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Computer Zone

Book - 5

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Preface

This is the age of computers. Computer is undergoing rapid change, and new and improved technological advances appear almost daily. Computers have invaded all walks of life to such an extent that computer literacy has become the order of the day. Computer science is now an essential addition to the school curriculum at all levels.

Computer Zone is a series of ten books on Computer Science for school level, designed for the new generation of students who need to acquire knowledge on the theory, application and programming aspects of computing. Logical and scientific in its approach, the series covers the history of computer, its accessories, applications and programming in a step-by-step and graded manner. It has been prepared to focus on creativity and encourage young children to explore and experiment with learning opportunities.

This book is the fifth in the series and is recommended for use in class 5. The chapters are supplemented with lucid illustrations, practise exercise, brief summaries and a variety of theory and lab exercises, that ensure mastery over the concepts learnt.

A lot of research and meticulous attention to detail have gone into the making of this book. However, there is always scope for improvement. Constructive criticism and suggestions which could be incorporated in the future editions of this book, are welcome in my mailing address hari99_sapkota@yahoo.com.

I earnestly hope that the students would find the journey through this series an enjoyable experience and gain a sound working knowledge on the basic aspects of computing that lay the foundation for good and systematic programming.

-Author

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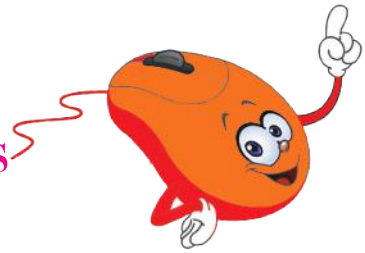

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Chapter 1

Introducing Computer System

Learning Objectives

a. *Define computer and explain the importance of a computer system.*

b. *Differentiate between data and information.*

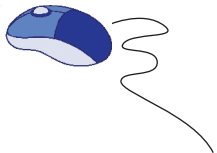
c. *Explain the four basic functions of a computer system and identify the important functional parts of a computer system.*

d. *Explain the features of a computer.*

e. *Identify and explain the different types of modern computers.*

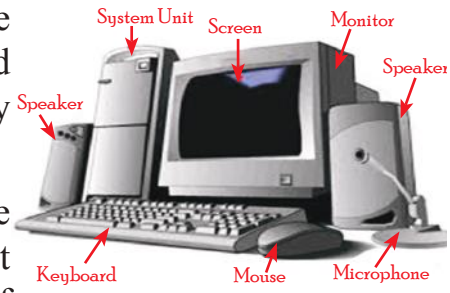
An Overview

The computer is one of the most brilliant gifts of science. Computers are constantly being updated to make out lives better. In fact, the computer is a wonderful electronic brain that we have come to rely on, in our everyday life. The computer has proved a friend and servant of science, technology and industry. Most offices, shops, factories and industries use computers. Computer is the backbone of information technology whose major application lies on the Internet. Internet has some very useful applications in our day to day life. The computer gives us many benefits. Eventually, computers come into every family and effectively influence our usual life. Thus, computer has become an indispensable part of our daily life. The computer is a boon to every human beings.



Computer System

Computers are extremely important in the modern world of today. In the fast moving life of the modern world of today, computers hold tremendous significance in every fields. It is very hard to imagine modern life without computer.



A computer system is one that is able to take a set of inputs, process them and create a set of outputs. This is done by a combination of hardware and software.

The computer system has one or more inputs to provide data. This data is then processed in some way. The outcome of the processing is sent to an output or it may be stored until some event happens to cause it to be output.

For processing to take place, there needs to be a set of instructions of what needs to be done. This set of instructions is called a program.

expanding your horizons

Data

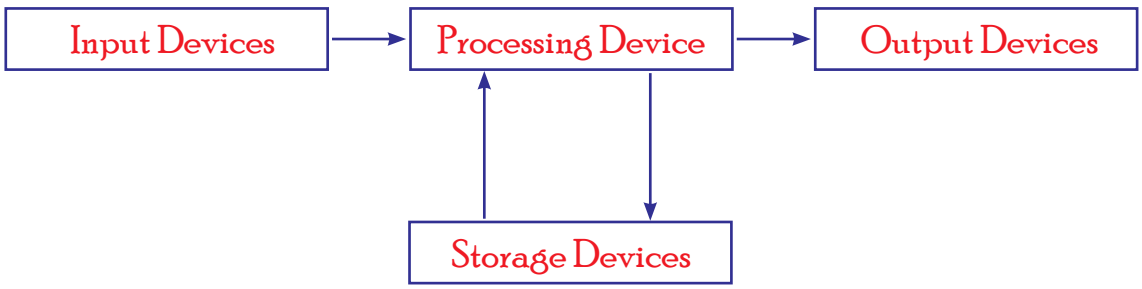
Data refers to a collection of raw facts and figures. Data consists of letters, numbers, sounds, or images. It does not provide any meaning and need to be worked upon.

Information

The result obtained by processing is called information. Information is the data that have been shaped by humans into a meaningful and useful form.

Parts of a Computer System

The four basic functions of a computer are input, processing, output and storage. Input is the information which is entered into the computer. Processing is performing operations on or manipulating data. Output is the result of the data processing. Storage refers to saving of information for later use. The computer consists of input devices, processing device and output devices, storage devices for performing these functions.



Input Devices

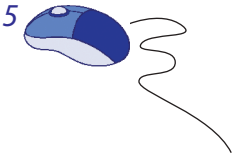
Input devices are devices used to input data or information into a computer. They are like your sense organs (ears, eyes, tongue, skin and nose) which take in information and send it to your brain. The most common input devices are keyboard and mouse.

The functions of input devices are:

a. accept instructions and data

b. convert these data and instructions to the form acceptable to the computer

c. supply the data and instructions to the processing unit of the computer system



Processing Device

The data entered is processed by the processing device according to the instructions given by the user. The processing device in a computer is called the Central Processing Unit. The Central Processing Unit (CPU) carries out the processing of data. It is the centre of all processing activities. Therefore, it is called the brain of the computer.

The CPU has three main parts:

a. Arithmetic Logic Unit b. Control Unit c. Memory Unit

Arithmetic Logic Unit

Arithmetic Logic Unit does all the arithmetic calculations like addition, subtraction, multiplication and division. It also makes comparisons of data, such as less than, greater than and equal to.

Control Unit

Control unit is the heart of the computer. The control unit is a component of a computer's Central Processing Unit (CPU) which directs operation of the processor. It controls communication and co-ordination between input/output devices. It reads and interprets instructions and determines the sequence for processing the data.

Primary Memory

Primary memory is a storage location that holds memory for short period of time while the computer is running. It operates at a very high speed. It is also called internal memory or main memory.

The primary memory of the computer system is of two types. They are:

a. Random Access Memory b. Read Only Memory

Random Access Memory (RAM)

RAM stands for Random Access Memory. It is also called read/write memory as information can be written into and read from RAM. It is used to store programs and data temporarily because anything stored in RAM is lost when the computer is switched off.

Read Only Memory (ROM)

ROM stands for Read Only Memory. It can be used to perform only the read operation. Data were store in ROM at the time of manufac-turing. The data store in ROM is permanent in nature and is not loss even if the power supply is cut down. ROM is considered as non- vol-atile memory.ROM stands for Read Only Memory. It can be used to perform only the read operation. Data were store in ROM at the time of manufacturing. The data store in ROM is permanent in nature and is not loss even if the power supply is cut down. ROM is considered as non- volatile memory.

RAM	ROM
a. RAM stands for Random Access Memory	a. ROM stands for Read Only Memory
b. RAM allows both read and write operation	b. ROM allows only read operation
c. It is volatile in nature i.e. data are loss when the power supply is cut off.	c. It is non- volatile in nature
d. It is used to store programs and data temporarily.	d. It is a permanent memory.

Output Devices

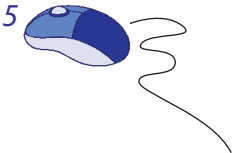
Output devices are the devices used to display or output data which has been processed or has been stored on the computer. The most common output devices are monitor and printer.

The functions of output devices are to:

a. convert the result produced by the computer after processing, into a form that we can understand.

b. display the converted results with the help of the output devices.

Facts Corner *TYPEWRITER is the longest word that you can type using the letters only on one row of the keyboard of your computer.*



Features of a Computer

We are living in the age of electronic revolution where computers are integral part of our life. It is indeed, difficult to imagine our daily life without their use in one way or other. Practically, computers have entered into each and every walk of life due to the following special features of computers:

Speed

Computers work at enormous speed. Computers work with the help of electrical signals. They perform millions of calculations in just a second.

Accuracy

Computer is capable of performing calculation with 100% accuracy. They perform accurate calculations and give correct results according to the instructions fed to them. 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).

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.

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. Storage is done in the memory of a computer. The data and information are stored in the secondary memory such as hard disk, compact disk and pen drive.

Versatility

Computers are versatile machines, which can handle a large variety of jobs. They are used everywhere. We can see computers at shops, space stations, schools, etc. The power of a computer varies from place to place as per the requirement.

Reliability

Computer provides very high speed accompanied by an equality high level for reliability. Thus, computers never make mistakes of their own.

Programmability

The computer can be programmed to do all forms of activities of human beings. Programming in computer means the act of writing computers programs and this involves the use of special set of characters, signs and symbols to supply instruction to the computer for execution towards achieving specific tasks (motives). This opportunity gives room for the computer to be a versatile system.

Brainstorming task

Fill in the blanks. Choose the answer from the clue box.

Clue Box

Data, Computer System, Primary Memory, Input device, Information

a. A _____ is one that is able to take a set of inputs, process them and create a set of outputs.

b. _____refers to a collection of raw facts and figures.

c. The result obtained by processing is called _____ .

d. _____are devices used to input data or information into a computer.

e. _____is a storage location that holds memory for short period of time while the computer is running.

Modern Computers

The computers we use today are modern computers. They are very powerful. They are faster, cheaper and smaller in size than the earlier computers. Modern computers do calculations at very high speeds. Following types of modern computers are commonly in used.

Desktop computer

Desktop computer can be small, medium, or large in size and is placed on a desk. It can be either flatbed type or tower type. It is also called personal computer or PC because it is often owned and used by a single person.

Laptop

Laptops are battery or AC-powered personal computers that can be easily carried and used in different places. Laptop computer is expensive as compared to a desktop computer. It uses a keyboard, a small flat screen and a touch pad. It also has a hard disk, pen drives and a DVD-ROM.

Palmtop

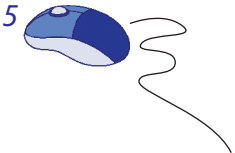
Palmtops are also called PDAs (Personal Data Assistant) or hand-held computers or pocket computers. They are small enough to fit in your palm. It operates on batteries. It has to be plugged into a main computer for other uses. It uses a special pen and a touch-sensitive screen to enter data.

Tricky Terms

Data	:	A collection of facts and figures in raw format.
Information	:	The result obtained by processing.
Input devices	:	The devices used to input data or information into a computer.
ROM	;	A memory that holds a store of programs which tells the computer how to work.
Desktop	:	A computer that be small, medium, or large in size and is placed on a desk.
Laptop	:	The battery or AC-powered personal computers that can be easily carried and used in different places.

Let Us Revise

- A computer system is one that is able to take a set of inputs, process them and create a set of outputs.
- The four basic functions of a computer are input, processing, output and storage.
- Input devices are devices used to input data or information into a computer.
- The Central Processing Unit (CPU) carried out the processing of data.
- Arithmetic Logic Unit does all the arithmetic calculations like addition, subtraction, multiplication and division.
- Primary memory is a storage location that holds memory for short period of time while the computer is running.
- Output devices are the devices used to display or output data which has been processed or has been stored on the computer.



Chapter Review

1. Fill in the blanks. Choose the answer from the clue box.

Clue Box

Control Unit, Laptop, Desktop, CPU, ALU

a. _____ carries out the processing of data.

b. _____ Computer can be small, medium or large in size and is placed on a desk.

c. _____ Computer is expensive as compared to a desktop computer.

d. _____ perform all the arithmetic and logical operation like addition, subtraction, equal to etc.

e. _____ is the heart of the computer.

2. Match each term with the statement that best describes it.

ROM	A collection of facts and figures in raw format.
Input devices	The result obtained by processing.
Desktop	The devices used to input data or information into a computer.
Data	A memory that holds a store of programs which tells the computer how to work.
Information	A computer that be small, medium, or large in size and is placed on a desk.

3. Say whether these sentences are True or False.

a. The computer has proved a friend and servant of science, technology and industry.

b. Information is the data that have been shaped by humans into a meaningful and useful form.

c. Output is the information which is entered into the computer.

d. Computers are versatile machines, which can handle a large variety of jobs.

e. Laptops are battery or AC-powered personal computers that can be easily carried and used in different places.

4. Answer the following questions.

a. "The computer is one of the most brilliant gifts of science". Explain this statement.
b. What is a computer system?
c. What are the difference between data and information?
d. What are the four basic functions of a computer system?
e. What is input device? State the functions of input device.
f. What is CPU? What are the three main parts of CPU?
g. Differentiate between RAM and ROM.
h. What is output device? State the functions of output device.
i. What is a laptop?
j. What is a palmtop?

5. Write the full form of the following.

ALU CU CPU RAM ROM

Extrapolative Exercise

Name the following computer devices.

Chapter 2

History of Computers

Learning Objectives

a. *Explain in short the developments of a computer.*
b. *List the features of an abacus.*
c. *Name the inventor of Napier's bones and list the features of Napier's bones.*
d. *List the features of difference engine and analytical engine.*
e. *List the features of Harvard Mark - I*
f. *List the features of Universal Automatic Computer-I*

An Overview

Computer is a versatile machine that can do arithmetic as well as non arithmetic calculation. The concept of counting started with the existence of human being. The early men lived nomadic and unorganized life. They felt no need of keeping records. But slowly when they started keeping animals and carrying on barter trade with other people, they needed a system to keep a record of the things. The early man used to count with the help of stones, pebbles, fingers, toes, sticks, etc. But the problem arose when the complex or big calculations are to be done. So, the need of some calculation devices arose that can help a men to do calculation easily and quickly. Let us look at some of the important developments, which lead to the present form of computers.

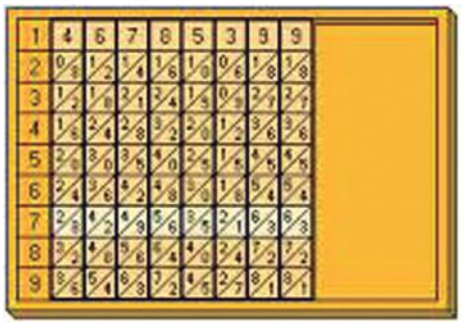
Chinese Abacus

Abacus was the first calculating device. It was first invented by Chinese in sixteenth century. It is the first known development in the world of calculating machines. It consists of a wooden frame having parallel wires with beads strung on them. It has two regions-heaven and earth separated by a mid-bar. There are two beads in the heaven and five beads on the earth. Calculations were done by sliding the beads towards the mid-bar.

Facts Corner *The abacus is used in pre-schools as an aid in teaching numeral system.*

Napier Bones

Napier bones are a set of rectangular rods marked with numbers on them. It was invented in 1617 by Scottish mathematician Sir John Napier. He also invented the system of Logarithm in 1614 AD which helped in arithmetic calculations. It was meant for calculations like multiplication and division of numbers. It also enabled the transformation of multiplication and division into simple addition and subtraction. The rod was made of bones with numbers on it.



Slide Rule

William Oughtred, an English Mathematician invented Slide Rule in 1620 AD. It was based on the principle that actual distance from the starting point of the rule is directly proportional to the logarithm of the numbers printed on the rule. It is a device consisting of two logarithmically scaled rules mounted to slide along each other so that multiplication, division, and other more complex computations are reduced to the mechanical equivalent of addition or subtraction.

Facts Corner *Henry Coggeshall invented a 2 foot folding slide rule for lumber measure, called the Coggeshall slide rule in 1677.*

Pascaline

Pascaline was invented by Blaise Pascal in 1642. Blaise Pascal invented this device at the age of 18 to assist his father in tax calculation. It was the world's first mechanical calculator and was also known as Pascal's calculator or the Arithmetic Machine. It was made up of a rectangular box with eight movable wheels. It could perform addition, subtraction, multiplication and division by rotating movable wheels.

Stepped Reckoner

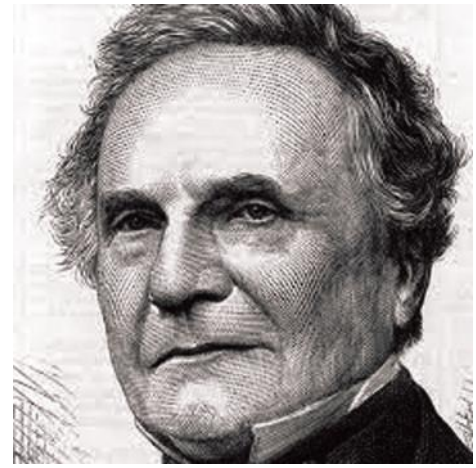
A German mathematician Gottfried Wilhelm Lebinitz invented a machine called "Stepped Reckoner" in 1642. The Step Reckoner expanded on the French mathematician-philosopher Blaise Pascal's ideas and did multiplication by repeated addition and shifting. It was the first calculator that could perform all four arithmetic operations: i.e addition, subtraction, multiplication and division.

Facts Corner

Gottfried Wilhelm Leibniz (also known as von Leibniz) was a prominent German mathematician, philosopher, physicist and statesman.

Babbage's Engines

Charles Babbage was a professor of Mathematics at Cambridge University in England. He designed an automatic mechanical calculating machine, called a Difference Engine in 1822 AD. Charles Babbage, later designed another machine called Analytical Engine in 1833-34. These machines could not be built because of lack of money and inadequate engineering skills at that time. However, he provided the basic idea of computers and hence he is regarded as "the father of modern computers".



Tabulating Machine

Herman Hollerith of United States of America invented Tabulating Machine in 1887. This machine used punched card to store data and arrange the data in a tabular form. Hollerith's tabulator was used for the 1890 U. S. census (process of counting people). He formed his own company called Tabulating Machine company in 1896. This company later joined with other companies to form the giant International Business Machines (IBM) Corporation. IBM is the biggest computer company in the world now.

Facts Corner *The first commercial data processing machines were punched card tabulating systems.*

Brainstorming task

Fill in the blanks. Choose the answer from the clue box.

