. 2. Press Ctrl+D.

Print

Power Point provides you with many printing options. You can print a large view of your slides or you can print your slides as handouts with 1, 2, 3, 4, 6, or 9 slides per page. You can also print your Notes pages or the Outline view of your slides. **To print slides:**
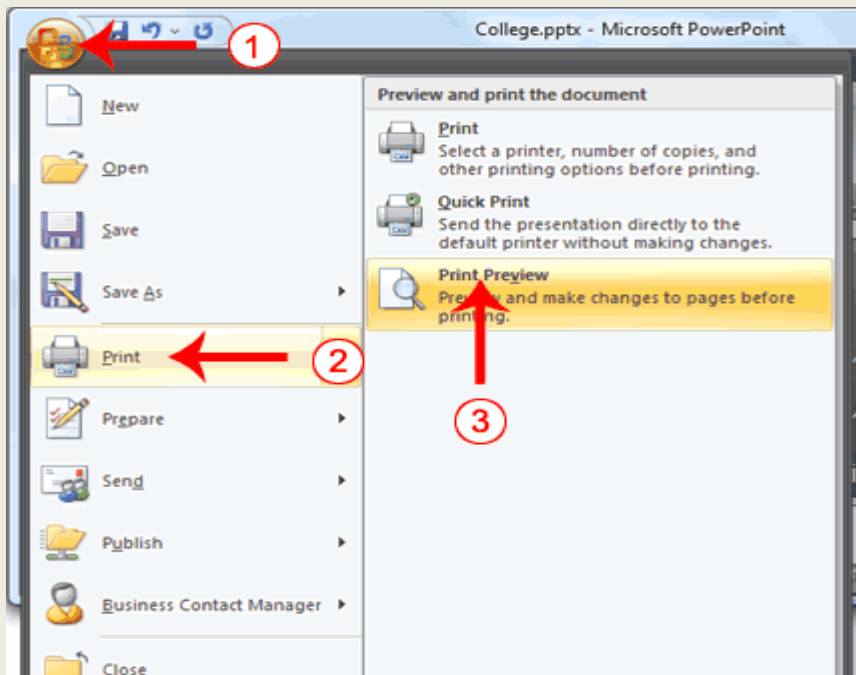
1. Click the Microsoft Office button. A menu appears.
2. Choose Print.
3. Click Print Preview. The Print Preview tab appears.
4. Click the down arrow next to the Print What field in the Page Setup group and then select Slides.
5. Click the Print button 🖨. The Print dialog box appears.
6. Click the down arrow next to the Color/Grayscale field to select whether you want your slides to print in color, grayscale, or black and white. If you are using a black and white printer, choose black and white. You will use less ink or toner.
7. Set the other print settings.
8. **Click OK. Your slides prints**

Questions

1. Explain the steps in creating a power point presentation?
2. Explain various parts of a slide?
3. How do you add animation, transition and sound effect to a presentation?
4. Explain about running and printing slides?

MODULE-3
Database System

Database

Database is an integrated collection of logically related records and files. In other words, it is a collection of inter related data item that can be processed by one or more application systems. The first databases were developed in the early 60s in US.

A database is a set of logically connected data files that have common access methods between them. It gives a centralized control over the database resources. A database system is a way of organizing information on a computer, implemented by a set of computer programs. Most commercial and non-commercial organizations use a database for storing their important information. Simply database is an ordered collection of information. Usually this is organized into tables, so we define a database as a collection of tables (together with some other, supporting, data structures, such as indices and views, and perhaps some computer code).

Its **characteristics** include:

* **Simplicity** - an easy way to collect, access-connects, and display information;

* **Stability** - to prevent unnecessary loss of data;

* **Security** - to protect against unauthorized access to private data;

* **Speed** - For fast results in a short time and for easy maintenance in case of changes in the organization that stores the information.

* **Reduce redundancy**- redundancy arises when the same data are stored unnecessarily at different places. DB system will avoid redundancy or duplication of data

Advantages of database system

The database system approach has the following advantages

1. **Data independence**

   This exists when it is possible to make changes in the data storage characteristics without affecting the application program's ability to access the data.

2. **Data shareability**

   Database permits simultaneous multiple access to the database. Thus multiple users can share the same data.

3. **Data integrity**

   Access to the database is controlled by the database management system. The system prevents the unauthorized access and manipulation of data in the database.

4. **Data availability**

   The database is centrally controlled and access to data permitted through authorization scheme. So the data resources are available to the authorized persons

5. **Data evolvability**

   The database is flexible and can store huge quantity of data. It can evolve as the number of applications and queries increases to meet the data requirements

Components of database system.

Nutshell, the components of database systems are

- **hardware**
- **software**
- **people**
- **procedures**
- **Data.** But this can further reclassified into:

a. **Database file-** it store the transaction data
b. **DBMS –** it is a set of programmes that manages the database. It controls the access, ensures security etc.,
c. **Host language interface system-** this interacts with application programmes and interpret their data request that are issued in high level languages
d. **Natural language interface-**it performs interpreting the queries and requests in natural languages like English
e. **Application programmes-** application programmes request data from the database for variety of uses
f. **Data dictionary-** data dictionary contains schema of the database. It defines each data item in the database, lists its structure, source, person authorized to modify it etc.,
g. **Report generator-** this generates output for users in the form of query response, reports, forms etc, It also produce documents like invoice and process adhoc queries and special report requests
h. **Users of DB-**there are three classes related users for DB, they are
   - Application programmers who writes the application programmes
   - End users who access the DB for various purposes
   - Database administrators who administer the database

Data Base Management System

DBMS = Database Management System- it is a collection of programs that manages the database structure and controls access to the data stored in the database. (Think electronic filing cabinet).it updates files and retrieve data by applications for processing It serves as the intermediary between the user and the database. DBMS maintains database by adding, deleting and modifying records in database. it permits multiple users to access the same files simultaneously.

DBMS is general purpose system software. It works in conjunction with the operating system to create process, store, retrieve, control and manage data. Its tasks include **defining** (specifying data types, structure, storage constraints etc.,), **constructing** (storing the data in storage medium under the control of DBMS) and **manipulating** (merging, generating reports, processing queries etc.,) database for application. Three main **components** of DBMS are;

1. **Data definition language (DDL)**
   The contents of database are created by using the DDL. It defines relationship between different data elements and serves as an interface for application programmes that uses data

2. **Data Manipulation Language(DML)**
   Data processed and updated by using a language called data manipulation language. It allows a user to query database and receive summary or customized reports. DML is usually integrated with other programming languages.

3. **Data Dictionary**
   Data dictionary contains schema of the database. It defines each data item in the database, lists its structure, source, persons authorized to modify it etc. in other words it gives **metadata ie** data about data, through which the end user data are integrated and managed**.**

Functions of a DBMS:
   - Data dictionary management
   - Data storage management
   - Data transformation and presentation
   - Data security management
   - Multiuser access control
   - Backup and recovery management
   - Data integrity management

- Database access languages and application programming interfaces.
- Database communication interfaces

Advantages of DBMS
- improved data sharing
- improved data security
- better data integration
- minimized data inconsistency
- improved data access
- improved decision making
- increased end-user productivity

Disadvantages of DBMS
- increased costs
- management complexity
- maintaining currency
- vendor dependence
- frequent upgrade/replacement cycles

Data Base Administrator (DBA)

He is a person responsible for the design and management of one or more databases and for the evaluation, selection and implementation of database management systems. In smaller organizations, the data administrator and database administrator are often one in the same; however, when they are different, the database administrator's function is more technical. The database administrator would implement the database software that meets the requirements outlined by the organization's data administrator and systems analysts. His tasks might include controlling an organization's data resources, using data dictionary software to ensure data integrity and security, recovering corrupted data and eliminating data redundancy and uses tuning tools to improve database performance.

Functions of DBA

One of the main reasons for using DBMS is to have a central control of both data and the programs accessing those data. A person who has such control over the system is called a Database Administrator (DBA). The following are the functions of a Database administrator

1. **Schema Definition**
   The Database Administrator creates the database schema by executing DDL statements. Schema includes the logical structure of database table (Relation) like data types of attributes, length of attributes, integrity constraints etc.

2. **Storage structure and access method definition**
   Database tables or indexes are stored in the following ways: Flat files, Heaps, B+ Tree etc..

3. **Schema and physical organization modification**
   The DBA carries out changes to the existing schema and physical organization.

4. **Granting authorization for data access**
   The DBA provides different access rights to the users according to their level. Ordinary users might have highly restricted access to data, while you go up in the hierarchy to the administrator, you will get more access rights.

5. **Routine Maintenance**
   Some of the routine maintenance activities of a DBA include; taking backup of database periodically. Ensuring enough disk space is available all the time. Monitoring jobs running on the database. Ensure that performance is not degraded by some expensive task. Performance tuning etc.,

Database architecture

There are three basic ways of organizing data in database. They are;

1. **Hierarchical structure**

   The records or aggregates' of data are logically conceived to be stored at different levels of hierarchy. Relations between records form a hierarchy. One record can be linked only one record. So it is one-to-one relationship (parent-child)

2. **Network structure**

   This structure can represent more complex logical relationship. This structure permits multiple relationships between data items. Any data element can be linked to any other data element so it is many-to -many relationships

3. **Relational structure**

   Relational structure is most recent of these three structures. All data element stored in the database are conceived to be stored in tables. Different data tables are linked up using common type of data item in different tables. The table is called **relation**, the columns of table are called as **domains** and the rows are called **tuples**

Relational database management system (RDBMS)

A relational database management system (RDBMS) is a database management system (DBMS) that is based on the relational model as introduced by **E. F. Codd.** Most popular databases currently in use are based on the relational database model.

Definition of an RDBMS is: a DBMS in which data is stored in tables and the relationships among the data are also stored in tables. The data can be accessed or reassembled in many different ways without having to change the table forms.

Popular Relational Database Packages

In order to suit to the requirements of the users there are nearly 100 of RDBMS soft ware's developed by various corporations are readily available. Examples of currently available soft wares are - 4th Dimension, Adabas D,   Black Ray, CA-Data com, Clarion, Clustrix, CSQL, , DataEase□ IBM DB2 Express-C□ Infobright, Mckoi SQL Database, Microsoft Access, Microsoft Jet Database Engine (part of Microsoft Access, Microsoft SQL Server, Microsoft SQL Server Express, SQLBase, SQLite.,Sybase Adaptive Server Enterprise., XSPRADA, Zoduna Data Store (Designed for mobile platform) etc.,

Following are the important popularly used current RDBMS packages

Microsoft SQL Server

Microsoft SQL Server is a relational database server, developed by Microsoft: It is a software product whose primary function is to store and retrieve data as requested by other software applications, be it those on the same computer or those running on another computer across a network (including the Internet). There are at least a dozen different editions of Microsoft SQL Server aimed at different audiences and for different workloads (ranging from small applications that store and retrieve data on the same computer, to millions of users and computers that access huge amounts of data from the Internet at the same time).

Oracle Database

The Oracle Database (commonly referred to as Oracle RDBMS or simply as Oracle) is an object-relational database management system (ORDBMS) produced and marketed by Corporation. An Oracle database system—identified by an alphanumeric system identifier or SID comprises at least one instance of the application, along with data storage. An instance—identified persistently by an instantiation number (or activation id: SYS.V_$DATABASE.ACTIVATION#)—comprises a set of operating-system processes and memory-structures that interact with the storage. Typical processes include PMON (the process monitor) and SMON (the system monitor).The Oracle RDBMS stores data logically in the form of table spaces and physically in the form of data files ("data files").Table spaces can contain various types of memory segments, such as Data Segments, Index Segments, etc. Segments in turn comprise one or more extents.

Extents comprise groups of contiguous data blocks. Data blocks from the basic units of data storage. There is also a partitioning feature available on newer versions of the database, which allows tables to be partitioned based on different set of keys. Specific partitions can then be easily added or dropped to help manage large data sets.

Microsoft Office Access

Microsoft Office Access, previously known as **Microsoft Access**, is a relational database management system from Microsoft that combines the relational Microsoft Jet Database Engine with a graphical user interface and software-development tools. MS Access is detail is given in next chapter

Database Security and security measures

Database security concerns the use of a broad range of information security controls to protect databases (potentially including the data, the database applications or stored functions, the database systems, the database servers and the associated network links) against compromises of their confidentiality, integrity and availability. It involves various types or categories of controls, such as technical, procedural/administrative and physical. Database security is a specialist topic within the broader realms of computer security, information security and risk management.

Security risks to database systems include, for example:

- Unauthorized or unintended activity or misuse by authorized database users, database administrators, or network/systems managers, or by unauthorized users or hackers (e.g. inappropriate access to sensitive data, metadata or functions within databases, or inappropriate changes to the database programs, structures or security configurations);
- Malware infections causing incidents such as unauthorized access, leakage or disclosure of personal or proprietary data, deletion of or damage to the data or programs, interruption or denial of authorized access to the database, attacks on other systems and the unanticipated failure of database services;
- Overloads, performance constraints and capacity issues resulting in the inability of authorized users to use databases as intended;
- Physical damage to database servers caused by computer room fires or floods, overheating, lightning, accidental liquid spills, static discharge, electronic breakdowns/equipment failures and obsolescence;
- Design flaws and programming bugs in databases and the associated programs and systems, creating various security vulnerabilities (e.g. unauthorized privilege escalation), data loss/corruption, performance degradation etc.;
- Data corruption and/or loss caused by the entry of invalid data or commands, mistakes in database or system administration processes, sabotage/criminal damage etc.

