

- WHAT IS INTERNET?
- WHAT IS WWW?
- WHAT IS INFORMATION RESOURCE?
- WHAT IS URL?
- WHAT IS WEB SITE?
- WHAT IS PAGE?
- WHAT IS HYPERLINK
- WHAT IS WEB APPLICATION?
- WEB BROWSER?
- WHAT IS FTP?
- WHAT IS SEARCH ENGINE?
- WHAT IS ISP?

Examples of Domain Types

- .com → commercial
- .org → organization
- .gov → government
- .edu → education
- .net → network
- .mil → military

WEB APPLICATION

A web application is a web site designed to do more presenting pages and hypermedia links, but also act as a front end of data processing. A good example of web application is search engine

WEB SITE

- A **website** (alternatively, **Web site** or **web site**) 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, cell phone or a LAN.

EXAMPLES OF WEB BROWSER

- Internet Explorer



- Netscape



- Mozilla



- Firefox



- Opera



- Google Chrome



- Apple Safari



Front-end



Three layers of web design:
Structure { **Style** { **Behavior** } }

HTML markup CSS JavaScript

Types of Developers

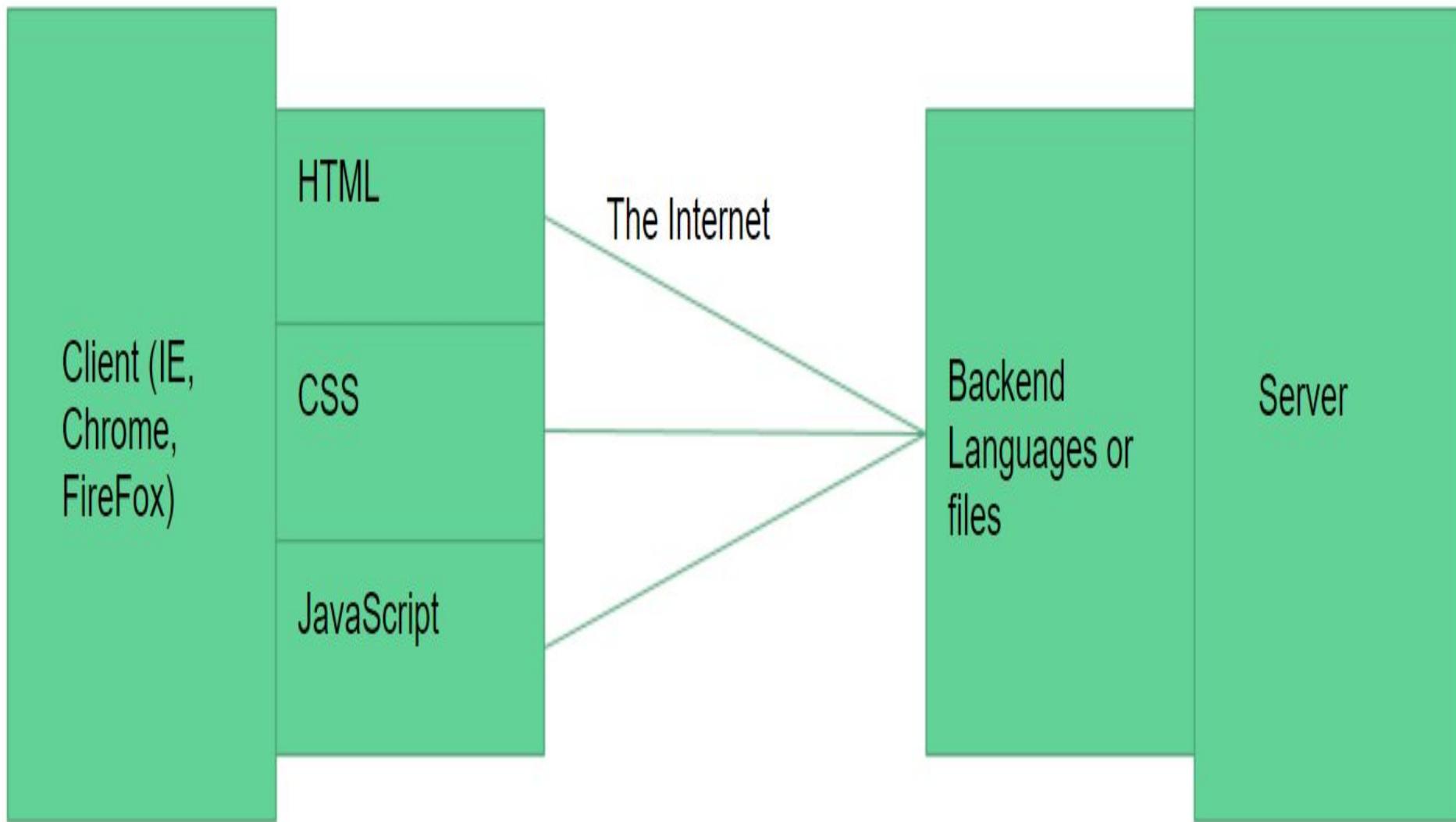
- Frontend Web Developer
- Backend Web Developer
- Full-Stack Web Developer
- Mobile App Developer
- Desktop Software Developer
- Data Scientist (Big Data Developer)
- Artificial Intelligence/Machine Learning Developer
- Game Developer
- Operating Systems Developer
- Much more...