Clue Box

Blaise Pascal, John Napier, Gottfried Wilhelm Lebinitz, William Oughtred

a. A Napier bone was invented by……..
b. A Slide Rule was invented by……
c. Pascaline was invented by……
d. "Stepped Reckoner" was invented by……

Mark-I

The Mark I computer, built at Harvard University in 1944, is one of the early landmarks of computer technology. The computer was the brainchild of Howard Aiken, a Harvard graduate student and then instructor, and was based on mechanical, punch-card tabulating equipment developed by the International Business Machines Corporation (IBM).

This machine used instruction stored in paper tapes and punched cards. It was also known as the IBM automatic sequence controlled calculator (ASCC).

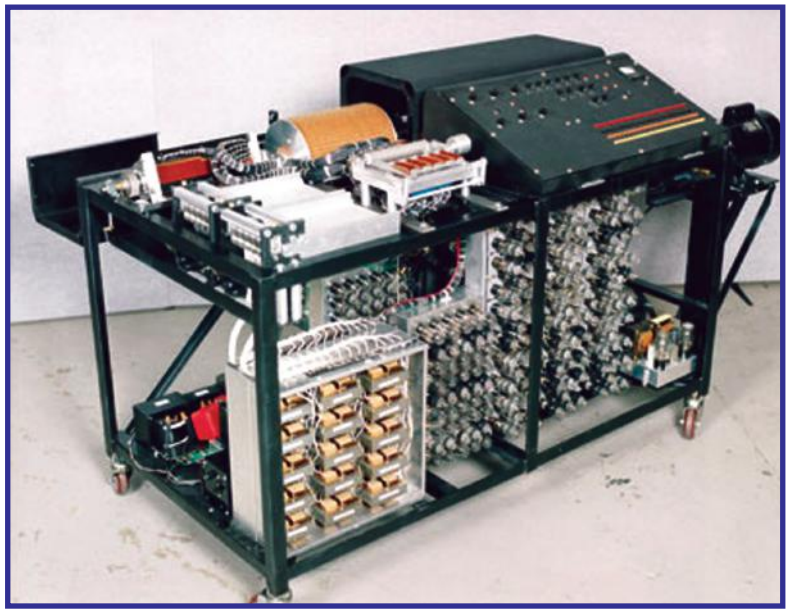
expanding your horizons

Colossus Machines

The Colossus machines were electronic computing devices used by British codebreakers to help read encrypted German messages during World War II. These were the world's first programmable, digital, electronic, computing devices. They used vacuum tubes (thermionic valves) to perform the calculations.

Attanasoft Berry Computer

ABC is the short for Attanasoft Berry Computer. It was the first electronic digital computer invented by Dr.John Attanasoft along with his assistant Clifford Berry in 1937-38. This machine laid the foundation for the development of electronic digital computer.



ENIAC and UNIVAC-I

ENIAC (Electronic Numerical Integrator And Calculator) was the first electronic digital computer developed by John Eckert and John Mauchly in 1946. It was decimal-based, used approximately 18,000 vacuum tubes, occupied 1,800 square feet area and performed 5,000 additions/second. It was 10 feet tall and weighed approximately 30 tons.

In 1951, the other successful computer milestone called UNIVAC-I (Universal Automatic Computer) was achieved by J. Presper Eckert and John Mauchly. It can handle both numeric and textual information. It was the first general-purpose electronic digital computer.

IBM Model 5150

A personal computer is a general purpose computer based on a single tiny silicon chip called a microprocessor that contains all the essential elements of a computer. It is designed to meet the personal computing needs of an individual, either in working place or at homes. The IBM Personal Computer, commonly known as the IBM PC, is the original version and progenitor of the IBM PC compatible hardware platform. It is IBM model 5150, and was introduced on August 12, 1981. It was created by a team of engineers and designers under the direction of Don Estridge of the IBM Entry Systems Division in Boca Raton, Florida.

Facts Corner

In 1981 International Business Machines (IBM), one of the world's largest companies, dominated the computer industry.

Brainstorming task

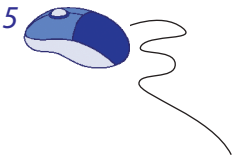
Answer the following questions in short.

a. What is Napier bones?

b. What is Mark I Computer?

c. Who developed ENIAC? When was it invented?

d. What is a personal computer?



Tricky Terms

Abacus	:	The first calculating device invented by Chinese.
Napier Bones	:	A set of rectangular rods marked with numbers on them.
Slide Rule	:	A device consisting of two logarithmically scaled rules mounted to slide along each other for calculation.
Punched card	:	Secondary storage medium consisting of paper or cardboard cards; data is recorded by punching holes in the cards.

Let Us Revise

- Abacus consists of a wooden frame having parallel wires with beads strung on them.
- Napier bones are a set of rectangular rods marked with numbers on them.
- William Oughtred, an English Mathematician invented Slide Rule in 1620 AD.
- Pascaline was invented by Blaise Pascal in 1642.
- A German mathematician Gottfried Wilhelm Lebinitz invented a machine called “Stepped Reckoner” in 1642.
- Charles Babbage was a professor of Mathematics at Cambridge University in England.
- Herman Hollerith of United States of America invented Tabulating Machine in 1887.
- The Mark I computer, built at Harvard University in 1944, is one of the early landmarks of computer technology.

Chapter Review

1. Fill in the blanks. Choose the answer from the clue box.

Clue Box

ABC, Slide Rule, Napier's Bones, Abacus

a. _____consists of a wooden frame having parallel wires with beads strung on them.

b. _____are a set of rectangular rods marked with numbers on them.

c. William Oughtred, an English Mathematician invented _____in 1620 AD.

d. Pascaline was invented by Blaise Pascal in_____.

e. _____was the first electronic digital computer invented by Dr.John Attanasoft along with his assistant Clifford Berry in 1937-38.

2. Match the followings.

Napier's Bones	Herman Hollerith
Slide Rule	Sir John Napier
Pascaline	Charles Babbage
Analytical Engine	William Oughtred
Tabulating Machine	Blaise Pascal

3. Say whether these sentences are True or False.

a. The early men lived nomadic and unorganized life and they felt no need of keeping records.

b. Napier bones was first invented by Chinese in sixteenth century.

c. William Oughtred, an English Mathematician invented Slide Rule in 1620 AD.

d. Charles Babbage is regarded as "the father of modern computers".

e. ENIAC (Electronic Numerical Integrator And Calculator) was the first full electronic digital computer developed by John Eckert and John Mauchly in 1946.

4. Answer the following questions.

a. What is the first tool man had used for calculation?
b. What is ABACUS?What are the two sections in an abacus?
c. Who invented the first analog computer?
d. Why is Charles Babbage called the father of modern computers?
f. Name the two important machines of Charles Babbage.
i. What is a Tabulating machine? Name the inventor and date of invention.
g. What is Mark-I? Who invented Mark-I?
h. Who developed the first electronic digital computer?

5. Write the full form of the following.

ABC IBM ENIAC UNIVAC ASCC

Extrapolative Exercise

Fill in the blank spaces with the help of clues.

a. The first calculating device invented by Chinese in sixteenth century.

b. Blaise Pascal invented this device at the age of 18 to assist his father in tax calculations.

Chapter 3

Generations of Computers

Learning Objectives

a. Define generations of computers.

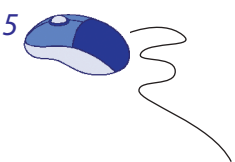
b. Explain the features of different generations of computers.

c. Identify the main components used in each generations of computers.

d. Identify the inventors of different electronic devices used in different generations of a computer.

An Overview

The idea of "generations" was created to make it easier to keep a perspective on the fast changing computer world. Generation refers to the state of improvement in product development process. Similarly, we can say generation of computer refers to the state of improvement in computer technology. They are classified in terms of speed, storage, size, reliability and the components used for manufacturing the machine. The computers in past were not just like computers what today they are. The earlier computers have very less features. Day by day, the technology is developing and new features are being added and the computer is becoming smaller and faster. A brief discussion of the various generation of the computer is given below:



First Generation Electronic Computers (1937-1953)

The first generation computers were developed between 1937 to 1953. The features of first generation electronic computers are:

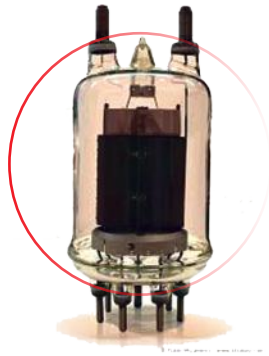
a. First generation computers used vacuum tubes.

b. Language used in first-generation computers was the machine language.

c. They were very large in size and produced a large amount of heat and they had to be cooled down by air conditioners.

d. The operating system was very slow. They were not reliable.

e. They were mainly used in commercial and scientific applications.



Facts Corner

A vacuum tube (also called an electron tube or, in the UK, a valve) is a device sometimes used to amplify electronic signals. Vacuum tube was developed by Lee DeForest in 1908.

The examples of the first generation computers were ENIAC, EDVAC, EDSAC, UNIVAC-I, and IBM 650.

expanding your horizons

IBM 650

The IBM 650 occupies a unique place in computer history as the earliest ancestor of the personal computer. It was one of IBM's early computers, and the world's first mass-produced computer. It was announced in 1953 and almost 2000 systems were produced in 1962.

Second Generation Electronic Computers (1954-1962)

The second generation computers were developed between 1954 to 1962. The features of second generation electronic computers are:

a. Second generation computers used transistors.

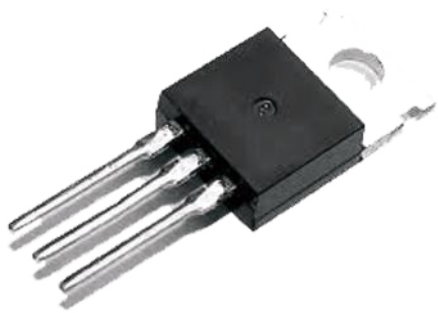
b. They were less expensive, smaller in size than the first generation computers.

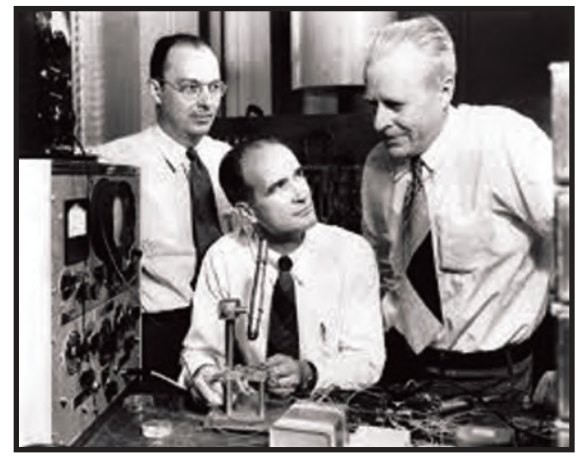
c They require less electricity and emitted less heat than vacuum tubes.

d. They were more reliable and accurate than that of first generation computers.

e. The operating system was comparatively high.

The examples of the second generations were IBM 1620, IBM 1401, Control Data 3600, 400 series and IBM 7000 series.





Facts Corner

The invention of the transistor by three scientists of Bell Telephone Laboratories in 1947 greatly changed the computer's development. The three Bell Lab scientists' are John Bardeen, Walter Brattain, and William Shockley. Transistors were made of a semiconducting material and controlled the flow of electricity through the circuits. They also allowed computers to become smaller and more powerful and faster at the same time.

Third Generation Electronic Computers (1963-1971)

The third generation computers were developed during 1963-1971. The features of third generation electronic computers are:

a. Third generation computers used Integrated Circuits in their electronic ciruitry.

b. Monitors and keyboards were introduced for input and output of data.

c. Magnetic disks were used for auxiliary memory.

d. The size of the computer became much smaller.

e. The speed of operation was measured in nanoseconds.

f. They had a larger storage capacity.

The examples of third generation computers were IBM system/360, Honeywell 200 series, National Cash Register Century Series, ICL 1900 series and IBM 370 series.

Facts Corner

An integrated circuit (IC) is a small electronic device made out of a semiconductor material. The first integrated circuit was developed in the 1950s by Jack Kilby of Texas Instruments and Robert Noyce of Fairchild Semiconductor. Integrated circuits are used for a variety of devices, including microprocessors, audio and video equipment, and automobiles.

Fourth Generation Electronic Computers (1972-1984)

The fourth generation computers were developed during 1972-1984 The features of fourth generation electronic computers are:

a. The fourth generation of computers is marked by the use of Very Large Scale Integrated (VLSI) circuits.

b. The computers are highly reliable and accurate.

c. The operating speed is excellent, measured in picoseconds.

d. Micro computers are also introduced.

e. Magnetic disk is the common source of external storage.

f. Application software for microcomputers has become popular.

The examples of this generation are Alto, Apple I, Vax 11/78, IBM PC, LISA and Macintosh.

The original Apple Computer, also known as the Apple I, or Apple-1, is a personal computer released by the Apple Computer Company (now Apple Inc.) in 1976. They were designed and hand-built by Steve Wozniak.

The IBM Personal Computer, commonly known as the IBM PC, is the original version and progenitor of the IBM PC compatible hardware platform. It is IBM model number 5150, and was introduced on August 12, 1981. It was created by a team of engineers and designers under the direction of Don Estridge of the IBM Entry Systems Division in Boca Raton, Florida.

Fifth Generation Electronic Computers (1983-1990)

The fourth generation computers were developed during 1983-1990. The features of fifth generation electronic computers are:

a. These computers have a high speed.

b. These computers use Ultra Large Scale Integration (ULSI).

c. These computers use have Artificial Intelligence. It will contain computers that can learn, logic and reason.

d. They process non-numerical informations such as pictures and graphs.

The examples of this generation are IBM PC-AT, PS/2, Intel 80486 and Video Toaster.

The NewTek Video Toaster was a combination of hardware and software for the editing and production of standard-definition video.

expanding your horizons

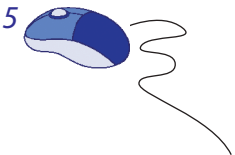
The sixth generation computers refers to the computer and video games, video game consoles and video game Handhelds. Platforms of the sixth generation of computers include the SEGA Dreamcast, Sony Playstation2 (PS2), NINTENDO, Game cube and Microsoft Xbox. This era games began on November 27, 1998 with the release of the Dreamcast and it was joined by the Playstation2 in March, 2000. The Playstation2 is still in production and selling steadily till date (which is still one of the sixth generation computers).

Tricky Terms

Artificial Intelligence	:	An area of computer science that emphasizes the creation of intelligent machines that work and react like humans.
Chip	:	A small slice of silicon material on which integrated electronic components are deposited.
Circuits	:	The complete path of an electric current including the source of electricity and the conductors through which it flows.

Let Us Revise

- Generation refers to the state of improvement in product development process.
- The first generation computers were developed between 1937 to 1953.
- The examples of the first generation computers were ENIAC, EDVAC, EDSAC, UNIVAC-I, and IBM 650.
- The second generation computers were developed between 1954 to 1962.
- Second generation computers used transistors.
- The examples of the second generations were IBM 1620, IBM 1401, Control Data 3600, 400 series and IBM 7000 series.
- Third generation computers used Integrated Circuits in their electronic ciruitry.
- The fourth generation of computers is marked by the use of Very Large Scale Integrated (VLSI) circuits.
- The fifth generation computers will have Artificial Intelligence.



Chapter Review

1. Fill in the blanks. Choose the answer from the clue box.

Clue Box

IC, Fourth, Generation, Second, Vaccum tube

a. _____refers to the state of improvement in product development process.

b. First generation computers used_____.

c. The examples of the _____generations were IBM 1620, IBM 1401, Control Data 3600, 400 series and IBM 7000 series.

d. An _____ is a small electronic device made out of a semiconductor material.

e. The _____ generation of computers is marked by the use of Very Large Scale Integrated (VLSI) circuits.

2. Match the followings.

First generation computer	Integrated Circuits
Second generation computer	VLSI
Third generation computer	vacuum tubes
Fourth generation computer	Artificial Intelligence
Fifth generation computer	transistors

3. Say whether these sentences are True or False.

a. Language used in first-generation computers was the machine language.

b. Second generation computers used vacuum tubes.

c. Third generation computers used Integrated Circuits in their electronic ciruitry.

d. The examples of third generation are Alto, Apple I, Vax 11/78, IBM PC, LISA and Macintosh.

e. The sixth generation computers refers to the computer and video games, video game consoles and video game Handhelds.

4. Answer the following questions.

a. What is meant by generation of computers? How many generation of computers are there?

b. What are the features of the first generation computers?

c. How were the second generation computers an improvement over their predecessors?

d. What is used in the electronic ciruitry of the third generation computers?

e. Mention any three features of fourth generation computers?

f. What do you understand by the term "Artificial Intelligence"?

l. What are the special features of fifth generation that makes it different from the other generations?

5. Write the full form of the following.

AI IC VLSI ULSI ENIAC

Extrapolative Exercise

Identify and name the following electronic devices and name their inventors.

Chapter 4

Presenting the Internet

Learning Objectives

a. *Define the Internet and explain the history of the Internet.*
b. *State the uses of the Internet.*
c. *Identify the different items required for connecting to the Internet.*
d. *Explain how to search the Web using a search engine.*
e. *Explain E-Mail service on the Net.*

An Overview

Internet stands for Interconnected Network. The Internet is the world's largest computer network. A computer network is a group of computers connected to each other electronically. Internet is the largest network of interconnected computers world-wide. It is capable of communicating and sharing data with each other. It is a network of networks or it can be called the mother of all networks. Today, the Internet connects thousands of networks and more than million of users around the world. It is a huge network with no central administration. All the computers are located at different places and are connected to each other through telephone lines and satellite links.

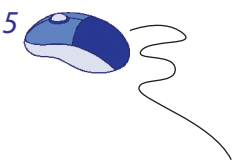
History of Internet

The Internet was started in the Pentagon, the US Department of Defense. A networking project called ARPA or Advanced Research Projects Agency. was launched, which has to work as a network that would allow scientists and military personnel to exchange information in a war scenario without disruption in communications. This network, called ARPANET, became functional in September 1969, linking scientific and academic researchers in the United States.

Researchers and academics in other fields began to make use of the network. In 1986, National Science Foundation (NSF) connected its huge network of five supercomputer centers, called NSFnet. to ARPANET. This configuration of complex networks became Internet.

Facts Corner

The Internet is a huge network of networks that links computers together all over the world using a range of wires and wireless technologies. The World Wide Web is the collection of linked pages that are accessed using the Internet and a web browser.



