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GST103 COMPUTER FUNDAMENTALS SUMMARY

Computer is fast becoming the universal machine of the _____century.
21st

Today computer is still confined the laboratory.
False

A _____is basically defined as a tool or machine used for processing data to give required information.
Computer

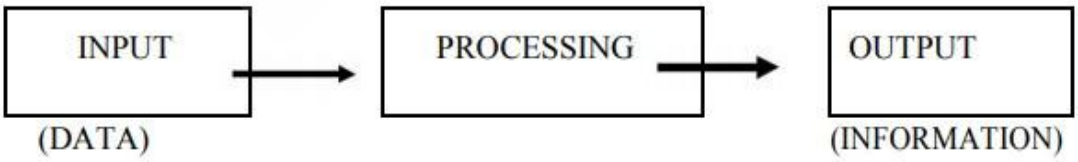

Fig. 1.0: Schematic diagram to define a computer

_____is referred to facts about a person, object or place e.g. name, age, complexion, school, class and height
Data

_____ is referred to as processed data or a meaningful statement
Information

The following are the methods of data processing

- Manual method
- Mechanical method
- Computer method

The _____method of data processing involves the use of chalk, wall, pen pencil and the like.
Manual

The manual data processing operations entail considerable_____.
manual efforts

The _____method of data processing involves the use of machines such as typewriter, roneo machines, adding machines and the like.
Mechanical

The mechanical operations are basically _____in nature.
Routine

The computer method of carrying out data processing has the following major features

- Data can be steadily and continuously processed
- The operations are practically not noisy
- There is a store where data and instructions can be stored temporarily and permanently.
- Errors can be easily and neatly corrected
- Output reports are usually very neat, decent and can be produced in various forms
- Accuracy and reliability are highly enhanced

The following are the characteristics of a Computer

- Speed
- Accuracy
- Storage
- Automatic
- Reliability
- Flexibility

The computer system is made up of the hardware and _____.
Software

The computer system is made up of the
_____and_____.
Hardware and **software**

The computer hardware comprises the input unit, processing unit and_____.
output unit

The input unit comprises those media through which data is fed into the computer. Examples include the keyboard, mouse, joystick, trackball, scanner etc.

All the electronic components in a PC are mounted on a piece of fiberglass called the_____.
Motherboard

A small battery powers a _____ to keep track of the time when the PC is turned off.
Clock

ROM is the acronym for_____ **Read Only Memory**

When a computer is switched on and running a program, _____is used for purposes such as holding the program and its data
RAM (Random Access Memory)

Fiberglass can conduct electricity. **True**

The earliest PCs were equipped with a CPU from Intel Corporation called the_____.
8088

CPU stands for Central _____ Unit.
Processing

The speed of a CPU is measured in _____
Megahertz (MHz)

The _____ keys can be likened with the conventional typewriter keys.
Alphanumeric

The _____ keypad contains a set of keys required for typing or entering number digits 0, 1, 2, 3, 4, 5, 6, 7, 8, and 9 into the computer store.
Numeric

When the _____ key is pressed, the capital letters on the alphanumeric keys are activated.
Shift

ALU is the acronym for_____
Arithmetic and Logic Unit

The processing unit is made up of the Arithmetic and Logic Unit (ALU), control unit and _____ **main memory**

The main memory also known as the primary memory is made up of the Read Only Memory (ROM) and the Random Access Memory (RAM).

_____are the series of instructions that enable the computer to perform a task or group of tasks
Computer software

A _____is made up of group of instructions to perform a task.
Program

Series of programs linked together make up a _____

Software

Computer programs could be categorized into the following

- system software
- utility software
- application programs

The different categories of personnel that operates the computer are called_____

Computer users

The _____ranges from the building housing the other elements of the computing system namely the computer and the users, the furniture and auxiliary devices

Computing environment

UPS stands for_____

Uninterruptible Power Supply System

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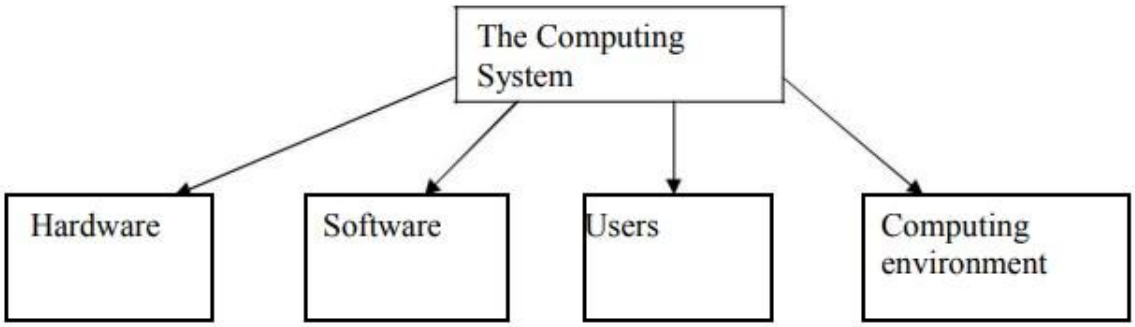


