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Allied Paper II- II BCA

COMPUTER APPLICATION IN BUSINESS

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SYLLABUS

:

Allied Paper II -COMPUTER APPLICATION IN BUSINESS

Objective:

To enable the students to know the importance of computer application in business.

Unit I

Computer – Meaning – Characteristics – Areas of application – Components – Memory control unit – Input and output devices – Ms Word – Creating word documents – creating business letters using wizards – editing word documents
– Inserting objects – formatting documents – spelling and grammar check – word count – thesaurus, auto correct working with tables – opening, savings and closing documents – mail merge.

Unit II

Spread sheet – Spread sheet programmes and applications – Ms Excel and features – Building work sheets – entering data in work sheets, editing and formatting work sheets – creating and formatting different types of charts - application of financial and statistical function – creating, analyzing and organizing data – opening and closing work books – Introduction to Pivot tables.

Unit III

Fundamentals of Computerized accounting – Computerized accounting Vs manual accounting - Architecture and customization of Tally – Features of Tally – latest version – Configuration of Tally – Tally screens and menus – Creation of company – Creation of groups – Editing and deleting groups – Creation of ledgers – Editing and deleting ledgers – Introduction to vouchers – Vouchers entry – Payment vouchers – Receipt vouchers – Sales vouchers – Purchase vouchers – Contra vouchers – Journal vouchers – Editing and deleting vouchers.

Unit IV

Introduction to Inventories – Creation of stock categories – Creation of Stock groups – Creation of Stock items- Configuration and features of stock item– Editing and deleting stocks – Usage of stocks in Vouchers entry. Purchase orders – Stock vouchers – Sales orders – Stock vouchers – Introduction to cost
– creation of cost category – Creation cost centers – Editing and deleting cost centers & categories – Usage of cost category and cost – centers in vouchers entry – Budget and controls – Creation of budgets – Editing and deleting budgets – Generating and printing reports in detailed and condensed format.

Unit V

Day books– Trial balance – Profit and Loss account – – Balance sheet. Ratio analysis, Cash flow statement – Fund flow statement – Cost center report – Inventory report - Bank Reconciliation Statement.

Text and Reference Books (Latest revised edition only)

- Computer Applications in Business – S.V. SrinivsasaVallabhan – Sultan Chand Publication.
- Microsoft office – Jones Derek – Comdex Computer Publication.
- Implementing Tally – K.K. Nandhani Publication, BPB Publication
- Computer Application in Business – R. Paramasivam – S.Chand& Co.,
- Computer Application in Business: Dr.JosephAnbarasu, Learntech Press

INTRODUCTION

A computer is a programmable machine designed to perform arithmetic and logical operations automatically and sequentially on the input given by the user and gives the desired output after processing.

Computer components are divided into two major categories namely hardware and software. Hardware is the machine itself and its connected devices such as monitor, keyboard, mouse etc.

Software is the set of programs that make use of hardware for performing various functions

COMPUTER MEANING

A computer is an electronic device that manipulates information, or data. It has ability to store, retrieve, and process data. We may already know that we can use a computer to type documents, send email, play games, and browse the Web. We can use it to edit or create spreadsheets, presentations, and even videos.

A Computer is an electronic machine with the following capabilities:

- Accepts user supplied data and instructions using various input devices.
- Performs arithmetic and logical operations using the given data
- Presents the results of data processing to output devices.
- Stores the data in storage devices
- Executes the given data using a set of user instructions.

CHARACTERISTICS OF COMPUTERS

The characteristics of computers that have made them so powerful and universally useful are speed, accuracy, diligence, versatility and storage capacity. Let us discuss them briefly.

- **SPEED**
- **ACCURACY**
- **DILIGENCE**
- **VERSATILITY**
- **STORAGE CAPACITY**

SPEED

Computers work at an incredible speed. A powerful computer is capable of performing about 3-4 million simple instructions per second. As you know computer can work very fast. It takes only few seconds for calculations that we take hours to complete. Therefore, we determine the speed of computer in terms of microsecond (10-6 part of a second) or nanosecond (10 to the power -9 part

of a second). From this you can imagine how fast your computer performs work

ACCURACY

In addition to being fast, computers are also accurate. Errors that may occur can almost always be attributed to human error (inaccurate data, poorly designed system or faulty instructions/ programs written by the programmer) The degree of accuracy of computer is very high and every calculation is performed with the same accuracy. The accuracy level is determined on the basis of design of computer. The errors in computer are due to human and inaccurate data.

DILIGENCE

Unlike human beings, computers are highly consistent. They do not suffer from human traits of boredom and tiredness resulting in lack of concentration. Computers, therefore, are better than human beings in performing voluminous and repetitive jobs. A computer is free from tiredness, lack of concentration, fatigue, etc. It can work for hours without creating any error. If millions of calculations are to be performed, a computer will perform every calculation with the same accuracy. Due to this capability it overpowers human being in routine type of work.

VERSATILITY

Computers are versatile machines and are capable of performing any task as long as it can be broken down into a series of logical steps. The presence of computers can be seen in almost every sphere – Railway/ Air reservation, Banks, Hotels, Weather forecasting and many more. It means the capacity to perform completely different type of work. We may use your computer to prepare payroll slips. Next moment We may use it for inventory management or to prepare

electric bills.

STORAGE CAPACITY

Today's computers can store large volumes of data. A piece of information once recorded (or stored) in the computer, can never be forgotten and can be retrieved almost instantaneously.

Power of Remembering:

Computer has the power of storing any amount of information or data. Any information can be stored and recalled as long as you require it, for any numbers of years. It depends entirely upon how much data you want to store in a computer and when to lose or retrieve these data.

AREA OF APPLICATIONS

- **BUSINESS**
- **BANKING**
- **EDUCATION**
- **MARKETING**
- **HEALTH CARE**
- **ENGINEERING DESIGN**
- **COMMUNICATION**
- **GOVERNMENT**

BUSINESS

A computer has high speed of calculation, diligence, accuracy, reliability, or versatility which made it an integrated part in all business organizations.

Computer is used in business organizations for: Payroll

- Calculation
- Budgeting
- Sales Analysis
- Financial Fore casting Managing
- Employees Database Management
- Stock

BANKING

Today banking is almost totally dependent on computer.

- Banks provide online accounting facility, which includes current balances, deposits, overdrafts, interest charges, shares, and trustee records.

- ATM machines are making it even easier for customers to deal with banks.

EDUCATION

The computer has provided a lot of facilities in the education system.

- The computer provides a tool in the education system known as CBE Computer Based Education. CBE involves control, delivery, and evaluation of learning.
- The computer education is rapidly increasing the graph of number of computer students.
- There are number of methods in which educational institutions can use computer to educate the students.
- It is used to prepare a database about performance of a student and analysis is carried out on this basis.

MARKETING

In marketing, uses of computer are following:

- **Advertising** - With computers, advertising professionals create art and graphics, write and revise copy, and print and disseminate ads with the goal of selling more products.
- **Home Shopping -** Home shopping has been made possible through use of computerized catalogues that provide access to product information and permit direct entry of orders to be filled by the customers.

HEALTH CARE

Computers have become important part in hospitals, labs, and dispensaries. The computers are being used in hospitals to keep the record of patients and medicines. It is also used in scanning and diagnosing different diseases. ECG, EEG, Ultrasounds and CT Scans etc., are also done by computerized machines.

Some major fields of health care in which computers are used are:

- **Diagnostic System -** Computers are used to collectdata and identify cause of illness.
- **Lab-diagnostic System -** All tests can be done and reports are prepared by computer.
- **Surgery:** Nowadays, computers are also used in performing surgery.

ENGINEERING DESIGN

Computers are widely used in engineering purpose.

One of major areas is CAD Computer aided design. That provides creation and modification of images. Some fields are:

- **Structural Engineering -** Requires stress and strain analysis for design of Ships, Buildings, Budgets, Airplanes etc.
- **Industrial Engineering -** Computers deal with design, implementation and improvement of integrated systems of people, materials and equipments.
- **Architectural Engineering -** Computers help in planning towns, designing buildings, determining a range of

buildings on a site using both 2D and 3D drawings.

COMMUNICATION

Communication means to convey a message, an idea, a picture or speech that is received and understood clearly and correctly by the person for whom it is meant for. Some main areas in this category are:

- Email
- Chatting
- Usenet
- FTP
- Telnet
- Video Conference

GOVERNMENT

Computers play an important role in government. Some major fields in this category are: Budgets

- Sales tax department
- Income tax department Male/Female ratio
- Computerization of voters lists
- Computerization of driving licensing system
- Computerization of PAN card
- Weather forecasting

Types of computer:

When most people hear the word computer, they think of a personal computer such as a desktop or laptop. However, computers come in many shapes and sizes, and they perform many different functions in our daily lives. When you withdraw cash from an ATM, scan groceries at the store, or use a calculator, you're using a type of computer.

Desktop computer:

Many people use desktop computers at work, home, and school. Desktop computers are designed to be placed on a desk, and they're typically made up of a few different parts, including the computer case**,** monitor**,** keyboard**,** and mouse.

Laptop computer:

The second type of computer you may be familiar with is a laptop computer, commonly called a laptop. Laptops are battery-powered computers that are more portable than desktops, allowing you to use them almost anywhere.

Tablet computer:

Tablet computers or tablets are handheld computers that are even more portable than laptops. Instead of a keyboard and mouse, tablets use a touch-sensitive screen for typing and navigation. The iPad is an example of a tablet.

.**Other types of computer:**

Many of today's electronics are basically specialized computer, though we don't always think of them that way. Here are a few common examples.

- **Smart phones**: Many cell phones can do a lot of things computers can do, including browsing the Internet and playing games. They are often called smart phones**.**
- **Wearable**: Wearable technology is a general term for a group of devices including fitness trackers and smart watches that are designed to be worn throughout the day. These devices are often called wearable's for short.

- **Game consoles**: A game console is a specialized type of computer that is used for playing video games on your TV.
- **TVs**: Many TVs now include applications or apps that let you access various types of online content. For example, you can stream video from the Internet directly onto your TV.

Server

A server is a computer that serves up information to other computers on a network. For example, whenever you use the Internet, you're looking at something that's stored on a server. Many businesses also use local file servers to store and share files internally

GENERATIONS OF COMPUTER

A generation of computers refers to the specific improvements in computer technology with time. In 1946, electronic pathways called circuits were developed to perform the counting. It replaced the gears and other mechanical parts used for counting in previous computing machines. In each new generation, the circuits became smaller and more advanced than the previous generation circuits. The miniaturization helped increase the speed, memory and power of computers. There are five generations of computers which are described below;

First Generation Computer:

The first generation (1946-1959) computers were slow, huge and expensive. In these computers, vacuum tubes were used as the basic components of CPU and memory. These computers were mainly depended on batch operating system and punch cards. Magnetic tape and paper tape were used as output and input devices in this generation;

Some of the popular first generation computers are;

- **ENIAC** (Electronic Numerical Integrator and Computer)
- **EDVAC** (Electronic Discrete Variable Automatic Computer)
- **UNIVACI**(Universal Automatic Computer)
- **IBM-701**
- **IBM-650**

Second Generation Computer:

The second generation (1959-1965) was the era of the transistor computers.

These computers used transistors which were cheap, compact and consuming less power; it made transistor computers faster than the first generation computers. In this generation, magnetic cores were used as the primary memory and magnetic disc and tapes were used as the secondary storage. Assembly language and programming languages like COBOL and FORTRAN, and Batch processing and multiprogramming operating systems were used in these computers.