Types of information security control are appropriate to databases, including:

- **Access control**- access control includes authentication, authorization and audit. It also includes measures such as physical devices, including biometric scans and metal locks, hidden paths, digital signatures, encryption, social barriers, and monitoring by humans and automated system
- **Auditing-**the purposes of an IT audit are to evaluate the system's internal control design and effectiveness. This includes, but is not limited to, efficiency and security protocols, development processes, and IT governance or oversight. IT audits are also known as "automated data processing (ADP) audits" and "computer audits". They were formerly called "electronic data processing (EDP) audits"
- **Authentication**-A computer system that is supposed to be used only by those authorized must attempt to detect and exclude the unauthorized. Access to it is therefore usually controlled by insisting on an authentication procedure to establish with some degree of confidence the identity of the user, granting privileges established for that identity

- **Encryption**-encryption is the process of transforming information (referred to as plaintext) using an algorithm (called a cipher) to make it unreadable to anyone except those possessing special knowledge, usually referred to as a key. The result of the process is encrypted information (in cryptography, referred to as cipher text). The reverse process, i.e. to make the encrypted information readable again is referred to as decryption, (i.e. to make it unencrypted).
- **Integrity controls**- Integrity control means keeping the data consistent and correct by means of controls that a database administrator puts on the database. Only persons with privileged accounts can load data into the database. Even with that, there are rules on the table fields that allow only a certain type of data to be inserted.
- **Backups-**In information technology, a backup or the process of backing up is making copies of data which may be used to restore the original after a data loss . Primary purpose of back up is to recover data after its loss, be it by data deletion or corruption. Data loss is a very common experience of computer users. The secondary purpose of backups is to recover data from an earlier time, according to a user-defined data retention policy, typically configured within a backup application for how long copies of data are required.
- **Application security-** purpose of application security includes:
a) Knowing your threats.
b) Securing the network, host and application.
c) Incorporating security into your software development process

Digital signature and Digital certificate- Digital signatures are commonly used for software distribution, financial transactions, and in other cases where it is important to detect forgery or tampering. A **digital signature** or **digital signature scheme** is a mathematical scheme for demonstrating the authenticity of a digital message or document. A valid digital signature gives a recipient reason to believe that the message was created by a known sender, and that it was not altered in transit. a public key certificate (also known as a digital certificate or identity certificate) is an electronic document which uses a digital signature to bind a public key with an identity — information such as the name of a person or an organization, their address, and so forth. The certificate can be used to verify that a public key belongs to an individual.

Microsoft Access

Microsoft Access is a database package. It is an important part of MS Office. It is a relational database application. A *database* is an organized collection of records. Telephone and address books are examples of paper databases. With Access, you can create a computerized database. For example, you can use Access to organize the students who attend a school, the courses they take, and the instructors who teach them. After you create an Access database, you can search it, manipulate it, and extract information from it. Table is the basic unit of recording data in Access.

To start Access

You use windows to interact with Access. To begin, start Access 2007. You screen will look similar to the one shown here.

The Microsoft Office Button

In the upper-left corner of the Access window is the Microsoft Office button. When you click the button, a menu appears. You can use the menu to create a new file, open an existing file, save a file, and perform many other tasks.

The Quick Access Toolbar

Next to the Microsoft Office button is the Quick Access toolbar. The Quick Access toolbar provides you with access to commands you frequently use. By default, Save, Undo, and Redo appear on the Quick Access toolbar. You use Save to save an object, Undo to roll back an action you have taken, and Redo to reapply an action you have rolled back.

The Title Bar

The Title bar is located at the top in the center of the Access window. The Title bar displays the name of the database on which you are currently working.

The Ribbon

In Access 2007, you use the Ribbon to issue commands. The Ribbon is located near the top of the Access window, below the Quick Access toolbar. At the top of the Ribbon are several tabs; clicking a tab displays related command groups. Within each group there are related command buttons. You click buttons to issue commands or to access menus and dialog boxes. You may also find a dialog box launcher in the bottom-right corner of a group. When you click the dialog box launcher, a dialog box makes additional commands available.

Access Objects
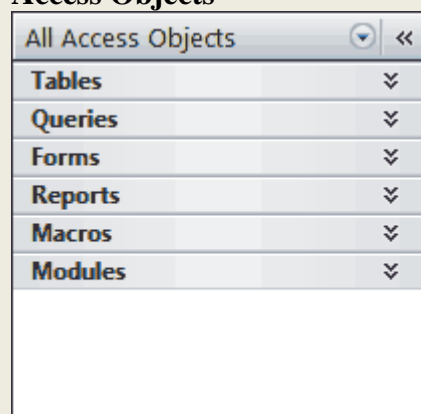
- You click the double down-arrows ⌄ to view objects. The double down-arrows change to double up-arrows ⌃ .
- You click the double up-arrows ⌃ to hide objects. The double up-arrows change to double down-arrows ⌄ .

	Objects
Tables	In Access, data is stored in tables. A table is a set of columns and rows, with each column referred to as a field. Each value in a field represents a single type of data. Each row of a table is referred to as a record.
Queries	You use queries to retrieve specific data from your database and to answer questions about your data. For example, you can use a query to find the names of the employees in your database who live in a particular state.
Forms	Forms give you the ability to choose the format and arrangement of fields. You can use a form to enter, edit, and display data.
Reports	Reports organize or summarize your data so you can print it or view it onscreen. You often use reports when you want to analyze your data or present your data to others.
Macros	Macros give you the ability to automate tasks. You can use a macro to add functionality to a form, report, or control.
Modules	Like macros, modules give you the ability to automate tasks and add functionality to a form, report, or control. Macros are created by choosing from a list of macro actions, whereas modules are written in Visual Basic for Applications.

You double-click an object to open the object. Objects that are open appear on tabs. Right-click a tab to view a menu of options you can perform, such as save the object, close the object, or change the view.

Change Views

A view is a way of looking at an object. For example, in Access, data is stored in tables. Two of the possible ways you can view a table are Datasheet view and Design view. You can see the data contained in a table in Datasheet view. You can see the design of a table in Design view. When you open an object, buttons appear in the lower-right corner of the Access window. You can use the View button on the Home tab to change views, or you can click the proper button in the lower-right corner of the window.

Close a Database and Exit Access

This completes the introduction to Access using the Northwind database. The following describes how you close a database and exit Access.

To close a database:
1. Click the Microsoft Office button. A menu appears.
2. Click Close Database. Access closes the database.

To exit Access:
1. Click the Microsoft Office button. A menu appears.
2. Click Exit Access. You exit Access.

Create a Database

When you start Access, the Getting Started with Microsoft Office Access screen appears. You can use this screen to create a database. Within a database, you can do such things as enter data, create reports, and retrieve data. You can create a blank database or you can use one of the templates provided by Microsoft. When you use a template, Access creates forms you can use to enter data, reports you can use to retrieve data, and more. You can modify the forms, reports, and other objects to suit your needs. The following templates are included with Access: Assets, Contacts, Events, Faculty, Issues, Marketing Projects, Projects, Sales Pipeline, Students, and Tasks. Other templates are available online. Each template creates a database related to the title. For example, the Faculty template creates a faculty database that includes tables, queries, forms, and reports related to faculty. In Access, you use tables to store data, queries to retrieve data, forms to enter data, and reports to display data.

To use a template to create a database:
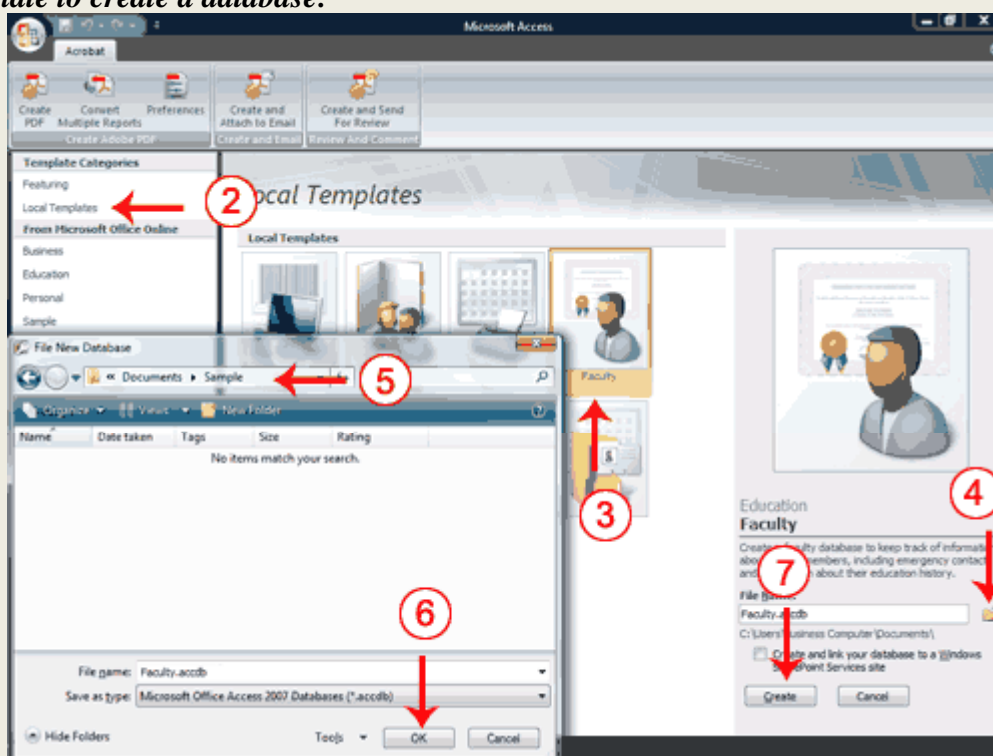
1. Start Access. The Getting Started with Microsoft Office Access screen appears.
2. Click Local Templates. Icons representing local templates appear in the center of the window.
3. Click the icon for the template you want to use.
4. Click the Browse button. The File New Database window appears.
5. Locate the folder in which you want to store your database.
6. Click OK.
7. Click Create. Access creates and opens your database.
8. Open the Navigation pane. Access displays the tables, queries, forms, reports and other objects related to the database you selected. You may wish to display the objects by type.

Opening an existing database

1. Click the Office button. A menu appears.
2. Click Open.
3. Locate the folder in which you stored your database.
4. Click the database name.
5. Click Open. Access opens the database.

We can also open an existing database by pressing Ctrl-O and then following steps 3 through 5

Create a Blank Database

A blank database is a database with nothing in it. You must create all the tables, forms, reports, queries, and so on. If you cannot find a template that suits your needs, create a blank database. After you create the database, Access opens to a datasheet and makes available the tools you need to create objects. Creating tables is the first step in building a database. You will learn more about creating tables in the next lesson.
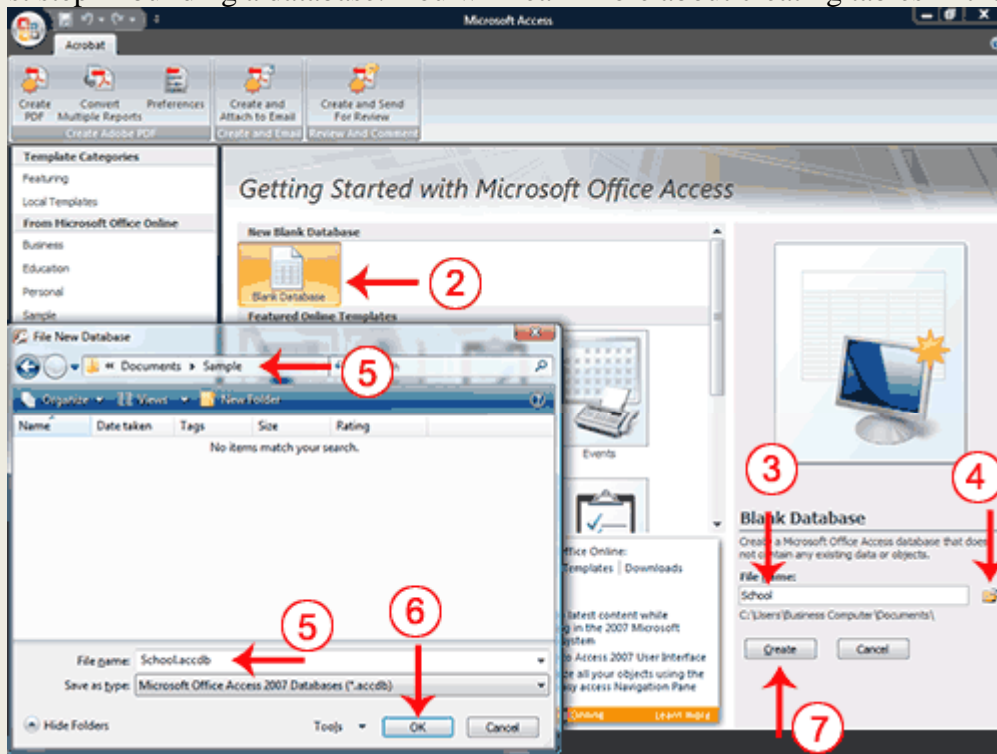
1. Start Access.
2. Click Blank Database.
3. Type the name you want to give your database in the File Name field. Access will automatically append .accdb to the name.
4. Click the Browse button. The File New Database window appears.
5. Locate the folder in which you want to store your database. Note that the name of the file appears in the File Name field.
6. Click OK.
7. Click the Create button. Access creates the database and opens a datasheet with the Table Tools available to you.

Datasheet

In Access, data is stored in tables. A datasheet displays the information stored in a table in columns and rows. The columns are called fields and the rows are called records. You can use a datasheet to create a table, enter data, retrieve data, and perform other tasks.

Creating Microsoft Access Tables

Tables are the foundation of an Access database. Access stores data in tables. This lesson teaches you how to create a table, add fields to a table, assign data types to fields, and set field properties.