Fig. 1.2a: Schematic diagram of the computing system

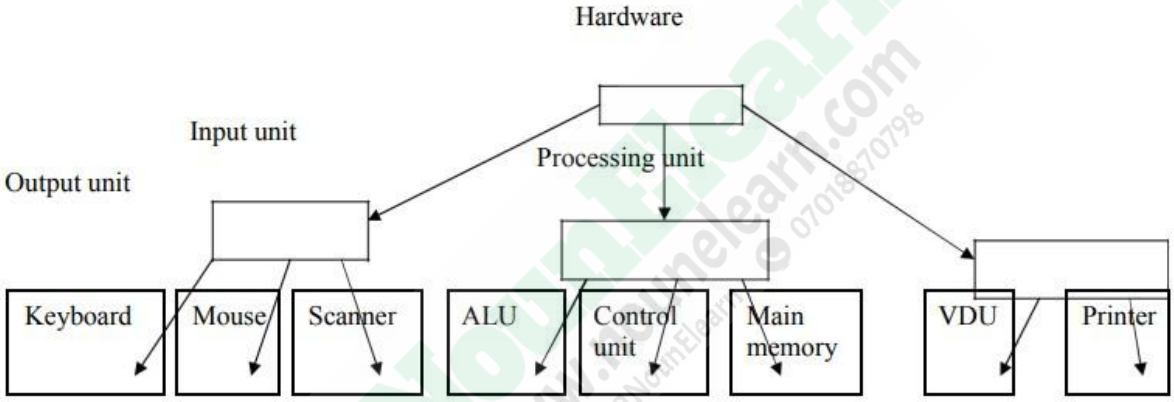


Fig. 1.2b: Computer hardware

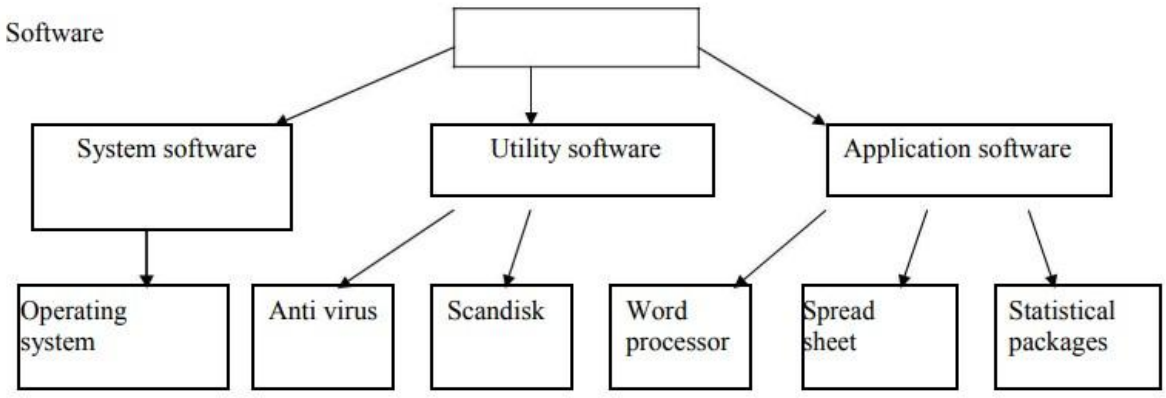


Fig. 1.2c: Computer software

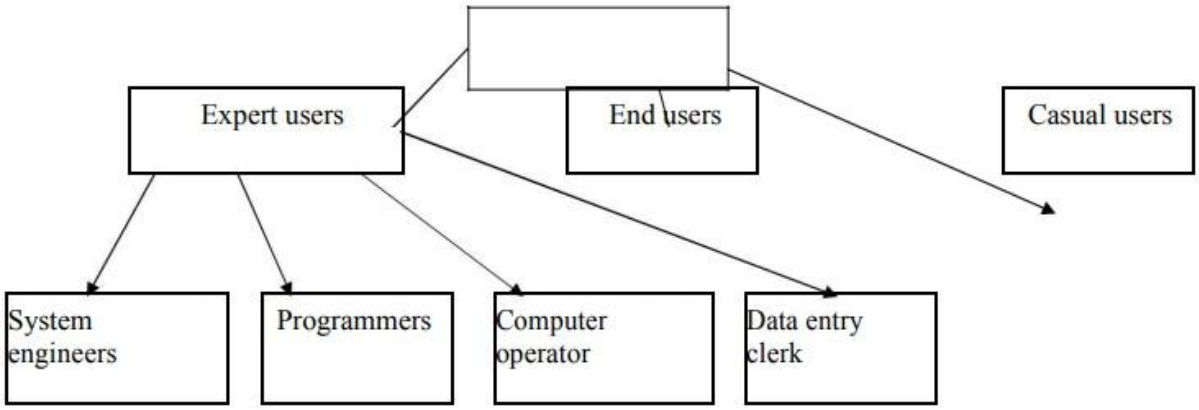


Fig. 1.2d: Computer users

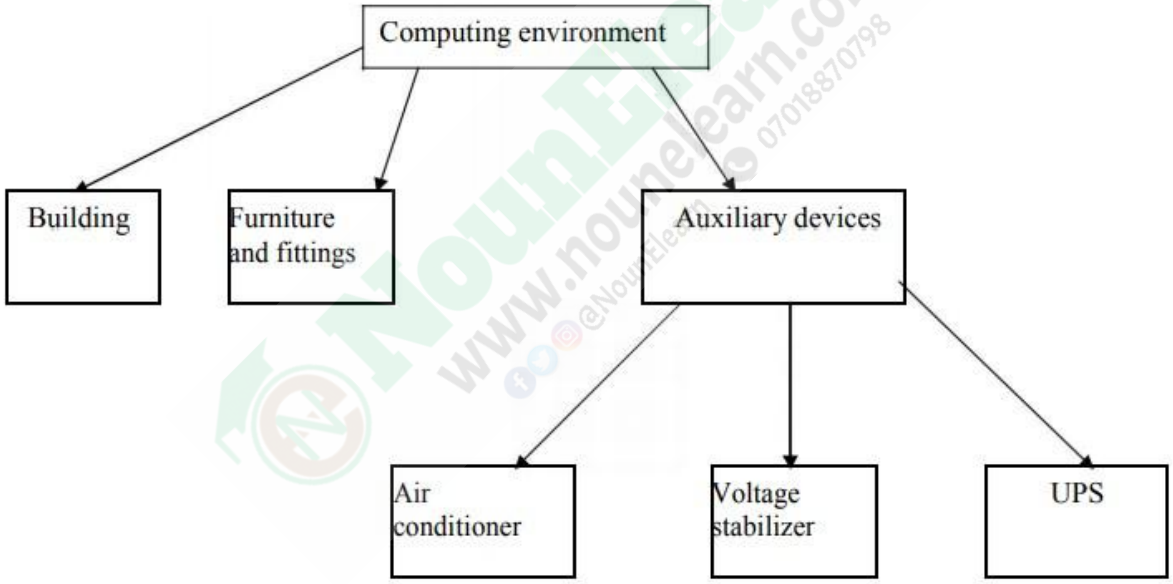


Fig. 1.2e: Computing environment

A complete history of computing would include a multitude of diverse devices such as the ancient Chinese abacus, the Jacquard loom (1805) and Charles Babbage's "analytical engine" (1834). As late as the 1960s, mechanical devices, such as the Marchant calculator, still found widespread application in science and engineering. In fact, as late as the 1960s, analog computers were routinely used to solve

systems of finite difference equations arising in oil reservoir 12 modeling.

Most of today's computers are_____ computers
Digital

First Generation Electronic Computers took place between 1937 – 1953

The earliest attempt to build an electronic computer was by J. V. Atanasoff, a professor of physics and mathematics at Iowa State, in 1937.

ENIAC is the acronym for_____
Electronic Numerical Integrator and Computer

The first general purpose programmable electronic computer was the _____
Electronic Numerical Integrator and Computer (ENIAC)

Electronic Numerical Integrator and Computer was built by J. Presper Eckert and John V. Mauchly

EDVAC was able to run orders of magnitude faster than ENIAC.
True

By the 1950s programmers were using a symbolic notation known as _____ **assembly language**

The first computer programs were written out in _____
machine code

Eckert and Mauchly developed UNIVAC in _____
1952

The Second Generation of computer was_____
1954 – 1962

The following high level programming languages were introduced during the Second Generation of computer

- FORTRAN
- ALGOL
- COBOL

FORTRAN was developed in the year_____
1956

ALGOL was developed in the year_____
1958

COBOL was introduced in the year_____
1959

The _____generation of computer saw the first two supercomputers designed specifically for numeric processing in scientific applications.
Second