Some of the popular second generation computers are;

- **IBM 1620**
- **IBM 7094**
- **CDC 1604**
- **CDC 3600**
    - **UNIVAC 1108**

Third Generation Computer:

The third generation computer used integrated circuits (ICs) instead of transistors. A single IC can pack huge number of transistors which increased the power of a computer and reduced the cost. The computers also became more reliable, efficient and smaller in size. These generation computers used remote processing, time-sharing, multi programming as operating system. Also, the high-level programming languages like FORTRON-II TO IV, COBOL, PASCAL PL/1, ALGOL- 68 were used in this generation.

Some of the popular third generation computers are;

- **IBM-360 series**
- **Honeywell-6000 series**
- **PDP(Personal Data Processor)**
- **IBM-370/168**
- **TDC-316**

Fourth Generation Computer:

The fourth generation (1971-1980) computers used very large scale integrated (VLSI) circuits; a chip containing millions of transistors and other circuit elements. These chips made this generation computers more compact, powerful, fast and affordable. These generation computers used real time, time sharing and distributed operating system. The programming languages like C, C++, DBASE were also used in this generation.

Some of the popular fourth generation computers are;

- **DEC 10**
- **STAR 1000**
- **PDP 11**
- **CRAY-1(Super Computer)**
- **CRAY-X-MP(Super Computer)**

Fifth Generation Computer:

In fifth generation (1980-till date) computers, the VLSI technology was replaced with ULSI (Ultra Large Scale Integration). It made possible the production of microprocessor chips with ten million electronic components. This generation computers used parallel processing hardware and AI (Artificial Intelligence) software. The programming languages used in this generation were C, C++, Java, .Net, etc.

Some of the popular fifth generation computers are;

- **Desktop**
- **Laptop**
- **Note Book**
- **Ultra Book**
- **Chrome Book**

ADVANTAGES OF COMPUTER

Multitasking:

Multitasking is one of the major advantages of computer. Person can perform multiple tasks, multiple operations; calculate numerical problems within few seconds. Computer can perform trillion of instructions per second.

Speed:

Now computer is not just a calculating device. Now a day's computer has very important role in human life. One of the main advantages of computer is its incredible speed, which helps human to complete their task in few seconds. All the operations can be performed very fast just because of its speed else wise it takes a long time to perform the task.

Cost/ Stores huge amount of data:

It is a low cost solution. Person can save huge data within a low budget. Centralized database of storing information is the major advantage that can reduce cost.

Accuracy:

One of the root advantage of computer is that can perform not only calculations but also with accuracy.

Data Security:

Protecting digital data is known as data security. Computer provide security from destructive forces and from unwanted action from unauthorized users like cyber attack or access attack.

DISADVANTAGE OF COMPUTER:

Virus and hacking attacks:

Virus is a worm and hacking is simply an unauthorized access over computer for some illicit purpose. Virus is being transferred from email attachment, viewing an infected website advertisement, through removable device like USB etc. once virus is transferred in host computer it can infect file, overwrite the file etc.

For example: Huge portion of internet was going down including Twitter, Netflix, Reddit and CNN in October 2016 because the largest DDoS attack was launched on service provider DYN using IoT Botnet.

- **Online Cyber Crimes:**

Online cyber-crime means computer and network may have used in order to commit crime. Cyber stalking and Identity theft are the points which come under online cyber-crimes.

For example**:** one may get the access of the access to your shopping account like Amazon account now that person will be able to know your personal details like debit card or credit card number which can be than misused.

- **Reduction in employment opportunity:**

Mainly past generation was not used of the computer or they have the knowledge of computer they faced a big problem when computer came in field. As we have seen in banking sector senior bank employees faced this problem when computer came to the banking sector. Above were the main disadvantages of computer, no IQ, Dependency, No feeling, Break down are the basic disadvantages of computer.

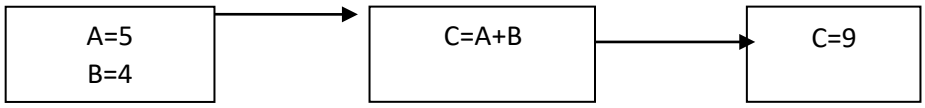
IPO CYCLE:

It means input, process and output cycle. Computer perform the following operation in a sequence.

1. Receives data or text
2. Processes data
3. Outputs result

This cycle of operations of a computer is known as Input-Process-Output cycle.

The following figure explains this cycle



we are giving A=5 and B=4 as input data through keyboard. Process is nothing but manipulation of data, Here the instruction is C=A+B. The output C=9 may be obtained on a display screen or on a printer.

II - Operating System

It is system software that controls the computer system. It also coordinates and supervises the activities of various components of the computer. As soon as the computer is switched on, its operating system starts functioning.

Functions of Operating System:

- Controls the computer resources like printer, keyboard, etc.
- Executes the application programs such as word, excel, etc.
- Informs user about wrong input or system fault.
- Acts as an interface between the hardware and the application software.
- Maintains priority among users
- Provides multi-access facility
- Provides security
- Manages memory
- Manages processor
- Shares resources

Classification of Operating System

- Single user operating system
- Multiuser operating system
- Graphical user interface operating system
- Multiprocessing operating system
- Multitasking operating system
- Multithreading operating system

Single user operating system:

This operating system controls only one user at a time. This operating system is used in

personal computers. Example for this type of operating system is DOS.

Multiuser operating system:

This operating system controls more than one user at a time. This operating system is used in networking environment. Example for this type of operating system is UNIX and Window NT. **Graphical user interface operating system:**

It has the capability of using graphical devices such as mouse. Examples for this type of operating system are Windows XP and Windows 2000.

Multiprocessing operating system:

It allows more than one processor for simultaneous processing. Examples for this type of operating system are UNIX and Windows NT.

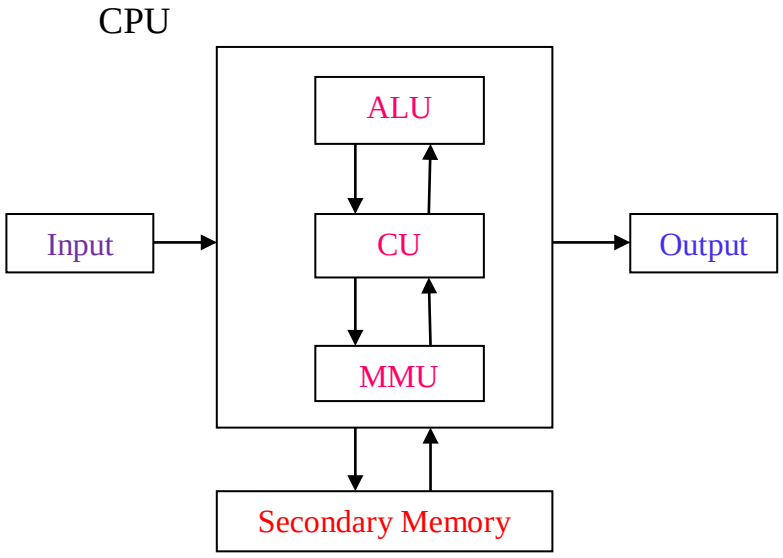
Multitasking Operating System:

It allows multiple software processes to be run at the same time. Examples for this type of operating system are Windows 98, Windows 2000 and Windows XP.

Multithreading operating system:

It allows different part of a software program to run in parallel. Examples for this type of operating system are Windows 98, Windows 2000 and Windows NT.

III - Components of a Computer System



Every computer system has the following three basic components:

1. Input unit
2. Central processing unit
    i. Memory unit
    ii. Arithmetic and logic unit
    iii. Control Unit
3. Output unit

Input Unit:

These components help users enter data and commands into a computer system. Data can be in the form of numbers, words, actions, commands, etc. The main function of input devices is to direct commands and data into computers. Computers then use their CPU to process this data and produce output.

For example, a laptop's keyboard is an input unit that enters numbers and characters. Similarly, even a mouse can be an input unit for entering directions and commands. Other examples include barcode readers, Magnetic Ink Character Readers (MICR),

Optical Character Readers (OCR), etc.

Another example of input devices is touch-screens. Users can simply touch these screens without using any other device to enter commands. From smart phones to ATM machines, these input devices are becoming very popular these days.

Central Processing Unit (CPU):

After receiving data and commands from users, a computer system now has to process it according to the instructions provided. Here, it has to rely on a component called the central processing unit. The CPU further uses these three elements:

a) Memory Unit:

Once a user enters data using input devices, the computer system stores this data in its memory unit. This data will now remain here until other components of CPU process it. The memory unit uses a set of pre-programmed instructions to further transmit this data to other parts of the CPU.

b) Arithmetic and Logic Unit:

Actual data processing occurs in this unit. All arithmetic and logical operations such as addition, subtraction, comparison, etc. are performed here. It has many sub units. They are

Registers: It is used for temporary storage. Some of the registers are instruction registers, address registers, etc.

Program Counter: It is used to store the address of the instruction that is to be executed.

Adders: It is used to perform arithmetic and logical operations

c) Control Unit:

This unit is the backbone of computers. It is responsible for coordinating tasks between all components of a computer system. The control unit collects data from input units

and sends it to processing units depending on its nature. Finally, it also further transmits processed data to output units for users.

Main memory unit:

It holds all data and instructions temporarily. It is otherwise called primary memory or internal memory. There are two types of main memory. They are

- Random-Access Memory (RAM)
- Read-Only Memory (DRAM)

Random-Access Memory:

It is a volatile memory. So this type of memory loses its contents when the power is turned off. There are two type of RAM. They are

- Static RAM (SRAM)
- Dynamic RAM (DRAM)

Dynamic RAM contents are refreshed thousands of times per second whereas Static RAM contents are refreshed less often.

Read-Only Memory:

It is nonvolatile memory, so its contents are not lost when the power is turned off. This memory contains the programs, which are used to boot the computer system. The content of ROM is recorded while manufacturing. The other types ROM are

- PROM
- EPROM
- EEPROM

PROM: It stands for programmable ROM. The user records its contents only one time. **EPROM:** It stands for erasable programmable ROM. The contents of EPROM are removed by focusing the chip to ultra violet light.

EEPROM: It stands for electrically erasable programmable ROM. Its contents are removed by applying electrical charge.

Difference between RAM and ROM memory:

RAM	ROM
The contents will be lost when the poser goes off	The contents is permanent even when the poser goes off
Accessing speed is large	Assessing speed is short
Requires high power	Requires low power
Used in large systems	Used in small systems

Output Unit:

The third and final component of a computer system is the output unit. After processing of data, it is converted into a format which humans can understand. After conversion, the output units display this data to users. Examples of output devices include monitors, screens, printers and speakers. Thus, output units basically reproduce the data formatted by the computer for users' benefit.

INPUT / OUTPUT DEVICES

These devices are used to enter information and instructions into a computer for storage or processing and to deliver the processed data to a user. Input/ Output devices are required for users to communicate with the computer. In simple terms, input devices bring information INTO the computer and output devices bring information OUT of a computer system. These input/ output devices are also known as peripherals since they surround the CPU and memory of a computer system.

INPUT DEVICES

An input device is any device that provides input to a computer. There are

many input devices, but the two most common ones are a keyboard and mouse. Every key

press on the keyboard and every movement or click you make with the mouse sends a specific input signal to the computer.

Following are some of the important input devices which are used in a computer

- Keyboard
- Mouse
- Joy Stick
- Light pen
- Track Ball
- Scanner
- Graphic Tablet
- Microphone
- Magnetic Ink Card Reader(MICR)
- Optical Character Reader(OCR)
- Bar Code Reader
- Optical Mark Reader(OMR)

Keyboard:

Keyboard is the most common and very popular input device which helps to input data to the computer. The layout of the keyboard is like that of traditional typewriter, although there are some additional keys provided for performing additional functions. Keyboards are of two sizes 84 keys or 101/102 keys, but now keyboards with 104 keys or 108 keys are also available for Windows and Internet.