Understanding Tables

A table is a set of columns and rows. Each column is called a **field.** Within a table, each field must be given a name and no two fields can have the same name. Each value in a field represents a single category of data. For example, a table might have three fields: Last Name, First Name, and Phone Number.
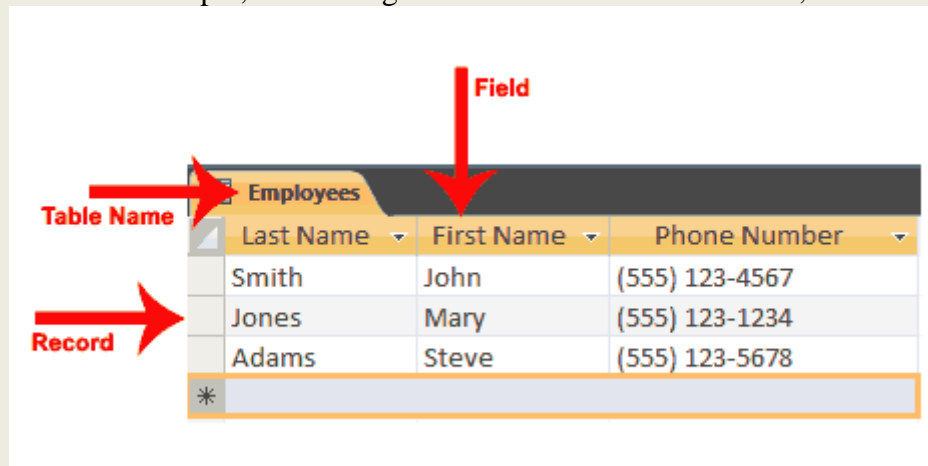
After Access creates a blank database, it opens in Datasheet view and makes available the tools you need to create a table. Datasheet view displays a table as a set of columns and rows. When you view a blank database for the first time in Datasheet view, you see a column named ID. This column is by default the primary key field.

*A **primary key*** is a field or combination of fields that uniquely identify each record in a table. No two records in a table should have the same values in every field. For example, the following should not occur in a table.

Last Name	First Name	City
Saju	Ravi	Calicut
Saju	Ravi	Calicut

In cases like this, you can use the ID field as the primary key field and use it to make each record unique. The ID field has a data type of AutoNumber; as a result, Access automatically creates a unique number for each record in the database. The resulting table will look like the one shown here.

ID	Last Name	First Name	City
1	Saju	Ravi	Calicut
2	Saju	Ravi	Calicut

When you save your table for the first time, Access gives you the opportunity to name your table. Each table name must be unique; hence, two tables in the same database cannot have the same name. The table name should describe the data in the table; can consist of letters, numbers, and spaces; and can be up to 64 characters long. When choosing a table name, try to keep it short.

You can save a table by clicking the Save button on the Quick Access toolbar or by right-clicking the Tables tab and then choosing 'save' from the menu that appears.

To add fields to a table:
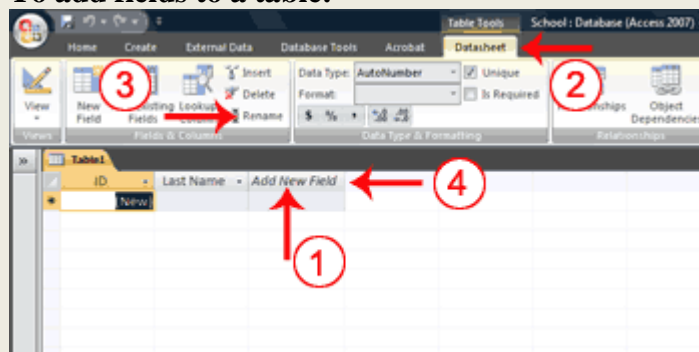
1. Click the Add New Field column label.
2. Activate the Datasheet tab.
3. Click Rename in the Fields & Columns group.
4. Type the field name.
5. Press Enter. Access creates the field.
6. Type the next field name. Access creates the field. Continue until you have created all of the fields in your table.
7. **Press Enter without entering a field name to end your entries.   Or**
1. Right-click the Add New Field column label. A menu appears.
2. Click Rename Column.
3. Type the field name.
4. Press Enter. Access creates the field.
5. Type the next field name. Access creates the field. Continue until you have created all of the fields in your table.

Name and Save a Table

After you create a table, you must name and save it.

To name and save a table:
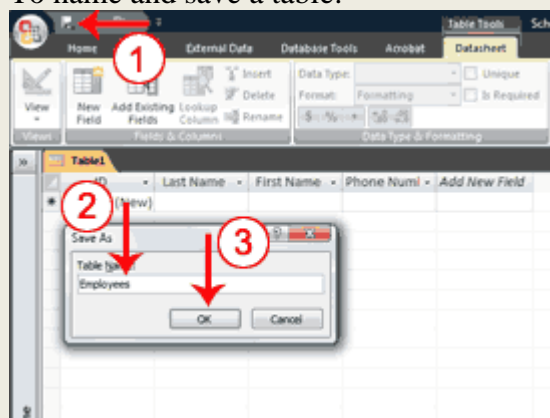
1. Click the Save button on the Quick Access toolbar. The Save As dialog box appears.
2. Type the name you want to give your table.
3. Click OK. Access names your table.

.Understanding Data Types

In Access, you use data types to specify the type of data each field can capture. A field with a data type of text can store alphabetic characters and numbers. Generally speaking, you cannot perform mathematical calculations by using a text field. For example, you can use a text field to store a House address. Unless you do some manipulation, you cannot use the numbers in the street address in mathematical calculations. The following list summarizes all the field data types available in Microsoft Access, their uses, and their storage sizes.

Text -Use for text or combinations of text and numbers, such as addresses, or for numbers that do not require calculations, such as phone numbers, part numbers, or postal codes. Stores up to 255 characters.

Memo -Use for lengthy text and numbers, such as notes or descriptions. Stores up to 65,536 characters.

Number -Use for data to be included in mathematical calculations, except calculations involving money (use Currency type).

Date/Time -Use for dates and times. Stores 8 bytes.

Currency -Use for currency values and to prevent rounding off during calculations. Stores 8 bytes.

AutoNumber-Use for unique sequential (incrementing by 1) or random numbers that are automatically inserted when a record is added. Stores 4 bytes

Yes/No -Use for data that can be only one of two possible values, such as Yes/No, True/False, On/Off. Null values are not allowed. Stores 1 bit.

OLE Object -Use for OLE objects (such as Microsoft Word documents, Microsoft Excel spreadsheets, pictures, sounds, or other binary data) that were created in other programs using the OLE protocol. Stores up to 1 gigabyte (limited by disk space).

Hyperlink -Use for hyperlinks. A hyperlink can be a UNC path or a URL. Stores up to 64,000 characters.

Views

Views are different ways of looking at the same object. Tables have four views:

Datasheet view - to create a table, edit data, or view data

Pivot Table view - to create a pivot table

Pivot Chart view- to create a pivot chart

Design view - to create a table or modify an existing table.

Design View

Access provides several ways to view the objects in your database. You can use **Design view** to create or modify an Access table. You can use the View button on the Home tab or the Table Design button on the Create tab to change to Design view.

To use Design view to create a new table:

1. Activate the Create tab.
2. Click Table Design in the Tables group. Access changes to Design view and the Table Tools become available.
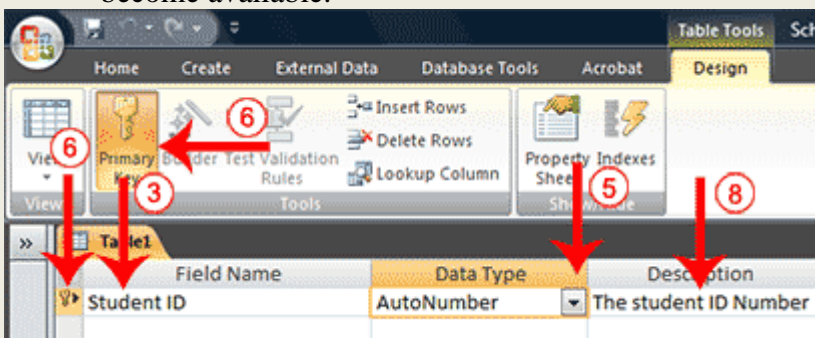
3. Type the first field name in the Field Name field.
4. Press the Tab key.
5. Click the down-arrow that appears when you click in the Data Type field and then select a data type.

6. Click Primary Key if the column you created is a primary key. A small key appears next to the field name.
7. Press the Tab key.
8. Type a description. The description is optional.
9. Press the Tab key. Access moves to the Field Name field.
10. Repeat steps 3 through 10 until you have created all of your fields.

To set field properties:
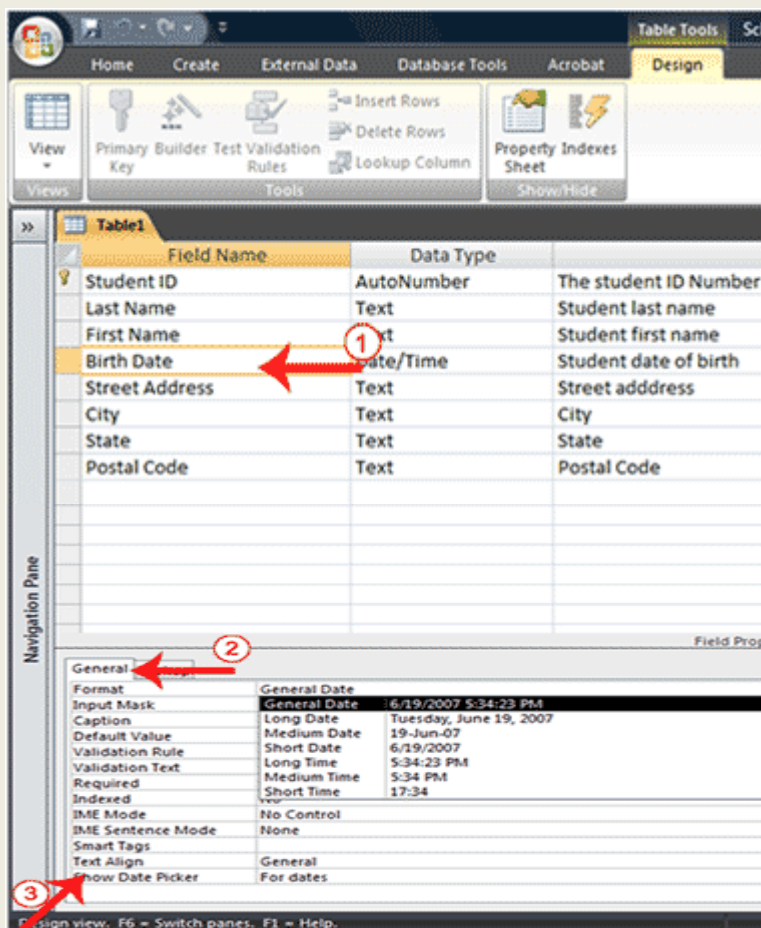
1. Click the field for which you want to set the field properties.
2. Activate the General tab in the Field Properties area.
3. Set the properties you want to set.
4. Repeat steps 1 through 3 until you have set all the properties for all fields.

.To change the view:
1. Activate the Home tab.
2. Click the down-arrow under the View button. A menu appears.
3. Click the view you want. Access changes to the view you chose.

Create Relationships

In Access, you store data in multiple tables and then use relationships to join the tables. After you have created relationships, you can use data from all of the related tables in a query, form, or report.

Primary key and foreign key

A *primary key* is a field or combination of fields that uniquely identify each record in a table. A *foreign key* is a value in one table that must match the primary key in another table. You use primary keys and foreign keys to join tables together—in other words, you use primary keys and foreign keys to create relationships.

There are two valid types of relationships: **one-to-one** and **one-to-many**. In a one-to-one relationship, for every occurrence of a value in table A, there can only be one matching occurrence of that value in table B, and for every occurrence of a value in table B, there can only be one matching occurrence of that value in table A. In a one-to-many relationship, for every occurrence of a value in table A, there can be zero or more matching occurrences in table B, and for every one occurrence in table B, there can only be one matching occurrence in table A.

When tables have a one-to-many relationship, the table with the one value is called the ***primary*** table and the table with the many values is called the ***related*** table. ***Referential integrity*** ensures that the validity of the relationship between two tables remains intact. It prohibits changes to the primary table that would invalidate an entry in the related table. For example, a school has students. Each student can make several payments, but each payment can only be from one student. The Students table is the primary table and the Payments table is the related table.

Students		
Student ID	**Last Name**	**Place**
Primary Key		
1	Raja	Vatakara
2	Manu	Quilandy
3	Vijay	Kozhikode

Payments			
Payment ID	Student ID	Amount Due	Amount Paid
Primary key	Foreign key		
1	1	500	500
2	2	700	300
3	3	500	250
4	2	400	300
5	3	250	250

If you delete Student ID 1 from the Students table, Student ID 1 is no longer valid in the Payments table. Referential integrity prevents you from deleting Student ID 1 from the Students table. Also, if the only valid Student IDs are 1, 2, and 3, referential integrity prevents you from entering a value of 4 in the Student ID field in the Payments table. A foreign key without a primary key reference is called an orphan. Referential integrity prevents you from creating orphans.