Uses of the Internet

Internet is one of the most important part of our daily life. There are large numbers of things that can be done using the Internet and so it is very important. You can say that with the progress in the Internet, we are progressing in every sphere of life as it not only makes our tasks easier but also saves a lot of time. Today Internet is used for different purposes depending upon the requirement. Some of the uses of the Internet are:

a. The Internet provides a rich and wide source of information and an essential communicating tool.

b. It also provides many services such as online banking, applications, shopping and job seeking.

c. It allows people on one computer to connect to a remote computer.

d. It provides ther cheapest and fastest means to access and provide information.

e. It allows you to complete your business transactions in the market place.

Brainstorming task

Fill in the blanks. Choose the answer from the clue box.

Clue Box

Internet, Pentagon, Network, ARPANET, Interconnected Network

a. Internet stands for_____.

b. A _____ is a group of computers connected to each other electronically.

c. The Internet was started in the_____.

d. This network, called_____, became functional in September 1969, linking scientific and academic researchers in the United States.

e. The_____provides a rich and wide source of information and an essential communicating tool.

Requirements for connecting to the Internet

For an Internet connection, you require following items:

Multimedia Computer System

A computer preferably with a fast processor and lots of memory (1 Gb or more).

MODEM

MODEM stands for MODULATOR-DEMODULATOR. It is a device that converts a computer's outgoing data into a format that can be transferred via communication lines.

Telephone/Cable/Wireless Connection

A communication line is required to transfer the data from one computer to another computer. It can be a telephone line or a cable or wireless connection.

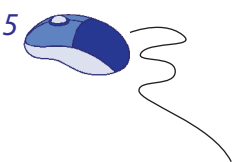
Subscription with an Internet Service Provider (ISP)

Internet Service Providers (ISPs) are companies that provide access to the Internet. Your computer must have an Internet Connection that is provided by different Internet Service Providers (ISP) at monthly charges.

Web Browser

Web browser is a software used to access and navigate webpages on the Internet. It lets us view the contents of a webpage. Some popular Internet web browsers are:

a. Mozilla Firefox
b. Netscape Navigator
c. Microsoft Internet Explorer
d. Safari Apple



Internet Terminology

World Wide Web

The World Wide Web, abbreviated as WWW, commonly known as Web is the largest collection of information on Internet. It contains millions of Web sites, which provides information in the form of text, graphic, sounds and digital movies. WWW is a storehouse of information that resides on computer called Web server.

Web Site

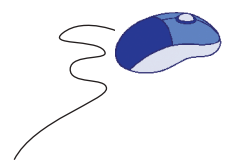
A website is a collection of Web pages, images, videos or other digital assets that is hosted on one or several Web server(s), usually accessible via the Internet. The different Web sites are created and maintained by different colleges, universities, government agencies, companies and organizations. All websites enabled through the Internet constitute the World Wide Web (WWW).

Web Page

A digital file or document or a particular Web site is known as a Web page. It is a document that includes text, images, sound and video. A web site can consists of one or more Web pages.

Facts Corner

A web page (or webpage) is a web document that is suitable for the World Wide Web and the web browser.

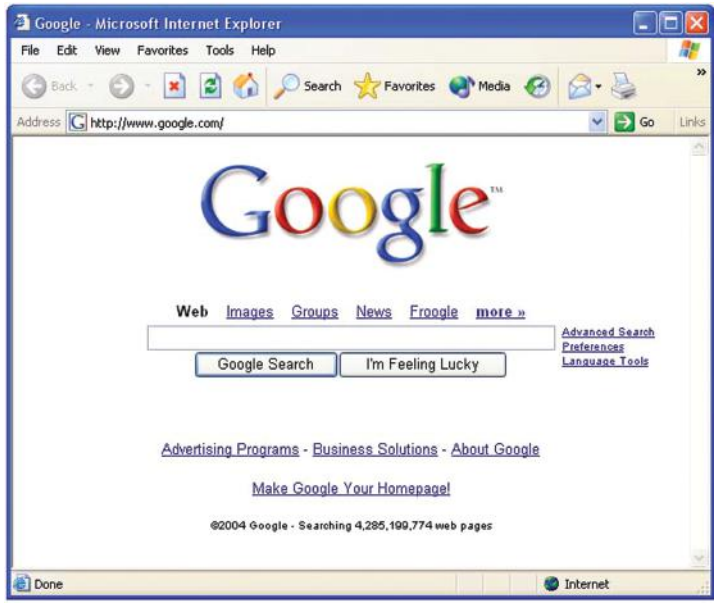


Web Server

A web server is a computer that stores websites on the Internet and delivers web pages to viewers upon request. This service is referred to as web hosting. Web server is usually a very fast, powerful and with large storage capacity of computer that can handle thousands of visitors at a time.

Web Browser

Web browser is software that is used to access the internet. A browser lets you visit websites and do activities within them like login, view multimedia, link from one site to another, visit one page from another, print, send and receive email, among many other activities. The most common browser software titles on the market are: Microsoft Internet Explorer,Google's Chrome, Mozilla Firefox, Apple Computer's Safari, and Opera.



Home Page

Home page is the initial page of a website, the 'point of entry' to all the information stored within. It's similar to the front page of a newspaper, but a home page contains links to a selection (or, in some cases, all) of the available content. The term 'home page' is also used to refer to the page you encounter first when connecting to the internet.

Searching the Web

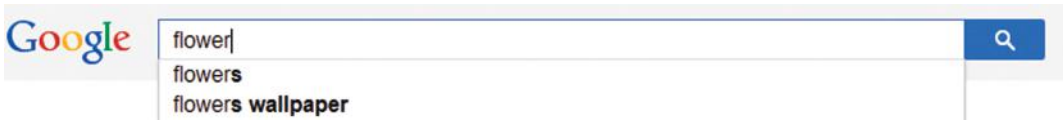
The World Wide Web contains millions of pages of information. It is not easy always easy to find what you want on the Web. In such cases, you can take the help of search engines. A search engine is a web-based tool that enables users to locate information on the World Wide Web. Popular examples of search engines are Google, Yahoo!, and MSN Search. Search engines utilize automated software applications (referred to as robots, bots, or spiders) that travel along the Web, following links from page to page, site to site. The information gathered by the spiders is used to create a searchable index of the Web.

Using a Search Engine

You do not always have to know a website's address in order to use the Internet. It is important to know how to search for information. One of the best methods to search is to use a search engine. A search engine is a software system on the Internet that will conduct a search of its own database of websites based on terms you have entered. As a result, you will be shown a list of web addresses that contain the term you were looking to find. An example of a popular search engine is www.google.com.

a. Launch your Web browser.

b. To conduct the search, point and click your mouse in the search textbox. Type in the textbox the words or words you would like to search. Then point and click your mouse on the Google Search button below the search textbox.



Every phrase in either blue with an underline may be clicked on to visit that particular site. These are hyperlinks to websites. The websites deemed most fitting for the search are found at the near the top of the list. There are also paid sponsors found at the top (shaded) and to the right of the screen that you may visit if you wish. You can see actual web addresses in green text.

E-Mail Service on the Net

The simplest and the most widely used service available on the Internet is the electronic mail service which is commonly called, in short, as the e-mail service. Email, e-mail or electronic mail is the transmission of messages (emails or email messages) over electronic networks like the Internet. This communication method is so fast that passes messages to their destination within minutes.

Using GMAIL

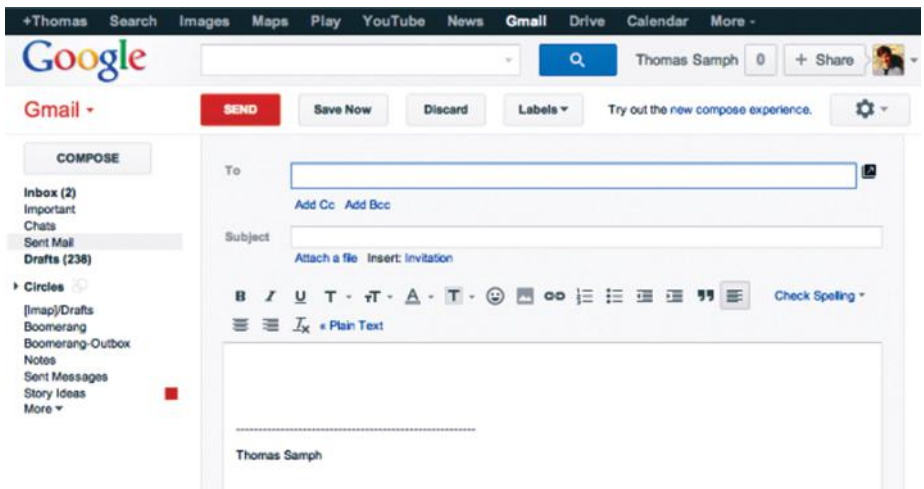
Gmail is a popular, web-based email service provided by Google. Gmail has a wide range of features, ranging from standard features that all email services have (such as the ability to send and receive emails), to some more unique features such as Priority Inbox, Conversation View, and the ability to call any phone in the world.

To use Gmail, follow these steps:

a. Open Gmail and type your login name.

b. Press TAB and enter your password. When the screen with your name opens, you are ready to send and receive email.

c. Click Compose to open a blank message.



d. Type the email address of the receiver. Then, fill in the Cc, Bcc boxes if you want to.

e. Type the subject.

f. Type the message.

g. Click the Send button.

Email Etiquette Tips

It is important that whether for business or personal use that you follow the basics of email etiquette. Some of the Email etiquette tips are as follows:

a. Make sure your e-mail includes a courteous greeting and closing.

b. Be sure the Subject: field accurately reflects the content of your email.

c. Always end your emails with "Thank you," "Sincerely," and "Best regards".

d. Never send large attachments without notice. Always ask what would be the best time to send them first.

e. Do not type in all caps. That's yelling or reflects shouting emphasis.

Brainstorming task

Give one word answer for each of the following:

a. A device that converts a computer's outgoing data into a format that can be transferred via communication lines.

b. A software used to access and navigate webpages on the Internet.

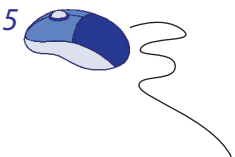
c. A digital file or document or a particular Web site is known as a Web page.

Tricky Terms

Internet	:	The largest network of interconnected computers world-wide.
Website	:	A collection of Web pages, images, videos or other digital assets that is hosted on one or several Web server(s), usually accessible via the Internet.
Web page	:	A digital file or document or a particular Web site.
Home page	:	The initial page of a website, the 'point of entry' to all the information stored within.

Let Us Revise

- A computer network is a group of computers connected to each other electronically.
- The Internet was started in the Pentagon, the US Department of Defense.
- A networking project called ARPA or Advanced Research Projects Agency.
- The Internet provides a rich and wide source of information and an essential communicating tool.
- The World Wide Web, abbreviated as WWW, commonly known as Web is the largest collection of information on Internet.
- A website is a collection of Web pages, images, videos or other digital assets that is hosted on one or several Web server(s), usually accessible via the Internet.
- A digital file or document or a particular Web site is known as a Web page.



Chapter Review

1. Fill in the blanks. Choose the answer from the clue box.

Clue Box

Gmail, Home page, web page, Mozilla Firefox, World Wide Web

a. _____ is the collection of linked pages that are accessed using the internet and a web browser.

b. _____ is the example of a web browser.

c. A digital file or document or a particular web site is known as a _____ .

d. _____ is the initial page of a web site.

e. _____ is a popular web based email service provided by Google.

2. Match the followings.

Web client	A collection of Web pages, images, videos or other digital assets that is hosted on one or several Web server(s), usually accessible via the Internet.
Website	A computer that stores websites on the Internet and delivers web pages to viewers upon request.
Home page	The software that is used to access the internet.
Web chat	The initial page of a website, the 'point of entry' to all the information stored within.
Web browser	The transmission of messages (emails or email messages) over electronic networks like the Internet.

3. Say whether these sentences are True or False.

a. The Internet provides a rich and wide source of information and an essential communicating tool.

b. Internet Service Providers (ISPs) are companies that provide access to the Internet.

c. A digital file or document or a particular Web site is known as a Web server.

d. A web page is the initial page of a website, the 'point of entry' to all the information stored within.

e. A search engine is a web-based tool that enables users to locate information on the World Wide Web.

4. Answer the following questions.

a. What do you understand by Internet?

b. Explain in short the history of Internet.

c. State any three uses of the Internet.

d. What are the requirements for getting connected to the Internet?

e. Define the following terms:

i. World Wide Web ii. Web page iii. Home page

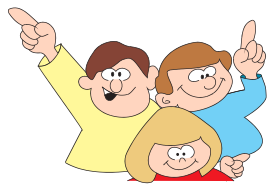
f. What are search engines? Name two popular search engines.

g. List any three important rules that should be followed while sending an email.

5. Write the full form of the following.

NSF MODEM ISP WWW E-Mail

Lesson Labs



a. Connect to the Internet.

b. Open the Internet explorer or Netscape Navigator.

Visit the following web sites:

www.yahoo.com

www.google.com

c. Use the Internet to find information on "Nepal" Past".

d. Create an E-Mail account in Gmail. Using that account send an E-Mail message to your friend describing your school and what you have learnt about computers till now.

Chapter 5

Microsoft Windows Accessories

Learning Objectives

a. *Explain in short Microsoft Windows 7.*
b. *Identify the steps to open the Accessories Menu.*
c. *Explain the main programs found in Windows Accessories.*
d. *Explain how to use Calculator program.*
e. *Explain how to draw shapes in Paint program.*
f. *Explain how to use word processing accessories in Windows 7.*

An Overview

Windows 7 is a Graphical User Interface (GUI) based operating system. It is the Microsoft Windows operating system released commercially in October 2009. In development, Windows 7 was known by the code names "Blackcomb" and "Vienna." It is a very special software, which starts up your computer and helps you to use other programs on the computer to carry out a variety of tasks. It has a variety of accessories listed on the start menu. The OS is widely available in three retail editions: Windows 7 Home Premium, Professional and Ultimate. Starter, OEM and Enterprise editions are available in some markets. These accessories provide plenty of good additional extras alongside the Windows system tools.

Opening the Accessories Menu

Windows Accessories is a special package of software. Windows has many accessories for day to day use and tools for maintaining computer in good shape. Some of the main Windows Accessories are Calculator, Paint, Notepad, WordPad and Windows Explorer.

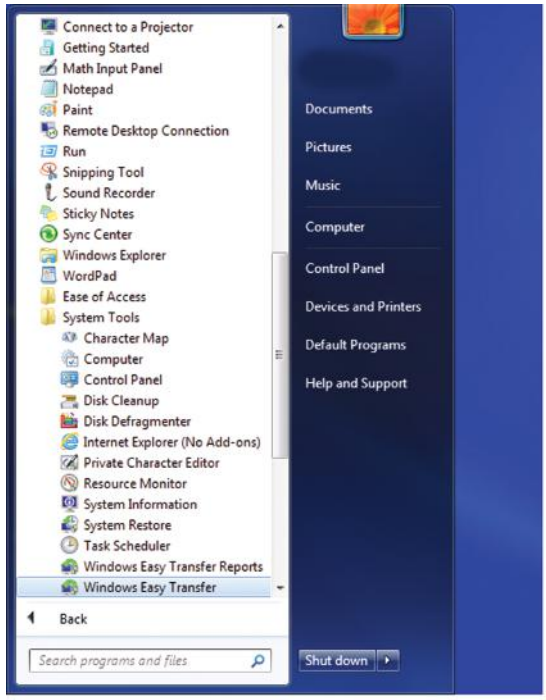
To open Accessories menu, follow these steps:

a. Click on Start button.

b. Click on All Programs.

c. Now, click on Accessories. Accessories menu appears.

d. Choose the program to open by clicking on its name in the menu.



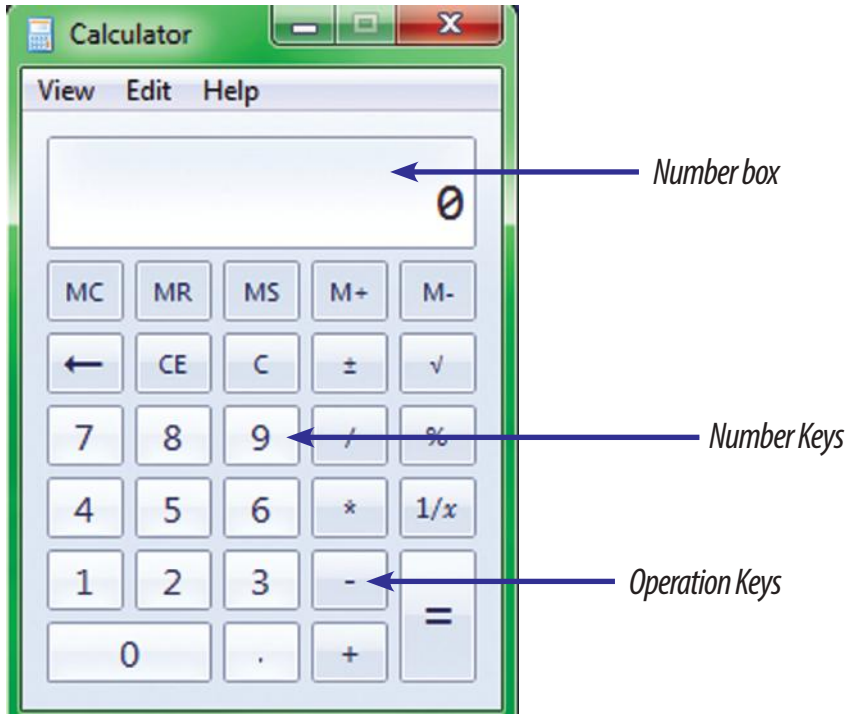
Calculator

The calculator is one of the handiest Windows 7 Accessories. The Windows 7 calculator has been enhanced with additional programmer and statistics options along with the scientific and standard calculator models. The calculator also has some quick tools for mortgage calculations, fuel economy, and vehicle leasing.

To open calculator, follow these steps:

a. Click on Start button.
b. Click on All Programs.
c. Click on Accessories.
d. Click Calculator.

The calculator application opens in default view, which is the standard view.



The calculator application is small and has a simple interface. The title bar has the name of the application. It also has Minimize and Close buttons. Various buttons found on it are numeric buttons, operators and memory buttons.

a. There are ten numeric buttons from 0 to 9. You can use these to enter numbers.
b. Operator buttons have symbols that represent mathematical operators. These are located on the right. There is also a button with an equal "=" sign.
c. The C button is used to clear the last calculation.
d. The CE button is used to erase the last display.

Paint

PAINT is a simple graphic program that you can use to create drawings on a blank canvas or on top of other pictures. It is located in Accessories. This is done by using the various tools and colours present in the Paint program.