The keys on the keyboard are as follows:

	Keys & Description
	**Typing Keys** These keys include the letter keys (A-Z) and digit keys (09) which generally give the same layout as that of typewriters.
	**Numeric Keypad** It is used to enter the numeric data or cursor movement. Generally, it consists of a set of 17 keys that are laid out in the same configuration used by most adding machines and calculators.
	**Function Keys** The twelve function keys are present on the keyboard which are arranged in a row at the top of the keyboard. Each function key has a unique meaning and is used for some specific purpose.
	**Control keys** These keys provide cursor and screen control. It includes four directional arrow keys. Control keys also include Home, End, Insert, Delete, Page Up, Page Down, Control(Ctrl), Alternate(Alt), Escape(Esc).

Special Purpose Keys

Keyboard also contains some special purpose keys such as Enter, Shift, Caps Lock, Num Lock, Space bar, Tab, and Print Screen.

Mouse:

Mouse is the most popular pointing device. It is a very famous cursor-control device having a small palm size box with a round ball at its base, which senses the movement of the mouse and sends corresponding signals to the CPU when the mouse buttons are pressed.

Generally, it has two buttons called the left and the right button and a wheel is present between the buttons. A mouse can be used to control the position of the cursor on the screen, but it cannot be used to enter text into the computer.

Advantages:

- Easy to use
- Not very expensive
- Moves the cursor faster than the arrow keys of the keyboard.

Joystick:

Joystick is also a pointing device, which is used to move the cursor position on a monitor screen. It is a stick having a spherical ball at its both lower and upper ends.

The lower spherical ball moves in a socket. The joystick can be moved in all four directions.

The function of the joystick is similar to that of a mouse. It is mainly used in Computer Aided Designing (CAD) and playing computer games.

Light Pen:

Light pen is a pointing device similar to a pen. It is used to select a displayed menu item or draw pictures on the monitor screen. It consists of a photocell and an optical system placed in a small tube.

When the tip of a light pen is moved over the monitor screen and the pen button is pressed, its photocell sensing element detects the screen location and sends the corresponding signal to the CPU.

Track Ball:

Track ball is an input device that is mostly used in notebook or laptop computer, instead of a mouse. This is a ball which is half inserted and by moving fingers on the ball, the pointer can be moved.

Since the whole device is not moved, a track ball requires less space than a mouse. A track ball comes in various shapes like a ball, a button, or a square.

Scanner:

Scanner is an input device, which works more like a photocopy machine. It is used when some information is available on paper and it is to be transferred to the hard disk

of the computer for further manipulation.

Scanner captures images from the source which are then converted into a digital form that can be stored on the disk. These images can be edited before they are printed.

Digitizer:

Digitizer is an input device which converts analog information into digital form. Digitizer can convert a signal from the television or camera into a series of numbers that could be stored in a computer. They can be used by the computer to create a picture of whatever the camera had been pointed at.

Digitizer is also known as Tablet or Graphics Tablet as it converts graphics and pictorial data into binary inputs. A graphic tablet as digitizer is used for fine works of

drawing and image manipulation applications.

Microphone:

Microphone is an input device to input sound that is then stored in a digital form.

The microphone is used for various applications such as adding sound to a multimedia presentation or for mixing music.

Magnetic Ink Card Reader (MICR):

MICR input device is generally used in banks as there are large number of cheques to be processed every day. The bank's code number and cheque number are printed on the cheques with a special type of ink that contains particles of magnetic material that are machine readable.

This reading process is called Magnetic Ink Character Recognition (MICR). The main advantages of MICR are that it is fast and less error prone.

Optical Character Reader (OCR):

OCR is an input device used to read a printed text.

OCR scans the text optically, character by character, converts them into a machine readable code, and stores the text on the system memory.

Bar Code Readers:

Bar Code Reader is a device used for reading bar coded data (data in the form of light and dark lines). Bar coded data is generally used in labeling goods, numbering the books, etc. It may be a handheld scanner or may be embedded in a stationary scanner.

Bar Code Reader scans a bar code image, converts it into an alphanumeric value, which is then fed to the computer that the bar code reader is connected to.

Optical Mark Reader (OMR):

OMR is a special type of optical scanner used to recognize the type of mark made by pen or pencil. It is used where one out of a few alternatives is to be selected and marked.

It is specially used for checking the answer sheets of examinations having multiple choice questions.

- Output Devices

Following are some of the important output devices used in a computer.

- Monitors
- Graphic Plotter
- Printer

Monitors:

Monitors, commonly called as Visual Display Unit (VDU), are the main output device of a computer. It forms images from tiny dots, called pixels that are arranged in a rectangular form. The sharpness of the image depends upon the number of pixels.

There are two kinds of viewing screen used for monitors.

- Cathode-Ray Tube (CRT)
- Flat-Panel Display

Cathode-Ray Tube (CRT) Monitor:

The CRT display is made up of small picture elements called pixels. The smaller the pixels, the better the image clarity or resolution. It takes more than one illuminated pixel to form a whole character, such as the letter ‘e’ in the word help.

A finite number of characters can be displayed on a screen at once. The screen can be divided into a series of character boxes - fixed location on the screen where a standard character can be placed. Most screens are capable of displaying 80 characters of data horizontally and 25 lines vertically.

Some disadvantages of CRT:

- Large in Size
- High power consumption

Flat-Panel Display Monitor:

The flat-panel display refers to a class of video devices that have reduced volume, weight and power requirement in comparison to the CRT. You can hang them on walls or wear them on your wrists. Current uses of flat-panel displays include calculators, video games, monitors, laptop computer, and graphics display.

The flat-panel display is divided into two categories

Emissive Displays − Emissive displays are devices that convert electrical energy into light. For example, plasma panel and LED (Light-Emitting Diodes)

Non-Emissive Displays − Non-emissive displays use optical effects to convert sunlight or light from some other source into graphics patterns.

For example, LCD (Liquid-Crystal Device)

Printers:

Printer is an output device, which is used to print information on paper.

There are two types of printers

- Impact Printers
- Non-Impact Printers

Impact Printers:

Impact printers print the characters by striking them on the ribbon, which is then pressed on the paper.

Characteristics of Impact Printers:

- Very low consumable costs
- Very noisy
- Useful for bulk printing due to low cost

These printers are of two types

- Character printers
- Line printers

Character Printers

Character printers are the printers which print one character at a time. These are further divided into two types:

- Dot Matrix Printer(DMP)
- Daisy Wheel

Dot Matrix Printer

In the market, one of the most popular printers is Dot Matrix Printer. These printers are popular because of their ease of printing and economical price. Each character printed is in the form of pattern of dots and head consists of a Matrix of Pins of size (5*7, 7*9, 9*7 or 9*9) which comes out to form a character which is why it is called Dot Matrix Printer.

Daisy Wheel

Head is lying on a wheel and pins corresponding to characters are like petals of Daisy (flower) which is why it is called Daisy Wheel Printer. These printers are generally used for word- processing in offices that require a few letters to be sent here and there with very nice quality.

Line Printers

Line printers are the printers which print one line at a time.

These are of two types

- Drum Printer
- Chain Printer

Drum Printer

This printer is like a drum in shape hence it is called drum printer. The surface of the drum is divided into a number of tracks. Total tracks are equal to the size of the paper, i.e. for a paper width of 132 characters, drum will have 132 tracks. A character set is embossed on the track. Different character sets available in the market are 48 character set, 64 and 96 characters set. One rotation of drum prints one line. Drum printers are fast in speed and can print 300 to 2000 lines per minute.

Advantages

Very high speed

Disadvantages

Very expensive

Characters fonts cannot be changed

Chain Printer

In this printer, a chain of character sets is used; hence it is called Chain Printer. A standard character set may have 48, 64, or 96 characters.

Advantages

Character fonts can easily be changed.

Different languages can be used with the same printer.

Disadvantages

Noisy

Non-impact Printers:

Non-impact printers print the characters without using the ribbon. These printers print a complete page at a time, thus they are also called as Page Printers.

These printers are of two types −

- Laser Printers
- Inkjet Printers

Characteristics of Non-impact Printers

Faster than impact printers They are not noisy

High quality

Supports many fonts and different character size

Laser Printers

These are non-impact page printers. They use laser lights to produce the dots needed to form the characters to be printed on a page.

Advantages

Very high speed

Very high quality output Good graphics quality

Supports many fonts and different character size

Disadvantages

Expensive

Cannot be used to produce multiple copies of a document in a single printing

Inkjet Printers

Inkjet printers are non-impact character printers based on a relatively new technology. They print characters by spraying small drops of ink onto paper. Inkjet printers produce high quality output with presentable features.

They make less noise because no hammering is done and these have many styles of printing modes available. Color printing is also possible. Some models of Inkjet printers can produce multiple copies of printing also.

Advantages

High quality printing

More reliable

Disadvantages

Expensive as the cost per page is high Slow as compared to laser printer

- Memory Handling

As we know that memory is that which stores the programs and these programs are used by the CPU for processing. Moreover, there are two types of memories first is the logical memory and second is the physical memory. The memory which is temporary such as ram is also known as the temporary memory and the memory which is permanent such as the hard disk is also known as the physical memory of the system.

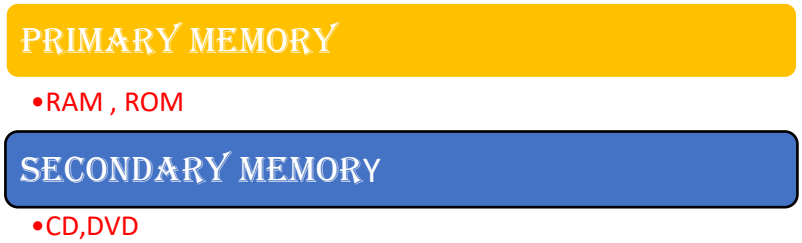
When we want to execute any programs then that programs must be brought from the physical memory into the logical memory. So that we use the concept of memory management, this is the responsibility of the operating system to provide the memory spaces to every program. Also, manage which process will be executed at that time.

Operating system translates the physical address into the logical address, and if he wants to operate, then he must translate the physical address into the logical address. This is the also known as binding. Means when a physical address is mapped or convert into the logical address, and then this is called as the binding.

There is also a concept which is also known as the dynamic loading, in this, a program doesn't reside into the memory of the computer, and we must have to load that process for processing. So that when a process is loaded only when a request has found, then it is called the loading of the process.

MEMORY

Computer's memory can be classified into two types; primary memory and secondary memory.



PRIMARY MEMORY CAN BE FURTHER CLASSIFIED AS RAM AND ROM.

RAM or Random Access Memory is the unit in a computer system. It is the place in a computer where the operating system, application programs and the data in current use are kept temporarily so that they can be accessed by the computer's processor. It is said to be 'volatile' since its contents are accessible only as long as the computer is on. The contents of RAM are no more available once the computer is turned off.

ROM or Read Only Memory is a special type of memory which can only be read and contents of which are not lost even when the computer is switched off. It typically contains manufacturer's instructions. Among other things, ROM also stores an initial program called the 'bootstrap loader' whose function is to start the operation of computer system once the power is turned on.

SECONDARY MEMORY

RAM is volatile memory having a limited storage capacity. Secondary/ auxiliary memory is storage other than the RAM. These include devices that are peripheral and are

connected and controlled by the computer to enable permanent storage of programs and data.

Secondary storage devices are of two types; magnetic and optical. Magnetic devices include hard disks and optical storage devices are CDs, DVDs, Pen drive, Zip drive.