Backend

Brain of Web

- The backend (or “server-side”) is the portion of the website you don't see. It's responsible for storing and organizing data, and ensuring everything on the client-side actually works.
- Language Used – Python , PHP, Javascript , Java , ASP.NET much more.

How It Really Works



What is web2py?

Web2py: is a free, open-source web framework for agile development of secure database-driven web applications; it is written in Python and programmable in Python. web2py is a full-stack framework, meaning that it contains all the components you need to build fully functional web applications.

Is web2py dead?

While we will continue some limited support for web2py, for future development, we no longer recommend it.

What is the alternative to web2py?

The best overall web2py alternative is Django. Other similar apps like web2py are Flask, CherryPy, Pyramid, and Bottle. web2py alternatives IS DJANGO

In Information Technology (IT), the user interface (UI) or simply an “interface” is everything designed into an information device with which a person may interact.

This can include display screens, keyboards, a mouse and the appearance of a desktop.

It is also the way through which a user interacts with an application or a website.

There are mainly two types of interface i.e. Command Line Interface (CLI) or Text based Interface and Graphical User Interface (GUI).

An operating system is system and SW that works as an interface between the computer and an user.

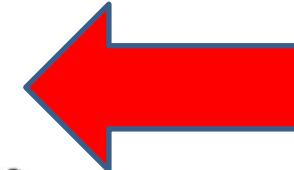
Is windows a text-based operating system?