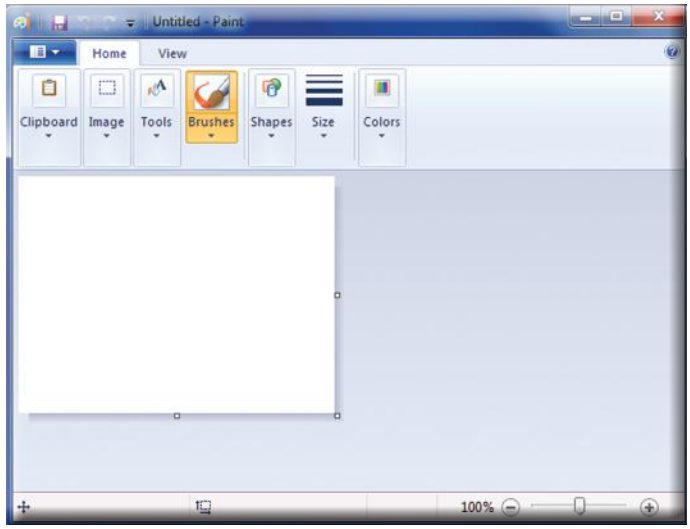
To open Paint, follow these steps:

a. Click on the Start button.

b. Click on All Programs.

c. Select Accessories. You will notice a list of options.

d. Click on Paint. The Paint window appears on the screen.



Paint lets you draw many different shapes. For example, you can draw ready-made, defined shapes such as rectangles, circles, squares, triangles, and arrows.

To draw shapes, do the followings:

a. On the Home tab, in the Shapes group, click a ready-made shape, such as the Rectangle.

b. To add a ready-made shape, drag the pointer across the drawing area to make the shape.

c. To change the outline style, in the Shapes group, click Outline, and then click an outline style.

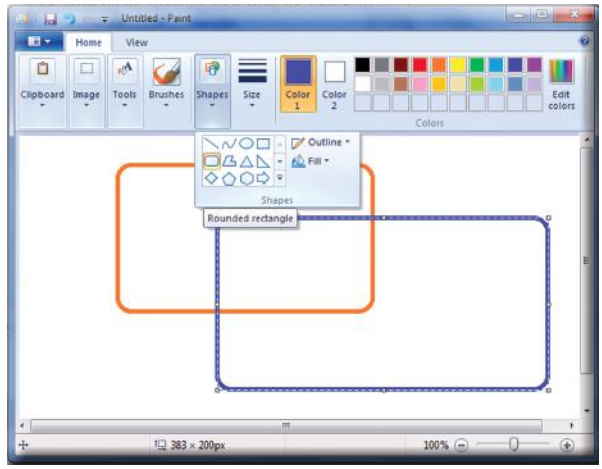
   If you don't want your shape to have an outline, click No outline.

d. In the Colors group, click Color 1, and then click a color for the outline.

e. In the Colors group, click Color 2, and then click a color to use to fill the shape.

f. To change the fill style, in the Shapes group, click Fill, and then click a fill style.

If you don't want your shape to be filled, click No fill.



Notepad

Notepad is a text editor that is used to edit simple text documents that do not require any special formatting effects.

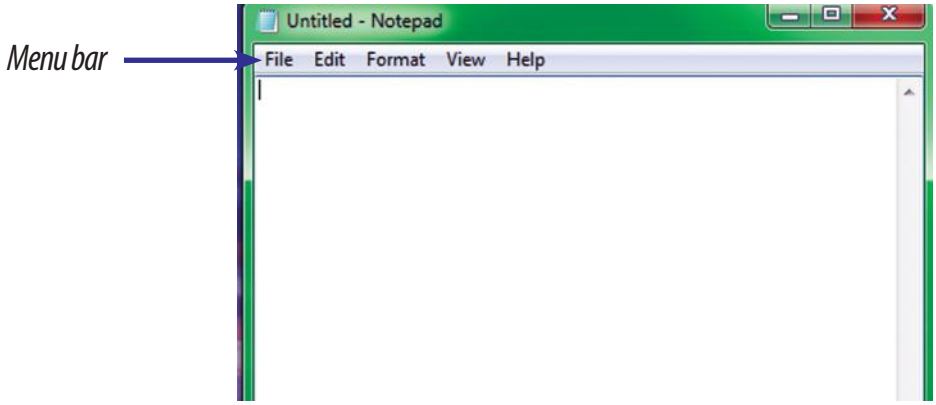
To open Notepad, follow these steps:

a. Click on the Start button.

b. Click on All Programs.

c. Select Accessories. You will notice a list of options.

d. Click on Notepad. The Notepad window appears on the screen.



WordPad

WordPad is a word processing program present in Windows Accessories. It allows you to create simple letters and documents. It also provides many formatting features to give an attractive look to your documents.

To open WordPad, follow these steps:

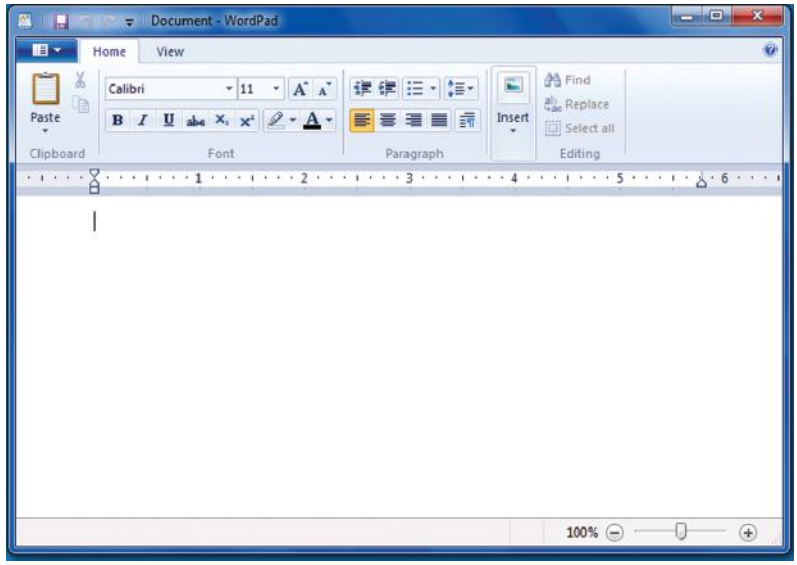
a. Click on the Start button.

b. Click on All Programs.

c. Select Accessories. You will notice a list of options.

d. Click on WordPad.

The WordPad window appears on the screen.



To enter text in WordPad, do the followings:

a. Type a paragraph.

b. Press Enter key only when you want to start a new line or paragraph.

he computer's disk or any other secondary storage media. It is divided vertically into two sections. The left side displays the disk drives and folders in the form of a folder tree and the right side displays folders and files you have chosen from the left pane.

Tricky Terms

Windows 7	:	A Graphical User Interface (GUI) based operating system.
GUI	:	A program interface that takes advantage of the computer's graphics capabilities to make the program easier to use.
PAINT	:	A simple graphic program that you can use to create drawings on a blank canvas or on top of other pictures.
Notepad	:	A text editor that is used to edit simple text documents that do not require any special formatting effects.

Let Us Revise

- Windows 7 is a Graphical User Interface (GUI) based operating system.
- The Windows 7 calculator has been enhanced with additional programmer and statistics options along with the scientific and standard calculator models.
- PAINT is a simple graphic program that you can use to create drawings on a blank canvas or on top of other pictures.
- Notepad is a text editor that is used to edit simple text documents that do not require any special formatting effects.
- WordPad is a word processing program present in Windows Accessories.
- The Windows Explorer is a program which allows you to efficiently manage files and folders present in the computer's disk or any other secondary storage media.

Chapter Review

1. Fill in the blanks. Choose the answer from the clue box.

Clue Box

Word pad, Paint, software, Notepad, GUI

a. Windows 7 is a _____ based operating system.

b. _____ is a simple graphics program.

c. _____ is a word p rocessing program present in windows Accessories.

d. _____ is a text editor that is used to edit simple text documents.

e. Windows Accessories is a special package of _____ .

2. Match the followings.

PAINT	A Graphical User Interface (GUI) based operating system.
Windows 7	A program interface that takes advantage of the computer's graphics capabilities to make the program easier to use.
Notepad	A simple graphic program that you can use to create drawings on a blank canvas or on top of other pictures.
Windows Explorer	A text editor that is used to edit simple text documents that do not require any special formatting effects.
GUI	A program which allows you to efficiently manage files and folders present in the computer's disk or any other secondary storage media.

3. Answer the following questions.

a. What is Windows 7? Is Windows 7 a Graphical User Interface?

b. What is Windows Accessories? Name some of the main Windows Accessories.

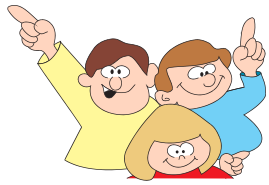
c. Write the steps to open the Accessories menu.

d. How do you use the Windows Calculator?

e. What is a Paint program? Write the steps to draw shapes in Paint program.

f. What is Windows Explorer?

Lesson Labs



a. Open the calculator and work out (45 x 22) - (31 x 15)

i. Press 31 x 15 and press equal button to display the result.

ii. Press MS to store the result in memory.

iii. Press 45 x 22 and press the equal button to display the result.

iv. Press the minus button.

v. Press MC to recall the number stored in memory.

vi. Press the equal button to display the result.

b. Type the following text in any word processor and do the tasks given below.

One fine evening a young princess put on her bonnet and clogs, and went out to take a walk by herself in a wood; and when she came to a cool spring of water with a rose in the middle of it, she sat herself down to rest a while. Now she had a golden ball in her hand, which was her favourite plaything; and she was always tossing it up into the air, and catching it again as it fell.

i. Format the heading "Princess" to 16 point bold and place it at the centre.

ii. Format the entire document to Arial black.

iii. Format the important words of your text to italics.

iv. Change the alignment as centred.

v. Save the document as "Princess" and close the document.

Chapter 6

Formatting in Word 2010

Learning Objectives

a. *Define word processing software and explain the advantages of Microsoft Office Word 2010.*

b. *Define Backstage view and identify the different options of backstage view.*

c. *Explain the steps to format text in Microsoft Office Word 2010.*

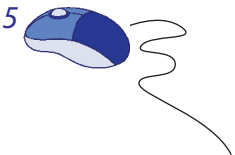
d. *Define paragraph alignment and explain the steps to change the paragraph alignment.*

e. *Define text boxes and explain the steps to insert text boxes in Word document.*

f. *Explain how to save a document in Microsoft Office Word 2010.*

An Overview

Word processing software is the most popular type of computer software. It is an application software that provides extensive tools to create, view, edit, format, store and print text materials for human communication. It can also be referred as "text editor". It processes words. It also processes paragraphs, pages, and entire papers. It has replaced the electronic typewriter in most of the places, as document can be easily edited, searched and reprinted in it. There are many word processing software packages available for use with personal computers. Some examples of word processing software include Microsoft Word, WordPerfect (Windows only), AppleWorks (Mac only), and OpenOffice.org.



Microsoft Office Word 2010

Microsoft Office Word 2010 is a full-featured word processing program that allows you to create professional looking documents. It is one of the products under the MS-Office packages developed by Microsoft Corporation, USA. Microsoft Office Word has the following advantages:

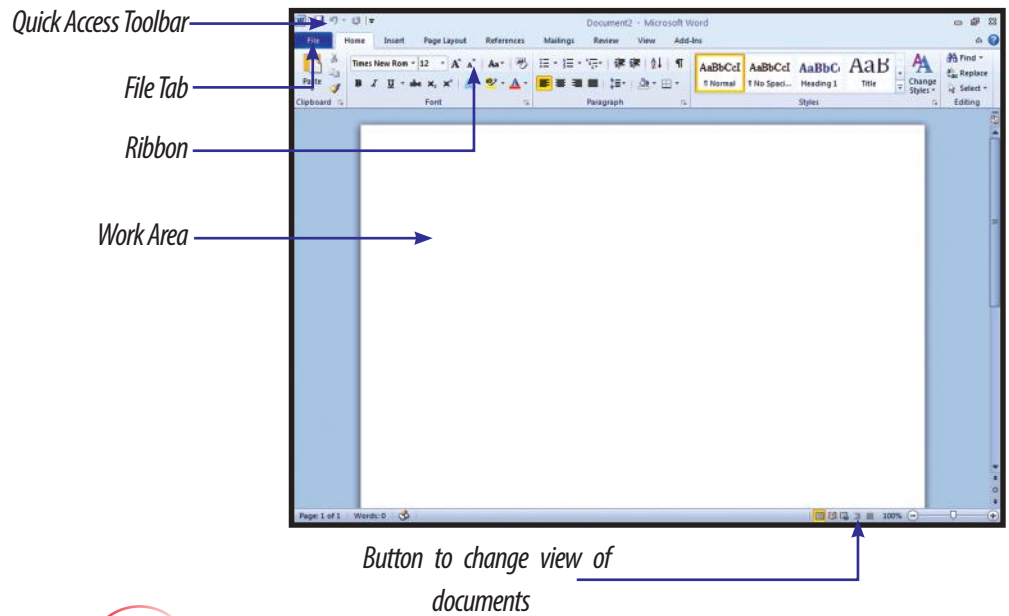
a. Word excels in its ability to change or edit a document.

b. Word provides tools that enable you to create Web pages with ease.

c. Word provides you with powerful desktop publishing tools to use as you create professional looking brochures, advertisements, and newsletters.

d. The drawing tools in Word allows you to design impressive 3-D effects by including shadows, textures and curves.

e. Word has many features that controls the appearance or format of the document.



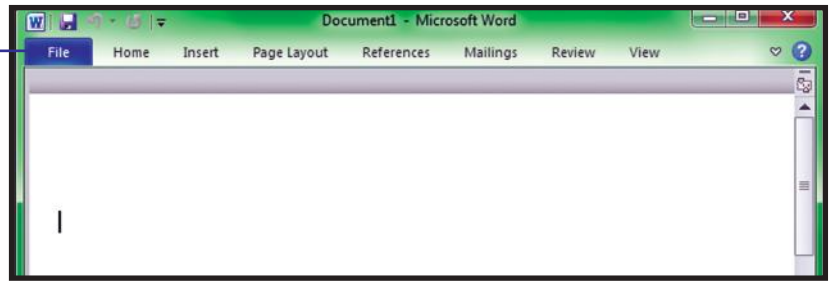
Facts Corner

The first word processors were basically computerized typewriters, which did little more than place characters on a screen, which could then be printed by a printer.

Introducing Backstage

The Backstage view has been introduced in Word 2010 and acts as the central place for managing your documents. The backstage view helps in creating new documents, saving and opening documents, printing and sharing documents, and so on.

Click on File Tab. A new screen will appear, displaying the most commonly used file management commands.



First column of the backstage view will have following options:

Save	If an existing document is opened, it would be saved as is, otherwise it will display a dialog box asking for document name.
Save As	A dialog box will be displayed asking for document name and document type, by default it will save in word 2010 format with extension .docx
Open	This option will be used to open an existing word document.
Close	This option will be used to close an opened document.
Info	This option will display information about the opened document.
Recent	This option will list down all the recently opened documents.
New	This option will be used to open a new document.
Print	This option will be used to print an opened document.
Save & Send	This option will save an opened document and will display options to send the document using email etc.
Help	You can use this option to get required help about word 2010.
Options	This option is used to set various option related to word 2010.
Exit	This option is used to close the document and exit.

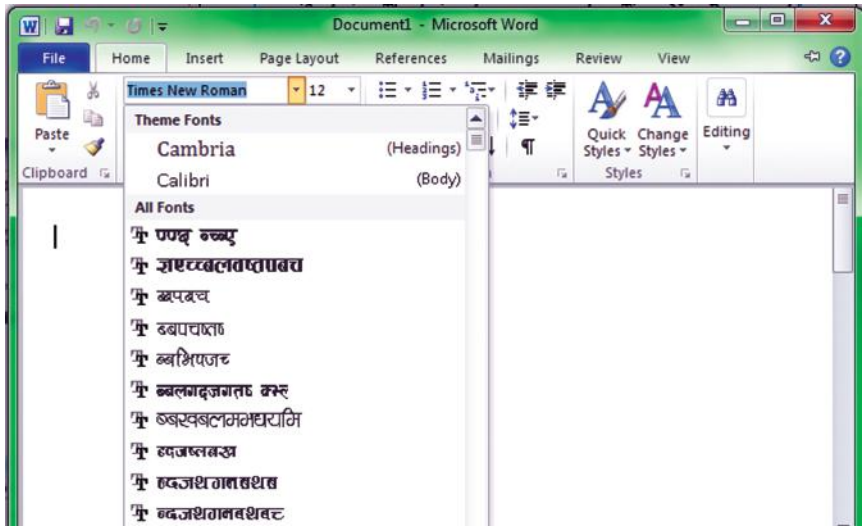
Setting Text Fonts and Size

A font, also commonly referred to as a typeface, is a set of characters with a specific design. The designs have names such as Times New Roman and Courier. Using fonts as a design element can add interest to your document and give readers visual cues to help them find information quickly.

Each font has one or more sizes. Size is the height and width of the character and is commonly measured in points, abbreviated "pt". One point equals about 1/72 inch, and the text in most documents is 10 pt or 12 pt.

To change font and size of the text, do the following:

a. Select the text that you want to change to a different font and click Home tab. Now click Font Type button to list down all the fonts available as shown below.



b. Try to move mouse pointer over different fonts listed. You will see that text font changes when you move mouse pointer over different fonts. You can use Font Scroll Bar to display more fonts available.

c. Similar way, to change the font size, click over the Font Size button which will display a font size list. You will use same procedure to select a desired font size what you have used while selecting a font type.

Changing Text Case

You can change the case of the text in your document without retyping the text i.e, the text written in small letters can be changed into capital or a vice versa. Word offers five case styles to choose from.

Sentence Case	The text will be in the form of a sentence i.e. the first character of sentence will be capital (upper case) and rest will be in small (lower case).
Lower Case	The text will be changed into small letters by using this option.
Upper Case	The text will be changed into capital letters.
Capitalize each word	The first character of each word will be capitalized of the text.
tOGGLE cASE	The first character of the word will be small and rest in capital.

To change the text case, do the followings:

a. Select the text that you want to change to a new style.