To create relationships:

1. Close all tables and forms. (Right-click on the tab of any Object. A menu appears. Click Close All.)
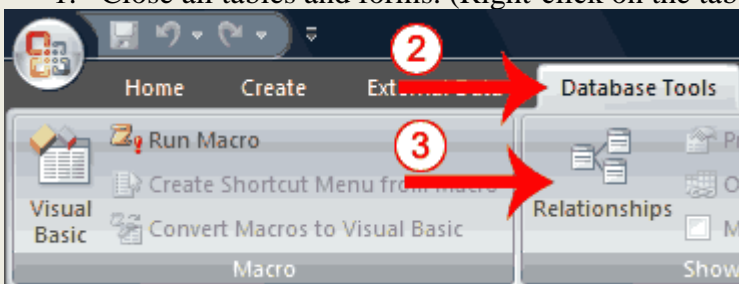
2. Activate the Database Tools tab.
3. Click the Relationships button in the Show/Hide group. The Relationships window appears.
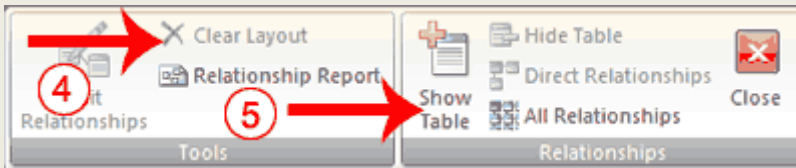
4. If anything appears in the relationships window, click the Clear Layout button in the Tools group. If you are prompted, click Yes.
5. Click the Show Table button in the Relationships group. The Show Table dialog box appears.
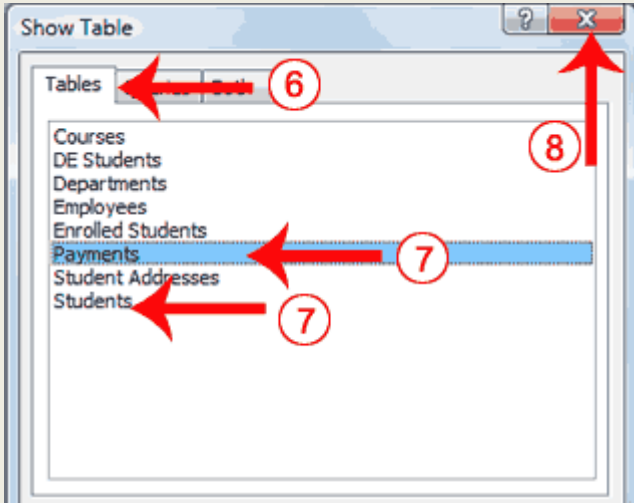
6. Activate the Tables tab if your relationships will be based on tables, activate the Queries tab if your relationships will be based on queries, or activate the Both tab if your relationships will be based on both.
7. Double-click each table or query you want to use to build a relationship. The tables appear in the Relationships window.
8. Click the Close button to close the Show Table dialog box.
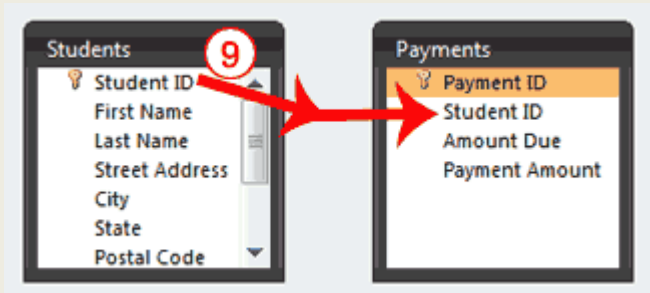
9. Drag the Primary table's primary key over the related table's foreign key. After you drag the primary key to the related table's box, the cursor changes to an arrow. Make sure the arrow points to the foreign key. The Edit Relationships Dialog box appears.
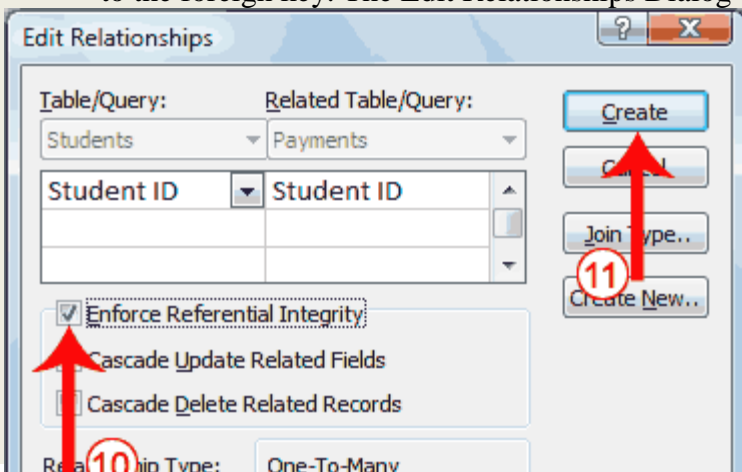
10. Click the Enforce Referential Integrity checkbox.
11. Click Create. Access creates a one-to-many relationship between the tables.
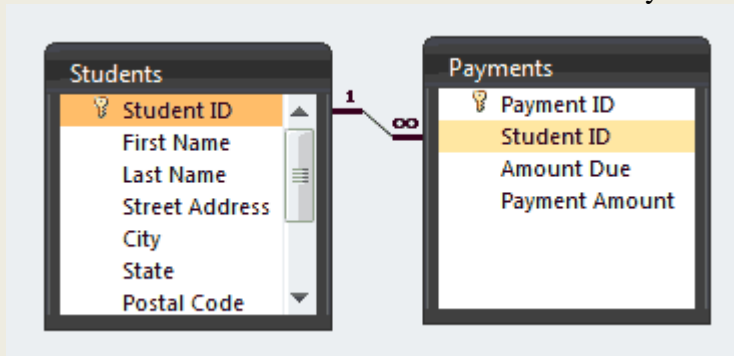
12. Click the Save button on the Quick Access toolbar to save the relationship

Creating Microsoft Access Queries

Queries are very useful tools when it comes to databases and they are often called by the user through a form. They can be used to search for and grab data from one or more of your tables, perform certain actions on the database and even carryout a variety of calculations depending on your needs.

Microsoft Access allows for many types of queries, some of the main ones being select, action, parameter and aggregate queries. They can be thought of as just another part of your database – essentially an object like a table or a macro.

When it comes time to build a query for your database, you have two ways to go about creating it.

1. Either use the Query Wizard that Microsoft Access provides for you, or
2. Create your own queries from scratch.

Query types:

Select Query

The select query is the simplest type of query and because of that, it is also the most commonly used one in Microsoft Access databases. It can be used to select and display data from either one table or a series of them depending on what is needed. It is the user-determined criteria that tell the database what the selection is to be based on. After the select query is called, it creates a "virtual" table where the data can be changed, but at no more than one record at a time.

Action Query

When the action query is called, the database undergoes a specific action depending on what was specified in the query itself. This can include such things as creating new tables, deleting rows from existing ones and updating records or creating entirely new ones.Action queries are very popular in data management because they allow for many records to be changed at one time instead of only single records like in a select query.

Four kinds of action queries are:

1. **Append Query** – takes the set results of a query and "appends" (or adds) them to an existing table.
2. **Delete Query** – deletes all records in an underlying table from the set results of a query.
3. **Make Table Query** – as the name suggests, it creates a table based on the set results of a query.
4. **Update Query** – allows for one or more field in your table to be updated.

Parameter Query

In Microsoft Access, a parameter query works with other types of queries to get whatever results you are after. when using this type of query, you are able to pass a parameter to a different query, such as an action or a select query. It can either be a value or a condition and will essentially tell the other query specifically what you want it to do.

Aggregate Query

A special type of query is known as an aggregate query. It can work on other queries (such as selection, action or parameter) just like the parameter query does, but instead of passing a parameter to another query it totals up the items by selected groups.

Designing and running queries

Following are the steps for designing queries in MS Access

1. Open the Query Design Grid

The first stage is to select the CREATE TAB and then go to the OTHER group on the far right of the ribbon. Then click on the QUERY DESIGN ICON to bring up the query design grid.

2. Select Table for Query

The next stage is to select which table you are going to use in this query. When the query design grid opened, the SHOW TABLE pop up window should also have opened. If necessary you can open this window manually by clicking the SHOW TABLE icon in the QUERY SET UP group on the Access Ribbon.
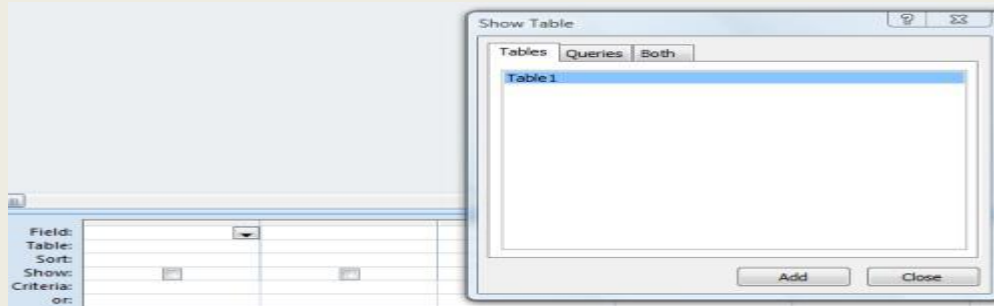
Suppose there is only one table in your database - TABLE1. This should be highlighted when the window opens, but if not, just click on it once. Next click ADD. When you close the pop-up window by clicking x, you should see a box labeled TABLE1 above the query design grid.

3. Select fields from Table

In the table1 box, you will see a list of its field names. We are going to use all the fields in this query, so select each one individually by double clicking on their names. You will now see the field names at the top of each column in the Query Design Grid.
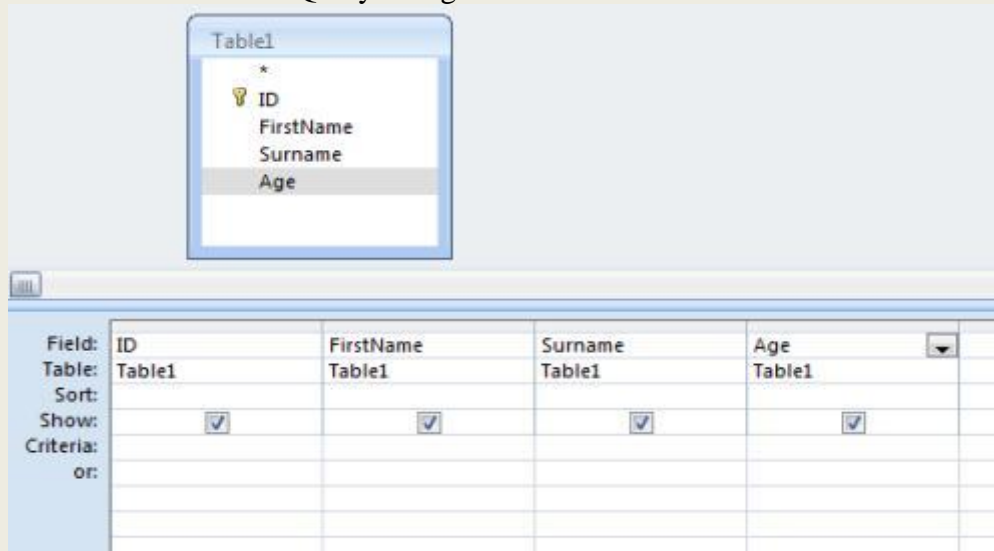
4. Enter query criteria

As you may remember, the purpose of our query is to extract records where the persons name is greater than or equal to 35. To do this we enter the criteria into the appropriate cell of the query design grid. In this case you need to go to the AGE column of the CRITERIA row, and enter the formula >=35.

Field:	ID	FirstName	Surname	Age
Table:	Table1	Table1	Table1	Table1
Sort:				
Show:	✓	✓	✓	✓
Criteria:				>=35
or:				

5. Save and Run Query

Click the save icon above the Access Ribbon. When prompted for the query name, just use the default QUERY1. To run your query, click the RUN icon in the RESULTS GROUP of the Access Ribbon. You should now be presented with a datasheet displaying your query results - JOHN JONES 35 and JOE BROWN 39.

	ID	FirstName	Surname	Age
	1	John	Jones	35
	4	Joe	Brown	39
*	(New)			

Now we have created and run query.

Creating Reports

Reports organize and summarize data for viewing online or for printing. A detail report displays all of the selected records. You can include summary data such as totals, counts, and percentages in a detail report. A summary report does not list the selected records but instead summarizes the data and presents totals, counts, percentages, or other summary data only. Access has several report generation tools that you can use to create both detail and summary reports quickly. This lesson teaches you how to create reports.

Use the Report Button

The Report button creates a simple report that lists the records in the selected table or query in a columnar format.

By using the Report button:
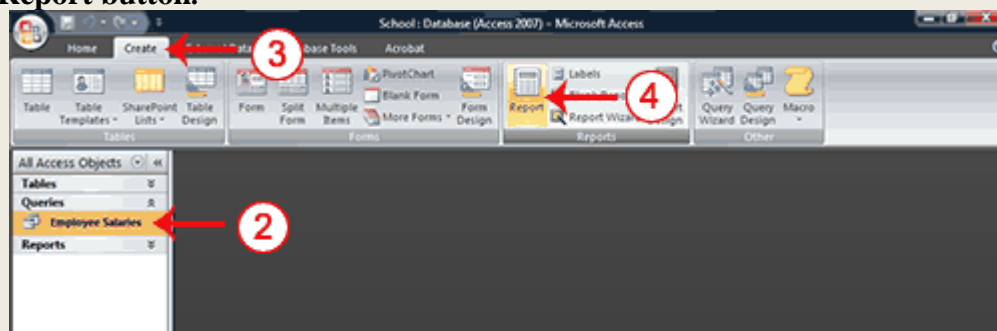
1. Open the Navigation pane.
2. Click the table or query on which you want to base your report.
3. Activate the Create tab.
4. Click the Report button in the Reports group. Access creates your report and displays your report in Layout view. You can modify the report.

: After you create a report, you can save it.
1. Click the Save button on the Quick Access toolbar. Access saves the report unless you are saving for the first time. If you are saving for the first time, the Save As dialog box appears.
2. Type the name you want to give your report.
3. Click OK. Access saves the report. You can now access the report by using the Navigation pane.

Use the Report Wizard

You can also use the Report Wizard to create a report. The Report Wizard provides you with more flexibility than you get by using the Report button. You can choose the tables and fields, group the data, sort the data, summarize the data, choose a layout and orientation, apply a style, and title your report. Follow the steps shown here to create a report by using the Report Wizard:

Create a report by using the Report Wizard:

Open the Report Wizard
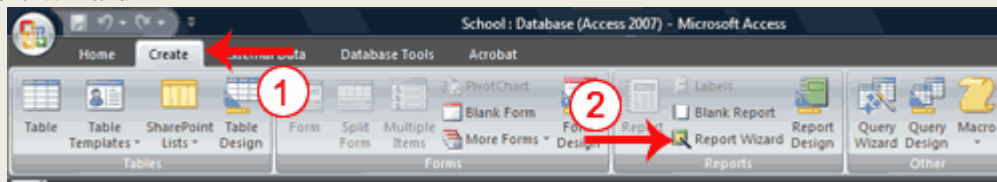
1. Activate the Create tab.
2. Click Report Wizard in the Reports group. The Report Wizard appears.