Hard disks are made up of rigid material and are usually a stack of metal disks sealed in a box. The hard disk and the hard disk drive exist together as a unit and is a permanent part of the computer where data and programs are saved. These disks have storage capacities ranging from 1GB to 80 GB and more. Hard disks are rewritable.

COMPACT DISK

Compact Disk (CD) is portable disk having data storage capacity between 650- 700 MB. It can hold large amount of information such as music, full-motion videos, and text etc. CDs can be either read only or read write type.

DIGITAL VIDEO DISK

Digital Video Disk (DVD) is similar to a CD but has larger storage capacity and enormous clarity. Depending upon the disk type it can store several Gigabytes of data. DVDs are primarily used to store music or movies and can be played back on your television or the computer too. These are not rewritable.

Magnetic Storage Device – one of the most popular types of storage used.

- Floppy diskette – A normal 3 ½ inch disk can store 1.44 MB of data.
- Hard drive – An internal hard drive is the main storage device in a computer. An external hard drive is also known as removable hard drive. It is used to store portable data and backups.
- Magnetic strip – Magnetic tape drive stores video and audio using magnetic tape, like tape and video tape recorders.
- Super disk – A disk drive and diskette that can hold 120 MB and 240 MB of data.
- Cassette tape – A magnetic storage device used for audio recording and playback.
- Zip diskette – Like a floppy diskette but more advanced.

Optical Storage Device – uses lasers and lights as its mode of saving and retrieving data.

- Blu-ray disc – A digital optical storage device which was intended to replace the DVD format.

- CD-ROM disc – An optical storage device that is read-only or cannot be modified nor deleted.
- CD-R and CD-RW disc – CD-R is a recordable disc that can be written to once, while CD-RW is a rewritable disc that can be written to multiple times.
- DVD-R, DVD+R, DVD-RW and DVD+RW disc – DVD-R and DVD+R are recordable discs that can be written to once, while DVD-RW and DVD+RW are rewritable discs that can be written to multiple times. The difference between the + and – is in the formatting and compatibility.

Flash Memory Device – is now replacing magnetic storage device as it is economical, more functional and dependable.

- Memory card – An electronic flash memory device used to store digital information and commonly used in mobile electronic devices.
- Memory stick – A memory card that is removable.
- SSD – Solid State Drive – A flash memory device that uses integrated circuit assemblies to save data steadily.
- USB flash drive, jump drive or thumb drive – A small, portable storage device connected through the USB port.

Online and Cloud – is now becoming widespread as people access data from different devices.

- Cloud storage – Data is managed remotely and made available over a network.

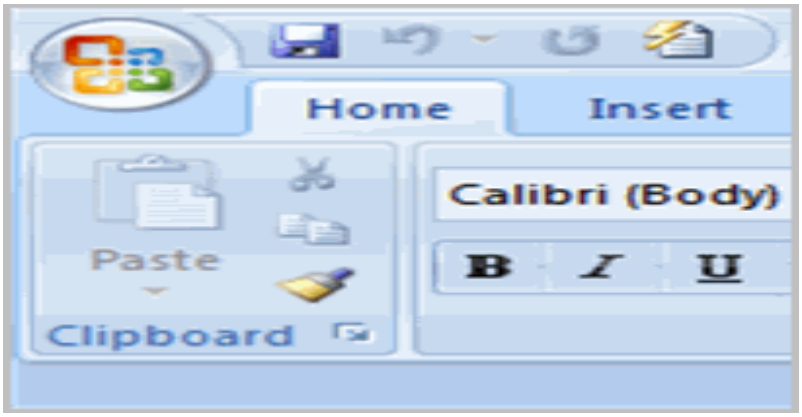
Basic features are free to use but upgraded version is paid monthly as a per consumption rate.

- Network media – Audio, Video, Images or Text that are used on a computer network. A community of people creates and use the content shared over the internet.

Paper Storage – method used by early computers for saving information.

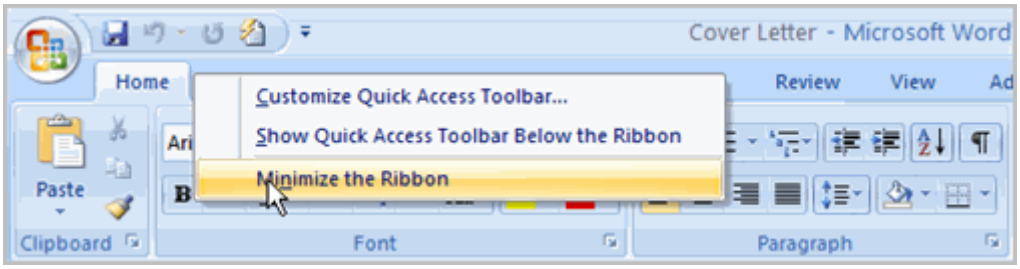
- OMR – stands for Optical Mark Recognition – A process of capturing marked data of human from forms like surveys and tests. It is used to read questionnaires with multiple choices that are shaded.
- Punch card – A piece of hard paper used to contain digital information coming from the perforated holes. The presence or absence of holes in predetermined positions defines the data.

CREATE THE WORD DOCUMENT



Before we begin creating documents in Word, you may want to **set up our Word environment** and become familiar with a few **key tasks** such as how to minimize and maximize the Ribbon, configure the Quick Access Toolbar, display the ruler, and use the Word Count and Zoom tools.

- Right-click anywhere in the main menu.
- Select **Minimize the Ribbon** in the menu that appears. This will **toggle** the Ribbon **on** and **off**.



The **check mark** beside **Minimize the Ribbon** indicates that the feature is active.

The new **tabbed Ribbon system** replaces traditional menus in Word 2007. It is designed to be responsive to your current task and easy to use; however, can choose to **minimize the Ribbon** if you would rather use different menus or keyboard shortcuts.

WORKING WITH TEXT

To insert text:

- Move our mouse to the location where we want text to appear in the document.
- Left-click the mouse. The **insertion point** appears.
- Type the text We want to appear.

To delete text:

- Place our cursor next to the text we want to delete.
- Press the **Backspace** key on our keyboard to delete text to the left of the cursor.
- Press the **Delete** key on our keyboard to delete text to the right of the cursor.

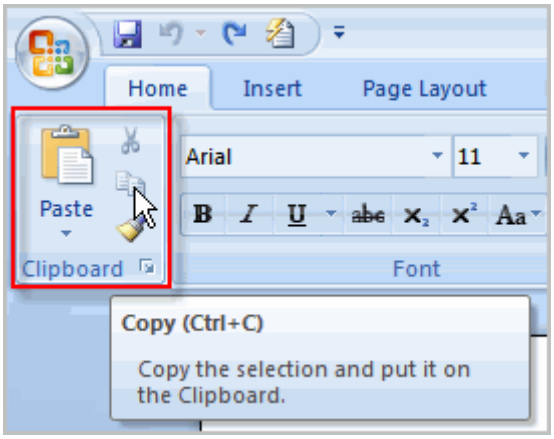
To select text:

- Place the **insertion point** next to the text we want to select.
- Left-click our mouse. While holding it down, drag our mouse over the text to select it.
- Release the mouse button. we have selected the text. A **highlighted box** will appear over the selected text.

When we Select text or images in Word, a **hover toolbar** with formatting options appears. This makes formatting commands easily accessible, which can save Our time.

To copy and paste text:

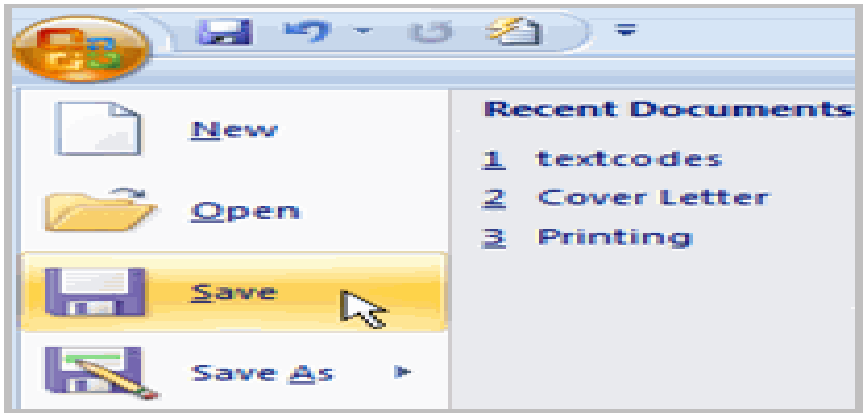
- Select the text we want to copy.
- Click the **Copy** command on the Home tab.
- Place the insertion point where we want text to appear.
- Click the **Paste** command on the Home tab. The text will appear.



To drag and drop text:

- Select the text you want to copy.
- Left-click your mouse, and **drag the text** to the location where y we want it to appear. The cursor will have a text box underneath it to indicate that we are moving text.

HOW TO SAVE DOCUMENTS



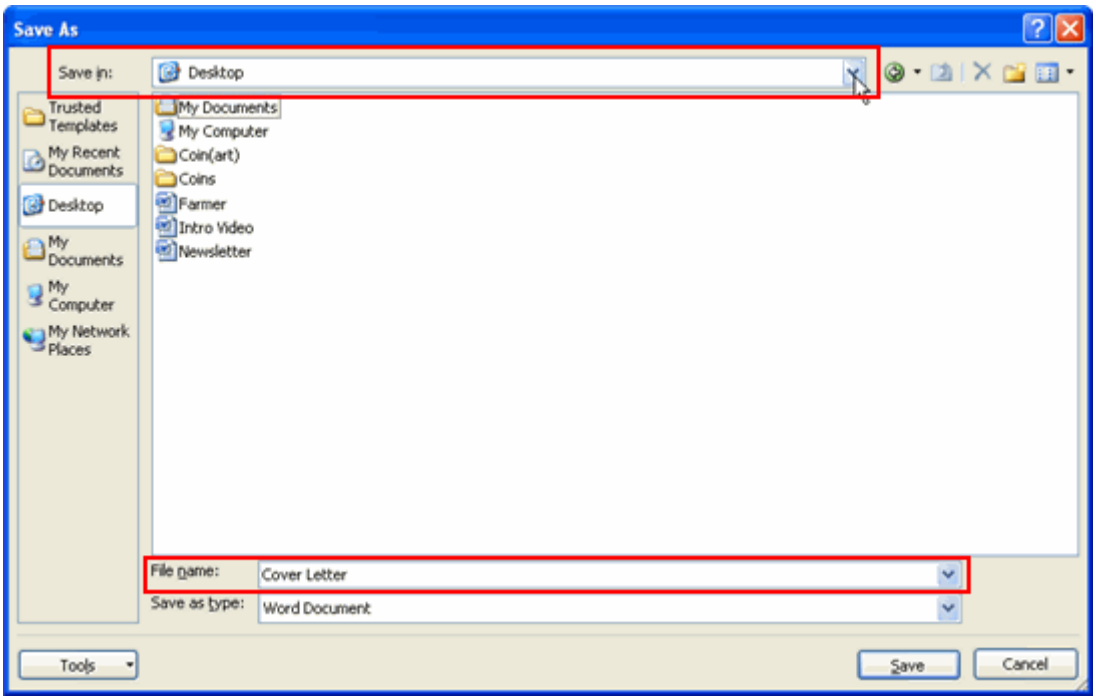
t's important to know how to save the documents working with. There are many ways you **share and receive documents**, which will affect how We need to save the file.

Are We downloading the document? Saving it for the first time? Saving it as another name? Sharing it with someone who doesn't have Word 2007? All of these factors will affect how WE **save Word documents**. In this lesson we will learn how to use the Save and Save As commands, how to save as a Word 97-2003 compatible document, and how to save as a PDF.

To use the Save As command:

- Click the **Microsoft Office button**.
- Select **Save As → Word Document**. The **Save As** dialog box appears.

