

LECTURE NOTES

COM 101 0+1 INTRODUCTION TO COMPUTER TECHNOLOGY

CHAPTER I

COMPUTER:

Computer is an electronic device with the ability to,

- Accept user – supplied data & instructions.
- Store data & instructions
- Perform mathematical & logical operations i.e., (execute the instructions)
- Output the results according to the user specifications.

In other words, it is defined as the data modeling & simulation device. It is decision-making tool. It is also an entertainment i.e., Audio & Video images can be stored.

Types of Computers:

A. Based on Architecture:

- Digital computer
- Analog computer
- Hybrid computer

B. Based on Market Availability:

- Personal computer
- Mini computer
- Super computer
- Micro computer
- Mainframe computer

C. Based on Use:

- Scientific computer
- Business computer
- General computer

A. Based on Architecture:

1. Digital computer:

This type of computer is used to store data. These computers can understand 2 discrete variables (0 & 1). 0 → off & 1 → on. The numbers used are called Binary numbers.

2. Analog Computers: In this type we can feed data. In analog computers are mostly continuous. Eg: Temperature, heartbeat etc.

3. Hybrid Computer:

These computers are designed for certain scientific applications. It is the combination of both digital & analog computers.

B. Based on availability:

1. Personal Computer: (PC)

PC is a single user computer. It was developed by IBM (Internal Business Machine). It consists of 3 important parts. a) Monitor ,b) CPU, c) Keyboard.

Operating System:

An operating system is an integrated set of special programs that are used to manage the resources and overall operations of the computer. The operating system act as an interface between the user & hard was of the computer and it controls the way the other software uses the hardware.

PC – ET (Extended – Technology):

With in the same floppy one hard disk of 20MB capacity is fixed, so as to increase the capacity.

PC – AT (Advanced Technology):

Instead of 8025 Intel, Intel 80286 (25 MH₃) is used which process the data very fastly.

Intel 80386 33 MH₃
Intel 80486 100 MH₃
Pentium I - 200 MH₃
Pentium II - 500 MH₃
Pentium III-800 MH₃
Pentium IV-9300 MH₃

LAN : (Local Area Network)

Network connection of several PC's within 16 km radius.They are used to give effective communications and paperless office automation.

It is also called as 'Intranet'.

If the Network connection is within the metropolitan ,Area Network → (MAN)

If the network connection is of several cities WAN → Wide Area Network.

2. Micro Computer:

These are the smallest computers available. These machines are self-contained units and usually designed for use by a single person.

3. Mini Computer:

Mini Computer has a central computer connecting 8 terminals. Central computer is called 'Intelligent Computers' and terminal computer are → 'Dumb Computers'. Medium sized computers that are most powerful & costlier than a microcomputer. Mini computer are usually designed to serve many users simultaneously, but the limitation is around 50 users. India purchased its first minicomputer, in India Statistical Institute. Calcutta.

4. Mainframe Computer:

Mainframe computers are much bigger in terms of speed, processing capacity & memory capacity. They can support 500 users & serve in various engineering & scientific applications. It can carry many tasks at a stretch called multitasking.

Eg: HP – 9000, AS – 400.

5. Super Computers:

These are computers having >1 microprocessors to perform some multiple tasking. They are used for weather forecasting & certain other special applications. Their speed is measured in terms of Millions of Instructions Per Second. (MIPS)

C. Based on Uses:

1. Scientific Computers:

These computers are used for scientific applications.

2. Business Computers:

These computers used for business application which can perform mainly the basic arithmetic operation.

3. General Purpose Computers:

These are most widely used for general purpose computing.

Input Device:

This gives the necessary input to the computer to carry on different tasks.

Control Unit:

This controls the flow of data inside the CPU. They receive the data and sent to appropriate operations.

Memory Unit:

This is a place where the computer has its data stored for processing and retrieving.

Arithmetic & Logic Unit: This is the place inside the computer where the arithmetic operations are carried out.

Output device:

Output devices are usually printers or monitors.

CHAPTER II TERMINOLOGIES

HARD WARE:

The term hardware refers to the physical components of a computer system, made up of electronic circuits, electrical & mechanical devices.

SOFT WARE:

A group 1 connection of programs that are fed into the computer to operate & control its activities is called software.

System Software:

It is readymade software. i.e., Package for performing some works like word processing, data processing, image processing, Audio & Video files etc.