Select tables, queries and fields

When using the Report Wizard, you can use fields from multiple tables and/or queries if the tables/queries have a relationship.
1. Click the down-arrow next to the Table/Queries field and then click the table from which you want to select fields.
2. Click a field and then click the single-right arrow to select a single field, click the double-right arrows to select all fields, click a field and then click the single-left arrow to deselect a single field, or click the double-left arrow to deselect all fields.
3. Repeat steps 1 and 2 for each table from which you want to select fields.
4. Click Next. The Report Wizard moves to the next page
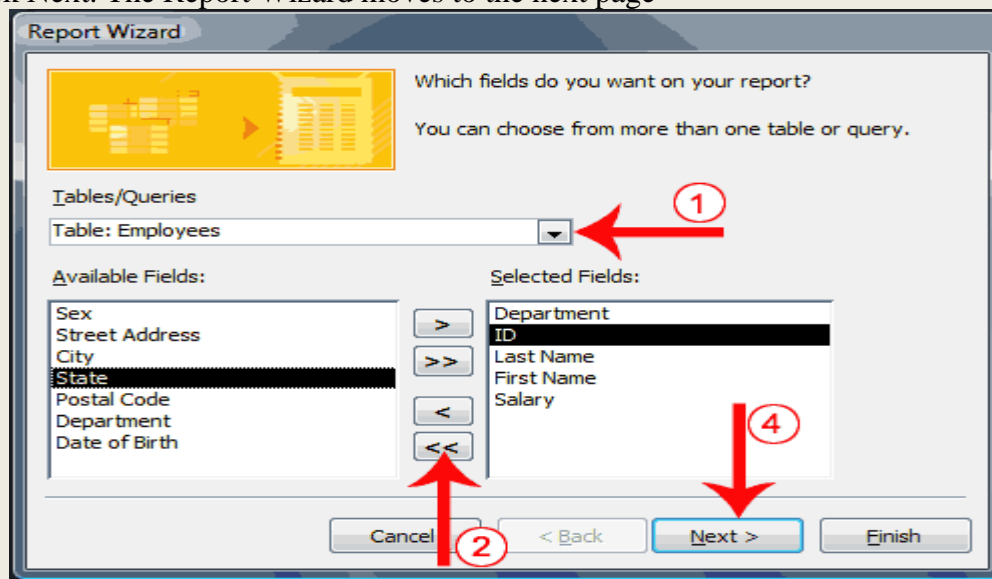
.
By using report wizard we can format and modify report in Access.

A. Group

When using the Report Wizard, you can group data. For example, if your data is grouped by the Department field and the records in the Department field have values such as Administration, Computer Science, and English. Access will group all of the data for the Administration department together, all of the data for the Computer Science department together, and all of the data for the English department together.

B. Sort and summarize

By using the Report Wizard, you can create up to four levels of sort. Access sorts the first level, and then sorts the second level within that sort, and so on. If you have grouped your data, you can summarize it by displaying the sum, average, and minimum or maximum value for each numeric field

C. Layout and orientation

You can choose the layout and orientation of your report.

D. .Style

A style is a set of formats consisting of such things as background colors, fonts, font colors, and font sizes. Access supplies predesigned styles that format titles, labels, and more. When you choose a style, the left side of the window displays a preview.

1. Click to select a style.
2. Click Next. The Report Wizard moves to the next page.

E. Create a title

On the final page of the Report Wizard, you can title your report. The title appears at the top of the report and on the Navigation pane.

1. Type the title you want to give the report.
2. Click Finish. Access creates, saves, and opens your report in Layout view.

F. Printing of report

Print a Report

Often, the people who use Access data only see a printed report. In Print Preview, you can see exactly how your report will look when printed, you can make changes to it, and you can print it. To print, click the Print button in the Print group. The Print dialog box opens and you can select your print options.

To change to print Preview:

1. Open your report.
2. Activate the Home tab.
3. Click the down-arrow under the View button. A menu appears.
4. Click Print Preview. Access changes to Print Preview.

Questions

1. What is database system? What are its features?
2. What is DBMS? Explain its components and advantages?
3. Who is DBA? What are his functions?
4. Discuss types of database architecture?
5. Discuss database security and security measures?
6. What is MS Access? What is its use?
7. How do you create a table in MS Access?
8. What is RDBMS? And how to you create relationship?
9. Describe the steps for designing simple Query?
10. Discuss various types of queries in MS Access?
11. How do you create and print report in Access?
12. Explain the terms-*primary key, foreign key and referential integrity*.

Module- 4

INTERNET

The Internet is a worldwide network of networks. The Internet, sometimes called simply "the Net," is a universal system of computer networks. It is a configuration of smaller networks and other connected machines spanning the entire globe. Around the world, each country has at least one backbone network that operates network that operates at very high speed and carries the bulk of the traffic. Other smaller Networks connect to that backbone.

The Internet, a global system of connected computers, was once available only to the government, academic, and research communities. Now the greatly publicized information superhighway is accessible to anyone with time, interest, and curiosity .Information on the internet and opportunities to use it are growing at a phenomenal rate. The last decade has witnessed an explosion of internet activity. Many of these users are in Corporation, Universities, and Government Institution . But the number of users connecting from home also continues to grow dramatically

Development of Internet

In 1969, the American defense Department wanted to connect all the computers in the department offices and military research institutions. When it was connected, the network was called ARPANET (Advanced Research Project Agency network).It also included many universities doing military funded research. Later the span of this network expanded covering the whole of USA.As it was very successful, various research institution and universities wanted to get connect themselves with the ARPANET.

Hence, the defense wanted to preserve its privacy and thereby, divided the network in to two divisions, viz, ARPANET ad MILNET (Military Network). These two divisions are connected with a technology called network protocol. Protocol means, a set of communication rules. In the network protocol means a set of rules to contact a person on the network. Hence we need a protocol to connect a person on the other networks. The protocol in- between the networks is called internet protocols. Thus, internet protocol is a technical switching scheme, which enables a node of network to communicate. With anode of another network. To control and monitor the network communications, the department of defense redesigned the existing protocol and protocols Transmission Control protocol/ Internet protocol (TCP\IP) were developed.

At this stage, the "American National Foundation "developed another network of computers in USA. In this new network all universities and research institution were allowed to join in to and provide their contribution in the development of super computer.

In early 1990, many institution turn to" American National Foundation`s "network and as a result ARPANET was shutdown. During 1994 many privet organization introduced global networks. They designed protocols and communicate between the nodes of different networks. This network is called internet.

Definition

"INTERNET" refers to the global information system that-

i)   Is logically linked together by a globally unique address space based on the Internet protocol (IP) or its subsequent extension /follow –on:

ii) Is able to support communications using the transmission Control protocol / Internet protocol (TCP/IP)suite its subsequent extension /follow –ones ,and/ or other IP compatible protocols; and

iii) Provides, uses or make accessible either publicly or privately .high level service layered on the communication and related infrastructure described therein.

Today the internet is a public, cooperative, and self-sustaining facility accessible to thousand of millions of people worldwide. Physically, the Internet uses a portion of the total resources of the currently existing public telecommunication networks. Technically, what distinguishes the internet is its use of asset of protocols called TCP/IP) for Transmission Control protocol / Internet protocol).

HOW INFORMATION TRAVELS ACROSS THE INTERNET

The internet comprises network that are attached to one another via pathway that facilitate the exchange of information, data and files. Being connected to the internet means having access to these pathway. The computer sends information over this pathway to any other computer connected to the Internet. The information or data that is being sent over the Internet must be broken up in to small packets. Each of these packets is given a header that contains a variety of information, such as the order in which the packets should be assembled with other related packets, the address of the destination, etc.

So when one sends information across the Internet, the information is first broken down into packets these are then delivered to the proper destinations. Where is they are reassembled into their
Original form so that receiving computer can use them. This job is done by the two most important communication protocols on the Internet – the **Transmission Control Protocol** (**TCP)** and **Internet protocol (IP)**. They are frequently referred to as *TCP/IP.*TCP breaks and reassembles the packets, whereas, IP is responsible for ensuring the packets are sent to the right destination.

INTERNET ADDRESS

To do just about anything on the Internet one need to understand internet address. The *internet protocol (IP)* uses internet address information to deliver mail and other data from computer to computer. Every IP address on the internet is actually a series of four numbers separated by dots, such as 163.52.128.72. However, it would be difficult for one to remember such numeric addresses when one want to access something on the net .And also numeric IP addresses something change. So to overcome this problem Sun Microsystems developed **Domain Name Server (DNS).** The DNS establishes a hierarchy of domains, which are group of computers on the internet. The DNS give each computer on the Internet and Internet address, or domain name, using letter and words instead of numbers.

DNS address has two parts: an individual name, followed by a domain (a name for a computer connected to the internet) that generally identifies the type of institution that uses the address such as .com for commercial business or *.edu* for school, college and universities. For example, DNS address of Microsoft is **microsoft.com.**

DNS address and numeric IP address identify individual computers, but a single computer might have separate users, each of whom must have an account. When a person sends a message to another person rather than a computer, than the recipient`s user name must be included in the address. The standard format is the user name first, separated from the DNS address (Which identifies the specific computer where the person has an Interne e-mail account) by an"at" symbol (@).For example, a person named xyz would have e-mail address has xyz@widgets.com.

CLIENTS AND SERVERS

The basic architecture of all Internet connection is based on client –server relationship. A client application on user`s computer requests information from a server already connected to the Internet. A server is a powerful computer, generally containing a large hard disk, which acts as a shared storage resource. In addition to containing stored files, a server my also allow access to program and data from other computer.

To make this   relationship work there are major components:

- ➢ **Telecommunication connection-** This connection is the physical electrical connection between your computer and the sever computer. This connection is used to pass requests and data between your computer and the server.
- ➢ **Server-**The server in an Internet connection is usually a service provider or Internet access provider. The server provider is the company that owns and operates the particular network to which you are going to connect your computer.
- ➢ **Client –**The client in an internet connection is one or more software programs that run on your computer and interact directly with the server provider or route their date request to and from the Internet through the service provider`s network

INTERNET

An enormous amount of information and entertainment is available on the Internet . To access this information various Internet tools are provided. These tools include:

- ➢ Information Retrieval Tools(FTP and Gopher)
- ➢ Communication Tools(E-mail, telnet ,Usenet)
- ➢ Multimedia information Search Tools(WAIS, Archie, Veronica)

INFORMATION RETRIEVAL TOOLS
FTP

FTP or File transfer protocol is the Internet tool used to copy files from one computer to another. When the user has accounts on more than one computer. FTP can be used to transfer data or programs between them. It is basically a command that activates the client – server relationship. The user sends the request for a particular file to the server and server responds back by sending the requested file if the requested file is that found on that server

Another popular way to retrieve file is through an anonymous file server. In this case, the user logs on to the server using the special user ID and the password. This server is called anonymous as it allows anyone to make copies of their files. Using FTP is simple. The only difficult part locating a file that one wants to download.

Gopher

The second type of information retrieval tool on the Internet is Gopher a menu based interface that provides access to information residing on special server, called Gopher server. Although, Gopher performs primarily the same tasks as FTP command, its interface is more user-friendly and it provides additional function, such as links to other Internet service. By selecting an item from the Gopher menu, users can move retrieve, or display files from remote sites .The menu   also allows user to move from one Gopher sit to another, where each site provides different information.

COMMUNICATION TOOLS
E-mail

E-mail or Electronic mail refer to exchanging message or files electronically. Anyone with an e-mail account can send message to other users of the Internet.

E-mail systems have two basic part: *user agents message transfer agent..* User agent allows people to read and send e-mail and message transfer agent move the message from the source to the destination. The user agents are generally local program that provide a command based, menu –based or graphical method for interacting with the e-mail system. E-mail. The message transfer agents run in the background and move e-mail though the system E-mail is not a live connection between the originator of the message and its recipient. There is always a delay between the time a massage is send and the time it arrives. This delay can be of few second and more

When one sends a message, your computer passes it to post office server. Which identifies the destination address and passes it though the Internet to a mail server, where a message is stored in a mailbox unit the recipient opens his/her mailbox. *Figure 5.1* show how the mail is being sent and received .E-mail system support five basic function:

- ➢ Composition: Process of creating message and answers.
- ➢ Transfer: Moving message from the original to the recipient.
- ➢ Reporting: Telling the originator what happened to the message.
- ➢ Displaying: Incoming message are being displayed for the people to read.
- ➢ Disposition: Concerns with what the recipient does with the message after receiving it. Possibilities include deleting it after reading or before reading, saving it and so on.

In addition on these basic service ,most e-mail system provide a large variety of advanced features such as mailboxes (to store incoming mails),automatic notification of undelivered e-mail, facility to make carbon copies (cc) and blind carbon copies (bcc)of mail, etc.
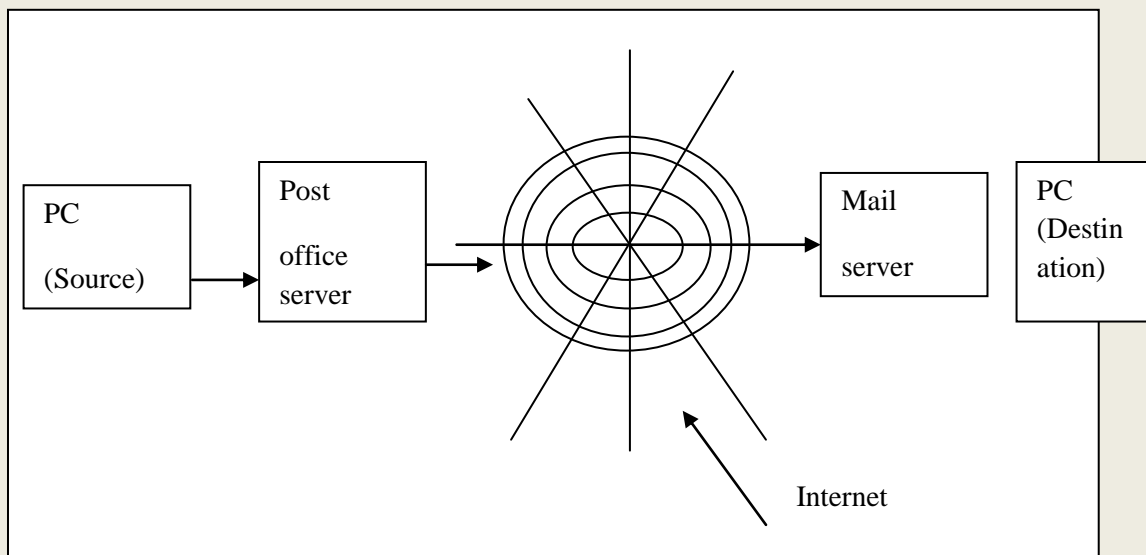
Telnet
Telnet is a command that connects the user to a remote machine may be located anywhere on the internet. In other word it is tool for using one computer to control a second computer. Using Telnet one can send command that run program and open text or data files on same computer The telnet program is basically a transparent window between your one computer and a computer that you are logging onto.