Windows has GUI built in kernel so it's not text-based OS

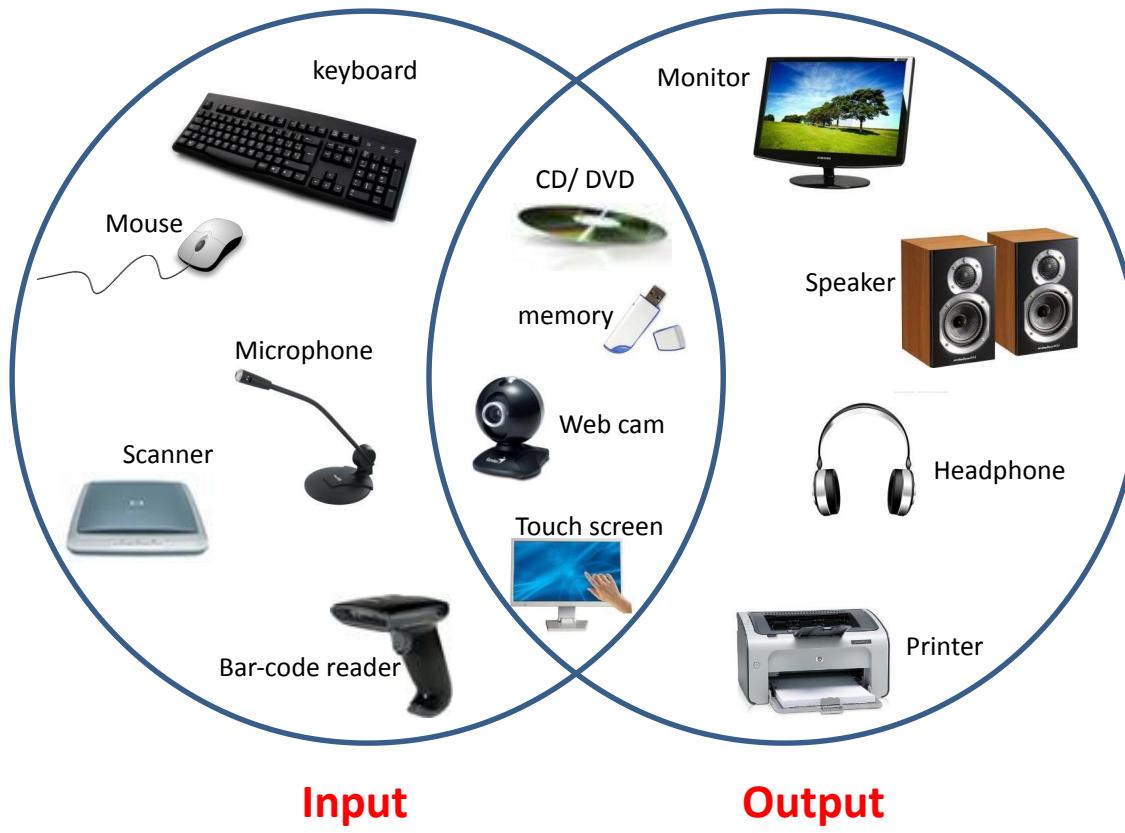
A diagram showing how the user interacts with application software on a typical desktop computer. The application software layer interfaces with the operating system, which in turn communicates with the hardware. The arrows indicate information flow.

Components of a Computer

- Same components for all kinds of computer
 - Desktop, server, embedded
- Input/output includes
 - User-interface devices
 - Display, keyboard, mouse
 - Storage devices
 - Hard disk, CD/DVD, flash
 - Network adapters
 - For communicating with other computers



Examples of I/O devices



An **HTML form** is used to collect user input. The user input is most often sent to a **server** for processing.

- Out put html

Example

First name:

Last name:

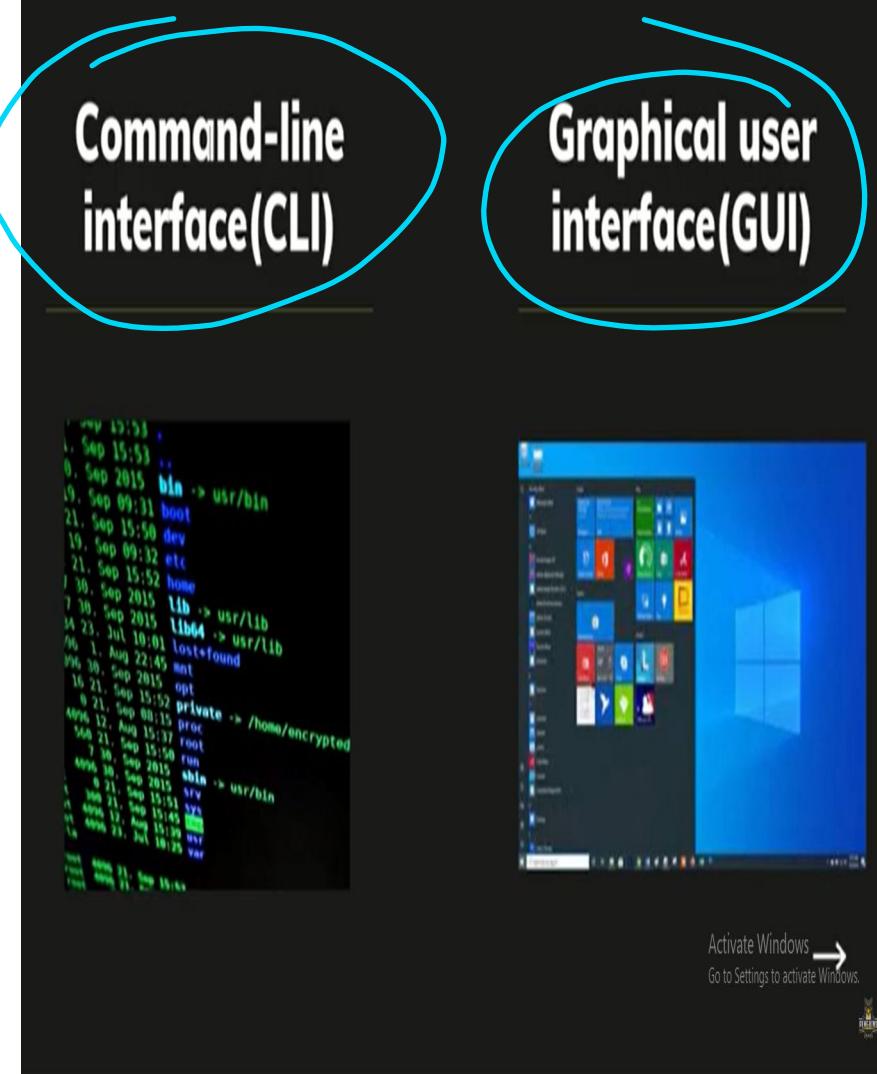
In Python, simply use the `print()` function to print output. For example,

```
print('Python is powerful')  
# Output: Python is powerful
```