- Select the **location** where you want to save the document using the drop-down menu.
- Enter a **name** for the document.



- Click the **Save** button.

To use the Save command:

- Click the **Microsoft Office button**.
- Select **Save** from the menu.

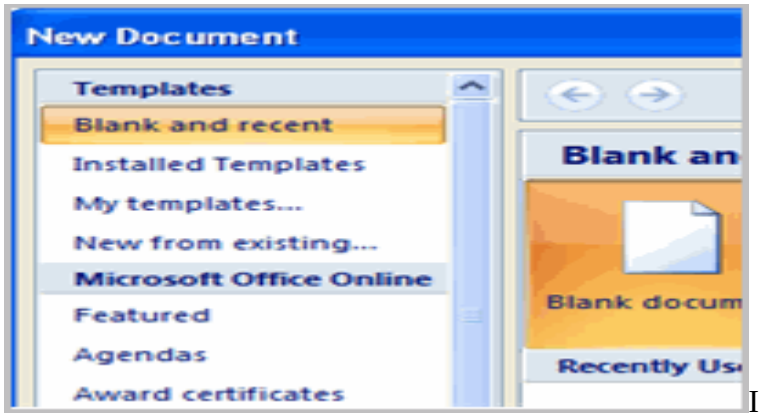
Using the Save command saves the document in its current location using the same file name. If you are saving for the first time and select **Save**, the **Save As** dialog box will appear.

To Save As a Word 97 - 2003 document:

- Click the Microsoft Office button.
- Select **Save As → Word 97-2003 Document**.

- Select the location where you want to save the document using the drop-down menu.
- Enter a name for the document.
- Click the Save button.

TO CREATE A NEW BLANK DOCUMENT:



I

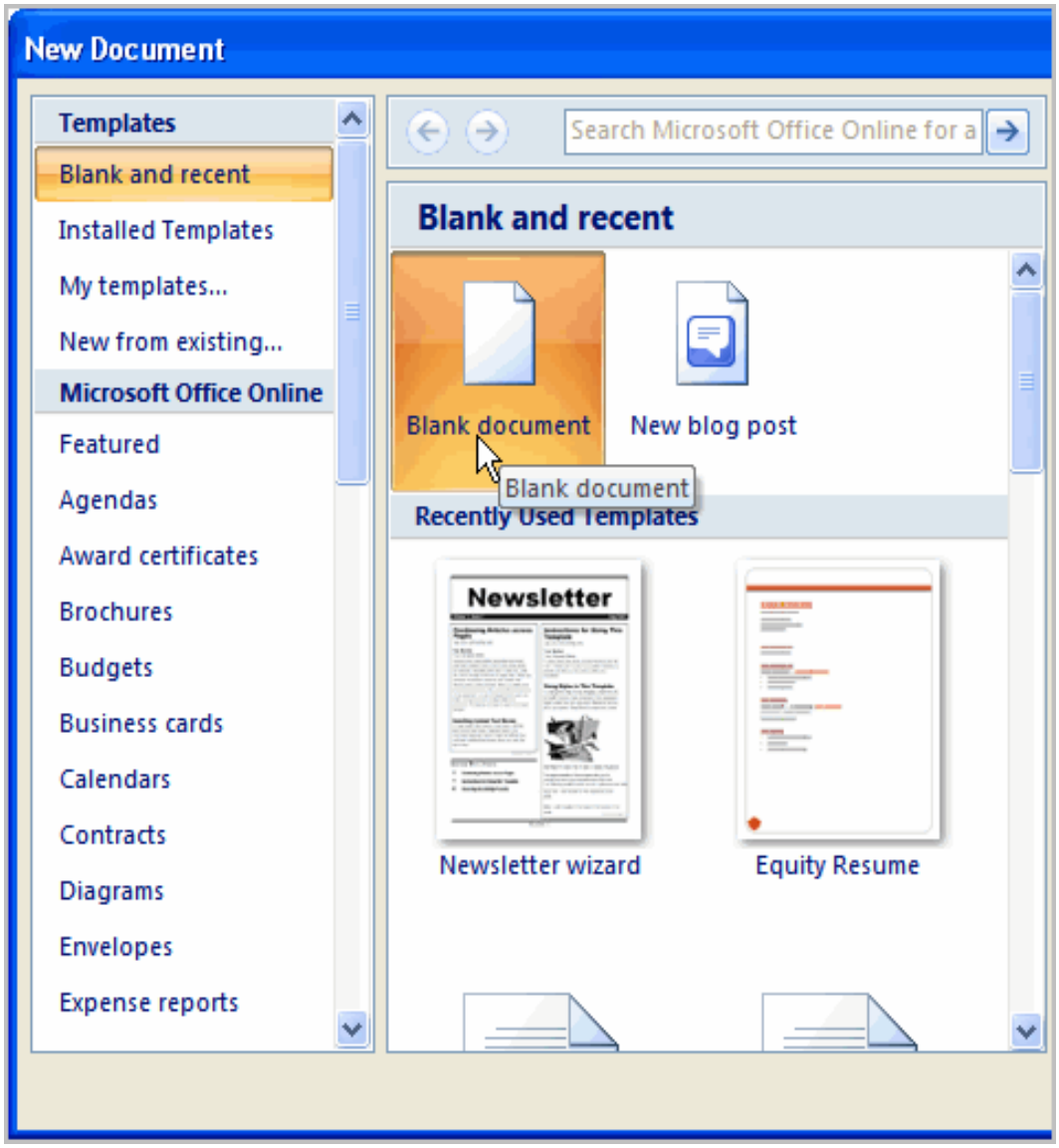
In addition to working with existing documents, we will want to be able to **create new documents**. Each time you open Word, a new blank document appears; however, we will also need to know how to create new documents while an existing document is open.

In this lesson, we will learn how to create new documents—including templates and **blank documents**—via the Microsoft Office button.

To create a new blank document:

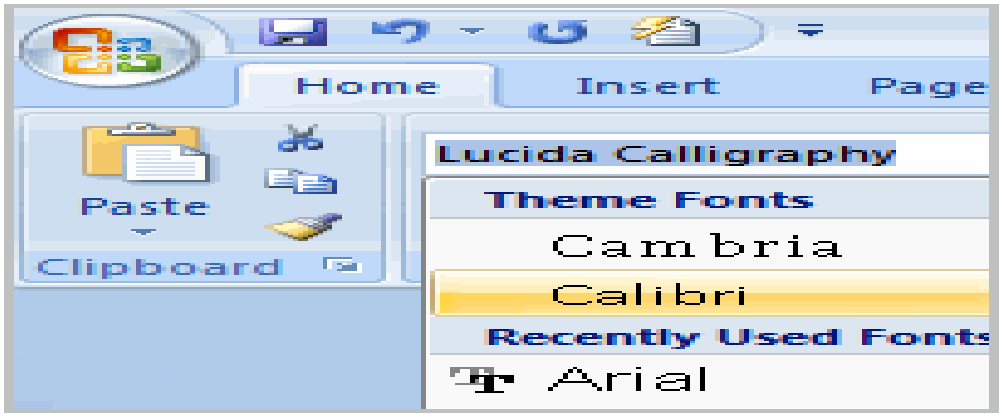
- Click the **Microsoft Office button**.
- Select **New**. The New Document dialog box appears.
- Select **Blank document** under the **Blank and recent** section. It will be highlighted by default.

- Click **Create**. A new blank document appears in the Word window.



We can access templates that are installed on our computer or on Office Online. Click the Microsoft Office button and select **New.** .

FORMATTING TEXT

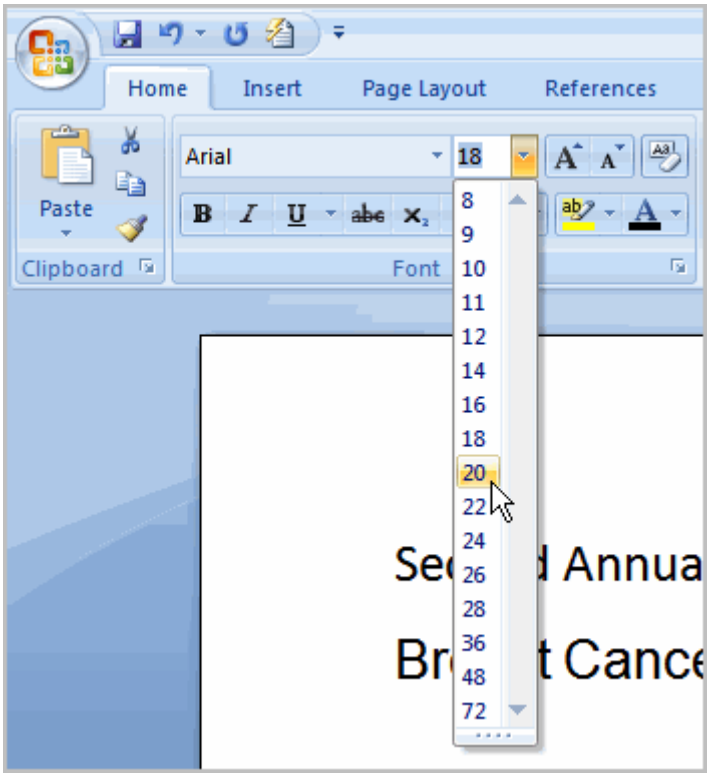


To create and design effective documents, we need to know how to **format text**. In addition to making our document more appealing, **formatted text** can draw the reader's attention to specific parts of the document and help communicate our message.

In this lesson, we will learn to format the font size, style, and color of text, as well as how to use the Bold, Italic, Underline, and Change Case commands.

F ORMAT TEXT.

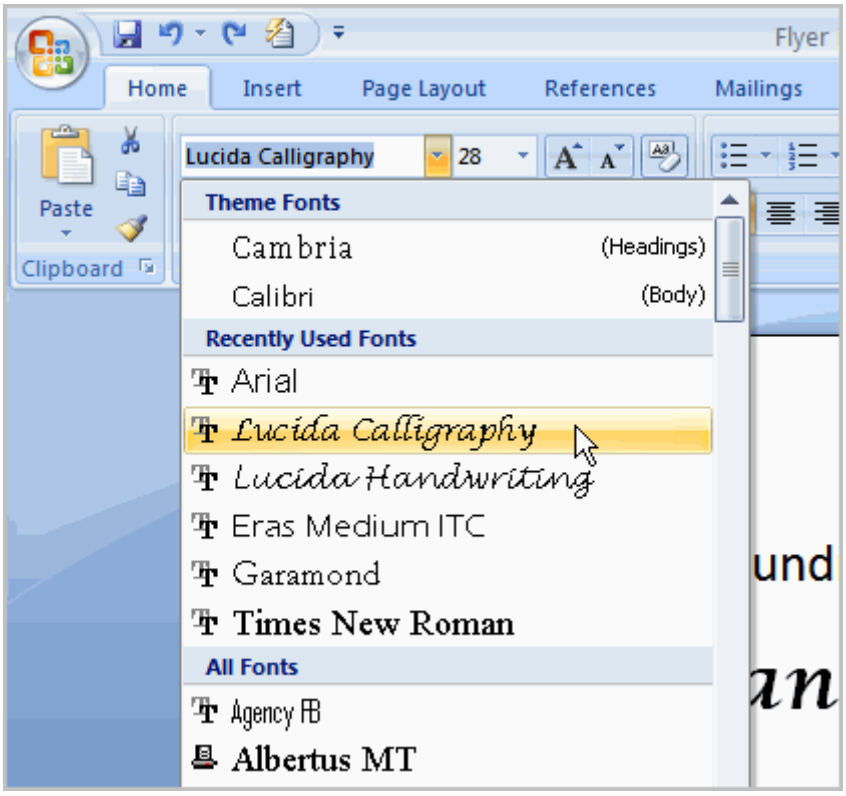
- Select the text you want to modify.
- Left-click the **drop-down arrow** next to the **font size box** on the Home tab. The font size drop-down menu appears.
- Move your cursor over the various font sizes. A **live preview** of the font size will appear in the document.