The term_____ is generally reserved for a machine that is an order of magnitude more powerful than other machines of its era.
Supercomputer

LARC stands for_____
Livermore Atomic Research Computer

Third Generation was between _____
1963 – 1972
SSI stands for_____
Small-Scale Integration

MSI is the acronym for_____
Medium-Scale Integrated

In_____, Seymour Cray developed the CDC 6600
1964

Fourth Generation of computer was in _____
1972 – 1984

Fifth Generation of computer was in _____
1984 – 1990

WAN stands for_____
Wide Area Network

LAN stands for_____
Local Area Network

There are _____ types of electronic computers.
Three

The basic types of computer are Digital, Analog and _____
Hybrid

Classification of computer based on signal type

- Digital Computer
- Analog Computer
- Hybrid Computer

_____ represent its variable in the form of digits.
Digital Computer

_____ counts the data it deals with whether representing numbers, letters or other symbols, are converted into binary form on input to the computer.
Digital Computer

_____ Computer measures rather than counts.
Analog

_____hold data in the form of physical variables rather than numerical quantities
Analog computers

A _____ computer needs a conversion element which accepts analog inputs, and output digital value
Hybrid Computer

Based on classification by purpose, computers are classified as either special purpose or _____ **general purpose**

A _____ computer is one that is designed to solve a restricted class of problems. **special purpose**

_____ computers are computers designed to handle wide range of problems.
General-Purpose

The classification of computers according to capacity

- Microcomputers
- Medium or Mini or Small Computers
- Large Computer or Main Frames

Microcomputers are also known as_____ **single board computers**

_____ are small size types that are battery-operated.
Laptop Computers

_____ is like laptop computers but smaller in size, although small but comprises all the components of a full system.
Notebook Computer

The _____Computers have memory capacity in the range 128K bytes to 256 Kbytes
Mini

The Main Frame Computers often called number crunches have memory capacity of the order of 4 Kbytes and they are very expensive.