In web development, inputs are often collected through HTML forms and sent to a server for processing. The server generates outputs, which can be HTML pages, JSON data, or other types of responses. Frameworks like Django and Flask make it seamless to handle inputs and outputs in web applications.

What is CLI and GUI?

- GUI lets a user interact with the device/system with the support of graphical elements like:
 - windows
 - Menus
 - icons, etc.
- The CLI, on the other hand, lets a user interact with their device/system with the help of various commands: Some OS provide their users with only CLI while some offer both CLI and GUI.



Activate Windows →
Go to Settings to activate Windows.



GUI vs CUI

Explained



```
-t) [-a] [-n count] [-l size] (-f) (-i TTL) (-v TOS)
-n count) [-s count) [(-j host-list) i (-k host-list)]
-v timeout] target_name

Ping the specified host until stopped.
To see statistics and continue - type Control-Break.
To stop - type Control-C.
Resolve addresses to hostnames.
Number of echo requests to send.
Send Buffer size.
Set Don't Fragment flag in packet.
Time To Live.
Type Of Service.
Record route for count hops.
Timestamp for count hops.
-list Lease source route along host-list,
-list Strict source route along host-list.
-it Timeout in milliseconds to wait for each reply.
```

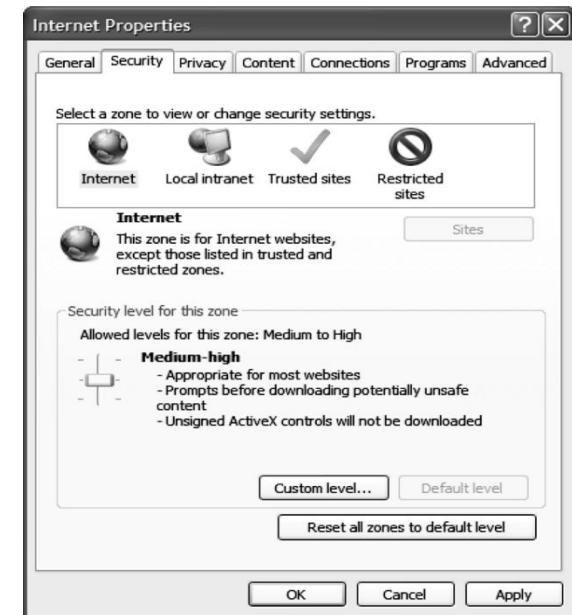
What is interface?

The interface is a common thread between two functional objects that define the requirements as defined by the standard; a combination of devices, methods, and relationships (control, supervision, etc.).



Graphical User Interfaces

Interaction with a GUI is done through **dialog boxes** – small windows that display information and allow the user to perform actions



ANSWERS TO CHECK YOUR PROGRESS EXERCISE

1. What are the two main types of user interfaces?

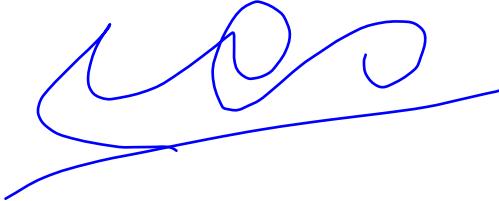
2. What is the difference between a folder and file?