Usenet
The Usenet is a network that provides users with discussion groups forums. A user posts an article to a chose newsgroup on the Usenet, where each newsgroup id devoted to a particular topic such as politics, environment, surfing and so one. The article is routed only to those sites that have expressed an interest in receiving information on the topic .May find the Usenet to be helpful for gathering information on a variety of topics. Another popular application of Usenet is downloading new or upgraded software from vendors and obtaining quotes for products and services.

MULTIMEDIA INFORMATION TOOLS
World Wide Web (WWW)

World Wide Web or WWW I one of the newest and most popular hypertext –based Internet tools. It allows users to access and display document and graphics stored on any server on the Internet. Its capability to provide an enormous wealth of information on almost every conceivable subject in a graphical colorful way has led to its popularity.WWW is also based on client –server model. Here the client is the browser that runs on your local system. Web browser or browser is software that is used to request resources from the Internet. Some of the popular web browsers are Microsoft Internet Explorer, Netscape Navigator ,Mosaic etc Server is a program that runs somewhere on the Internet and is used to serve the resources that have been made available on the server .The main components of WWW are :

- ➤ **URL(Uniform Resource Locator):** It is a way of specifying the location of web page on the net. URLs look like:
  Type://address/path
  Where type specifics the type of server in which the file is located address of the server and path is the location within the file structure of the server .For example, http://www.microsoft.com.

- ➤ **HTTP(Hyper Text Transfer Protocol):**The internal structure of the WWW is built on the set of rules called HTTP. It establishes the communication path between a web server and a client. The communication takes place in for steps: First the *connection* is established between the client and the server. Then the client sends some *request* like requesting some particular file. The server then *responds* by sending a message that the file is being found .If the file is not found on the server then an error message indicating that file is not found, is sent back and the connection is closed.

- ➤ **HTML(Hyper Text MARKUP Language):**HTML is the language in which WWW documents are written in , it allows users to produce web pages that included text ,graphics ,and like to other pages .

Unlink Gopher which organize information on the Internet into logical menu, the WWW does not provide a basic structure for locating resources. To overcome this, an assortment of directories and search tools is available online.

INFORMATION SEARCH TOOLS

Archie

Archie is a search tool designed specifically to locate files on anonymous FTP servers. It creates a central index of all the files available on anonymous FTP sites and creates a central database that users can access to locate information. Uses who have ARCHIE software can access this database   The only disadvantage is that the use must know at least part of the filename in order to be able to search for the file. When the desired file is located. the server identifies the file`s address and the user can use the FTP command to access and retrieve the file. Though Archie is a very tool for locating files, not all anonymous FTP sites are included in the Archie database

Veronica

Veronica is a search tool specifically designed to locate all files on Gopher sites and it is listed under *Other Gopher and Information* Sever on the Gopher menu. Users who have access to a Gopher server and a veronica server can access the database. One of the biggest advantages of Veronica over Archie is that the user doesn`t have to know the filename.

WAIS

WAIS (Wide area Information Server)is a search system that accesses servers all over the world to locate requested files. The WAIS database has an index of keyword that helps users to locate files. When given the keyword, WAIS returns the address where the file are located The user can them use one of the other services discussed above to download the files. If a particular file is not found on a given WAIS server, the server will automatically direct the query to other WAIS server on the Internet

INTERNET PROTOCOL

A communication protocol allows different kind of computer using different operating system to communicate with one another .It is high essential because Internet is not made up of any single type of computer system. Instead there are great diversities found in the computer used on the internet. The user connected on any network on the Internet can communicate with others or software. Locate on any other network connected to the internet using common set of protocols. An Internet protocol is a set of standards or rules for exchanging information between computer systems in a network. The most commonly used protocols are:

1. Transmission Control Protocol/ Internet Protocol(TCP/IP)
2. File Transfer Protocol(FTP)
3. Hyper Text transfer Protocol (HTTP)
4. Telnet
5. Gopher
6. Wide Area Information Service(WAIS)

1. **Transmission Control Protocol/ Internet Protocol (TCP/IP)**

TCP/IP/ is actually a collection of protocols that govern the way travel from one computer to another computer across networks. A user connected on any network on the Internet can communicate with people or software locates on any other network connected to the internet using this common set of protocols, the TCP/IP. Thus any computer that speaks the language TCP/IP can talk to any internet machine

On the Internet, the protocol that permits two internet connected computers to establish a reliable connection is called TCP/IP.TCP ensures reliable data delivery. The computer that sends the data continues to do so until it receives a confirmation from the receiving computer that the data has been received intact. Simply this is the set of standards (Protocols) for data transmission and error correction that allow the transfer of data from one computer to another computer over Internet

2 File Transfer Protocol (FTP)

FTP Is the protocol set of rules which enable files to be transferred between computers. It is a powerful tool which allows files to be transferred from one computer to another computer.

FTP work on the client / server principle. A client program enables the user to interact with a server in order to access information and service on the server computer. Files that can be transferred are store on server computer. A client can access these files only though a client application program helps a client computer to locate the required file to be transferred and start the process of transfer.

To access other computer, user has to normally supply a login name and password and after that he can access the computer file dictionary system and can upload (send)and download (receive) files .Anonymous FTP facilities are also available which allows the user to access any information without giving a password . Sometime an anonymous FTP site may ask for your electronic mail address as password. May web browsers can function as FTP client to download files from anonymous file archives.

3. Hyper Text transfer Protocol (HTTP)

HTTP is can internet standard or set of rules that allows the exchange of information on the World Wide Web (WWW). Hyper text is an method of preparing and publishing text ideally suited to the computer, in which users can select their own text .To prepare hyper text, the whole material should be divided into

small segment such as single pages of text. These small segments are called nodes. Then hyper links (also called anchors) are embedded in the text .When the user clicks on a hyper link, the hypertext software display a different node. The process of navigating among the nodes linked in this way is called `browsing`. A collection of nodes that are interconnected by hyper links is called a web

The World Wide Web (WWW) is a hyper text system on global scale. Hyper link enable the user to access document that have been linked with other document. Web document contain highlighted words/ phrases, and a click of the mouse on that spot will transport the user to another site. A hyper text is prepared using Hyper Text Markup Language (HTML). The HTML codes are used to create links

HTML is also based on the client /server principle .It allows the client computer to contact with sever computer and make a request. The server accepts the connection requested by the client and sends back a response. An HTTP request identifies the information or text that the client is needed and it tell the server to supply the text. In short HTTP allows the user to jump from one to another according to his requirements

4. Telnet

Telnet is an internet protocol of set of rules that enable internet users to connect to another computer linked to the internet .This process is also called as remote login. The user`s computer is referred to as the local computer and the computer being connected to is referred to as remote or host computer. One access is established between local and host computer. Local computer can give command so that they are executed in the host computer.

The user`s computer clearly display the process undertaken by the remote computer during the telnet session. After getting connection to a remote computer, instruction or menus appear. Sometimes the user has to give his own user name or password .However, much information such as library catalogues are available through telnet even without giving password.

5. Gopher

Gopher is a protocol linked to the internet to search, retrieve and display documents from remote sites on the internet . It is a menu based program that helps the user to find file program, definition and other topics that the user specifies. Gopher protocol allows the user to free from the troubles of specifying the details of host, directory and file name. Instead, the user can browse through menus and press Enter when he finds some interesting topic.

The user usually sees another menu, with more option, until finally the selects an option that displays information. The user can then read the information or save it on disk after retrieving it with anonymous FTP .When information is displayed the user may feel as if all the information available to Gopher resides on their local computer ,when in fact Gopher is interacting with a large number of independently Owned computer around the world.

6. Wais

WAIS stands for wide Area Information service .WAIS is a internet search tool and describes as a protocol for computer to computer information retrieval. It is a program that permits the user to search information worldwide based on a service of key words WAIS has the capability of simultaneously searching in more than one database.

INTERNET ADDRESSING

Internet address is used to identify people computer and information related with internet

IP Address

IP address is required to communicate with other computers in the net. One must known the address of the computer to transfer file , send e-mail messages etc

An IP(Internet Protocol) address is an identifier for a particular computer on a particular network.A32-bit binary number that uniquely and precisely identifies the location of a particular computer on the Internet . Every computer that is directly connected to the Internet must have an IP address . An IP

address consists of four sections separate by period .Each section contains a number ranging from 0 to 255. Example, 128.43.7.12.The address has the following common characteristic.

1. IP address is unique number
2. No two computers can have the same IP number.
3. IP addresses are also global and standardized.

Domain Name

A domain name is a name used to identify and locate computers connected to the internet. No two organizations can have the same domain name.

A domain name always contains two or more components separated by periods called `dots` Some example of domain name are Microsoft .com, Indiacapital.com, Kerala.com pugmark .org,Mid.edu ,etc ,.The last portion of the domain name is the top level domain name and describes the type of organization holding that name . The important types of top level domain names are the following.

- .com -Commercial Institutions
- .edu -Education Institutions
- .org - Miscellaneous organization not included above

Country codes – A two letter abbreviation for a particular country. For example "in" for India ,"uk" for United Kingdom. Or"fr" for France, etc.,

Each domain name is an English Version of an IP address consists of four selection separated by periods. The Internet uses the numeric IP address to send data. A user is using a domain name, but a net work is connecting to the web server with IP address related with that domain name. The domain name like kerala.com is easy to remember than IP address like 204-28.12.5.Domain name and corresponding IP addresses must be unique. Domain name system server are software that translates domain names to IP addresses

FACILITIES AVAILABLE ON THE INTERNET

Internet provides several software tools to take maximum benefits from the net. It is possible to communicate with people all around the world. Information on various subjects can be accessed very easily. A user can navigate from one topic to another and download any information required by him. Friendship can be built with people of related interest from around the world. Further business can be done and product can be advertised on the Internet. The following are some of the services that can be exploited by an internet user.

1. E-mail
2. Internet Relay(IRC)
3. World Wide Web
4. FTP
5. Telnet (FTP,Telnet are explained in previous page)

1 .Electronic Mail (E-mail)

E-mail is an electronic message sent one computer to another. Message can be prepared and sent reliably over communication networks from the computer of the sender to be received at the computer of recipient

This facility allows the exchange mail with millions of people all over the world at economical rates. One can communicate with his friends, Institution, various departments through electronic mail much faster and at much cheaper cost compared to telephone or ordinary mail. On its way, message passed from one computer to another along the network. Each computer reads the e-mail address and routes it to another computer until it reaches its destination. It is then stored in an electronic mail box. All this process will be completed within few minutes and that allows the users to communicate quickly and easily with millions of people around the world anytime for the cost of a local phone call .The recipient of the message can open the mailbox and read the message at his convenience. There are e-mail programs which can manage all electronic messages. The reply to the message can also over internet

Working of e-mail

Working of e-mail is quite simple. The sender has to type the message first and then type the e-mail address of the recipient. Proper are should be taken while typing e-mail address .If address is not correct, the message will not be received by the recipient. After that, press the ` send` button of the e-mail program. Immediately on processing the send button, the message passes to the modem and then coded analog signals are sent over the telephone line. The e-mail message then arrives at the server of our ISP. If it recognizes the e-mail address, the mail will be sent. The mail is then sent through Internet .The message will be received by the recipient. ISP and server where it will be delivered to the recipient`s mail box. Finally, the recipient modem and computer decode the data and the message now can be read by him.

E-mail Address

Electronic message are delivered to the recipient at his e-mail address. E-mail address is a series of character that precisely identifies the location of person`s electronic mail box.

E-mail addresses are made up of the following.
- The user name (sometimes only 8 characters)
- Then @symbol.
- Then the name of the user`s **ISP**
- The last 2 or 3 characters describe the type of service called the top level domain name. For example .**com** stand for commercial site, .**org** stands for organization, **edu.** Stands for educational institutions, **net-**network, etc………….

For example sarath@imageequity.com is an e-mail address. An e-mail address is read from left to right. Sarath is the users' name. He is the person who received or sends message. Image equity is part of the domain name of the organization.` com` is also part of the domain name and indicates that image equity is a commercial organization

An e-mail user can also make use of customize facilities available in e-mail programs. E-mail can be sent both in text format or HTML format. The advantage of using HTML format is that color can be added with text .Moreover formatting facilities like bold italic, bulleted or numbered lists etc. can also be used .Spell checking facilities are also available in e-mail program.

We can also attach files to email message to sent picture, sound, documents, Videos and other types of file with your email. Some email program automatically open attachment such as photos and html code. Change the program`s properties or option to turn to the feature on or off.

Unrequested spam email has become a problem on the Internet. A large percentage of the email sent is this unrequested email which takes up band width and causes prices to rise. Most ISPs provide software known as span filters that will filter out this type of email.

2. Internet Relay Chat (IRC)

Internet Relay Chat is a real time internet based chat service, in which one can find `live` participants from the world over. It is a multi user chat system that allows many people to communicate simultaneously across the Internet. Developed in 1988 by j. Oikarimen in Finland, the IRC offering a unique type of talking experience on the net has been used extensively for live coverage of world events, news and sports commentary .The IRC network on the internet consists of multiple interconnected servers. The IRC service provides a number of channels; public, private, secret or invisible. A user can select a channel of his choice and be part of a particular conference on the internet .The user`s interaction with his fellow people is achieved through a specially designed software namely the IRC client.