The Main Frame Computers is otherwise called _____ **number crunches**

One of the biggest fears of having computers are _____
Viruses

_____ are created by programming or computers experts
Viruses

_____ is one of the greatest threats to computers and computer applications.
Computer virus

The _____is the main unit of a PC **system unit**

CD-ROM or DVD drive

When a computer is switched on and running a program, _____is used for purposes such as holding the program and its data
RAM (Random Access Memory)

RAM chip

Intel Processor

The Microprocessor or Central Processing Unit (CPU) is the computer's most important single item.

CPU fan

The _____ emits the computer's sound output.
Speaker

The _____ is the computer's main permanent storage unit, holding large amount of data and programs.

hard disk

Hard drive (Hard disk)

All the electronic components in a PC are mounted on a piece of fiberglass called the_____
Motherboard

Fiberglass cannot conduct electricity
True

Computers use disk to store_____.
Information

There are _____main varieties of disks available.
Four

The computer _____devices are those devices which are attached to the system unit.
Peripheral

The intelligent computer keyboard has four major divisions

- Function keys

- Alphanumeric keys
- Numeric keys
- Control keys

(a) Return or Enter key
(b) Escape key denoted by ESC
(c) Control key denoted by CTRL
(d) Alternate key denoted by ALT
(e) Delete key denoted by DEL
(f) Insert key denoted by INS
(g) Backspace key
(h) Shift key.

The _____ key activates the numeric keypad.
Numlock

Neither NumLock nor CapLock affects the function keys.

The _____ key is often used in most text mode to perform block operations like mass deletion, insertion and so on.
Control

The _____ key is used to cancel an operation in progress.
Escape

The _____ key is actually used to inform the computer the end of an input or command.
Return

The _____ key deletes the character at the cursor position when pressed and the remaining text moves to the left while the cursor remains at the same position.
Delete

The _____ Key deletes the characters to the left of the cursor when pressed and all other characters to the right of the cursor are shifted one space to the left.

Backspace

The _____is the longest key found on most keyboards and it erases characters at the cursor position or gives blank space when pressed.
Spacebar

The _____ Key moves the cursor by five spaces to the right when pressed.
Tab

A _____ is the primary input device for modern computers that feature operating systems with a graphical user interface
Mouse

_____ are used with game software and help the user more effectively control the actions of computer-simulated airplanes or arcade-style games.
Joysticks

All modern PC operating systems rely on an _____ pointer to select and execute commands.
on-screen

A _____ is simply an input device built to help the user control this on-screen pointer in as natural and efficient a manner as possible.
Mouse

The _____ on the computer screen mimics the movements of the mouse. **Pointer**

The pointer on the computer screen mimics the movements of the_____.
Mouse

The mouse controls the on-screen pointer and lets you select program icons, manipulate property sheets, and_____.

Access data

A _____ is the computer component that lets you create copies of the information stored in your computer on paper.
Printer

A printed material is often called _____ **hard copy**

There are three basic types of printers available for use with personal computers:

- Laser printers
- Inkjet printers
- Dot-matrix printers

_____ combine a magnetic roller with powdered ink called toner to transfer high-quality characters or images onto a page.
Laser printers

_____ printers have small nozzles that actually spray fastdrying ink onto the page to form characters or images.
Inkjet
_____ printers use a print head to strike an inked ribbon against paper, like a typewriter, creating characters out of a series of dots.
Dot-matrix

The cheapest printers available in the market are _____ printers
Dot-matrix

The two most common monitor sizes are _____
15-inch and **17-inch**

_____ are peripheral devices used to digitize (convert to electronic format) artwork, photographs, text or other items from hard copy.
Scanners

A _____ works by dividing an image into microscopic rows and columns and measuring, like the film in a camera how much light reflects from each individual intersection of the rows and columns.
Scanner

The following are types of scanners

- Flatbed Scanners
- Sheetfed Scanners
- Hand Scanners

_____ scanners look and behave a lot like a photocopier.
Flatbed

OCR stands for_____
Optical Character Recognition

_____ scanners look and act more like fax machines.
Sheetfed

A sheetfed scanner is a good choice for large volumes of text, but not for handling delicate original photographs.

UPS is the acronym for_____
Uninterruptible Power Supply System

A Computer is an _____ machine.
Electronic

The auxiliary equipment in a computing environment include

- Air Conditioner
- Voltage Stabilizer
- Line Voltage Transformer
- Uninterruptible Power Supply System (UPS)

The computer hardware are driven by the_____
Software

The physical components of the computer are called the _____ **hardware**

A _____ is a series of coded instructions showing the logical steps the computer follows to solve a given problem.
Program

The computer software could be divided into two major groups: System Software and _____
Application Software

_____ refers to the suits of programs that facilitates the optimal use of the hardware systems and or provide a suitable environment for the writing, editing, debugging, testing and running of User Programs.
System Software

An _____ is a program that acts as an interface between a user of a computer and the computer hardware.
operating system

The purpose of an _____ is to provide an environment in which a user may execute programs.
operating system

The purpose of an operating system is to provide an environment in which a user may _____ programs.
execute

_____ are programs written for direct execution on computer hardware in order to make the power of the computer fully and efficiently accessible to applications programmers and other computer users.
Systems programs

A computer system has many resources (hardware and software) that may be required to solve a problem: CPU time, memory space, files storage space, input/output devices etc. The operating system acts as the manager of these resources and allocates them to specific programs and users as necessary for their tasks.