3. What is the use of a control panel? Windows Interface

4. What do you understand by the term recycle bin?

In computer technology, there are several types of interfaces:

1. There are mainly two types of interface i.e. Command Line Interface or Text based Interface and Graphical User Interface. A command line interface (CLI) is a text-based user interface (UI) used to view and manage computer files. Command line interfaces are also called command-line user interfaces. GUI is an interface that uses icons or other visual component to interact with electronic devices, rather than only text via a command line. For example, all versions of Microsoft Windows are a GUI, whereas MSDOS is a command line.
2. Files are used to store data while folders store files and other folders on your computer. Files are a set of information (text, pictures, presentation, word document and audio) and store the data in manner to make difference from one set of information to another. Folder contains different format files and other folders.
3. A control panel holds a group of tools that help to change the S/W and H/W settings. The Control Panel is a component of Microsoft Windows that provides the ability to view and change system settings.
4. Recycle bin is an area which usually holds deleted files until it reaches a user configurable percentage of a disk's capacity. At that point it discards them. It can be opened up to restore something which had been thrown away earlier.



generations of computer systems	user interface paradigm	generations of user interfaces	computer supported teaching and learning paradigm	generations of computer supported teaching and learning systems
<u>1945-1955 pioneer</u>	programming, batch	batch interfaces	—	—
<u>1955-1965 historical</u>	command languages	line-oriented interfaces	computer assisted instruction	prophets and pioneers
<u>1965-1980 traditional</u>	full screen hierarchical menus, form fill-in	full-screen interfaces	intelligent computer assisted instruction	miniaturization: new knowledge, new population, new applications
<u>1980-1995 modern</u>	WIMP (Windows, Icons, Menus, Pointing devices)	graphical user interfaces	ITS (Intelligent Tutoring System)	computer as part of instruction
<u>1995-? future</u>	non-command based interfaces	next-generation interfaces	Web oriented intelligent tutoring system	computer as electronic mentor

Decade	1960s	1970s	1980s	1990s
Location	Computer room	Terminal room	Desktop	Mobile
Users	Experts	Specialists	Individuals	Groups
Data	Alphanumeric	Texts, numbers	Fonts, graphs	Multimedia
Interface	Punched cards	Keyboard and CRT	See and point	Ask and tell
Connectivity	None	Peripheral cable	LAN	Internet
Objective	Calculate	Access	Present	Communicate

Handwritten notes:

- Red circle around "1960s", "1970s", "1980s", and "1990s".
- Red checkmark next to "Location", "Users", "Data", and "Interface".
- Red box highlights the "Interface" row.
- Blue arrow points from the word "elP" to the "Multimedia" entry.

- What is an Interface :
An interface is a system consisting of hardware, software, or both
that allows two dissimilar components to interact.
- **Hardware interfacing means the interface between computer and any device or circuits.**
- A hardware interface is described by the mechanical, electrical, and logical signals at the interface and the protocol for connecting them.

There are three ways for hardware interfacing.

- (1) Printer port (Parallel port)
- (2) Serial port
- (3) USB port



User interfaces in computing

In computer science and human-computer interaction, the user interface (of a computer program) refers to the graphical, textual and auditory information the program presents to the user, and the control sequences (such as keystrokes with the computer keyboard, movements of the computer mouse, and selections with the ? touchscreen) the user employs to control the program.