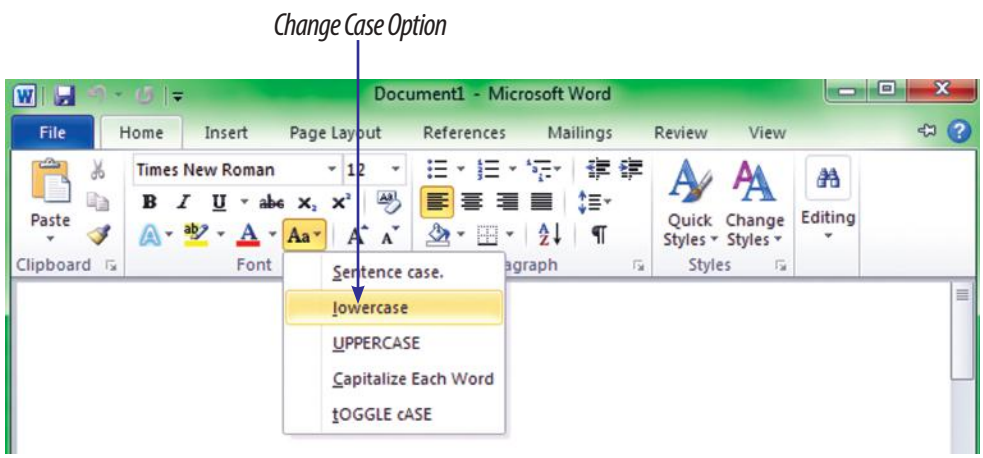
b. Click on Home tab on the ribbon.

c. Click on Change Case button.

d. Click on the case style you want to use.

The text you have selected changes to the new case style.

To deselect the text, click on outside the selected area.



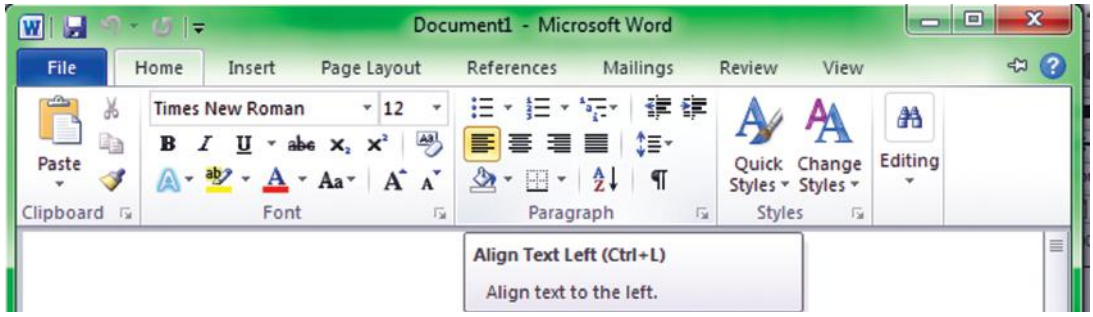
Paragraph Alignment

Paragraph alignment refers to the manner in which the left and right ends of lines of the text are aligned. There are four types of paragraph alignment style. You can choose any one of the styles. These styles are: left alignment, right alignment, center alignment and justified.

To change the paragraph alignment, do the followings:

a. Select the text you wish to modify.

b. Select one of the four alignment options from the Paragraph group on the Home tab.



Line Spacing

Line spacing is the vertical distance between the lines of text. It is set to a single line spacing by default in Word 2010. Line spacing is a paragraph format setting, therefore, it affects the paragraph containing the insertion point or all paragraphs in a selection.

To change the line spacing, do the following:

a. Select the paragraph or paragraphs for which you want to define spacing. You can use any of the text selection method to select the paragraph(s).

b. Click the Line and Paragraph Spacing Button triangle to display a list of options to adjust space between the lines. You can select any of the option available by simply clicking over it.

Paragraph Spacing

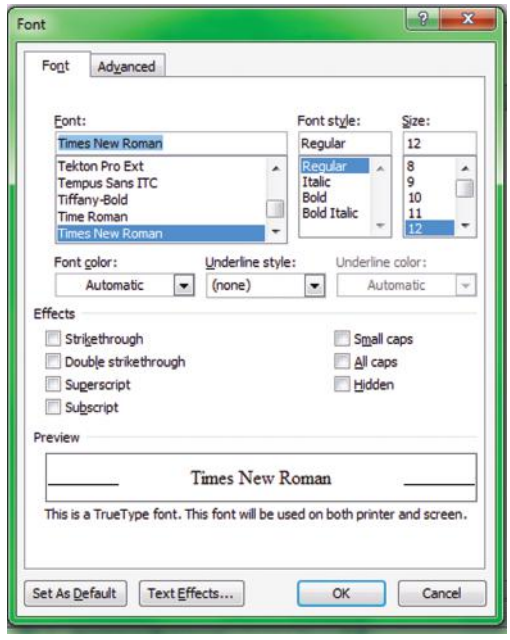
The appearance of your documents improves if some blank space is left between the end of one paragraph and the start of the next. You can accomplish this by pressing Enter twice at the end of a paragraph. By using paragraph dialog box, you can have greater control over your paragraph spacing and save time, too. Extra spacing between paragraphs helps to make a document easier to read.

To format paragraph spacing, do the followings:

a. Click the Line and Paragraph Spacing command on the Home tab.

b. Select Add Space Before Paragraph or Remove Space After Paragraph from the drop-down menu.

c. From the drop-down menu, you can also select Line Spacing Options to open the Paragraph dialog box. From here, you can control exactly how much space there is before and after the paragraph.



You can use Word's convenient Set as Default feature to save all of the formatting changes you've made and automatically apply them to new documents.

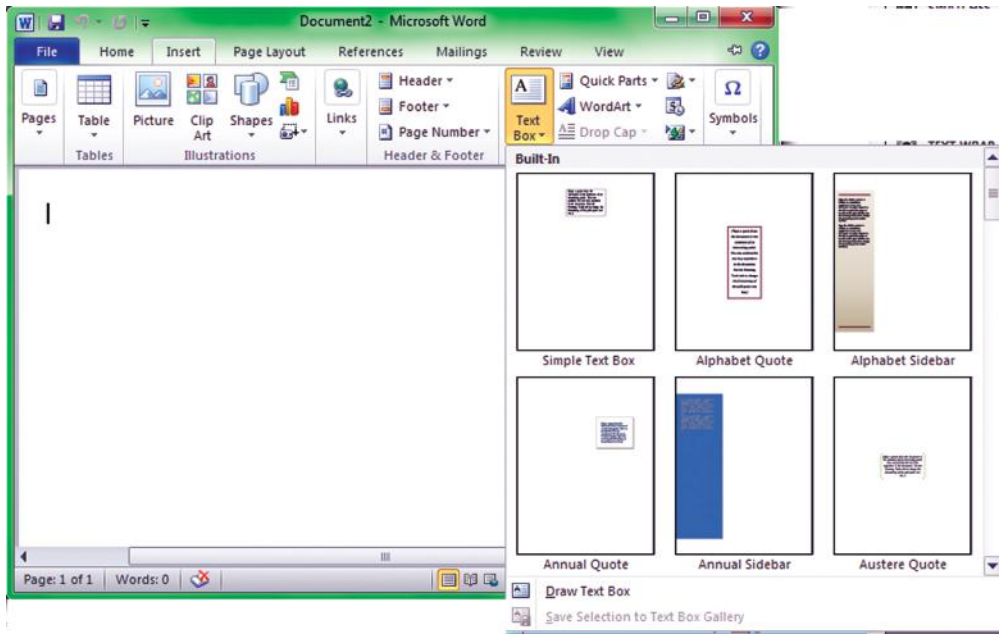
Inserting Text Boxes

Text boxes are the containers for text or graphics. They are useful for helping to organize your document. They are basically treated the same as shapes, so when you insert a text box, you can and format it by changing its fill color, outline color, and shape style, as well as create WordArt and add 3-D effects.

To insert text boxes, do the followings:

a. Select the Insert tab on the Ribbon.

b. Click the Text Box command in the Text group. A drop-down menu will appear.



c. Select Draw Text Box.

d. Click and drag on the document to create the text box.

e. You can now start typing to create text inside the text box.

From the drop-down menu, you can also select one of the built-in text boxes that have pre-defined colors, fonts, positions, and sizes. If you choose this option, the text box will appear automatically, so you will not need to click and drag to draw it.

Saving a Document

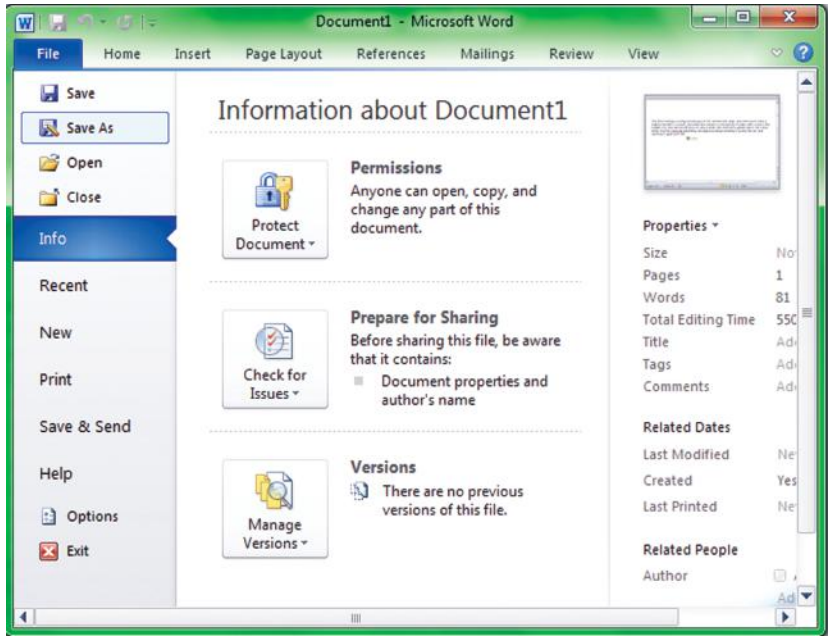
It is important to know how to save the documents you are working with. Frequently saving your documents helps to keep you from losing your work, and using 'Save As' allows you to edit a document while leaving the original copy unchanged. There are many ways you share and receive documents, which will affect how you need to save the file.

To use the Save As command, do the followings:

Save As allows you to choose a name and location for your document. It's useful if you've first created a document or if you want to save a different version of a document while keeping the original.

a. Click the File tab.

b. Select Save As.



c. The Save As dialog box will appear. Select the location where you wish to save the document.

d. Enter a name for the document and click Save.

Tricky Terms

Wordprocessing	:	An application software that provides extensive tools to create, view, edit, format, store and print text materials for human communication.
Word 2010	:	A full-featured word processing program that allows you to create professional looking documents.
Font	:	A typeface, is a set of characters with a specific design.
Paragraph alignment	:	Refers to the manner in which the left and right ends of lines of the text are aligned.

Let Us Revise

- Wordprocessing is an application software that provides extensive tools to create, view, edit, format, store and print text materials for human communication.
- Microsoft Office Word 2010 is a full-featured word processing program that allows you to create professional looking documents.
- The backstage view helps in creating new documents, saving and opening documents, printing and sharing documents, and so on.
- A font, also commonly referred to as a typeface, is a set of characters with a specific design.
- Paragraph alignment refers to the manner in which the left and right ends of lines of the text are aligned.
- Line spacing is the vertical distance between the lines of text.
- Text boxes are the containers for text or graphics.

Chapter Review

1. Fill in the blanks. Choose the answer from the clue box.

Clue Box

Text boxes, Line spacing, backstage, typeface, paragraph alignment

a. The _____ view helps in creating new documents, saving and opening documents, printing and sharing documents, and so on.
b. A_____is a set of characters with a specific design.
c. _____refers to the manner in which the left and right ends of lines of the text are aligned.
d. _____is the vertical distance between the lines of text.
e. _____are the containers for text or graphics.

2. Match each term with the statement that best describes it.

Word 2010	An application software that provides extensive tools to create, view, edit, format, store and print text materials for human communication.
Wordprocessing	A full-featured word processing program that allows you to create professional looking documents.
Paragraph alignment	A typeface, is a set of characters with a specific design.
Text boxes	Refers to the manner in which the left and right ends of lines of the text are aligned.
Font	The containers for text or graphics.

3. Say whether these sentences are True or False.

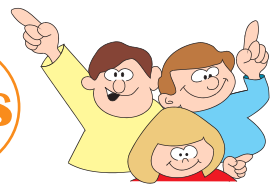
a. Microsoft Office Word 2010 is a full-featured word processing program that allows you to create professional looking documents.
b. The drawing tools in Word allows you to design impressive 3-D effects by including shadows, textures and curves.
c. Recent option will display information about the opened document.

d. One point equals about 1/72 inch, and the text in most documents is 10 pt or 12 pt.
e. Line spacing is set to a single line spacing by default in Microsoft Word.

4. Answer the following questions.

a. What is a word processing software? Name some popular word processing software.
b. List any five advantages of Microsoft Office Word 2010.
c. What is backstage view?
d. What is a font? What is the default font in Word 2010?
e. What are the five case styles of Text Case?
f. What is paragraph alignment?
g. What is line spacing? What is the default line spacing in Word 2010?
h. What is paragraph spacing?

Lesson Labs



Set A

Open a new file in the Word 2010 and type a short story. Now perform the following formatting options.

The Frog Prince

One fine evening a young princess put on her bonnet and clogs, and went out to take a walk by herself in a wood; and when she came to a cool spring of water with a rose in the middle of it, she sat herself down to rest a while. Now she had a golden ball in her hand, which was her favourite plaything; and she was always tossing it up into the air, and catching it again as it fell.

a. Change the title font to Arial (or a font of your choice), 16 pt.
b. Center the title.
c. Add italics and bold to the word "The Frog Prince".
d. Change the alignment as justified.
e. Insert any suitable clip art image on your data disk below the title. Size it appropriately and center it below the title.
f. Save the document as "The Frog Prince" on your data disk.

Set B

Start Word and type the following text exactly like given below :

School Ahead

Teacher : Why are you late, John?

John : Because of the sign.

Teacher : What sign?

John : The one that says, "School Ahead, Go Slow.

a. Correct any spelling or grammar errors.

b. Bold and center the title.

c. Change the title font to Impact (or a font of your choice), 16 pt.

d. Add a colour of your choice to the title text.

e. Format the entire document to the Courier New.

f. Insert any suitable clipart at the top of the page.

g. Change the alignment to justified.

h. Save the document as "School Ahead".

i. Close the document and exit Microsoft Word.

Set C

Start Word and type the following text exactly like given below :

Whilst she was speaking, a frog put its head out of the water, and said, 'Princess, why do you weep so bitterly?' 'Alas!' said she, 'what can you do for me, you nasty frog? My golden ball has fallen into the spring.' The frog said, 'I do not want your pearls, and jewels, and fine clothes; but if you will love me, and let me live with you and eat from off your golden plate, and sleep on your bed, I will bring you your ball again.'

a. Correct any spelling or grammar errors that are identified.

b. Bold and center the first three lines.

c. Change the font to a font of your choice, 16 pt.

d. Add colour of your choice to the three lines.

e. Change the font size of the remaining paragraphs to 11 pt and change the alignment to justified.

f. Insert the clip art image on the right hand side of the text. Size it appropriately and center it.

g. Save the document as "Health" on your data disk.

h. Close the document and exit Microsoft Word.

Chapter 7

Introducing PowerPoint 2010

Learning Objectives

a. *Define presentation program and explain the advantages of Microsoft Office PowerPoint 2010.*
b. *Explain how to create a blank presentation with design theme.*
c. *Explain how to insert slide in a presentation.*
d. *Explain how to format text in a presentation.*
e. *Identify the steps to animate text and object in Microsoft Office PowerPoint 2010.*
f. *Define transition and identify the steps to apply a transition in Microsoft Office PowerPoint 2010.*

An Overview

A presentation program is a computer software package that allows you to create documents called presentation. Presentation is a systematic display of information along with graphics. It typically includes three major functions: an editor that allows text to be inserted and formatted, a method for inserting and manipulating graphic images and a slide-show system to display the content.

PowerPoint 2010 is a visual and graphical application, primarily used for creating presentations. With PowerPoint, you can create, view, and present slide shows that combine text, shapes, pictures, graphs, animation, charts, videos, and much more.

Microsoft Office PowerPoint 2010

Microsoft Office PowerPoint 2010, is a presentation developed by Microsoft Corporation, USA. It allows you to produce professional-looking presentations and handouts.

Microsoft Office PowerPoint has the following advantages:

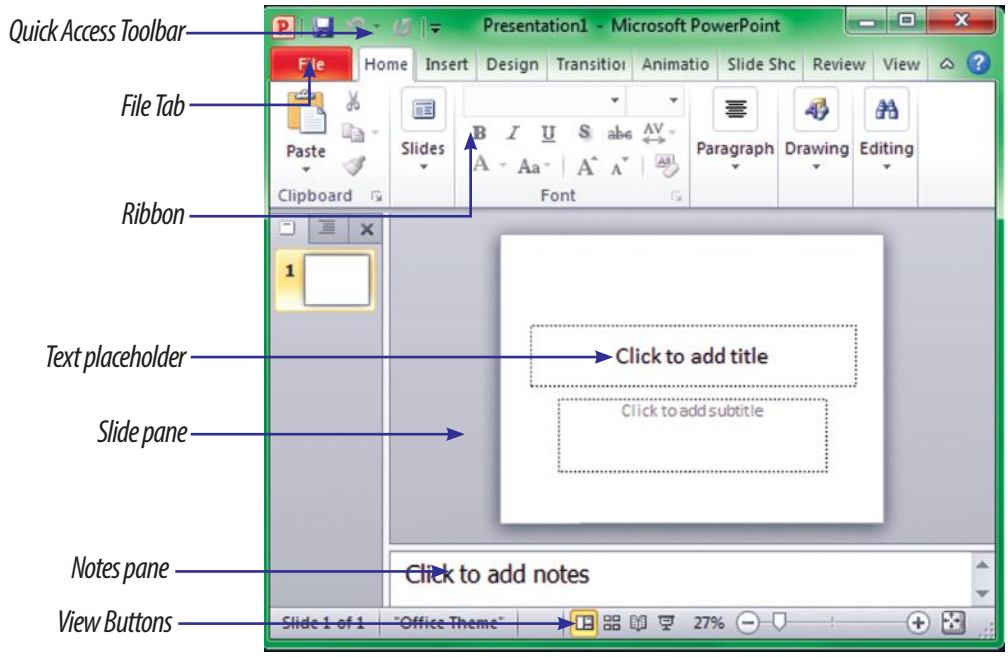
a. Save time and money by applying sophisticated photo effects without using additional photo-editing software programs

b. Allow to create presentations for lectures, research reports and meeting handouts

c. Allow to insert pictures from the Clip Gallery into your presentation

d. Allow to insert sound, music, videos and animated pictures into a slide. Offers new, dynamic slide transitions and animation effects that look similar to graphics you'd see on TV

e. The new Microsoft Office Backstage view replaces the traditional file menu to let you save, share, print, and publish your presentations with just a few clicks



Title bar	It is the topmost bar of the window that shows the name of the document.
Office button menu	A menu button that contains the commands like New, Save and Open.
Quick Access Toolbar	The toolbar that displays quick access buttons like Save, Undo and Redo commands.
Ribbon	It displays the different tabs of related commands. Each tab has short cut buttons for the common tasks.
Program Window Controls	These buttons are used to minimize the program window, restore the window to full size, or close the window.
Outline and Slides Tab	It provides two views of the slides of your presentations i.e. the outline of the slide text and a thumbnail view of the slide.
Slide Pane	It displays a large view of the current slide on the right side of the window. You can also enter text, graphics and animations directly in the slide pane.
Splitter Bar	It allows you to adjust the width of the slide pane by dragging with the mouse.
Text Placeholder	It allows you to type titles, body text and bulleted lists in text placeholders.
Status Bar	The status bar consists of a message area. The message area displays the current slide number and the total number of slides in the slide show.
View Buttons	It allows you to quickly change the way your presentation is displays on the screen. Normal view, slide sorter view and slide show view are the three main views of PowerPoint.
Notes Pane	You can display the text notes for the current slide in the Notes Pane.