The types of operating system include the following

- Batch processing operating system
- Time sharing operating system
- Real time operating system
- Multiprogramming operating system
- Distributed operating system
- Network operating systems

Operating systems which handle airlines reservations, machine tool control, and monitoring of a nuclear power station are called_____ OS

Real time

A _____is a system that allows more than one active user program (or part of user program) to be stored in main memory simultaneously

multiprogramming operating system

A _____ is a computer hardware configuration that includes more than one independent processing unit.

multiprocessing system

A _____ is one that appears to its users as a traditional uniprocessor system, even though it is actually composed of multiple processors.

distributed operating system

An _____ provides the environment within which programs are executed.

operating system

A _____ is the unit of work in a system

Process

The operating system is responsible for the following activities in connection with processes managed.

- The creation and deletion of both user and system processes
- The suspension are resumption of processes
- The provision of mechanisms for process synchronization
- The provision of mechanisms for deadlock handling

The operating system is responsible for the following activities in connection with memory management.

- Keep track of which parts of memory are currently being used and by whom.
- Decide which processes are to be loaded into memory when memory space becomes available.
- Allocate and deallocate memory space as needed

The operating system is responsible for the following activities in connection with disk management

- Free space management
- Storage allocation
- Disk scheduling

The I/O system consists of these

- A buffer caching system
- A general device driver code
- Drivers for specific hardware devices

A _____ is a collection of related information defined by its creator.
File

The operating system is responsible for the following activities in connection with file management:

- The creation and deletion of files
- The creation and deletion of directory

- The support of primitives for manipulating files and directories
- The mapping of files onto disk storage
- Backup of files on stable (non volatile) storage

_____ refers to a mechanism for controlling the access of programs, processes, or users to the resources defined by a computer controls to be imposed, together with some means of enforcement.
Protection

A _____ is a collection of processors that do not share memory or a clock. **distributed system**

A _____ provides the user with access to the various resources the system maintains.
distributed system

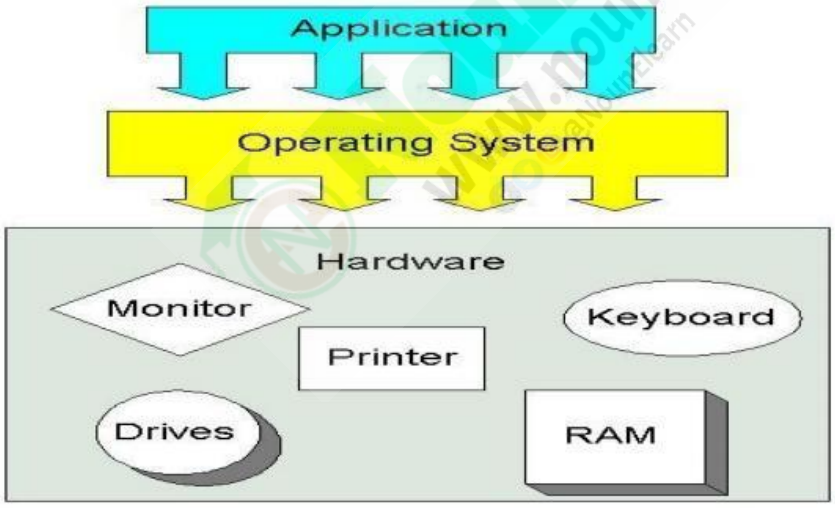


Fig. 1: Relationship between operating system and other components of the computer system.

The _____ is the primary interface between the user and the rest of the system. **command interpreter**

A _____ is a set of notations in which were express our instructions to the computer.
programming language

_____ is the initial program written in a language different from machine language is called the source program and its equivalent in machine language is called object program.
Language Translator

Three examples of classes of language translators are Assemblers, Interpreters and Compilers.

An _____ is a computer program that accepts a source program in assembly language program reads and translates the entire program into an equivalent program in machine language called the object
Assembler

_____ is a program that accepts program fin a source language, reads, translates and executes it, line by lone into machine language
An Interpreter

A _____ is a computer program that accepts a source program in one high-level language, reads and translates the entire user's program into an equivalent program in machine language, called the object program or object code.
Compiler

The stages in compilation include

- Lexical analysis
- Syntax analysis
- Semantic analysis
- Code generation

The utility software performs the following operations

- File Conversion

- File Copy
- Housekeeping Operations

_____ is a set of programs designed to solve problems of a specific nature.
Application software

Under the Generalized software, we have as examples: Word Processing Programs e.g. Word Perfect, Word Star, Microsoft word. Also, Desktop Publishing e.g. Ventura, PageMaker, CorelDraw likewise the Spreadsheet program e.g. LOTUS 1,2,3, Excel, Super-Q while under the User-defined, we could have some User-defined packages for a particular company or organization, for accounting, payroll or some other specialized purposes.