- Left-click the font size you want to use. The font size will change in the document.

To format font style:

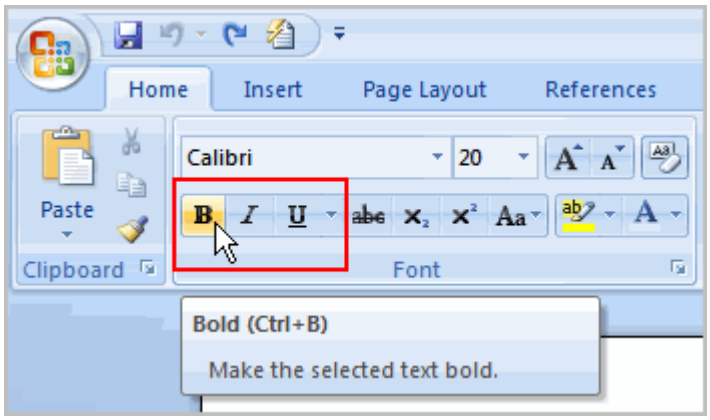
- Select the text you want to modify.
- Left-click the **drop-down arrow** next to the **font style box** on the Home tab. The font style drop-down menu appears.
- Move your cursor over the various font styles. A **live preview** of the font will appear in the document.



- Left-click the font style you want to use. The font style will change in the document.

To use the Bold, Italic, and Underline commands:

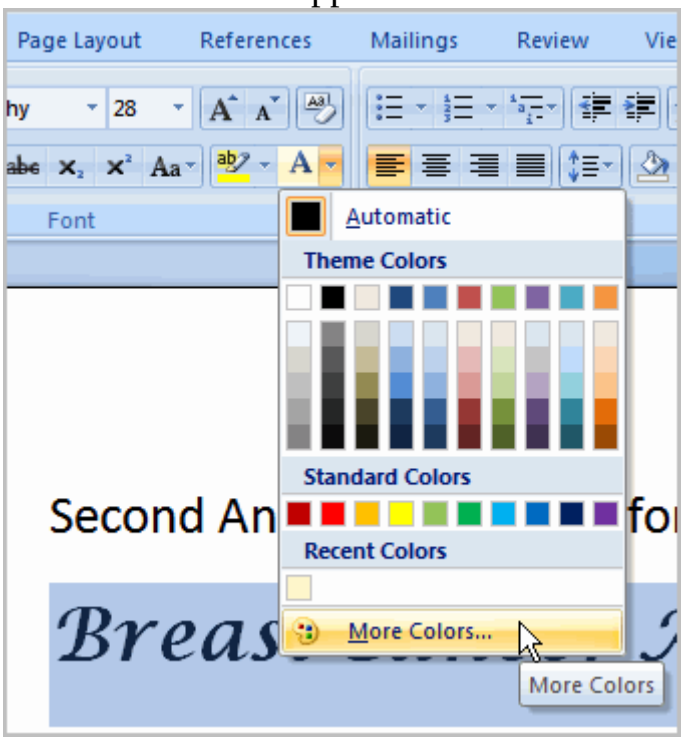
- Select the text you want to modify.
- Click the Bold, Italic, or Underline command in the **Font group** on the Home tab.



To format font colour:

- Select the text you want to modify.

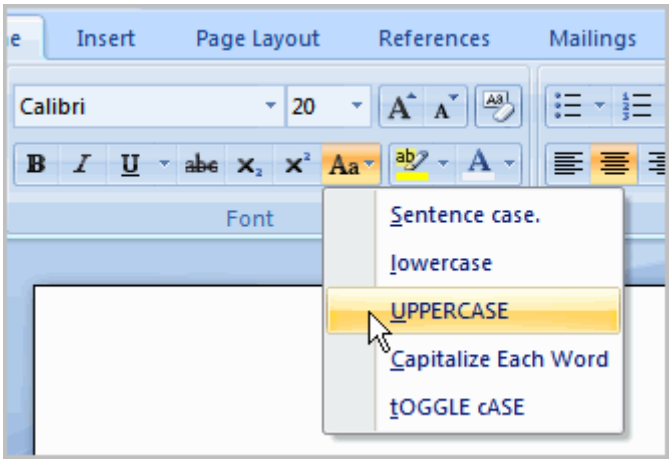
- Left-click the drop-down arrow next to the **font colour box** on the Home tab. The font colour menu appears.
- Move your cursor over the various font colours. A live preview of the colour will appear in the document.



- Left-click the font colour we want to use. The font colour will change in the document.

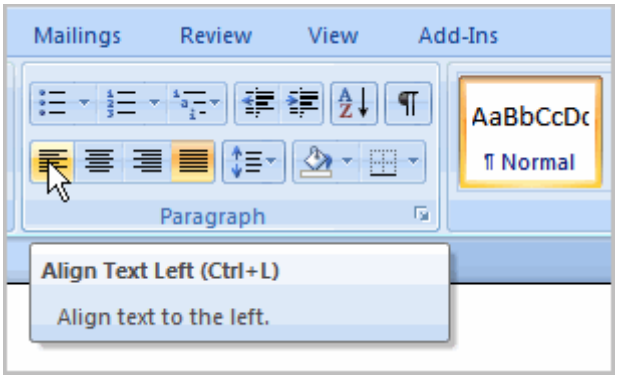
To change the text case:

- Select the text you want to modify.
- Click the **Change Case** command in the **Font** group on the Home tab.
- Select one of the case options from the list.

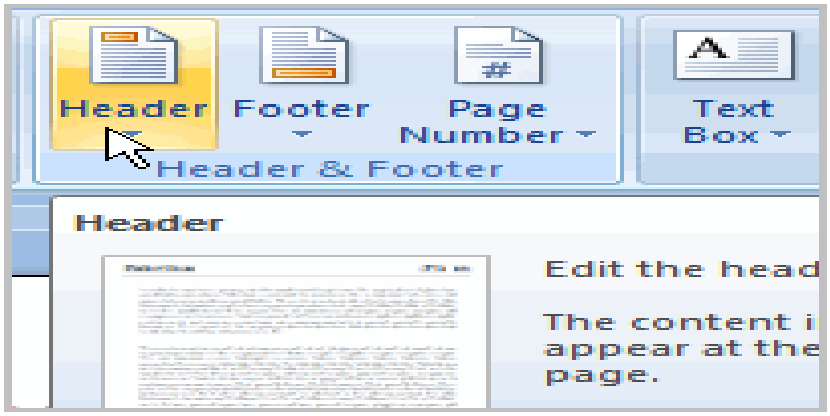


To change text alignment:

- Select the text you want to modify.
- Select one of the four **alignment options** from the Paragraph group on the Home tab.
  - **Align Text Left:** Aligns all of the selected text to the left margin
  - **Center:** Aligns text an equal distance from the left and right margins
  - **Align Text Right:** Aligns all of the selected text to the right margin
  - **Justify:** Aligns text equally to the right and left margins; used in many books, newsletters, and newspapers



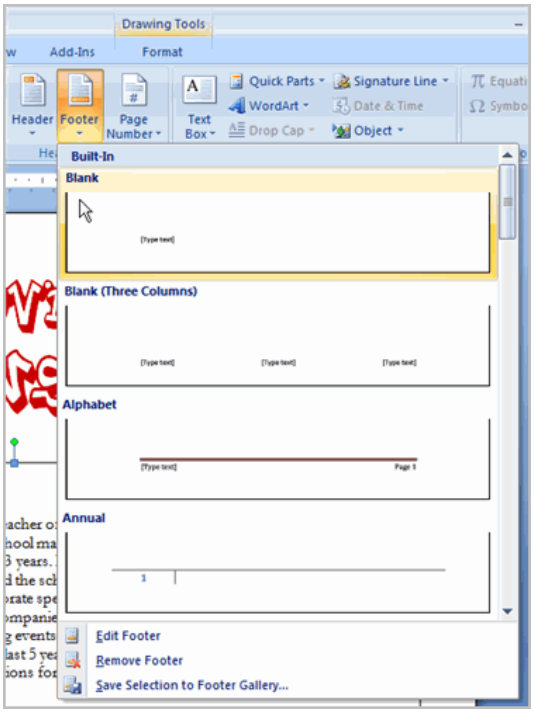
HEADER AND FOOTER



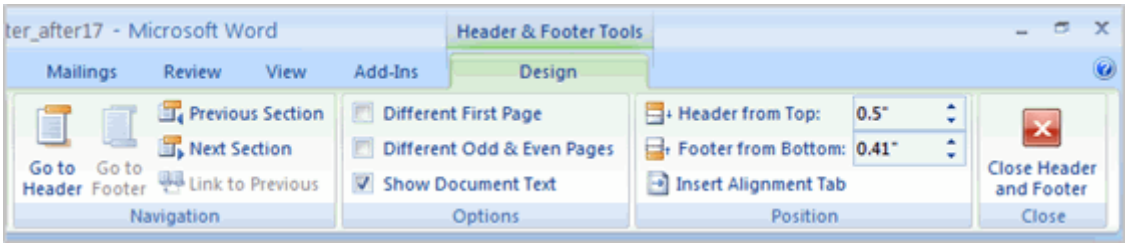
We can make your document look **professional and polished** by utilizing the header and footer sections. The **header** is a section of the document that appears in the **top margin**, while the **footer** is a section of the document that appears in the **bottom margin**. Headers and footers generally contain information such as page number, date, and document name.

To insert a header or footer:

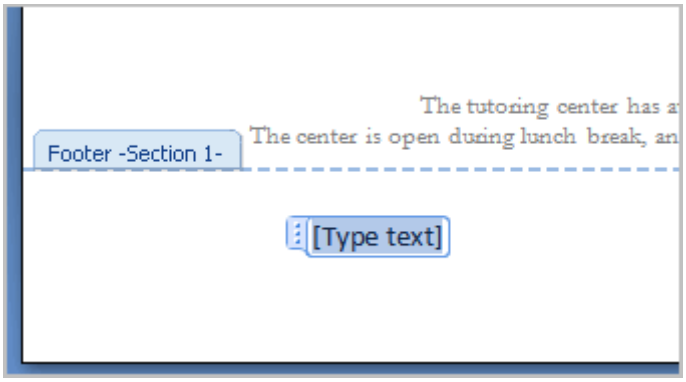
- Select the **Insert** tab.
- Click either the **Header** or **Footer** command. A menu appears with a list of **built-in options** you can use.
- Left-click one of the built-in options, and it will appear in the document.OR
- Left-click **Blank** to select it.



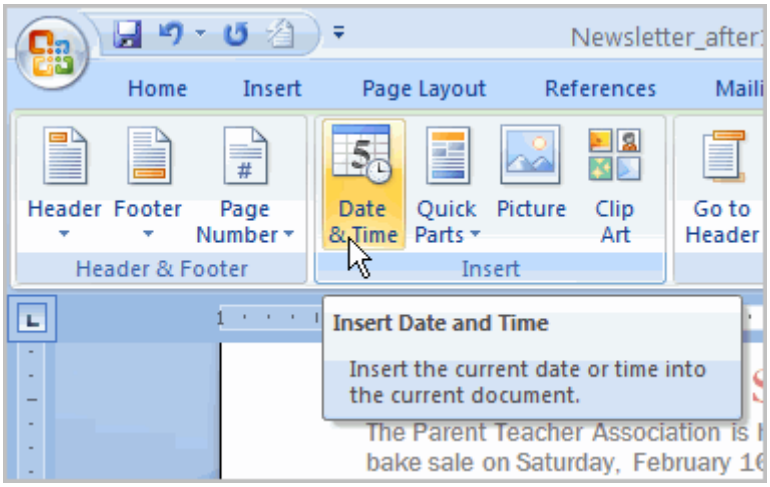
- The **Design** tab with **Header** and **Footer** tools is active.