History

The history of user interfaces can be divided into the following phases according to the dominant type of user interface:

- * Batch interface, 1945-1968
- * Command-line user interface, 1969-1983
- * Graphical user interface, 1984 to present

the following types of user interface are the most common:

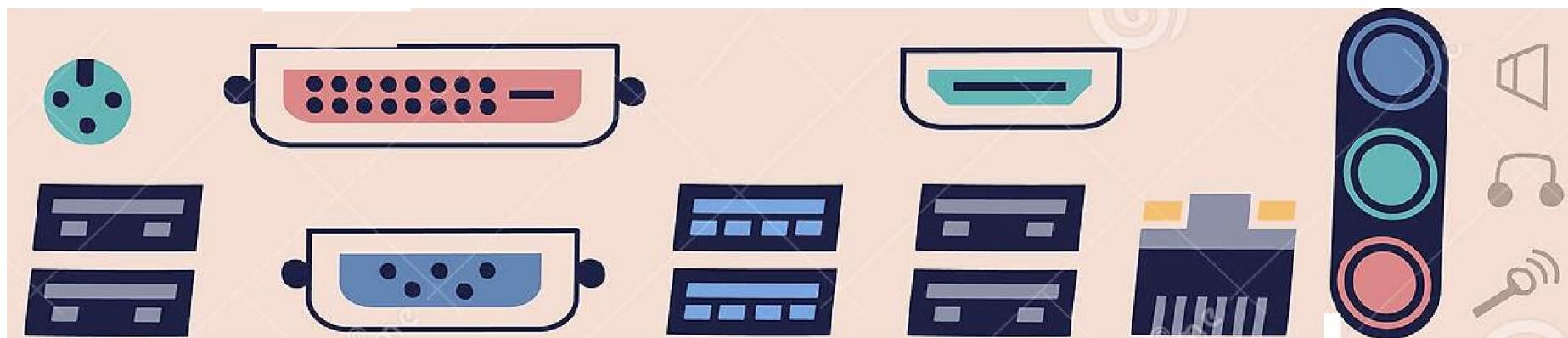
Batch interfaces are non-interactive user interfaces, where the user specifies all the details of the batch job in advance to batch processing, and receives the output when all the processing is done. The computer does not prompt for further input after the processing has started.

Command-line interfaces, where the user provides the input by typing a command string with the computer keyboard and the system provide output by printing text on the computer monitor. Used for system administration tasks etc.

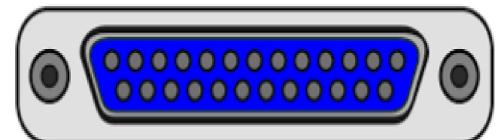
- Graphical user interfaces (GUI), which accept input via devices such as computer keyboard and mouse and provide articulated [graphical] output on the [computer monitor]. There are at least two different principles widely used in GUI design; object-oriented interfaces and application]] oriented interfaces.
- Web-based user interfaces, which accept input and provide output by generating web pages which are transported via the Internet and viewed by the user using a ?web browser program.

Computer ports for different connector types. Hardware interface with:

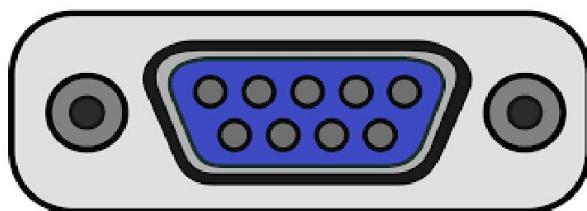
USB, audio, video, Ethernet, DVI, COM, SATA, VGA inputs for PC.



- Parallel ports are mostly used to connect printers to the system unit. A parallel port is a type of interface found on computers (both personal and business) for connecting peripherals.



Parallel ports in Hardware interfaces



Serial ports in Hardware interfaces

Serial ports are used to connect a mouse, keyboard, modem, and many other devices to the system unit. The serial port on a computer is a form of a link for peripherals like mice, gaming controllers, modems, and older printers.

USB Port (Universal Serial Bus)

USB stands for Universal Serial Bus, and is a short-distance digital data transmission cable.

A USB port is a popular cable link interface for computers and other consumer electronics.

Q. Difference between GUI and CUI ?

- | | |
|--|---|
| ① GUI Stands for graphical user interface. | ① CUI stands for character user interface. |
| ② GUI is very friendly and easy to use. | ② CUI is very confusing and difficult to use. |
| ③ In GUI, more than one task can run at same time. | ③ In CUI only one task can run at a time. |
| ④ Minimum use of keyboard. | ④ Maximum use of keyboard. |
| ⑤ It required more memory. | ⑤ It required less memory. |

Ex→ Windows, Linux etc.

Ex→ MS DOS .