Introduction to Information Technology

CSC109

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Every bench as a team, work on flow diagram Using The Computer Memory.

PS:

The computer starts using the memory from the moment the computer is switched on, till the time it is switched off

list steps that the computer performs from the time it is switched on

Sometimes, when you write a program and the power goes off, your program is lost if you have not saved it.

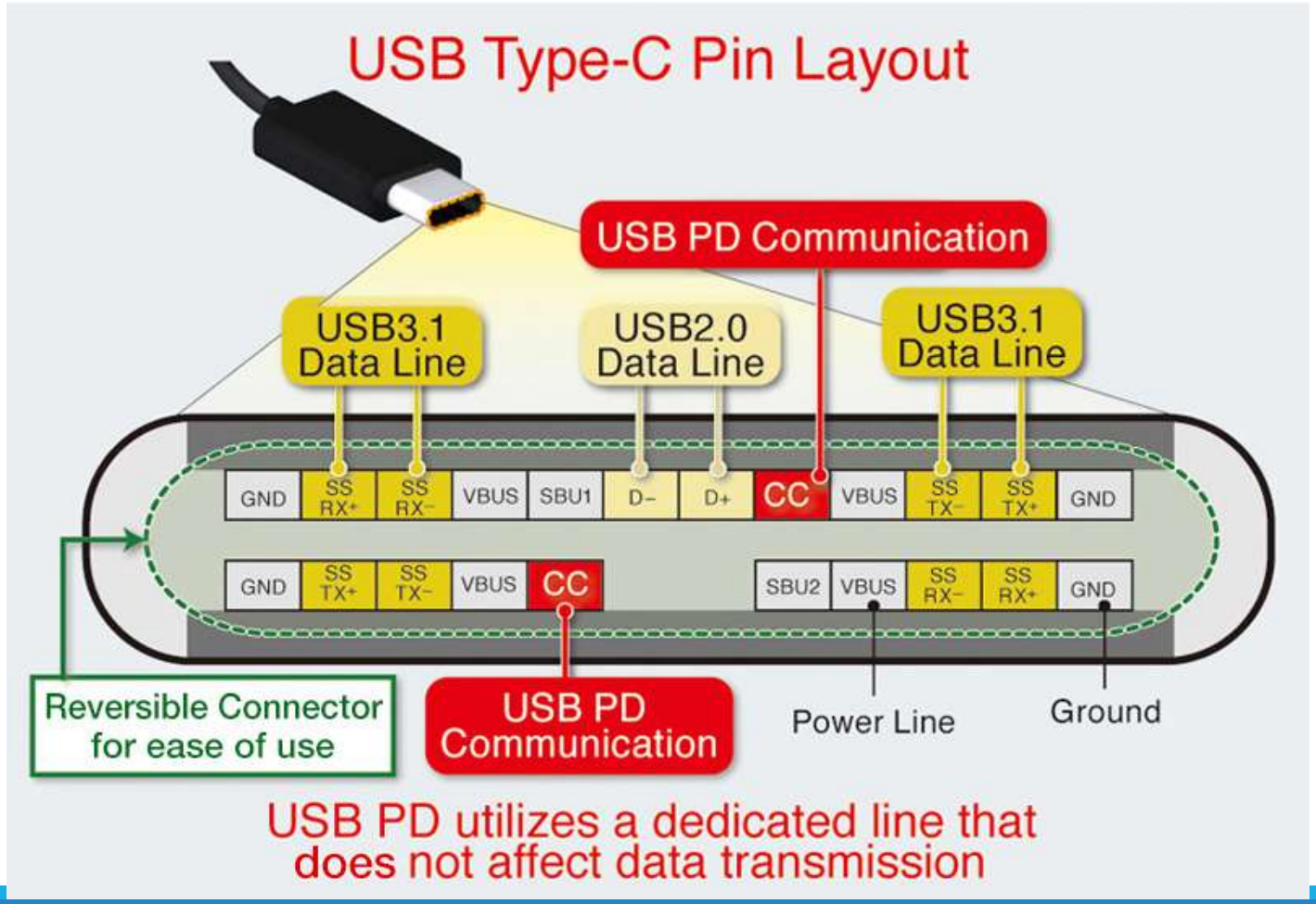
WHY?