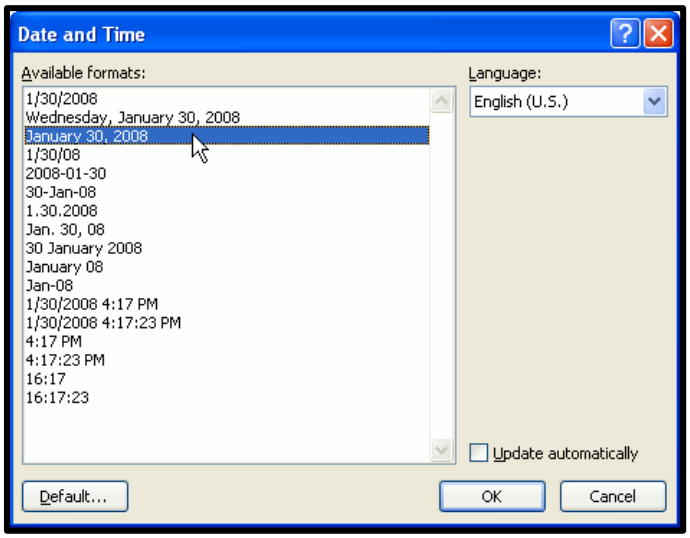
- Type information into the header or footer.



- With the header or footer section active, click the **Date & Time** command.



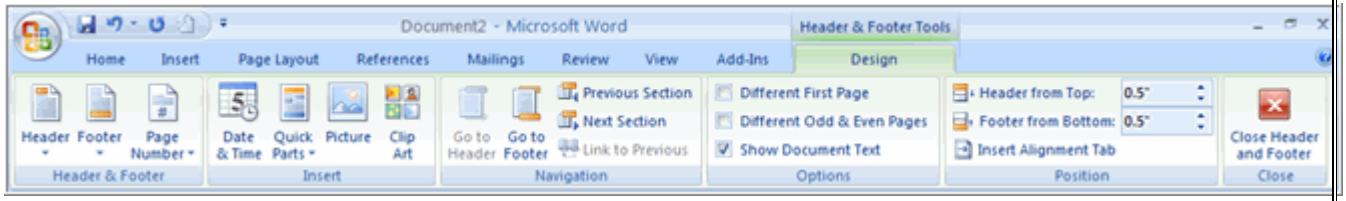
- Select a **date format** in the dialog box that appears.



- Click OK. The date and time now appear in the document.

Other header and footer options

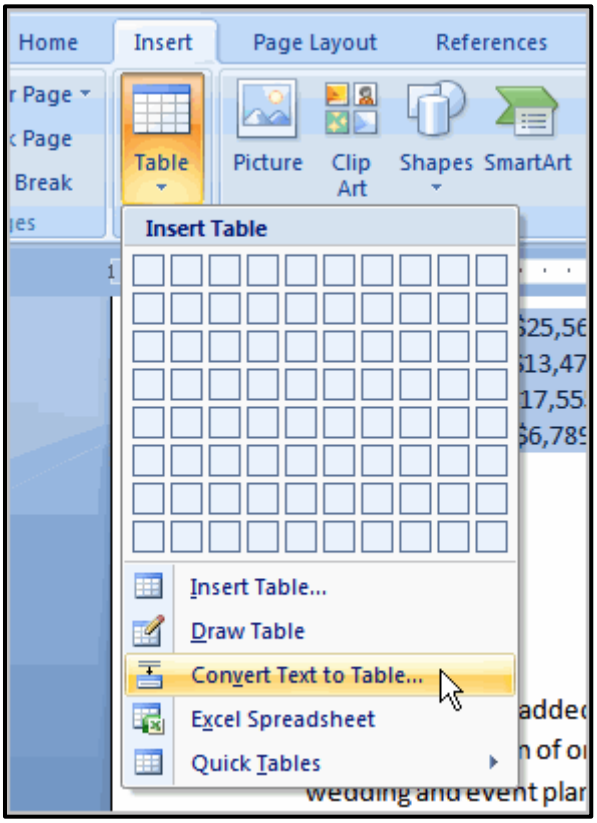
There are many other **header and footer options** you can use to design these sections of your document. From the Header and Footer Tools Design tab, you can see all of your design options.



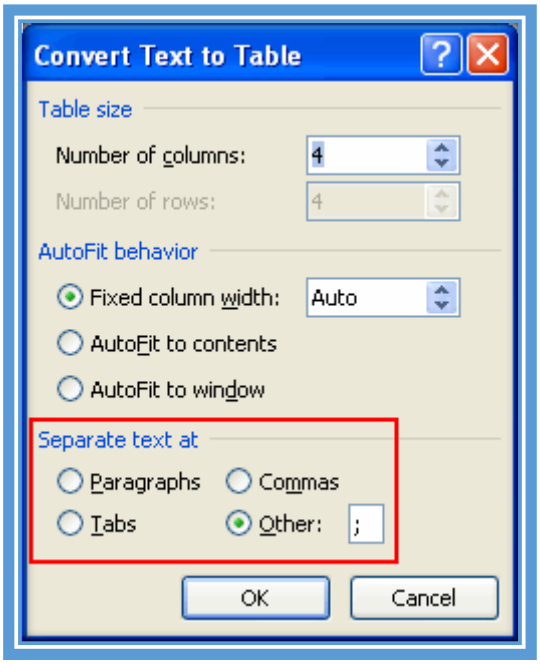
INSERTING AND MODIFYING TABLES

To convert existing text to a table:

- Select the text you want to convert.
- Select the **Insert** tab.
- Click the **Table** command.
- Select **Convert Text to Table** from the menu. A dialog box appears.



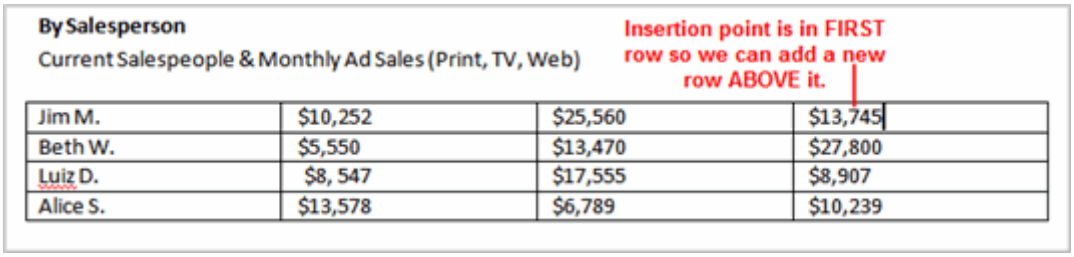
- Choose one of the options in the **Separate text at:** section. This is how Word knows what text to put in each column.



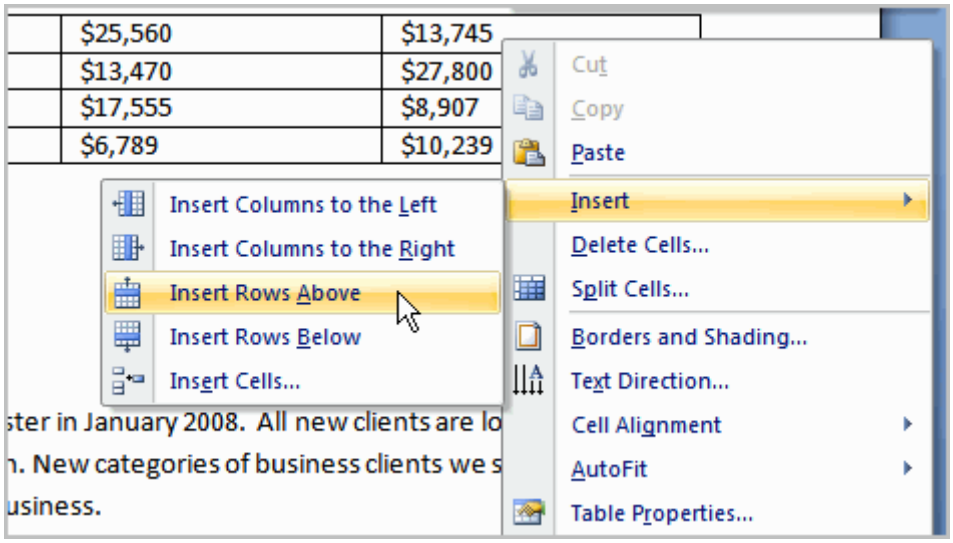
- Click OK. The text appears in a table.

To add a row above an existing row:

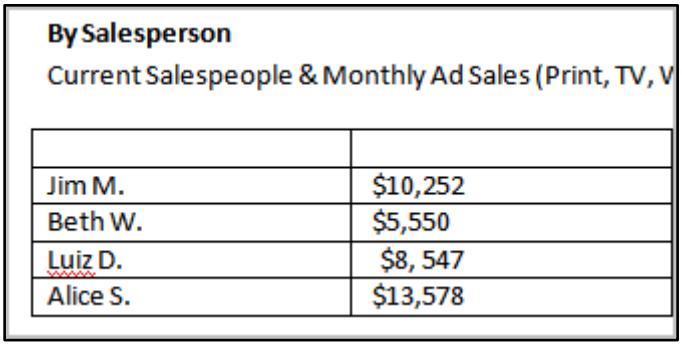
- Place the insertion point in a row below the location where you want to add a row.



- Right-click the mouse. A menu appears.
- Select **Insert → Insert Rows Above**.



A new row appears **above** the insertion point.



You can also add rows below the insertion point. Follow the same steps, but select Insert Rows Below from the menu.

To add a column:

- Place the **insertion point** in a **column adjacent** to the location where want the new column to appear.
- Right-click the mouse. A menu appears.
- Select **Insert → Insert Columns to the Left** or **Insert Columns to the Right**. A new column appears.

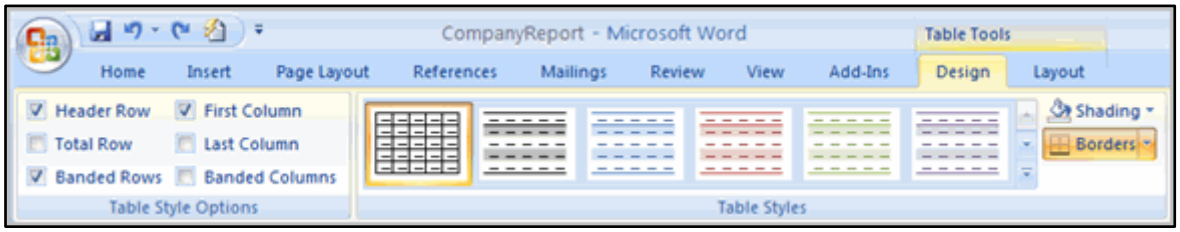
To delete a row or column:

- Select the row or column.
- Right-click our mouse, and a menu appears.

