User Interfaces

- Graphical User (GUI)
- Command line interface
- menu driven interface
- form based interface
- natural language interface

<u>GUI</u> is an tt interface that allows users to interact with different electronic devices using icons and other visual indicators. The graphical user interfaces as were created because command line interfaces were quite complicated and it was difficult to learn all commands in it.

It is a type of OS that makes use of

windows   Icons   menus   Pointers.

Icons and options on menus represent fto folders, applications and other commands which are activated when selected and clicked by the pointer.

A mouse is normally used to direct the pointer around the screen.

<u>CUI</u> Command User Interface is a way for users to interact with ~~users~~ to computers. programs by typing commands on command prompt

<u>drawbacks</u> → time consuming
→ difficult to use
→ slow processing

- **Word Processing software** is a type of application software that is used for creating text documents like letters, memos, reports etc.

Analogue Computers are designed to process analogue data. Analogue data is continous data that changes continously and cannot have discrete values. We can say that analogue computers are used where we don't need exact values always such as speed, temprature, pressure and current.

Digital Computer is designed to perform calculations and logical operations at high speed. It accepts the raw data as input in the form of digits or binary numbers (0 and 1) and processes it with programs stored in its memory to produce the output. All modern computers like laptops, desktops including smartphones that we use at home or office are digital computers.

Hybrid Computers are computers that exhibit features of analog computers and digital computers. The digital component normally serves as the controller and provides logical and numerical operations, while the analog component often serves as a solver of differential eq^n and other mathematically complex problems. The 1st desktop hybrid computing system was the Hycomp 250.

Machine language (low level)

Comp is a machine. Since its memory can store only 1's and 0's, instructions must be given to the computer in streams of 1's and 0's, ie, binary code.

These are easily understandable by the machine. Programs written in binary code can be directly entered into computer for execution and it is known as machine language.

Advantages:
- Execution is very fast.
- It is very difficult to write and read the programs which are in machine language.
- Machine instructions are difficult to remember.

High level language.

High level languages are designed to be used by the human operator or the programmer. They are refferred to as "closer to humans". In other words, their programming style and context is easier to learn and implement than low-level languages, and the entire code generally focuses on the specific program to be created.

A high level lang does not require addressing hardware constraints when developing a program. however, every single program written in a high level language must be interpreted into machine language before being executed by the computer.

BASIC, C/C++. and Java are popular examples of high level languages.

Assembly language (Middle level)

Assembly lang is a low-level programming language. It helps in understanding the programming lang to machine code. In computers, there is an assembler that helps in converting the assembly code into machine code executable.

Assembly language is designed to understand the instruction and provide it to machine language for further processing. It mainly depends on the architecture of the system, whether it is the operating system or computer architecture.

Assembly lang mainly consists of mnemonic processor instructions or data and other statements or instructions. It is produced with the help of compiling the high level language source code like C, C++. Assembly lang helps in fine-tuning the program.

Operating System as User Interface.

An operating system is a program that acts as an intermediary or interface b/w a user of a comp and the comp hardware. It is the most important type of system software in comp systems.

Without an operating system the user cannot run application programs on the computer system.

Generally, a comp system consists of 4 main components, hardware, application programs, operating system and user.

Hardware   Eg: CPU, Memory

Operating System   Eg: windows, linux

End User   Eg: Users
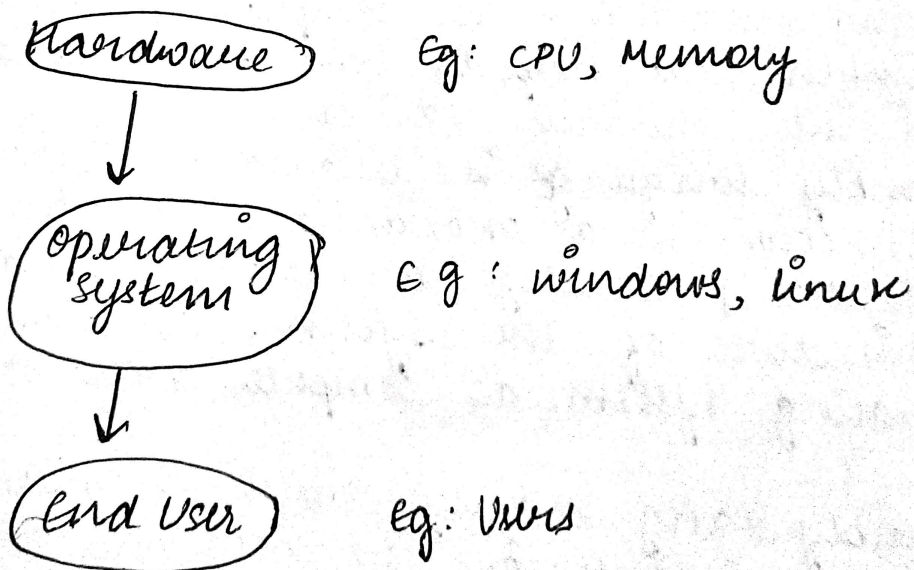
User Interfaces The user and operating syst are connected with each other with the help of interface, so interface is used to connect the user and OS.