Creating a Blank Presentation with Design Theme

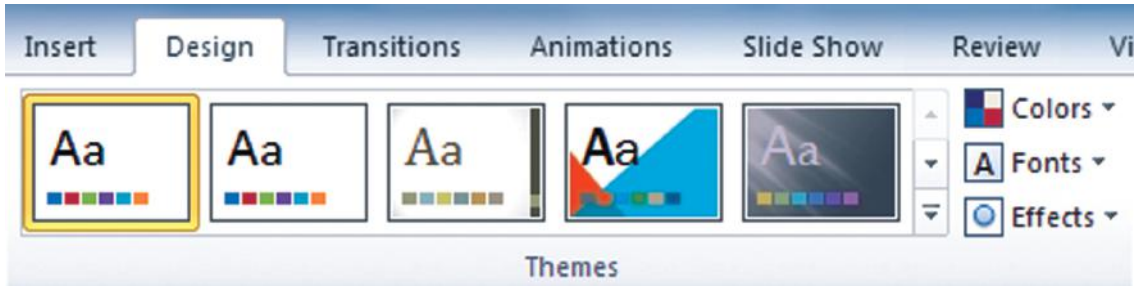
A theme is a predefine combination of colors, fonts, and effects that can be applied to your presentation. PowerPoint includes built-in themes that allow you to easily create professional-looking presentations without spending a lot of time formatting.

To apply a theme, do the followings:

a. Click on the Design tab on the ribbon.

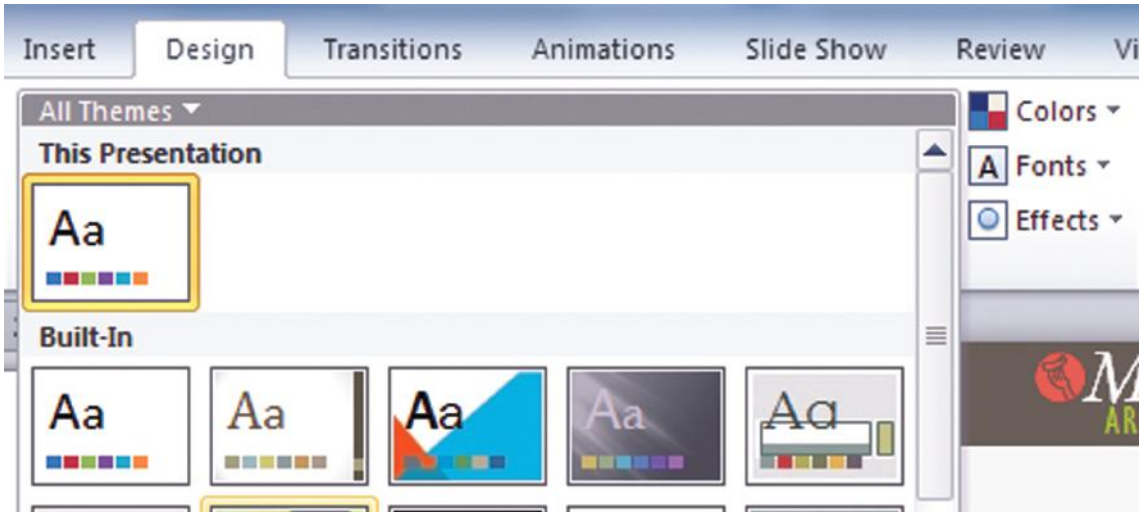
b. Click on one of the themes.

You can click on the down arrow of More button to view the full pallet of theme.



c. Hover over a theme to see a live preview of it in the presentation. The name of the theme will appear as you hover over it.

d. Click a theme to apply it to the slides.



About a Slide

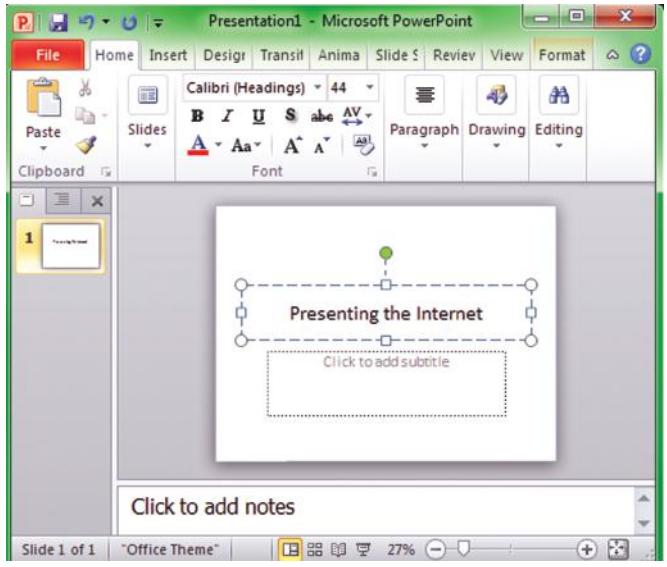
Every PowerPoint presentation is composed of a series of slides. Slides contain placeholders, which are areas on the slide that are enclosed by dotted borders. Placeholders can contain many different items, including text, pictures, charts, and more. Some placeholders have placeholder text, or text that you can replace. They also have thumbnail-sized icons that represent specific commands such as Insert Picture, Insert Chart, and Insert Clip Art.

To insert a title slide, do the followings:

a. Click on the title text placeholder box.

b. Type your text in text placeholder box.

The title text, displays in the title text placeholder and in the Slides tab. The insertion point is displaying after the letter 't' in Internet.



To enter text in subtitle, do the followings:

a. Click on the subtitle text placeholder box.

b. Type your text in subtitle text placeholder box.

The subtitle text is displayed in the subtitle text placeholder and the Slide tab.

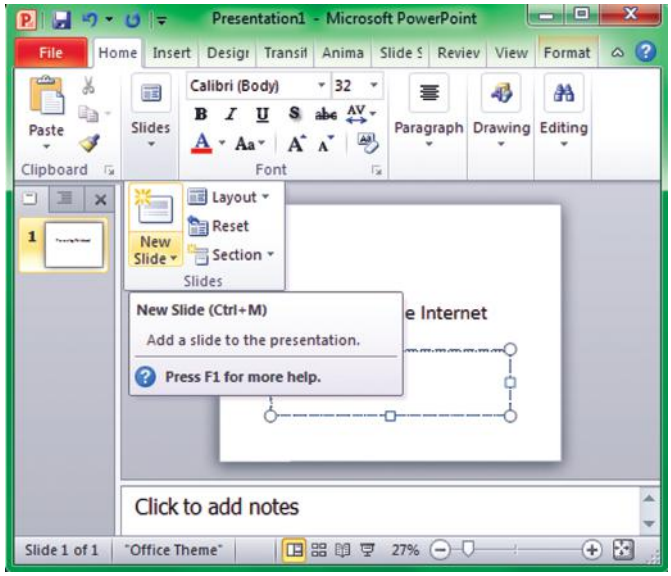
Adding a New Slide to a Presentation

A presentation may contain more than one slide. After creating a slide the new slide can be added into the presentation. The new slide can contain text, graphic or charts, etc.

To add a new slide, do the followings:

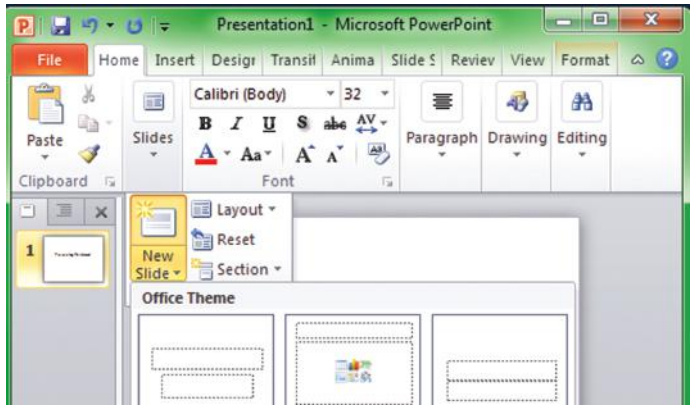
a. Click on Home tab on the ribbon

b. Click on the New Slide button.



c. Select the slide you want to insert.

d. A new slide will be added your presentation.



Changing the Slide Layout

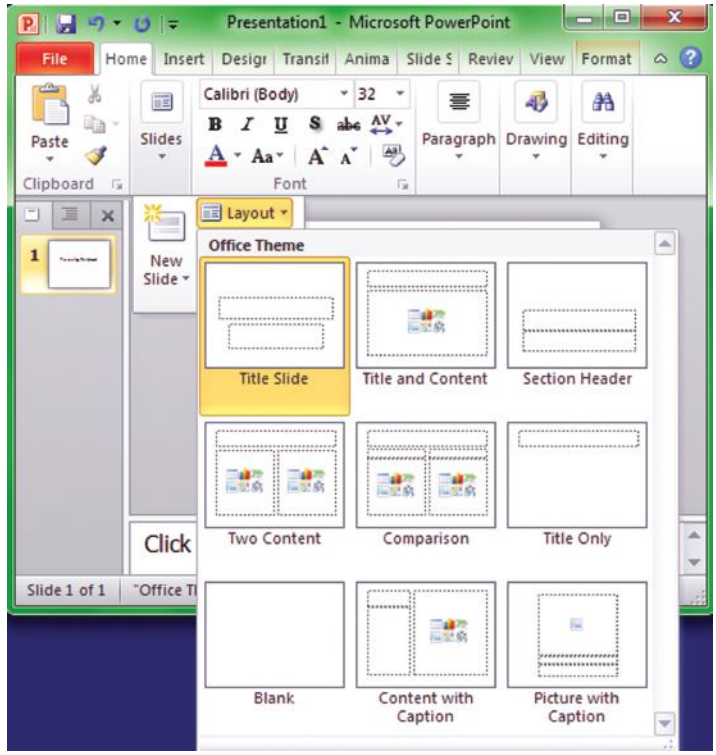
The PowerPoint provides the different layouts of the slide. Layouts contain placeholders that hold your content and place them in a regular and aligned format. By using layout, you can quickly change your whole presentation. But you need to make a few adjustments to the text position and size to fit the new layout, if you assign a new slide layout to the slide with existing text. So, it is better to assign the new layout before adding content to a slide.

To change the slide layout, do the followings:

a. Display the slide that you want to change.

b. Click on Home tab on the Ribbon.

c. Click on Layout button.



d. Click on the layout.

PowerPoint immediately assigns a layout to the slide. The text in the slide will automatically adjust itself to the new layout.

Formatting Text

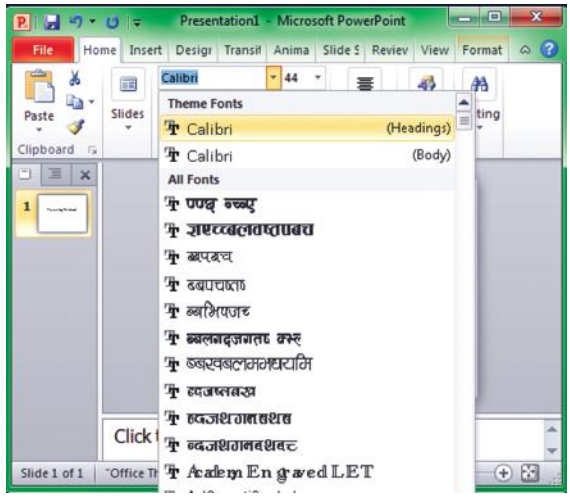
Microsoft PowerPoint's features allow you to format slides. Readability and clarity are the most important design criteria that one should keep in mind while formatting text. Your audience should be able to read your presentation easily.

To change the font of the text, do the followings:

a. Select the text you want to change to a different font.

b. Click on Home tab on the ribbon.

c. Click on down arrow button of Font to display a list of the available fonts.



d. Click on the font you want to use.

PowerPoint immediately applies new font to the box.

To change the size of the text, do the followings:

You can increase or decrease the size of the text on a slide in PowerPoint.

a. Select the text you want to change to a different font size.

b. Click on Home tab on the ribbon.

c. Click on down arrow button of Font Size to display a list of the available sizes.

d. Click on the size you want to use.

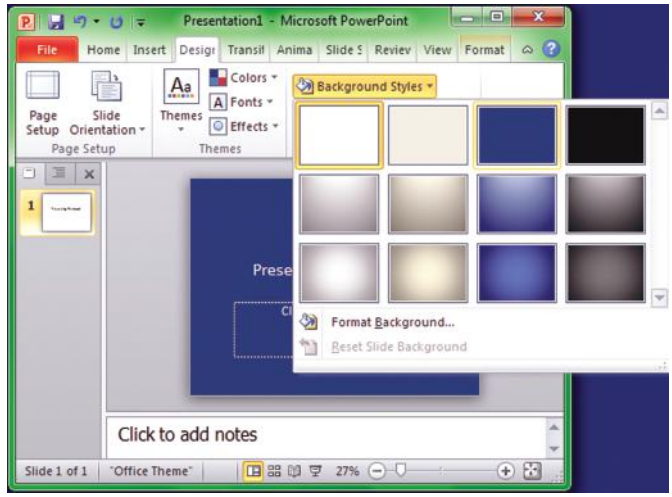
Changing the Background Color

The background is the color, texture, pattern, or image that is applied to the entire slide. By its very definition, it applies to the entire surface of the slide; you cannot have a partial background. You can also use a picture as a slide background. When you change the background, you can apply the change to only the current slide or to all the slides.

To change the background color, do the followings:

a. Click on the Design tab.

b. Click on Background Styles.



c. Click on Format Background.

   The Format Background dialog box appears.

d. Click on the radio button options of Solid fill.

e. Click on the Color button to open a color palette.

f. Select the color you want to apply as a background.

g. Click on Close button to apply solid color on the current slide.

   You can click on Apply to All button to apply solid color on all the slides.

   The color selected by you applied in the current slide.

Adding a Clip Art on a Slide

One of the great features in PowerPoint is the ability to add graphic elements to the slides of the presentation. This helps to create visually appealing presentations and keep the viewers entertained and interested. Clip Art is a library of pictures and graphics that you can use in your presentation.

To add a Clip Art on a slide, do the followings:

a. Display the slide you want to add a Clip Art image to.

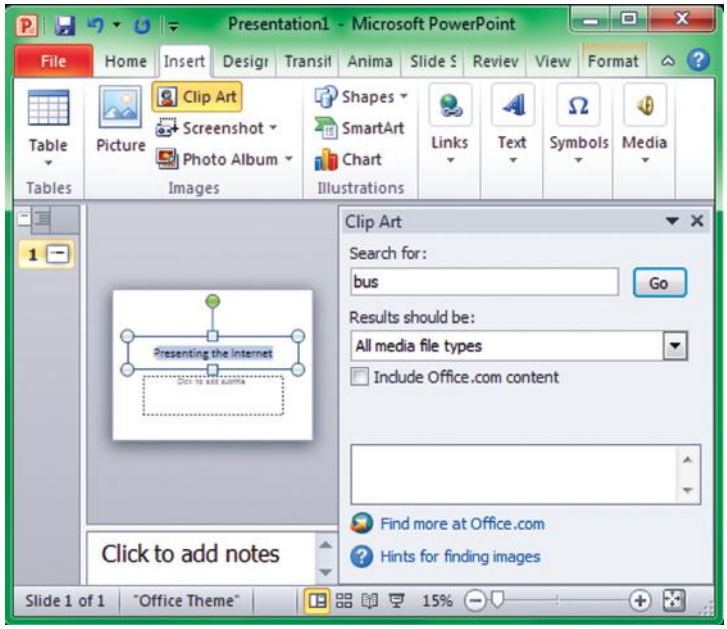
b. Change the layout of the slide to one that includes a placeholder for a Clip Art image.

c. Click on a Clip Art icon to add a Clip Art image. The Clip Art task pane opens.

d. Enter keywords in the Search for: field that are related to the image you wish to insert.

e. Click the drop-down arrow in the Results should be: field.

f. Click on Go.



Inserting Screenshots

Screenshots are pictures that capture the visible windows and items displayed on your computer screen. They may include an open window of a website, items on your desktop, or an open program. These images can be useful for explaining or displaying computer programs, functions, and websites. PowerPoint allows you to capture an image of an entire window or a screen clipping of part of a window.

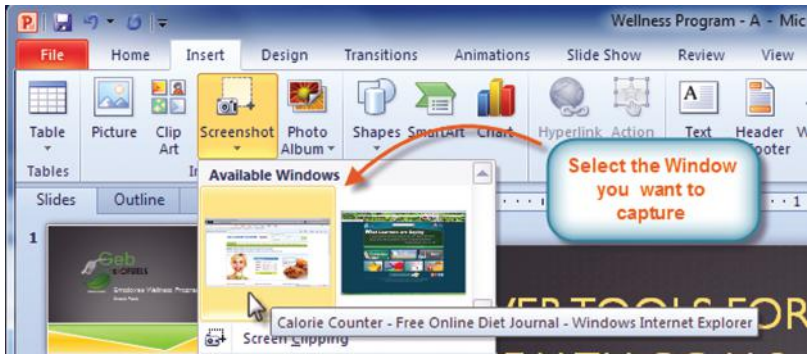
To insert screenshots of a window, do the followings:

a. Select the Insert tab.

b. Click the Screenshot command in the Images group.

c. The Available Windows from your desktop will appear. Select the window you would like to capture as a screenshot.

d. The screenshot will appear in your slide.