Application Software:

It is the program written by the computer user.

Operating System:

An operating system is an integrated set of special programs that are used to manage the resources & overall operations of the computer.

Routines/ Sub program:

Another software for frequent or repeated use of particular process. Different operating systems are,

1. MS Dos (Microsoft Disc operating system)
2. Windows.
3. Unix
4. Gut – Graphics User Interface.

Batch processing:

Data is collected over a period of time, the processor as a batch, the result is generated. It converts raw data into meaningful information. Data can be collected to a certain period & pool & process.

Online processing:

Data capturing & processing is simultaneously done.

Serial programs / Multiple programs:

There is a computer CPU. The computer will permit more than one programmer to work. It is implemented by time-sharing.

Time sharing:

The programs share the time given. When there is >1 user then certain time is allocated to each user.

Dead lock:

Waiting for an indefinite task on act. This can be removed → escape key.

DATA:

Data may be defined as a collection of facts & figures which on processing, yields meaningful information.

Information:

Derived form data. Information should be adequate, precure & timely → Quality.

Information Technology:

- Computer application
- Communication – Internet, e-mail.

MIS – Management Information System.

Types of printers:

- (a) Serial Printer
- (b) Parallel Printer 9 PIN DMP
- (c) Line Printer 24 PIN DMP
- (d) Page Printer
- (e) Ink jet & Laser Printers.

Serial Printers:

Print only one character at a time. It is a slow printer.

Parallel Printer:

8 bits / 8 dots – print dots very closely at a PIN DMP dot Matrix Printer (200 CPS)

24 PIN DMP dot (300 CPS) → Comparatively better.

Page Printer: (Laser Jet):

Print a page at a time, transfer of data from the computers. Laser printer contain a paper bag & printing powder. Letters will be printed on the powders.

Daisy Wheel Printer:

It consists of a spinning wheel with each letter and symbol marked at the end of the spindle. If the wheel spins, a hammer punches them against ribbons.

Dot Matrix Printer:

There are 2 types, 9 PIN & 24 PIN type.

Inkjet & Laser Printer:

Has 3 colors – Blue, red, green which can be used in 256 conditions.

Computer Languages:

A computer language is a means of communication used to communicate between people and the computer.

Machine Languages:

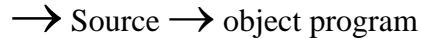
This is a language understood by the computer without using a translation program.

Assembly Languages:

The numeric code of a machine language is to be substituted with numerics. It substitutes letters & symbols for number.



One to one



Program translation.

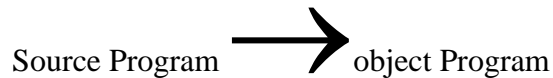
The above 2 languages are known as low-level languages.

High level languages:

High level language enables the programmer to write instructions using English words and familiar mathematic symbols. The high level language is machine independent. They are easy to learn & use and the programmers are likely to make fewer errors.



One to many



Translation.

CHAPTER III PROGRAMMING IN MS-DOS

MS – DOS – Microsoft Disc operating system is a single user operating system. Some of the important Dos - Commands are as follows.

Directory:

A directory is a special file used to organize files and directories into categories. We can create sub-directories to manage all the files.

Each disc has at least 1 directory – root directory. We can create sub directories into the root directory. A directory can have another sub-directory 1 files.

Files:

A file contains any set of text. A file should have a same. A file name can have 8 characters and 3 characters as extension only. (A-Z & 1-9 are allowed in file name)

(i) To Display the list of all files:

Syntax - DIR (options) [path] [File name]↵

DIR ↵ - Display all files & subdirectories

DIR/P↵ → Display all files page by page.

DIR/P↵ → Display all files width wise.

(ii) Creation of a file:

Syntax – Copy < file name> ↵

This command creates a new file.

(iii) Displays the text of a file:

Syntax – Type < file name> ↵

(iv) Display system data & time:

DATA↵

TIME↵

(v) Cleaning the Screen:

CLS↵

(vi) Copying files:

Syntax – Copy < Source File> < Target File>↵ copies one file from source to desired location.

(vii) Renaming a File:

REN < File name> < New file Name>↵.

(viii) Deleting a file:

DEL < File Name>
Erase < File Name>.

(ix) Creating a directory:

MD [PATH] < Directory Name> ↵.