In computers there are diff types of interface that can be used for connection with computers to users and their connection is responsible for data transfer.

Also, in computers there are different interfaces. These Interfaces are not necessarily used but can be used in computers whenever it is needed. So, different types of tasks can be performed by the help of different interfaces.

UI facilitates comm^n b/w an application and it's uses by acting as an intermediary b/w them. Each app including the O.S. is provided with a specific UI for effective comm^n

2 basic func^n → take input from user
                ↳ give provide output the user.

UI
GUI   CLI
Graphic User   Command line
Interface   user interface
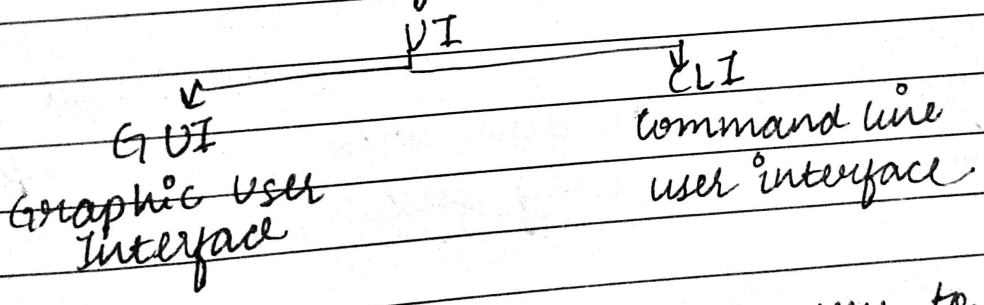
GUI is an interface that allows users to interact with diff electronic devices using icons and other visual indicators. The GUI were created to because CLI were quite complicated and it was difficult to learn all the commands in it.

A GUI is used in many devices such as mobiles, MP3 players, gaming devices, smartphones etc.

Elements of GUI

windows   icons   shortcuts   menu bars.
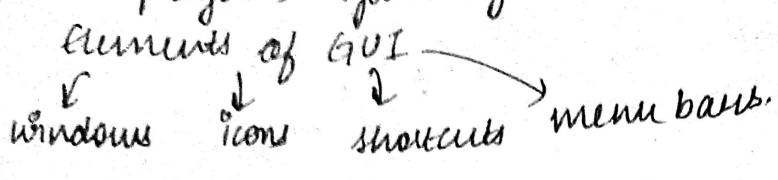
CUI/CLI   CUI (command user interface) is a way for users to interact with comp prog. It works by allowing the user (client) to issue commands as one or more lines of text (e referred to as command lines) to a program.

ex: MS-DOS and windows command prompt

one of CUI's uses is that it provides an easy way to implement programming scripts.

The CL VI was the primary method of communicating with a comp from the first machines and through the 1980s. Although, it may still be accessed in today's operating system, it is utilised far less due to the ease of use and familiarity of the GUI. The CUI, however, is still preferred by many advanced end users as its features provides them with more comprehensive control over an os operating system's functions.

Introduction to word Processing.

MS word is a popular word processing software. It helps in arranging written text in a proper format and giving it a systematic look. This formatted look facilitates easier reading. It provides spell-check options,

formatting functions like cut-copy-paste, and spots grammatical errors on a real-time basis. It also helps in saving and storing documents.

It's also used to add images, preview the complete text before printing it; organize the data into lists and then summarize, compare and present the data graphically. It allows the header and footer to display descriptive information, and to produce personalized letters through mail. This software is used to create, format and edit any document. It allows us to share the resources such as clip arts, drawing tools etc, available to all office programs

Features of word Processing

①) Creating a document. This involves typing into the comp the text (characters) that form your document

② Editing a document. Editing a document means revising or making corrections in the document, word processing permits full screen editing.

③ Block Operations B copy, cut and paste. Before you can change a text - a word, sentence, or paragraph on screen, you must tell the computer (word processor) what it is you want.

④ Search and Replace The word proc. can search out words in your doc. using the search (find command)

⑤ Formatting a document. Formatting is used to ~~enhancing~~ enhance the appearance and readability of our document. The word processor can show you your work in several ways.

⑥ Spacing page break, and Field - Each line will expand across the page.

⑦ Spelling checker. The word processor can check your doc for a wrongly ~~spelle~~ spelled word by running the text through a spelling checker prog.

- Editing font = making changes

- word-wrap = automatically creating a new line when the word does not fit.

- Formatting =
① text alignment
  ↓   ↓   ↓   → Justify
  left   right   centre

② line spacing
  ↓   ↓
  single   double

③ Alter text style
  ↓   ↓   ↓
  arial   comic sans   Times New Roman