To insert a screen clipping from a Window, do the following:

a. Select the Insert tab.

b. Click the Screenshot command and select Screen Clipping.

c. A faded view of your current desktop will appear, and your cursor will turn into a cross shape x.

d. Click, hold, and drag on the area of the window that you want to capture.

e. The screen clipping will appear in your slide.

Adding WordArt and Shapes

There are many features and commands you can use in PowerPoint to create visually appealing slides. Two of these features are WordArt and shapes. PowerPoint allows you to add effects to the text inside of a text box, which is known as WordArt. WordArt allows the user to create stylized text with effects such as textures, shadows, and outlines. It can be applied to text on any slide. You can also insert a variety of shapes such as rectangles, circles, lines, arrows, callouts, and stars.

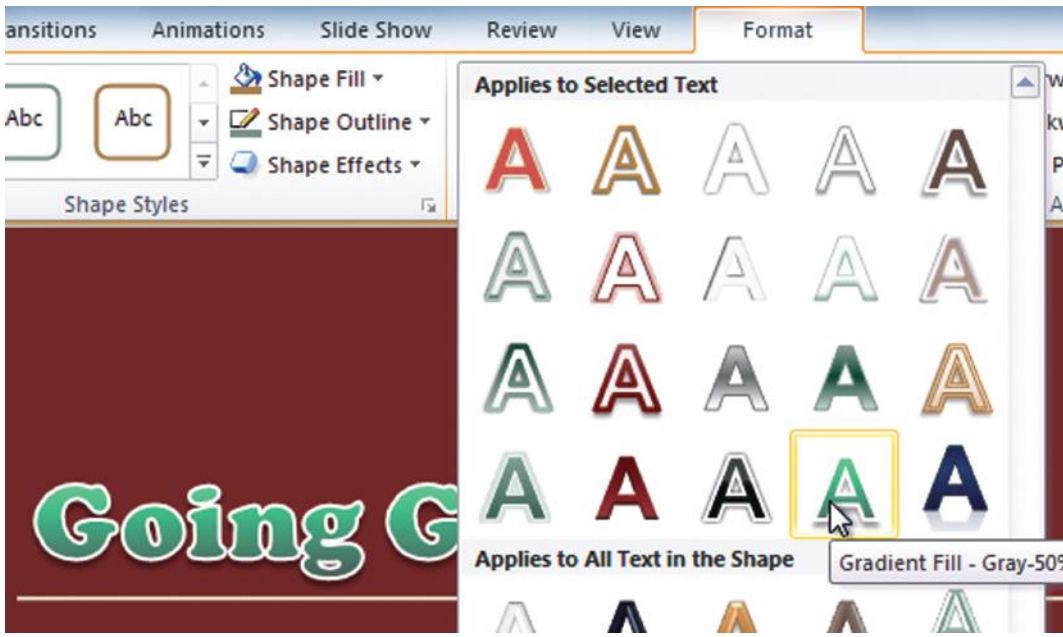
To apply a WordArt Style to text, do the followings:

a. Select a text box, or select some text inside of the text box. The Format tab will appear.

b. Click the Format tab.

c. In the WordArt Styles group, click the More drop-down arrow to view all of the available styles.

d. Select the desired style preset to apply the style to your text.



Animating Text and Objects

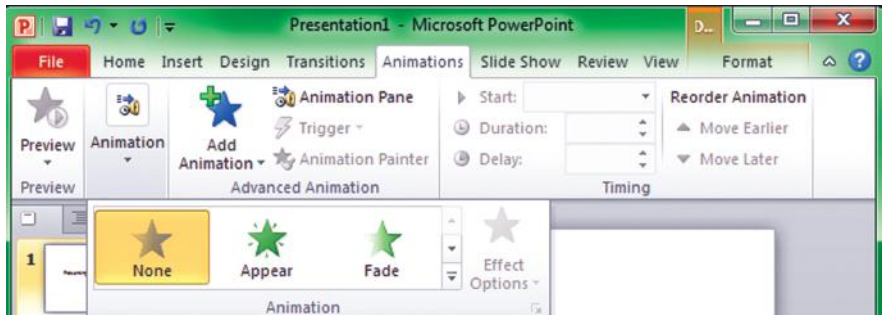
In PowerPoint you can animate text and objects such as clip art, shapes, and pictures. Animation, or movement, on the slide can be used to draw the audience's attention to specific content or to make the slide easier to read.

To apply an animation to an object, do the followings:

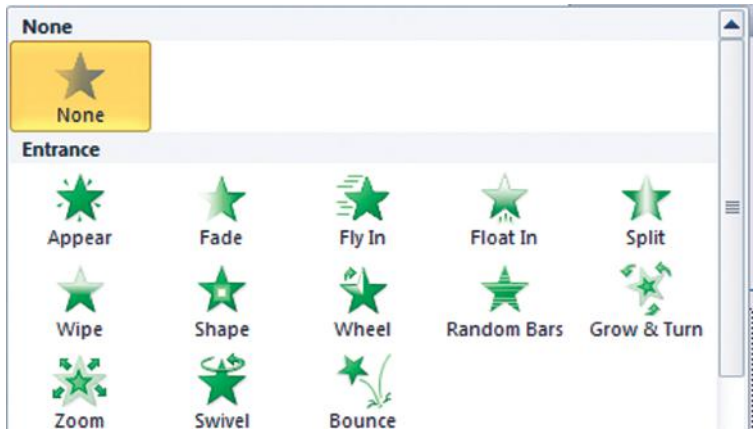
a. Select an object.

b. Click the Animations tab.

c. In the Animation group, click the More drop-down arrow to view the available animations.



d. Select the desired animation effect.



e. The object will now have a small number next to it to show that it has an animation. Also, in the Slide pane, the slide will now have a star symbol next to it.

Applying Transition

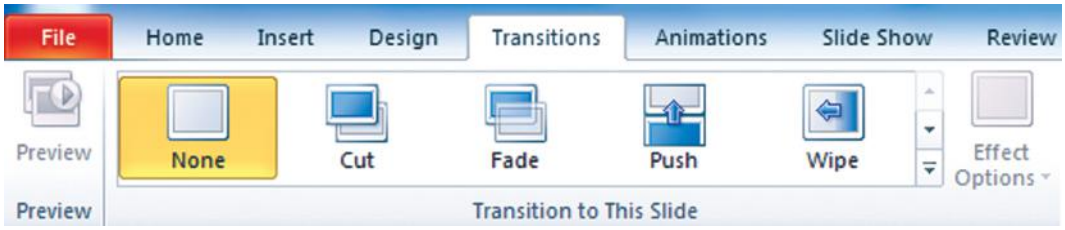
Transitions are motion effects that, when in Slide Show View, add movement to your slides as you advance from one slide to another. There are many transitions to choose from; each one allows you to control the speed and even add sound.

To apply a transition, do the followings:

a. Select the slide you wish to modify.

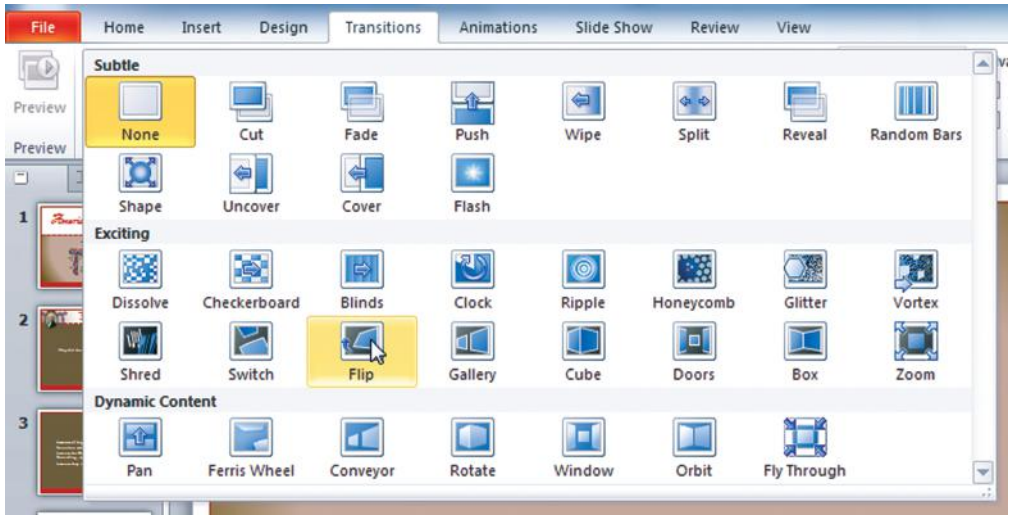
b. Click the Transitions tab.

c. Locate the Transition to This Slide group. By default, None is applied to each slide.



d. Click the More drop-down arrow to display all of the transitions.

e. Click a transition to apply it to the selected slide. This will automatically preview the transition as well.



Tricky Terms

Presentation program	:	A computer software package that allows you to create documents called presentation.
Presentation	:	A systematic display of information along with graphics.
Theme	:	A predefined combination of colors, fonts, and effects that can be applied to your presentation.
Transitions	:	The motion effects that, when in Slide Show View, add movement to your slides as you advance from one slide to another.

Let Us Revise

- A presentation program is a computer software package that allows you to create documents called presentation.
- PowerPoint 2010 is a visual and graphical application, primarily used for creating presentations.
- Allows to create presentations for lectures, research reports and meeting handouts
- A theme is a predefined combination of colors, fonts, and effects that can be applied to your presentation.
- Slides contain placeholders, which are areas on the slide that are enclosed by dotted borders.
- The background is the color, texture, pattern, or image that is applied to the entire slide.

Chapter Review

1. Fill in the blanks. Choose the answer from the clue box.

Clue Box

Slides, theme, PowerPoint, splitter bar, presentation program

a. A _____ is a computer software package that allows you to create documents called presentation.

b. _____ is a visual and graphical application, primarily used for creating presentations.

c. _____ allows you to adjust the width of the slide pane by dragging with the mouse.

d. A _____ is a predefined combination of colors, fonts, and effects that can be applied to your presentation.

e. _____ contain placeholders, which are areas on the slide that are enclosed by dotted borders.

2. Match the followings.

Splitter Bar	Displays a large view of the current slide on the right side of the window. You can also enter text, graphics and animations directly in the slide pane.
Slide Pane	Allows you to adjust the width of the slide pane by dragging with the mouse.
Ribbon	Allows you to type titles, body text and bulleted lists in text placeholders.
Screenshots	Displays the different tabs of related commands.
Text Placeholder	The pictures that capture the visible windows and items displayed on your computer screen.

3. Say whether these sentences are True or False.

a. Microsoft Office PowerPoint 2010 allows you to produce professional-looking presentations and handouts.

b. Notes Pane allows you to quickly change the way your presentation is displays on the screen.

c. PowerPoint includes built-in themes that allow you to easily create professional-looking presentations without spending a lot of time formatting.

d. Screenshots are pictures that capture the visible windows and items displayed on your computer screen.

e. Animations are motion effects that, when in Slide Show View, add movement to your slides as you advance from one slide to another.

4. Answer the following questions.

a. What is a presentation program? Give examples.

b. What do you mean by presentation?

c. What is Microsoft Office PowerPoint 2010? State three advantages of Microsoft Office PowerPoint 2010.

d. What does a title slide display?

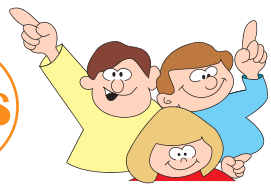
e. What is a theme? Write the steps to apply a theme.

f. What is a Clip Art? Write the steps to add a Clip Art on a slide.

g. What are screenshots?

h. What are transitions?

Lesson Labs



1. *Create a new, blank presentation.*
2. *Use the Title Slide AutoLayout for the first slide. The title should read: Presenting the Internet and the subtitle should read: History of the Internet.*
3. *Apply the Expedition design template to the presentation.*
4. *Add a new slide using the Bulleted List AutoLayout. The bullet slide title should read:*
   What is the Internet
   Key the following as separate bullets:
   World Wide Web, E-Mail, Online Chatting
5. *Save the presentation as Internet.*
6. *Spell check, proofread and resave the presentation, and then print and close it.*

Chapter 8

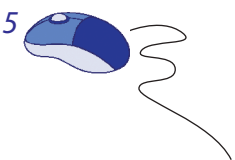
Basics of QBASIC

Learning Objectives

a. *Explain how to start QBASIC program.*
b. *Explain the elements of QBASIC programming.*
c. *Differentiate between constants and variables.*
d. *Define operator and explain the different types of operators supported by QBASIC.*
e. *Explain the function and syntax of simple QBASIC statements.*

An Overview

The computer cannot think and make any decision on its own. It needs instructions to perform any task. A computer needs instructions in a language that it can understand. Such language is known as programming language. There are various types of programming languages. BASIC is one of the programming languages, which stands for stands for Beginners' All Purpose Symbolic Instruction Code. It was developed in 1964 at Dartmouth College, U.S.A. by Professors John Kemeny and Thomas Kurtz. It allows the usage of simple English like statements and mathematical operators. There are various versions of BASIC like TURBO BASIC, GW-BASIC and QBASIC.



QBASIC Program

QBASIC is a high level computer language developed by Microsoft in 1985. It has a powerful pull-down menu that can be driven by keyboard or mouse. It can be used for scientific as well as commercial applications.

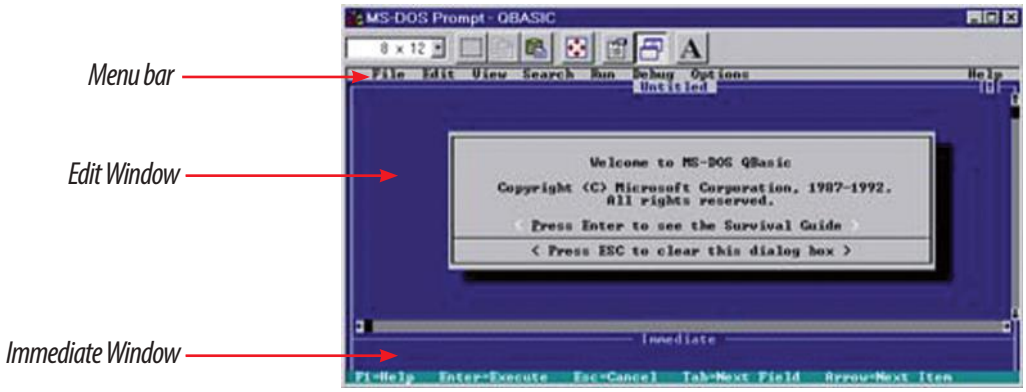
To start QBASIC program, do the followings:

a. Turn on the computer to load Windows Operating System and locate the QBASIC folder.

b. Double click on the QBASIC folder.

c. Double on the QBASIC icon.

Now you are presented with a welcome screen. Press Esc to clear the dialog box. The main QBASIC window appears. The QBASIC window is available for you to enter a program and execute it. The QBASIC window has the following parts: Menu bar, Edit window, Immediate window, Status bar.



Tips Corner

High level language is a computer programming language that resembles natural language or mathematical notation and is designed to reflect the requirements of a problem. It is specially used for solving mathematical and statistical problems. Today, there are dozens of high-level languages; some examples include BASIC, C, FORTRAN, Java, and Pascal.

Format of QBASIC Statements

Every command or instruction in QBASIC is called a statement. These statements or instructions should be given according to the rules of the language in which the program is written. The way in which a particular statement should be written is called the syntax of the statement.

All QBASIC program lines have the following syntax:

[line-identifier][statement][:statement]...[comment]

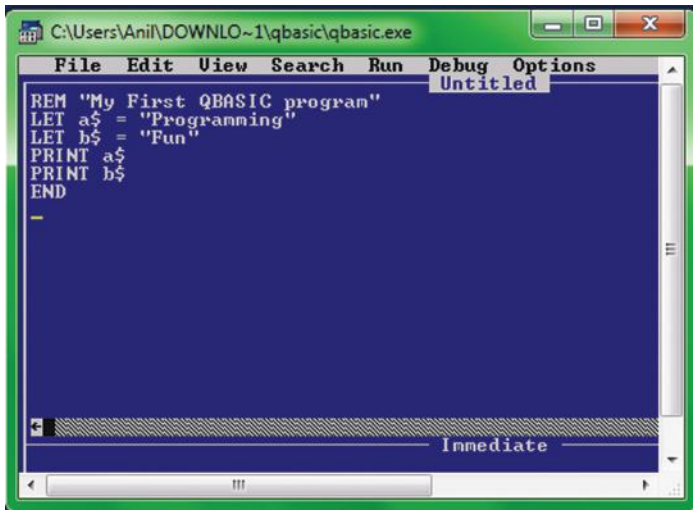
Where,

Line identifier — A line in BASIC may have one line-identifier. BASIC supports two types of line-identifiers. They are line numbers and alphanumeric line labels.

My First Program

The central part of QBASIC's development environment is the powerful and intelligent full screen editor. It allows you to write programs, view files and execute the programs.

Type the following program in the programming window.



Now, press F5 to execute the program.

Elements of QBASIC Programming

The important elements of QBASIC programming consists of the character set, variables, constants, operators, expressions keywords.

Character Set

The character set is a set of symbols used to frame the various components of a program. The character set consists of digits, letters and special characters that are valid in QBASIC. The character set includes:

Alphabets	:	A to Z (small and capital letters)
Numbers	:	0 to 9
Special characters	:	; = + -* / ^ ( ) % $ #! , .’ “ :& ? < > \ - b (Note: The symbol b denotes a blank space.)

Variables

Variables are programmer-defined areas in the computer memory for storing data. When programmers talk of computer memory, it is usually RAM to which they are referring. All variables are created in RAM. The data stored in a variable can change during the execution of the program.

Variable-Naming Conventions

Variable names need to follow certain rules and standard naming conventions of QBASIC. Given below are certain points to remember when naming a variable:

- The names may be up to 40 characters long.
- The characters allowed in a variable names are letters, numbers, the decimal point and the special type declaration characters ($, %, #, &, and !).
- The first character in the variable name must be a letter.
- Reserved words of QBASIC cannot be used as variable names.

Types of Variable

Variables are of two types - numeric variable and string variable depending on the kind of data item they represent.

- *Numeric Variable*

  A numeric variable has a number as its value. It must begin with an alphabet and the remaining characters, if used, may be alphabets or digits or both. The valid numeric variables are A2 and B.

- *String Variable*

  The string variable has a character or string of characters as its value. It must begin with an alphabet and end with a dollar($) sign. The valid string variables are A$, B3$, C$ and TL$.

Solved Example

```
REM "The program to input and display the name and address of person"
CLS
INPUT "enter the name"; n$
INPUT "enter the address"; add$
PRINT " Your name is:::";n$
PRINT " Your address is :::";add$
END
```

Constants

Constants are data items whose values do not change while the program is running. There are two types of constants: numeric constant and string constant.