(x) To change the current directory:

CD [PATH] < Directory Name> ↵.

(xi) To come out of Subdirectory:

CD [PATH] < Directory Name>] [option].

(xii) EDIT Command:

EDIT <File Name> ↵.
To create a new file to change the contents of the file.

(xiii) Removing a directory:

RD [PATH] < Directory Name> ↵.
To remove an existing directory.

Working in MS DOS as follows:

```
D : \ > CD m stat ↵
D : / > m stat > Mf ANJU ↵
D : \ > m stat > cd ANJU ↵
D : \ > m stat > Radthika > Edit ↵.
```

A new file is opened where text & other characters can be created.

```
D : \ > m stat > Radthika > type letter ↵.
The contents of the file is displayed on the screen.
D : \ > m stat > Radthika > Copy letter Note ↵.
D : \ > m stat > Radthika > Dir ↵.
```

Directory displayed are as follows

```
<DIR>..
<DIR>.. Letter, Note.
D : \ > m stat > Radthika > ren letter vanit ↵.
D : \ > m stat > Arun > cd..
D : \ > m stat > cd..
D : \ > time ↵.
The system time is displayed
D : \ > Date ↵.
```


The system date is displayed
D :\
> DIR ↵, D :\
> DIR/P ; D :\
> DIR/W
The contents are displayed according to the command.

CHAPTER IV

MS EXCEL

Microsoft excel it is shortly called as M.S.excel, which belongs to M.S.Office. M.S.excel is a software program that is used for various operations and calculation which are not suitable for M.S.Word. Here the word sheets are available.

Command in MS Excel:

File	View	Table
Edit	Format	window
Insert	Tools	Help.

File:

- * New: To create a new program.
- Open: To open the file while already existed.
- Close: To close the current file document.
- Save: To save the current document.
- Save as: To save the document, which is new to the computer.
- Print preview: To view the current page before giving to point.
- Print: To print the entire / Current / Selected page.
- Exit: To come out from MS excel.

EDIT:

Redo: To repeat the operation which was done by the operation before

Undo: To clear the redo operation.

Select: To select the particular line/page which has to be cut / paste / copy.

- * Cut: To cut the unwanted line/page before going to select the required part.
- Copy: To copy the selected portion.
- Paste: This is to paste the portion which we need in the required place.
- Select all: To select all the content of the current.
- Insert: Used to insert a picture to table.

Creating a file:

Steps:

- Click the start button.
- Go to program & Click.
- Go to MS-Excel & Click.

- Click now

All these operations are performed by using mouse only.

To Delete a file:

- Select the required portion using mouse.
- Go to edit menu.
- Click the delete command. Add – Click.

In MS excel ‘Σ’ symbol is used for summation & f(x) is the required maths or statistical function

Creating new Word sheet:

Start – Program – MS excel – file – new.

With the use of mouse. Deleting: Edit → Select – column (Row – Delete / Select row/column .

Using MS-Excel find out the total mean, variance, SD of 5 given Nos.

No.	A	B	C	D	E
1.		10	100		
2.		20	400		
3.		30	900		
4.		40	1600		
5.		50	2500		
7	Total = Sum (B1 : B5)		= Sum (C1:C5)		
		150	5500		
		Mean = B7/5	= C7/5		
		SD = Sar (B9)	= Sar (9)		

**CHAPTER V
INTERNET**

Net Work of networks. i.e., Different networks are available in network. It is possible to share information in my computer.

2 Types of Network:

LAN : Local Area Network.

WAN : Wide Area Network.

LAN: If all computers are connected through cables.

WAN: If all computers are not connected through cables but still we can share information.

INTERNET

To get internet operation:

MODEM, telephone line, PC, Internal account are needed.

MODEM:

MODEM → Modulator – Demodulator. Conversion of signals.

PC:

Any PC is used. Old PC – slow working.

MODEM: 2 types $\left\{ \begin{array}{l} \text{Internal Modem} \\ \text{External} \end{array} \right.$

Internal:

- I M will be fixed inside the CPU box
- Only used inside that computer.

External :

- Available as separate unit
- It can be connected with any computer

Cost: Rs.750/-

Speed: 50 KMPS.

Internet account:

It is needed to work/use Internet. Internet service providers → give this account.

Eg: VSNL, BSNL, Satyam, $\frac{\text{satyam, Dishnet}}{\text{private}}$

(To get an Internet account, go to office, fill application, pay).