The IRC also allows the facility to the user to change from one chat group to another, join any conversation or listen only .It is also possible to invite somebody for a secret chat in the internet.

3. World Wide Web(WWW)

World Wide Web or simply web is one of the main reasons for the growing popularity of the Internet. Information can be accessed on the internet through World Wide Web. Web is a system of organizing, linking and providing access to related internet files, resources and services. Files can be access to related internet files, resources and services. Files can be accessed at the click of the mouse. This is mainly due to the arrangement of file based a hyper-text or hyper media approach. The web is an internet based navigational system, an information distribution and management system with vast potential of trade and commerce.

The World Wide Web is the graphical internet service that provides a network of interactive document and the software to access them. It is an internet based navigational system based on document called pages that combine text, picture, forms, sound, animation and hyper links. In simple words, the web is a collection of distributed document referred to as pages located on computers or servers all over the world. Servers store hyper text mark-up language (HTML) files and respond to requests. Users can access documents through the use of a browser.

Internet provides several facilities for its maximum exploitation. File transfer, electronic mail and news group are some of the important facilities provided by internet. However World Wide Web (WWW) is perhaps one of the most popular and fastest growing facilities in the history of networking. Experts predict that use of web going to be so widespread like the use of telephone in the near future. It has become not only an integral part of internet but has become the exciting aspect of the internet.

The ever increasing use of web has accelerated the growth of the internet. Web is an easy to use, point and click graphical interface. It is also interactive because it is easy to use and combines graphics, text, sound, and animation into an effective communication medium. It also enables the creation, manipulation, organization and retrieval of documents that contain audio and video clips, graphical images and formatted text. Web servers, also called web sites are equivalent of a book and we` page` are the specific pages of the book. A web server is essentially a collection of multimedia pages. Use start their exploration of a web site at the `home page` which often server as a table of contents. A home page is accessed by entering the domain name of a site. Then user can `surf` from one page to another pointing and clicking on the hyper link in text or graphics.

Originally, web was developed to share document between distant scientists. In 1989, Tim Berners Lee at CERN (European Laboratory for particle physics) an engineer, began the web project. As soon as the basic outline of the web was complete, CERN To made all the software source code publicly available. Many programmers in USA participated in the initial development of the web. Later in1993, programmers developed `Mosaic` the first browser with graphical user interface. Use the web facilities, user needs special software called a web browser .It acts as an interface between the user and the internet. It sends request for data to other computers and then formats them for the users screen. Documents are formatted using hyper text Mark-up Language (HTML)

Electronic Data Interchange

EDI (Electronic Data Interchange) is simply the means to communicate between companies from one computer to another. For many years companies have been using computers to send business documents instead of mailing paper documents (i.e. most of our pay checks are directly deposited into our bank accounts). This transfer of funds is accomplished by the use of an electronic file being sent from your company to your bank). In 1979 the American National Standards Institute (ANSI) formed the Accredited Standards Committee (ASC) X12 to rectify this situation. **Electronic Data Interchange (EDI)** is simply a set of data definitions that permit business forms that would have been exchanged using paper in the past, to be exchanged electronically. This simple set of definitions has spurred a number of organizations to put in place an operational environment in which the exchange of electronic business forms substitutes for the

exchange of paper forms. This has resulted, in some cases, in the establishment of an EDI environment, which arguably represents the most advanced state of electronic commerce today, causing some to view EDI and electronic commerce as one and the same. We view EDI only as a subset of electronic commerce, albeit a very important one. As such, EDI provides an excellent example of a working electronic commerce environment and is a good starting point for examining electronic commerce.

OBJECTIVE

The basic documents for transaction of business will be taken only once by one agency and other agencies will take the information from that agency, electronically, avoiding the need to either physically take the document from one office to another or keying in the data again and again involving the attendant problems of manual labor and errors creeping in at each stage of data entry.

The use of EDI allows for the following benefits:

- Reduced manual data entry
- Reduced postage and handling costs
- Reduced labor processing costs
- Reduced order cycle
- Increased customer service
- Improved accuracy of data
- Reduced lead times
- Reduced paper handling
- Reduced inventory carrying costs

Business application of EDI

EDI is paperless document transfer between companies. A document is any form of communication, usually paper, sent between two companies. Examples include:

- Purchase Orders
- Invoices
- Shipping Notices
- Export/Import Information
- Carrier-to carrier waybills
- Funds Transfers
- Design Specifications
- Health Insurance Claims

EDI is a data processing concept independent of communication protocols or transmission media. EDI is a logical outgrowth of the standard computerization going on within business for the last several decades. The type of electronic communication between departments within a business is now being extended to reach out to other business, or trading partners.

EDI is computer-to-computer communication. Contrast this with the other forms of communications like Electronic mail. E-mail is person-to person communications over a computer. A person creates a text message, which is sent to another person. While this form of communications is electronic, it still requires people to interpret the message.

EDI replaces human-readable, paper or electronic based documents with machine readable, electronically coded documents. With EDI the sending computer creates the message and the receiving computer interprets the message without human involvement.

Questions

1. What is internet? Explain its features?
2. What are the components of internet?
3. What are the popular internet services?
4. What is internet protocol? Discuss commonly used protocols?
5. What is WWW and explain its uses?
6. What is EDI? What are its objects?
7. What are the benefits of EDI?
8. What are the business applications of EDI?
9. What is internet addressing ?
10. Explain the terms:

   - IRC
   - Telnet
   - WAIS
   - Gopher
   - Usenet

Module 5

Computerized Accounting and

Accounting is a necessary function for any business. All businesses must keep a record of their income and expenses and the records should be as detailed as possible. For some, the idea of spreadsheets, general journal books and ledger sheets is frightening. For these people, computerized accounting could be a welcome relief.

The two biggest advantages of a computerized accounting system are **speed** and **accuracy**. When using a manual accounting system, each step in the accounting cycle must be performed by hand. For example, if a business pays their electric bill, a cheque has to be written, an entry must be recorded into the cheque register, and the transaction has to be posted to the respective ledgers, In this case, a debit to the electric company's ledger account and a credit to cash. With a computerized accounting system, the steps described above are completed with one entry. The journal entries for cash and the electric company are automatically posted to their respective ledgers. What could take several minutes manually takes only seconds with a computerized accounting system. Also, because only one entry needs to be made with a computerized system, the likelihood of an incorrect entry is greatly reduced.

Another advantage is the **ease of producing end of period reports**. With a manual system, each general ledger entry would have to be posted to the financial statements by hand. With a computerized accounting system, each computerized transaction is automatically posted to both the general journal and the respective ledgers, which makes producing balance sheets, trial balances, and end of period financial reports as simple as selecting the desired report from the menu.

Other advantages to using computerized accounting are:

- **Instant access to accounting information**. Because each entered transaction is automatically posted to its respective account, all account information is always up-to-date.
- **Easy document production**. Purchase orders, debit memos, sales receipts, sales invoices, inventory lists and others can be printed in moments.
- **Staff motivation**. Accounting and bookkeeping departments should run more smoothly and be more efficient with computerized accounting software. There will be less time spent on compiling reports.
- **Legibility**. Computerized accounting software eliminates the need to decipher poor or odd handwriting, eliminating much of the possibility of error due to misreading a hand-written line item.
- **Ability for taxes to be computed automatically**. This makes paying quarterly or annual taxes easier since the computerized system will keep a running total of all taxes owed.

Many financial accounting software packages are available in the market. Most popular packages are Tally, Peachtree, DacEazy, EX_NGN, Wings etc., let us discuss the features of Tally.

Introduction of Tally 9

Tally 9 is the wonderful accounting software. It attained good reputation in the field of business .A businessman wanted an accounting software which be handled easily. Tally 9 is pure on this desire of businessman.There is no difficulty in operating tally 9, accounting software. It uses three fundamental formula for recording:

1st formula à is to record different companies' creation, display and alteration

2nd formula à is to record all ledger accounts vie create, display and alter under different head or master accounts.

3rd formula à is to record all voucher entries.

Components of Tally Screen (Gateway of Tally)
Gateway of Tally of an "Accounts Only" Company
The Gateway of Tally menu of an Account Only Company appears as:
The Gateway of Tally screen is separated into four sections, − Title Area, Main Area (Ctrl + M), Calculator Area (Ctrl + N) and the Button Bar.

Main Area
The left-hand side of the Main Area gives information of
Current Period – this is the currently loaded or selected company's accounting period.
Current Date – this is the date of the last Voucher Entry of the selected company (this is NOT the calendar date).
List of Selected Companies – This displays the name of the loaded or selected company.
Masters – for creation of Accounting Masters and Importing Master information
Transactions / Vouchers - for creation of Accounting Vouchers and Importing transaction information
Reports – for viewing and printing financial reports using the information given in Masters and Transactions.

Button Bar
The Button Bar area on this screen, displays the following buttons (keys):
Help (Alt + H) – to access Tally's online context-sensitive help
F1: Select Cmp – to select a company
F1: Shut Cmp – to shut or close the company
F2: Period – to change the period
F3: Cmp Info – to access the Company Information Menu

F11: Features – to access the Company features for a company
F12:Configure – to access the configuration settings to manage the information put into Tally.
You cannot load more than one company at one time. The loaded or selected company will be shut first and then the other company is loaded.

Company creation in tally
To start accounting with tally you need to create company. Here we are going to learn how to create a company in tally. Since tally launched the latest version ERP9, We are using tally ERP9 for our study

Step I
Double click on tally icon from your desktop you will have a company info menu on the right side of the screen like below
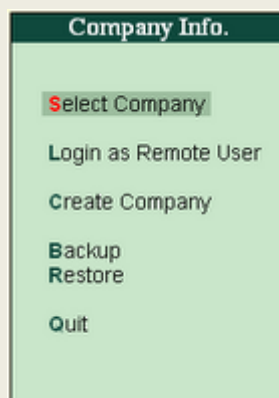
Step II

Select Create company by pressing down arrow key and press enter Company Creation screen will be displayed

This is the company creation screen where we can enter company details, Data storage etc. Let us explain each section separately.

Directory:- Directory means the data storage location , This is the place where tally store all data's you entered in tally. By default the data storage will be inside the installation folder, Data will be stored in D:/ if you installed tally in D drive. You can change it at your desired location by typing it manually.

Name: Type the name of the company in this field, for Example. ABC LTD

Address: This is the place where we can enter the address of the company.

Statutory compliance for: Select the country in which your business exists.

State: Select the state in which you want to comply statute

Pin code: Pin code of the location where your company office exists.

Telephone: Enter telephone number

Mobile No: Enter mobile number

Email: Enter your official communication mail id

Currency Symbol: Enter the currency symbol for example Rs for Indian Rupees, USD for US dollar etc.

Maintain: Here you can select how you maintain your company. Some companies are required to maintain stock items along with accounts, in such cases select '**Accounts with inventory**' or else your requirement is only to keep accounts only select '**Accounts only**'

Financial year from:

Type financial year in which you want create a company. Suppose you may be starting company on September 01 2010, you should enter the financial year from as 01.04.2010.

Book beginning from:

Most of the companies have a book beginning date same as above field but may differ for companies which are starting in the middle of the financial year. From above example your book beginning date is 01.09.2010

Tally vault password:

This is for security purpose, by entering password you can prevent unauthorized access of company data. But keep the password in writing in a safe place to prevent future password lost. You will have to enter this password each time you open your company. Be careful, forgetting your password, you will not be able to use tally data

Use Security control:

By enabling this you will get a complete control over your data, you can assign some people only for data entry, give more access to some other using this feature. We will have a detailed discussion about security controls later.

Base currency information

You can configure currency option under this field. You can see a company creation screen below.

Step3
Accept the screen. If you have entered a tally vault password you will be asked a password to create company in screen like below.
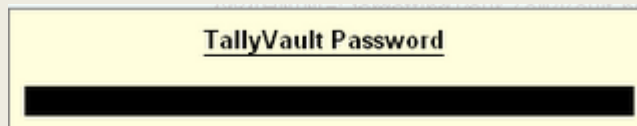
Enter tally vault password here and press enter you can see a screen importing statutory masters

Immediately after completing statutory masters importing you will lead to a new screen Gateway of tally

On the left side you can see the current period, current date, Name of the company ,Name of last Entry etc. Just under Name of the company you can see the name of newly created company in boldface. This means that listed company is loaded. Next time when you open tally this company will have loaded automatically. On the right side you can see tally data entry voucher to enter data.
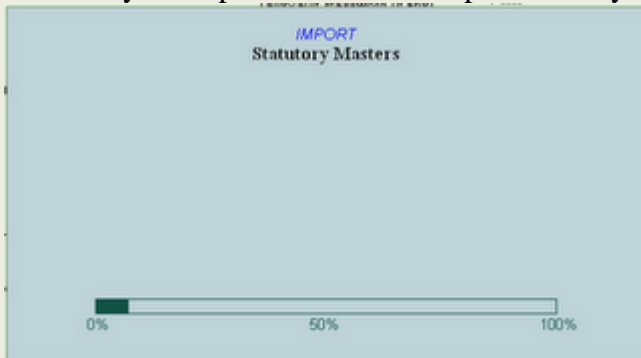
Classification of Account-heads

Tally follows the 'Single Ledger' concept of accounting, which is the modern way of managing accounts. This is in direct contrast to Subsidiary Ledger Accounting. Thus, all financial entries are performed using ledgers or account heads. Ledger account heads are created to identify transactions. Groups, in Tally, serve to both classify and identify account heads according to their nature and enable presentation of summarized information. Tally gives you great flexibility in setting up your chart of accounts. It allows you to group your ledger accounts right at time of creating your accounts chart. Your reports and statements will reflect the desired classification at all times

Groups have a hierarchical organization. At the top of the hierarchy are Primary Groups. These are the main asset, liability, income or expenditure groups of accounts that determine the entire accounting and their presentation, i.e., whether a ledger affects Profit & Loss Account (as a revenue item) or goes into the Balance Sheet. The Reserved Primary Groups and subgroups (shown indented) are:

1) Primary Groups of capital nature
a)Capital Account
b)Reserves and Surplus [Retained Earnings]
2) Current Assets
a)Bank Accounts
b)Cash-in hand
c)Deposits (Asset)
d)Loans & Advances (Asset)
e)Stock-in-hand
f)Sundry Debtors
3) Current Liabilities
a) Duties and Taxes
b) Provisions
c) Sundry Creditors
d) Fixed Assets
4) Investments
5) Loans (Liability)
a) Bank OD Accounts [Bank OCC Accounts]
b) Secured Loans
c) Unsecured Loans
6) Suspense Account
7) Miscellaneous Expenses (Asset)
8) Branch/Divisions
9) Sales Account
10)Purchase Account
11)Direct Income [Income Direct]
12)Indirect Income [Income Indirect]
13)Direct Expenses [Expenses Direct]
14)Indirect Expenses [Expenses Indirect]
Voucher entry- Major types

In Tally, Voucher entry consist of mainly two types I) material in & out II) Amount in & out.