A _____ is used to create, edit, save and print reports.
Word Processor

A document can be printed as many times as possible.
True

_____ is an application mainly designed for numerical figures and reports
Spreadsheet

Graphic Packages: These are packages that enable you to bring out images, diagrams and pictures. Examples are PM, PM Plus, Graphic Writer, Photoshop.

_____ software for designing, setting up and subsequently managing a database.
Database Packages

A _____ is an organized collection of data that allows for modification taking care of different users view.
Database

Examples are Dbase II, III, IV, FoxBASE, Rbase Data Perfect, Paradox III, Revelation Advanced and MS-Access.

_____ are packages that can be used to solve statistical problems e.g. Stat graphical, SPSS (Statistical Packages for Social Scientists).
Statistical Packages:

_____ are packages that can be used to produce books and documents in standard form.
Desktop Publishing:

Examples are PageMaker, Ventura, Publishers, Paints Brush, Xerox Form Base, News Master II, Dbase Publisher.

_____ are packages that contain a lot of games for children and adults.
Game Packages:

Examples of Game Packages are Chess, Scrabble, Monopoly, Tune

Examples of Communication Packages are Carbon Plus, Data talk V3.3, Cross talk, SAGE Chit Chat, Data Soft.

There are four basic types of instructions namely:

- input-output instructions
- arithmetic instructions
- branching instructions
- logic instructions

An _____ directs the computer to accept data from a specific input device and store it in a specific location in the store.
input instruction

An _____ tells the computer to move a piece of data from a computer storage location and record it on the output medium.
output instruction

Computer programming languages can be classified into the following categories

- Machine language
- Assembly language
- High level symbolic language
- Very high level symbolic language

A _____ allows the programmer to take advantage of all the features and capabilities of the computer system for which it was designed.
machine language program