They provide user name & password. Newly is paid depending on duration.

Eg: 100, 250, 500 hrs accounts.

Charge: Rs. 750 / 100 hr.

Registration charges (first time): Rs.250/-.

To get Internet link:

Dial the telephone no. given, if it is free, it gets link. It asks for user name & password. It verifies them whether it is available in their machine - & you can work. Till you disconnect the Internet, your telephone is engaged.

Toll free number: We need not pay telephone charge.

In ISDN – Speed is high.

Dial – Up computer: Getting link by dialing a number. Mostly available. (suited for individuals.

Other ways to have Internet Link:

1. ISDN family: Integrated Services Digital Network. Here the telephone exchange to which our no is connected should be electronic exchange jwe can get ISDN. It is faster. Here every year we have to pay but no line it of duration.
Eg: Rs. / 500/Month.

We can connect a core computer need to pay telephone charge.

2. Least – line facility:

Here 20 need of MODEM/telephone Rs 2Lakh/yr.
Here connection is readily available very fast.

3. Satellite:

No. telephone MODEM is needed V SAT is needed.
Very small operture terminal.

Cost: Rs. 1.25 Lakh ← 5 Lakh

Pay Internet Service Charge: 1.5 Lakh/yr.

Very fast.

INTERNET BROWSING

For connecting to the internet we need a modem. The phone line are analog while the computer are digital. The speed of the modem is an important factor & decides its cost.

Two types:

- (i) Internal Modem
- (ii) External Modem

Modulation:

The data is transmitted in the form of digital signals. These signals are converted into a form suitable for analog transmission.

Demodulation tool:

It is a process of transforming the analog signal into digital at the receving end.

Internet addressing domains:

It is a text string & identifies & locates computer connected to the internet.

It has 2 parts separated by an @ symbol user name.... @ Name of internet provider.

It ends with a zone i.e., a dd something.

Eg: COM, edu, net, gov, mil org. The server was gives a 120 digital number, ranging from 0 – 255 in each of the 4 parts xxx xxx – xxx xxy.

www. World Wide Web.

Developed in 1989, HTML language was used. Provides interaction Documents. Free softwares are also available.

URL – Uniform Resource Locator:

Identify on the web. It is a way of naming resources of information, which is used to link the pages in www. It also provides standard hierarchical way of identifying & locating internet resource on www.

(i) http//: Related to MSN.

http:/ Serves name / individual identify /.

Sub directory / file name.

Eg: Tnau.Univ.Org.

Emblem – tnauniv – org / images / ina / - creation of mail account.

Fist, we have printed the address www. Redif. Com then I click the Sign Up.

I have filled the log in name /vanitha 102, password, hint question & answered the questions asked by the computer. Finally I have cliclcked 'Register me'.

My mail account was registered as Vanitha – 102 @ Redif.com.

To sent & receive mail/

For sending: I have click compose. I entered the sender address & then I print the message. Then I click send. To receive message – Inbox.

For coming out form mail → log out.

CHAPTER VI MS POWER POINT

It is tool for creating visual aids for presentation. The information can be printed on the transparencies or show icon on computer. Screen, Sound effects, Video Clips and animation can also be induced. Power points contain many design templates, which facilitate for formatting and coloring.

One can started out with blank point presentation can build just color be wants form search most of the users prefers predesingned templates- these templates, enables to produce uniform documents. So quick and consistent for making of a document can be achieved.

Presentation templates (Presesntaion):

These templates contain formatting only the color of the text and back round can be changed using layouts graphics and charts.

- Design can be selected clicking
- Sentence may be typed on the template or brought form the already typed and saved, word document.

Eg: If a graphic is placed on the slide marker. Every slide in the presentation will show the graphic in the same spot.

- View

- Marker
- Slide marker
- Hand over marker
- Holes marker

Hence any graphic can be added and any alternations to the same text can be made in all the prepared slides.

Animations:

Menu box – slide show animations options.

- Adding sound (Video)
- Auto content wizard can be used by the new users every items preplanned here

Start → Presentation Style:

- Generic
- Training
- ▼ Brain storming.

Presentation type:

- On screen
- Web presentation
- Black & white over leade
- Color
- ▼ - 35 mm slides.

Presentation option:

- Title
- Footer
- ▼ - Finish.
-