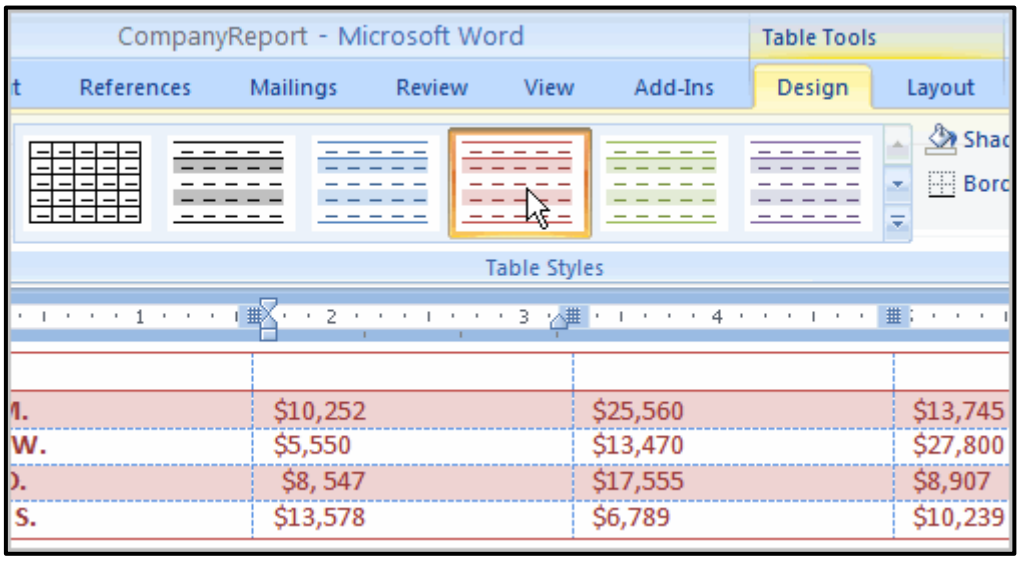
- Select **Delete Columns** or **Delete Rows**.

To apply a table style:

- Select the table. A **Table Tools Design** tab now appears on the Ribbon.
- Select the **Design** tab to access all of the **Table Styles** and **Options**.



- Click through the various styles in the **Table Styles** section.
- Left-click a style to select it. The table style will appear in the document.

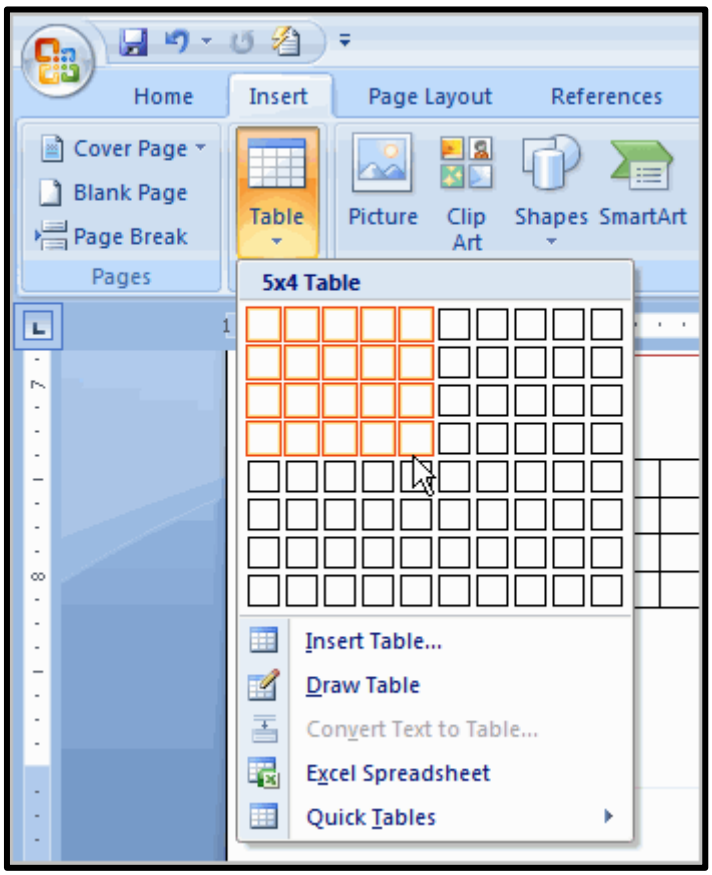


You can modify which table styles are displayed. In the **Table Styles Options**, you can select and deselect various table options. For example, ywe can select banded rows, and only tables with banded rows will appear in the Tables Styles section.

Want to have a little more creative freedom when it comes to formatting our tables? We can manually change the table border or shading, change line weight, or erase part of the table.

To insert a blank table:

- Place your insertion point in the document where we want the table to appear.
- Select the **Insert** tab.
- Click the **Table** command.
- Drag your mouse over the diagram squares to select the number of columns and rows in the table.



- Left-click your mouse, and the table appears in the document.
- Enter text into the table.

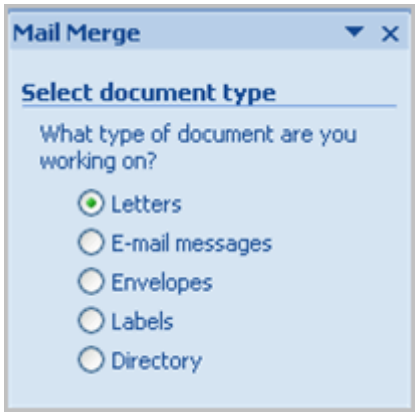
Modifying a table using the layout tab

When you select a table in Word 2007, **Design** and **Layout** tabs appear under **Table Tools** on the Ribbon. Using commands on the Layout tab, you can make a variety of modifications to the table, including:

- Adding and deleting columns

- Adding and deleting rows
- Changing the cell size
- Aligning cell text
- Changing text direction
- Merging and splitting cells

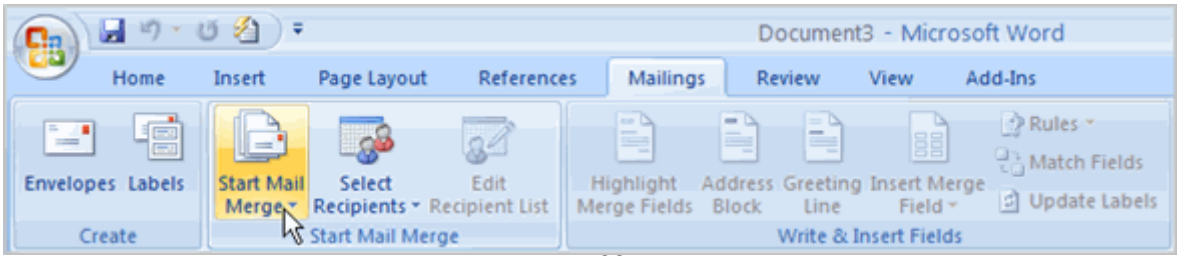
MAIL MERGE



Mail Merge is a useful tool that will allow we to easily produce multiple letters, labels, envelopes, and more using information stored in a list, database, or spreadsheet. In this lesson, we will learn how to use the **Mail Merge Wizard** to create a **data source** and a form **letter**, and explore other wizard features. Additionally, learn how to use the Ribbon commands to access Mail Merge tools outside of the wizard.

To use Mail Merge:

- Select the **Mailings** on the Ribbon.
- Select the **Start Mail Merge** command.



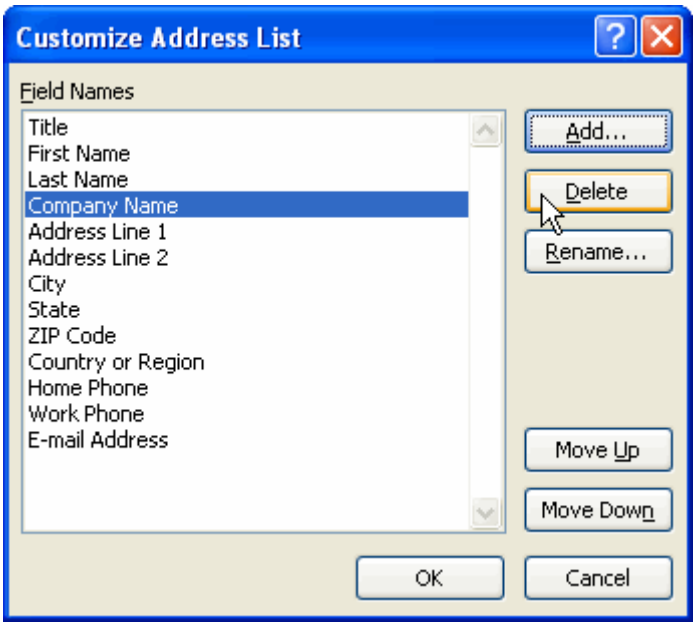
- Select **Step by Step Mail Merge Wizard**.

The Mail Merge task pane appears and will guide you through the **six main steps** to complete a merge. You will have several decisions to make during the process. The following is an example of how to create a form letter and merge the letter with a data list.

Steps 1-3

- Choose the type of document you want to create. In this example, select **Letters**.
- Click **Next:Starting document** to move to Step 2.
- Select **Use the current document**.
- Click **Next:Select recipients** to move to Step 3.
- Select the **Type a new list** button.
- Click **Create** to create a data source. The **New Address List** dialog box appears.
    - Click **Customize** in the dialog box. The Customize Address List dialog box appears.
    - Select any field you do not need, and click **Delete**.
    - Click **Yes** to confirm that you want to delete the field.
    - Continue to delete any unnecessary fields.
    - Click **Add**. The Add Field dialog box appears.
    - Enter the new field name.
    - Click OK.
    - Continue to add any fields necessary.
    - Click **OK** to close the Customize Address List dialog box.

To customize the new address list:



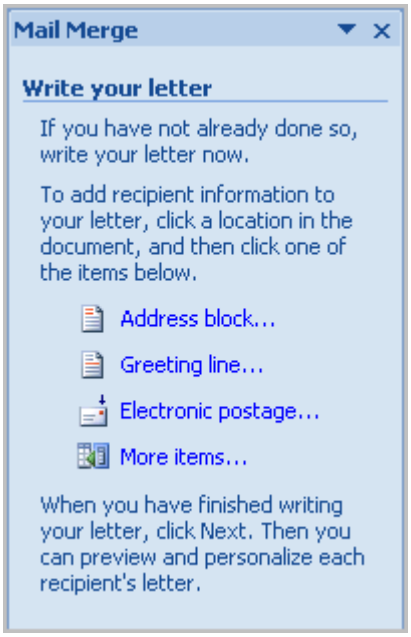
- Enter the necessary data in the New Address List dialog box.
- Click **New Entry** to enter another record.
- Click **Close** when you have entered all of your data records.
- Enter the file name you want to save the data list as.
- Choose the location where you want to save the file.
- Click **Save**. The Mail Merge Recipients dialog box appears and displays all of the data records in the list.
- Confirm that the data list is correct, and click **OK**.
- Click **Next:Write your letter** to move to Step 4.

Steps 4-6

- Write a letter in the current Word document, or use an open existing document.

To insert recipient data from the list:

- Place the insertion point in the document where you want the information to appear.
- Select Address block, Greeting line, or Electronic postage from the task pane. A dialog box with options will appear based on your selection.



OR

- Select More Items. The Insert Merge Field dialog box will appear.
- Select the field you want to insert in the document.
- Click **Insert**. Notice that a placeholder appears where information from the data record will eventually appear.
- Repeat these steps each time you need to enter information from your data record.

- Click **Next: Preview your letters** in the task pane once you have completed your letter.
- Preview the letters to make sure the information from the data record appears correctly in the letter.
- Click **Next: Complete the merge**.
- Click **Print** to print the letters.
- Click **All**.

- Click **OK** in the Merge to Printer dialog box.
- Click **OK** to send the letters to the printer.

The Mail Merge Wizard allows you to complete the merge process in a variety of ways. The **best** way to learn how to use the different functions in Mail Merge is to try to develop several of the different documents—letters, labels, and envelopes—using the different types of data sources.

*****all the best*****