In each type sub varieties are there as below

I) Material In & Out

1. Sales voucher
2. Purchase voucher
3. Goods receipt notes
4. Rejection in
5. Rejection Out
6. Delivery notes Etc.

II) Amount In & Out

1. Receipts
2. Payments
3. Contra
4. credit notes
5. Debit notes
6. Commission
7. Discounts. Etc

If we learn OR understand mainly Sales, Purchase, Payment & Receipts entry, Then all other entry are similar to above entry only relevant situation different names are there.

Contra Entry (F4)

Gateway of Tally > Accounting Vouchers > selecting F4: Contra > displays the Contra voucher entry screen. As per accounting rules, Contra Entry is a transaction indicating transfer of funds from:

1. Cash account to Bank account
2. Bank account to Cash account
3. Bank account to Bank account

Contra Entry screen appears in the Single Entry Mode by default. You are prompted to choose the account, which will receive the amount (the debit ledger).

Payment Voucher

Gateway of Tally > Accounting Vouchers > selecting F5: Payment > displays the Payment voucher entry screen. Payment transactions can be entered using Tally's Payment Voucher.

Voucher entry

A voucher is the basic recording document. To input any data into Tally, you must use a voucher. Inputting data through the voucher entry mode may be called creating a voucher or voucher entry. You may create a voucher on-line on Tally and print it for hard copy and authentication. Vouchers/Transactions are used to enter/record a transaction in Tally.

Gateway of Tally > Accounting Vouchers

This will open the Accounting Voucher Creation screen. Tally is pre-programmed with a variety of accounting vouchers, each designed to perform a different job. The standard vouchers are:

Payment Voucher

Receipt Voucher

Contra Voucher

Sales voucher

Sales Orders

Sales Vouchers/Invoices

Delivery Notes

Rejection In

Purchase Voucher

Purchase Orders
Purchase Vouchers
Goods Receipt Notes
Rejection Out
Journal Voucher
Credit Notes
Debit Notes
Journal
Memo Voucher
Reversing Journal
Stock Journal
Physical Stock
You can alter these vouchers to suit your company, and also create new ones. For example, if you wish to distinguish between cash and bank payments you can create vouchers to do this.

Create a Voucher Type
Create a new voucher type

Gateway of Tally > Accounts Info. > Voucher Type > Create
a new voucher type must assume the functions of a predefined voucher type, the following features should be specified
Name
Type of Voucher
Abbreviation
Method of Voucher Numbering
Automatic - Manual -
None - Advanced Usage
Starting number
Widths of Numerical Part.
Prefilled with ZERO? E.g. 001 1
Use common narration
restart Numbering, Prefix Details, Suffix Details
Financial Statements and Reporting

Tally has built in report formats that can be used for generating standard reports. Ratio analysis, cash flow statement, fund flow statement, budget and scenario management are some of the built- in- report or analysis facilities in tally. In additions to these tally can automatically generates bank reconciliation statement, inventory reports etc.,
Let us discuss in brief:

Display Balance Sheet
The term balance sheet implies that a report shows the balance between two figures. It shows a balance between the assets and liabilities of a firm and the owner's funds. The fundamental accounting equation applicable is therefore, Assets = Liabilities + Owner's Equity.
To view the Balance Sheet:

Go to **Gateway of Tally > Balance Sheet**

Balance Sheet	ABC Company				Ctrl + M ⊠
Liabilities	ABC Company as at 31-Aug-2008	**Assets**			ABC Company as at 31-Aug-2008
Capital Account	24,00,800.00	Fixed Assets			2,00,000.00
Loans (Liability)	12,00,800.00	Working Capital			2,79,59,021.62
Branch / Divisions	8,600.00	Unadjusted Forex Gain/Loss			12,558.00
Suspense A/c					
Profit & Loss A/c	2,45,62,979.62				
Opening Balance	2,26,300.00				
Current Period	2,43,36,679.62				
Total	2,81,71,579.62	**Total**			2,81,71,579.62

Press **F12: Configuration** and set the required parameters to display the Balance Sheet according to your preferences.

Balance Sheet gets updated instantly with every transaction voucher that is entered and saved. You can view additional information or toggle to another report using the options available in the Button Bar.

Some of the Button Bar options is

- Select **F1: Detailed/Condensed** to explode the summarized information.

- Change the date of the Balance Sheet using **F2: Period**.

- View different effect of different Stock Valuations on the Balance Sheet.

- Add up new columns to

- Display the Balance Sheet for a different date to compare with current one

- Display the Balance Sheet of Another Company when more than One Company is opened

- Display the Balance Sheet in a different currency

- Display the Budget figures and analyze the variances

Display Profit & Loss Account

The profit and loss account in Tally.ERP 9 displays the information based on the default primary groups. It is updated instantly with every transaction/ voucher that is entered and saved. No special processing is required to produce a profit and loss account in Tally.ERP 9.

To view the **Profit & Loss Account** of ABC Company,

Go to **Gateway of Tally > Profit & Loss A/c**

- Click **F1: Detailed**, to view the Profit & Loss Account in detailed format.

The **Profit & Loss Account** is displayed as shown:

Profit & Loss A/c	ABC Company		Ctrl + M ⊠
Particulars	ABC Company 1-Apr-2008 to 31-Mar -2009	**Particulars**	ABC Company 1-Apr-2008 to 31-Mar -2009
Opening Stock	56,650.00	Sales Accounts	3,90,55,008.75
Purchase Accounts	2,47,70,497.50	Closing Stock	2,51,65,005.25
Direct Expenses	2,62,587.50		
Indirect Expenses	69,475.00		
Nett Profit	3,90,60,504.00		
Total	6,42,20,014.00	**Total**	6,42,20,014.00

The **Profit & Loss** account is generated and updated immediately from the date of opening of books till the date of last entry.

Press **F2: Period** to change the period as required.

The Profit & Loss Account is displayed according to the configuration set up in the F12: Configure. The Profit & Loss A/c, by default is in horizontal form. You may configure the same to view in Vertical form by pressing it in **F12: Configure**. Some of the Button Bar options are

- Select **F1: Detailed/Condensed** to display more information or condense.
- Change the date of the Profit & Loss Account using **F2: Period**.
- Add new columns to

    ▪ Display the Profit & Loss Account for a different period to compare with the current one

    ▪ Display the Profit & Loss Account in a different currency

    ▪ Display a column with Budget figures and analyze variances

    ▪ See the effect of different Stock Valuations on the Profit/Loss account.

    ▪ Select and compare Profit & Loss of different companies.

Display Ratio Analysis Report

Ratio analysis is a powerful tool for financial analysis. A meaningful analysis of a financial statement is made possible by the use of ratios.. A single ratio may sometimes give some information, but to make a comprehensive analysis, a set of inter-related ratios are required to be analyzed.

To view the **Ratio Analysis**

Go to **Gateway of Tally> Ratio Analysis**

The **Ratio Analysis** screen is displayed as shown.

Ratio Analysis	ABC Company		Ctrl + M ⊠
Principal Groups	ABC Company 1-Apr-2009 to 30 -Sep-2009	**Principal Ratios**	ABC Company 1-Apr-2009 to 30 -Sep-2009
Working Capital	2,13,79,965.99 Dr	**Current Ratio**	2.71 : 1
(Current Assets-Current Liabilities)		*(Current Assets : Current Liabilities)*	
Cash-in-Hand	9,45,877.80 Dr	**Quick Ratio**	1.77 : 1
Bank Accounts	1,05,50,000.00 Dr	*(Current Assets-Stock-in-hand : Current Liabilities)*	
Bank OD A/c	4,000.00 Dr	**Debt/Equity Ratio**	0.10 : 1
Sundry Debtors	1,06,09,332.00 Dr	*(Loans (Liability) : Capital Account + Nett Profit)*	
(due till today)	**1,12,13,913.00 Dr**	**Gross Profit %**	64.86 %
Sundry Creditors	1,25,93,117.00 Cr	**Nett Profit %**	64.29 %
(due till today)	**1,30,76,300.00 Cr**	**Operating Cost %**	35.71 %
Sales Accounts	1,59,30,328.75 Cr	*(as percentage of Sales Accounts)*	
Purchase Accounts	1,25,56,447.50 Dr	**Recv. Turnover in days**	146.61 days
Stock-in-hand	1,17,17,317.74 Dr	*(payment performance of Debtors)*	
Excess of Income over Expenditure	1,02,40,823.99 Cr	**Return on Investment %**	82.32 %
Wkg. Capital Turnover	0.75	*(Nett Profit / Capital Account + Nett Profit)*	
(Sales Accounts / Working Capital)		**Return on Wkg. Capital %**	47.90 %
Inventory Turnover	1.36	*(Nett Profit / Working Capital) %*	
(Sales Accounts / Closing Stock)			

The screen is divided into two parts:
- Principal Groups
- Principal Ratios

Principal Ratios relate two pieces of financial data to obtain a comparison that is meaningful.

Principal Ratios

You can compare **Principal Ratios** of your company over a certain period with industry averages as well as with ratios pertaining to other periods to assess current performance.

Current Ratio

(Current Assets: Current Liabilities)

This indicates the solvency position of the enterprise. The ideal ratio is 2 under normal business conditions.

Quick Ratio

(Current Assets �Stock in Hand : Current Liabilities)

This indicates the liquidity position of the enterprise. This ratio is useful in planning future cash requirements.

Debt Equity Ratio

(Loans (Liabilities) : Capital + Net Profit)

This indicates the level of exposure to external borrowings and is a useful tool in determining the options of raising additional capital internally or externally.

Gross profit %

(Gross Profit / total Turnover)

This indicates the percentage of profit earned from direct operations (manufacturing)., This ratio is useful, where an enterprise produces more than one product, in identifying the order of profitability and making decisions such as increasing production capacity, continuance of a product etc.

Net Profit %

(Net Profit/ Total Turnover)

This indicates the percentage of net profit earned by the enterprise after considering all expenses of the enterprise. This is useful in identifying the overall profitability of the enterprise.

Operating Cost %

(As percentage of Sales Accounts)

This is referred to as the percentage of operating cost with respect to the total turnover This ratio is useful in making decisions in the areas of cost control, cost reduction etc.

Receivables Turnover in days

(Payment performance of Debtors)

This is an analysis of debtor wise payment performance and a useful tool in identifying the most preferred and least preferred customers or agents and planning the receivables collection process.

Return on Investment %

(Nett Profit/Capital Account + Nett Profit) %

This is a useful tool in measuring returns expected from the project/product and plan additional capital infusion, increase in production capacity (subject to market demand) etc.

Return on working capital

(Nett Profit/Working Capital) %

This is referred to as the percentage of net profit to working capital (current assets � current liabilities).

Working capital turnover ratio

(Sales Account/Working Capital)

This indicates how effectively working capital is used in terms of turnover it can help to generate. It is a useful tool in identifying the level of deployment of funds with respect to sales.

Inventory turnover ratio

(Turnover / inventory)

This indicates the relationship of inventory with respect to sales. This is a useful tool in identifying the extent of investment in stock and indicates

1. Stock control measures whether to be taken in case of change in demand
2. Procurement planning

Cash Flow Projection in Tally.ERP 9

To view **Cash Flow Projection**:

- Go to **Gateway of Tally > Display > Cash/Funds Flow > Cash Flow Projection**

The **Cash Flow Projection** screen appears as shown:

2. By default, the projected columns are displayed on monthly basis. Click **N: Auto Column** or press **Alt+N** to select the required column details.

Fund Flow in Tally.ERP 9

To view **Funds Flow**

Go to **Gateway of Tally > Display > Cash/Funds Flow > Funds Flow**

1. Press **ALT+F2,** change period - From: **1-04-2008 to 31-8-2008.**

The **funds flow statement** is displayed as shown.

2. A Monthly Funds Flow Summary with the movement of working capital for each month is displayed. It shows the Opening and Closing Balances of each month with a column for Funds Flow.
3. Select a **month** and press **Enter** to drill down.
4. Select **F1: Detailed** to see the funds flow for the selected month.

Tally prepares inventory reports and various other reports, books, statements (e.g. BRS) etc, based on the voucher entered to date by the user. We can view and analyze these reports, statements, books etc., by using **Display** option from gateway of tally. For example:

For display inventory report:

Gateway of tally > Display >statements of inventory >Stock summery

Printing Reports

The user can print the current screen display in Tally by selecting **PRINT** from the top of the button bar menu. This brings up new button bar options and the print configuration screen for the report which asks **Print? Yes or No.** before a document is printed; the user can view the output beforehand **With Preview**

Questions
1. What are the benefits of computerized accounting?
2. How do you create a company in tally?
3. Discuss classification of accounts in tally?
4. What are the voucher types in tally? And how you crate voucher?
5. Explain financial analysis and report generation in tally?
6. How do you display and print reports in Tally?
7. What are the components of Tally screen?

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