- *Numeric Constant*

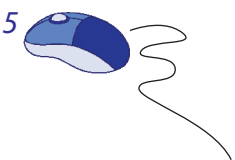
  Numeric constants are positive or negative numbers on which mathematical operations such as addition, subtraction, multiplication and division can be performed. Numeric constants should not contain commas. The valid numeric constants are 150, -980, +76 and 129.

- *String Constant*

  A string constant is a set of alphanumeric or special characters enclosed within double quotes. Blank spaces can also be used in a string. The valid string constants are "Fun with BASIC" and "Enjoy Programming".

Solved Example

```
A = 20          'A is a numeric variable and 20 is a numeric constant"
PRINT A
END
```

Operator

An operator is a symbol representing the operations they perform on operands in a program. The values on which the operator's work are referred to as operands. It is used to compute, compare values and test multiple conditions.

The operators in QBASIC are classified as follows:

a. Arithmetic operators
b. Relational operators
c. Logical operators
d. String operator

a. Arithmetic Operators

Arithmetic operators are used to perform various mathematical operations. The general format of arithmetic operator is:

operand1 arithmetic_operator operand2

The arithmetic operators supported by QBASIC are:

Operator	Name	Example
+	Addition	A + B
-	Subtraction	A - B
*	Multiplication	A*B
/	Division	A/B
\	Integer Division	A\B
Mod	Modulus	A mod B
^	Exponential	A^B

Solved Example

```
REM "The program to illustrate the use of arithmetic operators"
a = 15 : b = 5
PRINT "The difference is=";a-b
PRINT "The sum is=";a+b
PRINT "The product is= ";a*b
PRINT "The quotient is= "a/b
END
```

b. *Relational Operators*

Relational operators are used to compare two values of same type, either both numeric or both string. The general format of relational operator is:

operand1 relational_operator operand2

The relational operators supported by QBASIC are:

Operator	Name	Example
=	Equal	A=B
<	Less than	A<B
>	Greater than	A>B
<=	Less than or equal to	A<=B
>=	Greater than or equal to	A>=B
<>	Not equal to	A<>B

b. *Logical Operators*

Logical operators are used to connect two or more relational expressions to evaluate a single value as True or False. The general format of logical operator is:

operand1 logical_operator operand2

The logical operators supported by QBASIC are:

Operator	Name	Example
AND	Evaluates to true when both conditions are true	A > B AND A > C
OR	Evaluates to true when one or both conditions are true	A > B OR A > C
NOT	Makes a true expression false, and a false expression true.	A NOT B

Solved Example

Assume x=5 and y=6. What will be stored in result in each of the following statements?

Expression Result

(x<7) AND (y>7) True AND False => False

a. String Operator

The joining of two or more strings is called concatenation of strings. The strings are connected by the string operator, which is the plus sign (+). For example, the statement:

PRINT "KATH" + "MANDU"

would cause QBASIC to display the following string.

KATHMANDU

Brainstorming task

Circle the best suitable answer.

a. Every command or instruction in QBASIC is called a……
   i. Constant ii. Line iii. Statement

b. Character set consists of …….
   i. Digits ii. Letter iii. Both

c. The example of Arithmetic operator is……..
   i. Addition(+) ii. Equal(=) iii. None of them

d. The REM ids the short form of……..
   i. Remarks ii. Reload iii. Clear

First Look at QBASIC statements

A statement is a group of BASIC keywords generally used in program lines as part of a program. These statements are first stored in the memory of the computer and executed only when the command RUN is given. It is either executable or non-executable. Executable statements are program instructions that tell BASIC what to do during the execution of a program. Non-executable statements do not cause any program action. In this section, we shall discuss simple programming statements.

REM statement

The REM statement is the short form of 'remarks'. The computer ignores anything following the word REM and it is used to put explanatory notes in the program. You may use a single quotation mark (') instead of REM. The general form of the REM statement is:

REM <Any Text>

```
REM  "My first QBASIC program"
LET price = 200
LET tax = price * 25 / 100
PRINT "The sales tax is::"; tax
END
```

CLS statement

The CLS statement clears the screen. It is used whenever a fresh screen is desired during the program execution. The general form of the CLS statement is:

CLS

Solved Example

```
CLS
PRINT "Programming is great fun"
END
```

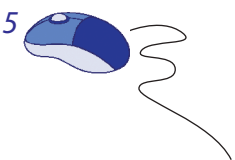
LET statement

The LET statement is used for storing a value in a variable. The word LET is optional, i.e., the equal to sign is sufficient when assigning an expression to a variable name. The general form of the LET statement is:

LET <variable> = <variable or constant or expression>

Solved Example

```
REM "Program to find the sum of two numbers"
LET a = 20
LET b = 30
Sum = a + b
PRINT "The sum of the two numbers::: "; Sum
END
```

INPUT statement

The INPUT statement is used to accept input from the keyboard during program execution. It facilitates the use of same program for various sets of data to obtain different results in different executions. The general form of the INPUT statement is:

INPUT <"message"> ; variables

Solved Example

```
REM "This program finds the volume of a room" CLS
INPUT "Enter the length of a room"; l
INPUT "Enter the breadth of a room"; b
INPUT "Enter the height of a room"; h
 vol = l * b*h
PRINT "The volume of room is:::"; vol
END
```

PRINT statement

The PRINT statement is used to display data or the results of calculation on the screen. Question mark (?) may be used in place of the word 'PRINT'. The general form of the PRINT statement is:

PRINT <variable, constants or expressions>

Print Positions

BASIC divides the line into print zones of 14 spaces. The position of each item displayed on the screen is determined by the punctuation used to separate the items in the list. The separator and print position is described below:

Separator	Print Position
,	Zone wise
;	Side by side
space(s)	Immediately after the last value

END statement

The END statement denotes the end of the program. Once the program encounters the END statement, the computer stops processing any further as it has reached the termination point. It must be written as the last statement in every program. The general form of the END statement is:

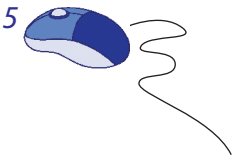
END

Tricky Terms

QBASIC	:	A high level computer language developed by Microsoft in 1985.
Character set	:	A set of symbols used to frame the various components of a program.
Variables	:	The programmer-defined areas in the computer memory for storing data.
Constants	:	The data items whose values do not change while the program is running.
Operator	:	A symbol representing the operations they perform on operands in a program.

Let Us Revise

- QBASIC is a high level computer language developed by Microsoft in 1985.
- The character set is a set of symbols used to frame the various components of a program.
- Variables are programmer-defined areas in the computer memory for storing data.
- Constants are data items whose values do not change while the program is running.
- An operator is a symbol representing the operations they perform on operands in a program.
- The joining of two or more strings is called concatenation of strings.
- A statement is a group of BASIC keywords generally used in program lines as part of a program.

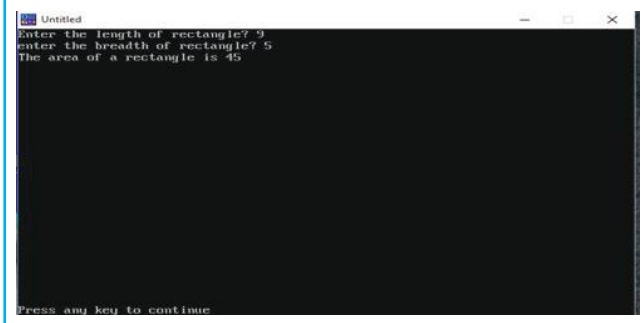


Solved Exercise

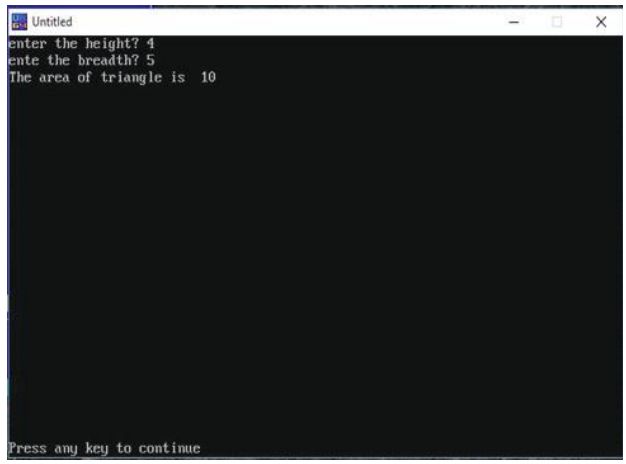
A. Write a program that calculates the sum of two numbers.

Program code:	***Output screen***
cls *input "enter the first number";A* *input "enter the second number";B* *sum=A+B* *print "the sum of two number is";sum* *end*	

B. Write a program that calculates the area of rectangle.

Program code:	***Output screen***
CLS *INPUT "enter the length of rectangle";L* *INPUT "enter the breadth of rectangle";B* *A = L * B* *PRINT "The area of a rectangle is";A* *END*	

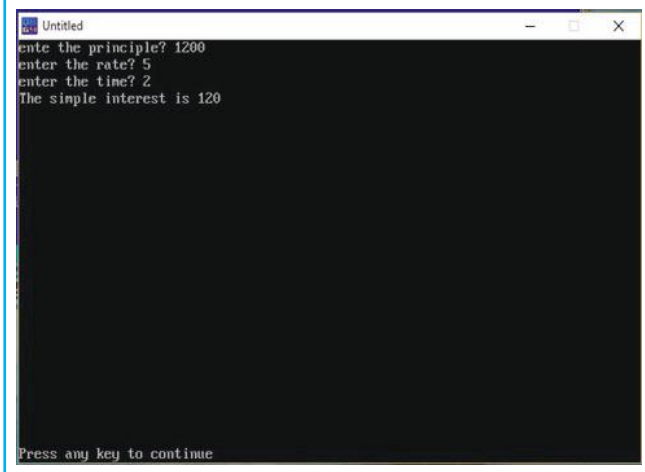
C. Write a basic program to input the height and base and find out the area of triangle.

Program code:	***Output screen***
CLS *INPUT "enter the height";H* *INPUT "ente the breadth";B* *area = 1 / 2 * (H * B)* *PRINT "The area of triangle is"; area* *END*	

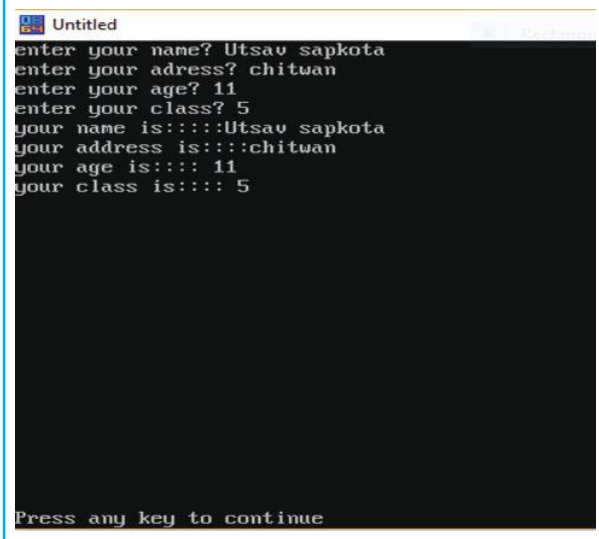
D. Write a program that converts centigrade temperature into Fahrenheit temperature. Where F=(9/5)*c+32.

Program code:	***Output screen***
CLS *INPUT "enter the tempreature in centigrade";c* *F = C * (9 / 5) + 32* *PRINT "The tempreature in fahrenheit is";F* *END*	

E. Write a program to calculate the simple interest.

Program code:	***Output screen***
CLS *INPUT "ente the principle";p* *INPUT "enter the rate";r* *INPUT "enter the time";t* *si = (P * T * R) / 100* *PRINT "The simple interest is";si* *END*	

F. Write a program to print your name, address, age, class.

Program code:	***Output screen***
cls *input "enter your name";n$* *input* *enter "your address";a$* *input "enter your age";age* *input "enter your class";c* *print "Your name is ::::";n$* *print "Your address is ::::";a$* *print "Your age is ::::";age* *print "Your class is ::::";c* *end*	

Chapter Review

1. Fill in the blanks. Choose the answer from the clue box.

Clue Box

END, QBASIC, Constants, concatenation, PRINT

a. _____ is a high level computer language developed by Microsoft in 1985.

b. _____ are data items whose values do not change while the program is running.

c. The joining of two or more string is called _____ of string.

d. The _____ Statements is used to display data.

e. The _____ statements denotes the end of the program.

2. Match the followings.

INPUT	To display data from the computer system
CLS	To input data to the computer
PRINT	To clear the screen
Variable	End of a program
Constant	The value can be change
END	The value cannot be change

3. Say whether these sentences are True or False.

a. BASIC allows the usage of simple English like statements and mathematical operators.

b. The numeric variable must begin with a number and the remaining characters, if used, may be alphabets or digits or both.

c. Reserved words of QBASIC cannot be used as variable names.

d. The string constant is a set of alphanumeric or special characters enclosed within single quotes.

e. Operator is a symbol representing the operations they perform on operands in a program.

4. Answer the following questions.

a. What is a BASIC program? Who developed BASIC?

b. What are the important elements of QBASIC programming language?

c. What are variables and constants?

d. Differentiate between a numeric variable and a string variable.

e. What are operators? State the rules of logical operators.

5. Write BASIC expressions for the following algebraic expressions:

a. $y = 6x$ b. $a = 2b+5c$ c. $y = x^2$

d. $nr^2 + KT$ e. $(F - 32)^2$ f. $a^2 + b^2$

6. Let x = 5, y = 8 and z = 10. What will be the value stored in result in each of the following statements?

a. r = x + y - z

b. r = (x * y) MOD z

c. r = z*y/x

d. r = (x+y)/z

e. r = (y/x)*z

7. Examine the following program.

```
a = 2
b = 3000
PRINT "The first number is ";a
PRINT "The second number is ";b
END
```

List all the variables and constants that appear in the above program.

8. Answer the following questions.

a. Write a program that stores the integers 52 and 87 in two variables and store the sum of these two integers in a variable named total.

b. Write a program to input two numbers (25 and 2) and print their quotient and remainder.

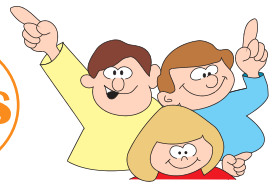
c. Write a program that displays the following information, each on a separate line:

Your name	Your address
Your telephone number	Your school's name

d. Write a program to input the side of a cube. Print the volume and the total surface area. (Hint :Volume of Cube = Length ^ 3 and Total Surface area = 6 * Length ^ 2)

e. Write a program to find the area of the four walls of a room. (Hint: Area = (2 * (length + breadth)) * height)

Lesson Labs



1. *The cost of an item is Rs 200. What will be the cost of 50 such items. Write a simple program.*
2. *The sales tax on an article is 25% of its price. Write a program to find the sales tax on an article priced at Rs. 10000.*
3. *The computer lab is 20 m long, 15 m wide and 24 m high. Write a program to find the cost of painting its four walls at Rs. 43 per square metre. (Area of four walls = 2h(l +b).*
4. *Write a program to find the volume of a box.*
5. *Write a program to compute the area and circumference of a circle.*
6. *Ram has deposited Rs. 2000 in Bank at the rate of 2% per year. Write a program to find how much interest will he be getting after 3 years?*
7. *Rajesh is a shopkeeper. He has bought 2 dozen pencils for Rs. 90 and sold them at the rate of Rs. 2. Write a program to find the profit that he has earned.*
8. *Manish has been assigned to write a program in which one can input a number and find out whether it is divisible by 5. Can you help him with the task?*

Typshala

Introduction

Touch typing is a commonly used system, which enables you to type quickly and accurately without looking at the keys. In order to know where your fingers are without looking, you must keep them positioned over their home keys, in the middle row of the keyboard.

Typshala is a typing tutor that provides free hand typing and entertains the user with a game.

To start typshala, follow these steps:

a. Click on Start.

b. Click on Typshala. Typshala program appears on the screen.

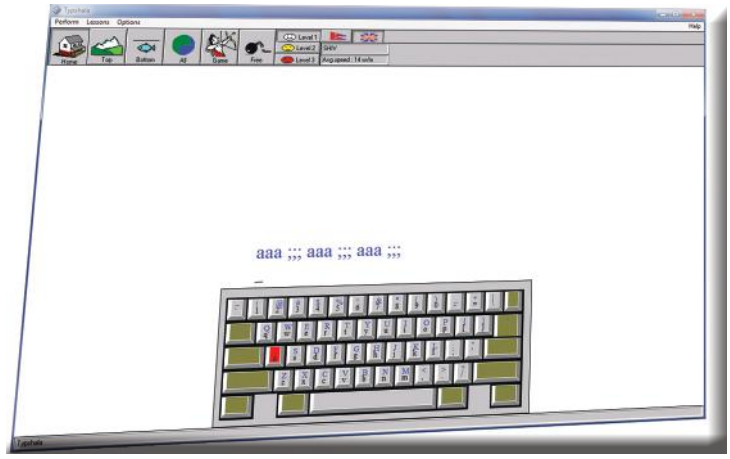
c. Click on Home.

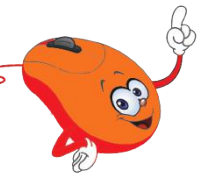
d. Choose 'Level 1'.

e. Click on OK.

f. Choose writing script.

g. Start typing.





Lesson Exercise 1

a. Choose English Script from the Options menu.

b. Choose Lessons | Home Row | Level 1. Now, start typing

aaa ;;; aaa ;;; aaa ;;;

c. Choose Lessons | Home Row | Level 2.

kjg kjg kjg kjg kjg kjg

d. Choose Lessons | Home Row | Level 3.

Lass Gas Salad Dallas

Lesson Exercise 2

a. Choose English Script from the Options menu.

b. Choose Lessons | Top Row with Home Row | Level 1. Now, start typing

rfgf rfgf rfgf hu hu hu

c. Choose Lessons | Top Row with Home Row | Level 2

la!fkg la!fkg la!fkg

d. Choose Lessons | Top Row with Home Row | Level 3

left out type @(at the

Lesson Exercise 3

a. Choose English Script from the Options menu.

b. Choose Lessons | Bottom Row with Home Row | Level 1. Now, start typing

f] agf/; b"Mv /ftf] /fhf

c. Choose Lessons | Top Row with Home Row | Level 2

/fzL /fzL /fzL /fzL bfzL

d. Choose Lessons | Top Row with Home Row | Level 3

bulb nab, ban, mob, bun,