A _____ language is computer dependent.
Machine

A machine language is _____ dependent.
Computer

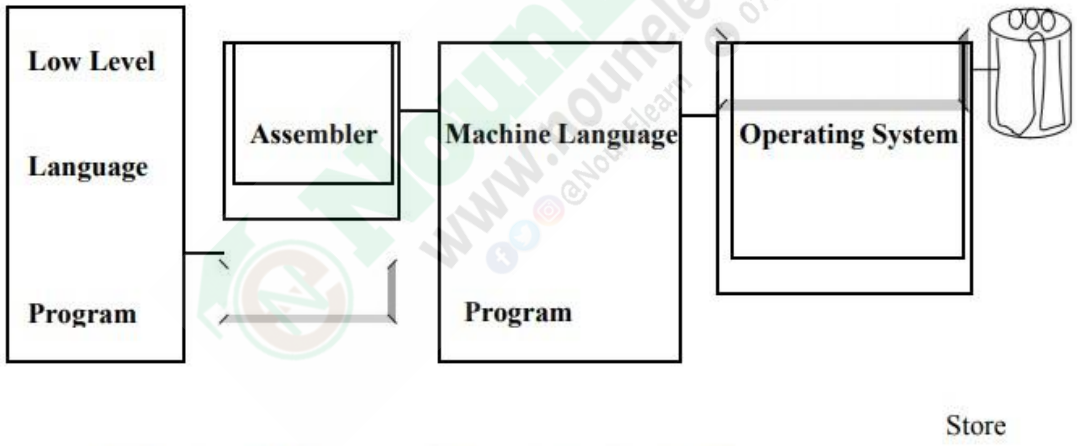


Fig. 1: Assembly Language Program Translation Process

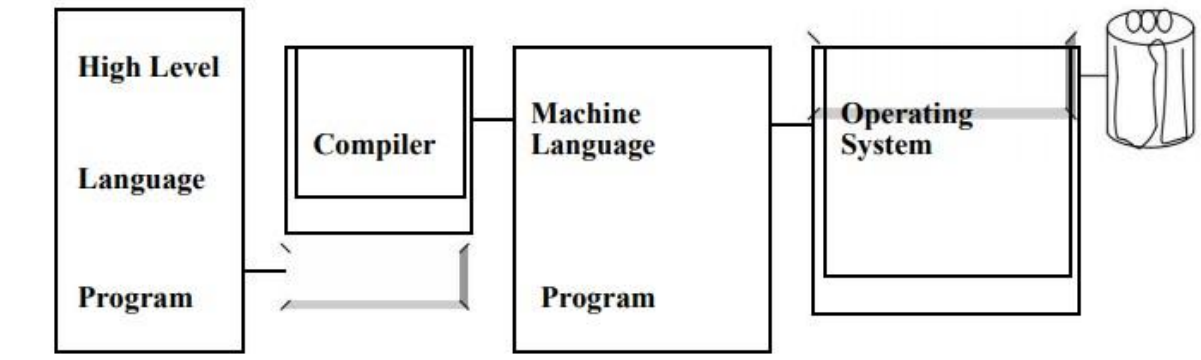


Fig. 2: High Level Language Program Translation Process

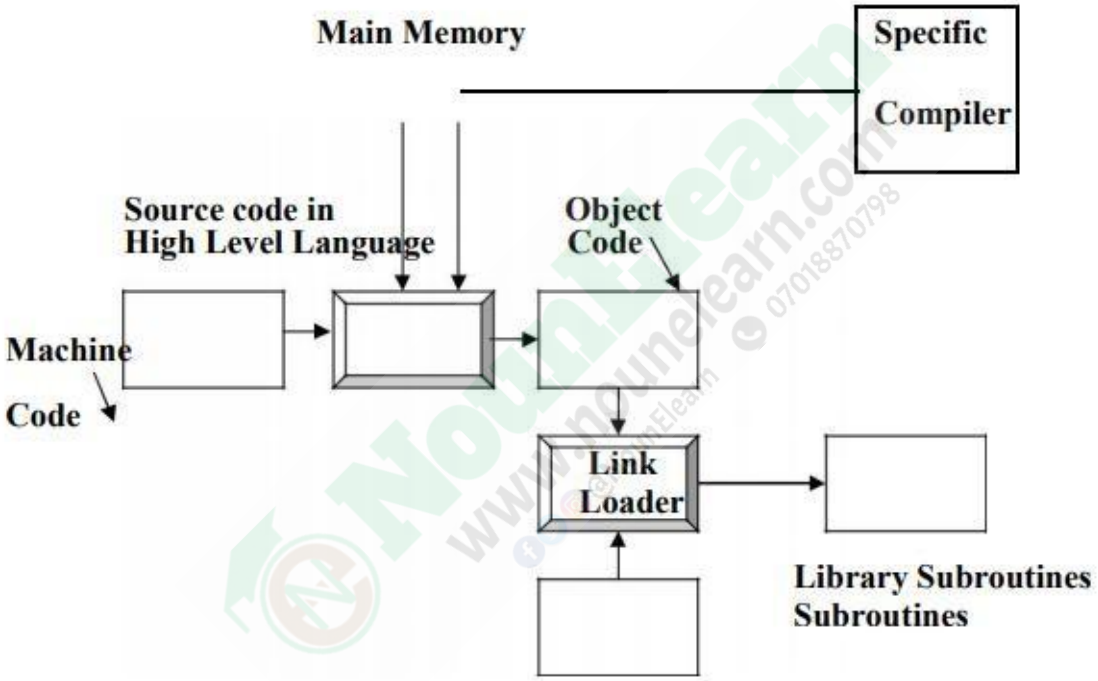


Fig. 3: General Procedure for Compiling High Level Language Program

Principles of good Programming It is generally accepted that a good

- Accuracy
- Reliability
- Efficiency
- Robustness
- Usability

- Maintainability
- Readability

The preparation of a computer program involves a set of procedure

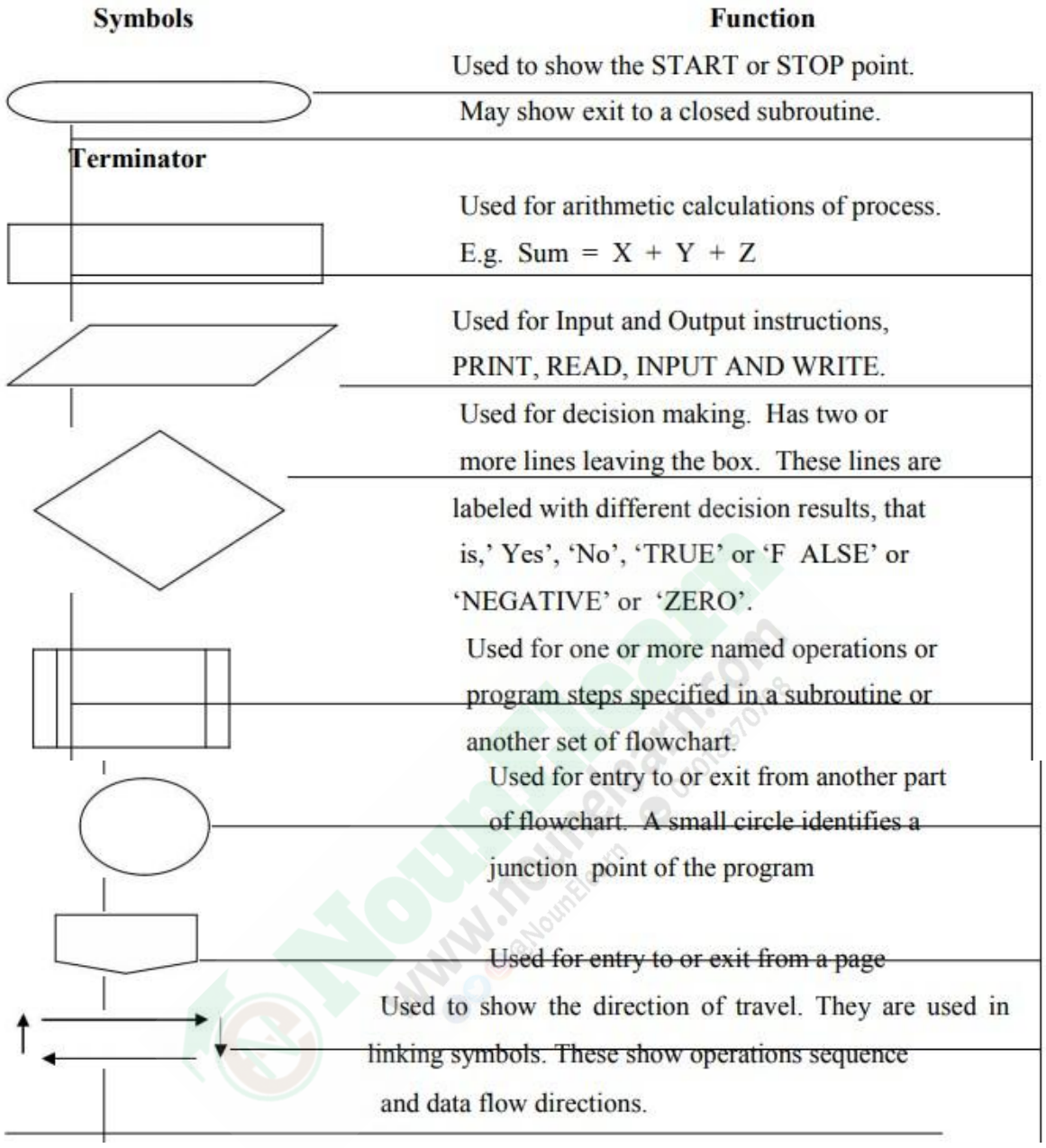
- Problem Definition
- Devising the method of solution
- Developing the method using suitable aids,
- Writing the instructions in a programming language
- Transcribing the instructions into “machine sensibl e” form
- Debugging the program
- Testing the program
- Documenting all the work involved in producing the program

A _____ is a graphical representation of the major steps of work in process.
Flowchart

_____ displays in separate boxes the essential steps of the program and shows by means of arrows the directions of information flow.
Flowchart

A flowchart can also be said to be a graphical representation of an algorithm, that is, it is visual picture which gives the steps of an algorithm and also the flow of control between the various steps.

The following are the most commonly used flowchart symbols and their functions:



Guidelines for drawing flowcharts

- Each symbol denotes a type of operation Input, Output, Processing, Decision, Transfer or branch or Terminal.
- A note is written inside each symbol to indicate the specific function to be performed.
- Flowcharts are read from top to bottom.
- A sequence of operations is performed until a terminal symbol designates the end of the run or "branch" connector transfers cont rol.

An _____ is a set of rules for carrying out calculation either by hand or a machine.
Algorithm

An _____ is a finite step-by-step procedure to achieve a required result.
Algorithm

An _____ is a sequence of computational steps that transform the input into the output.
Algorithm

An _____ is a sequence of operations performed on data that have to be organized in data structures.
Algorithm

An _____ is an abstraction of a program to be executed on a physical machine (model of computation)
Algorithm

An algorithm can be characterized by the following:

- A finite set or sequence of actions
- This sequence of actions has a unique initial action
- Each action in the sequence has unique successor
- The sequence terminates with either a solution or a statement that the problem is unresolved

_____ is a program design aid that serves the function of a flowchart in expressing the detailed logic of a program.
Pseudocode

_____ is the use of computers to create, revise, and save documents for printing and future retrieval.
Word processing

Information can be entered into the computer by using a_____.
Keyboard

You enter _____ into the computer by using a keyboard.
Information

_____ enable you to change information easily without retyping entire documents.
Word processors

For example, you can change margins, add and delete text, move paragraphs, and correct spelling errors. All revisions are made within the computer and are then saved on a disk and printed.

Word is a WYSIWYG (what-you-see-is-what-you-get) word processor.

To create a new document, click on the _____
New Blank Document

Every document has a_____.
text area

A _____ program provides facilities to edit documents and define their layout and enable them to be printed.
word processing

_____ is the use of computers to create, revise and save documents for printing and future retrieval.
Word processing

_____ make it easier to align text precisely.
Tabs

Tab stops are preset at _____ cm increments.
1.27

By pressing the _____ key, you can delete the character or space immediately to the left of the insertion point.
Backspace

Word will suggest the complete word or phrase after you type the first few letters. This feature is called_____.
AutoComplete

Text files can be created and modified with the aid of a special program called an_____.
Editor

The Windows environment provides a temporary storage area called the _____
Clipboard

When you cut or copy selected text, it is placed on the_____.
Clipboard

An _____ is a program used to create text files or make changes to existing files.
Editor

Shortcut key combination	Formatting result
<Ctrl> + B	Bold
<Ctrl> + I	Italic
<Ctrl> + U	Underline

Copying a text require _____ processes.
Four

Paragraph alignment may be applied before typing a paragraph or after the paragraph has been typed.

_____ determines how text is positioned between the left and right indents.

Paragraph alignment

There are _____ alignment options.
Four

A _____ comprises a grid of numbered rows and lettered column intersecting in cells.
Spreadsheet

A cell can contain either text or_____.
numbered values

A spreadsheet consists of information written in _____ form
Tabular

A series of data depicted horizontally is called a “row” while a series of data depicted vertically is called a “column”.

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