Chapter 4
Input and Output Devices

- Input-output unit
- Input devices— Human data entry devices, source data entry devices
- Source data entry devices
- Output devices — Hard copy devices, soft copy devices
- I/O port— Parallel port, serial port, USB port, firewire port
- Working of I/O system— I/O devices, device controller, device driver

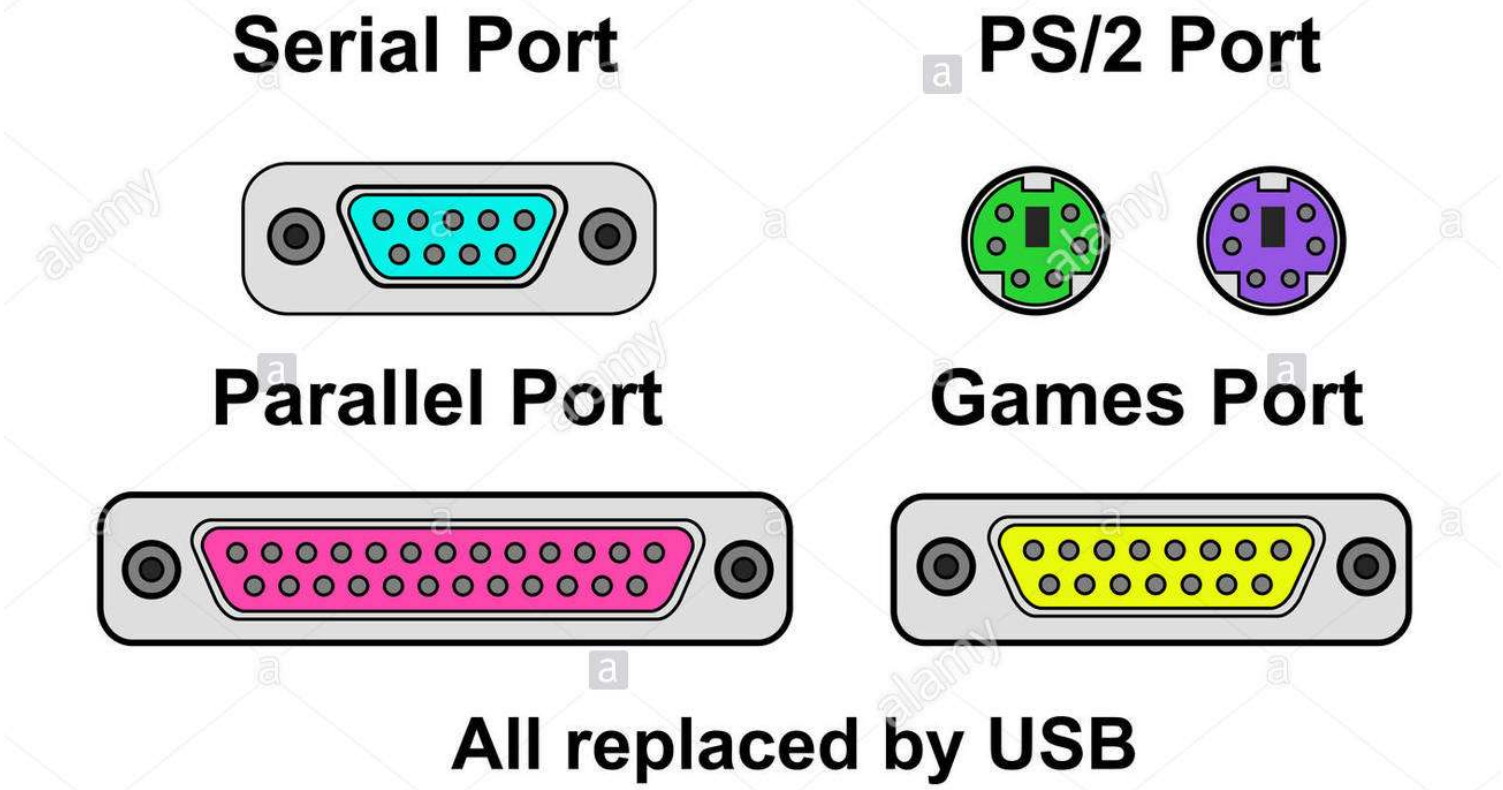
USB Port

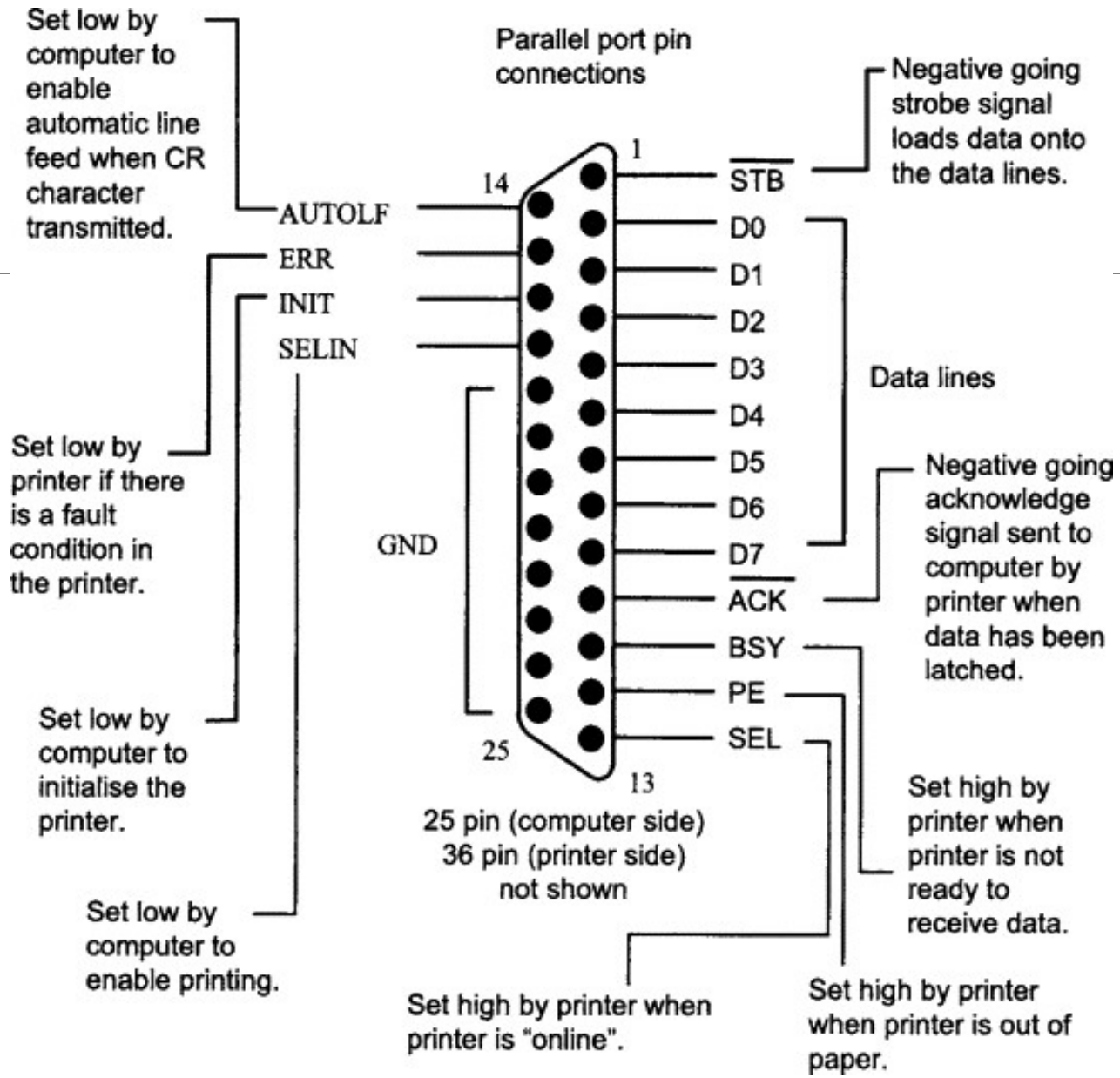

pin 1 | red
+5V
pin 2 | white | DATA−
pin 3 | green | DATA +
pin 4 | black | GND
shielding
pin 1 | red | +5V
pin 2 | white | DATA−
pin 3 | green | DATA +
pin 4 | black | GND
roschematics.com


USB Type-C Pin Layout
USB PD Communication
USB3.1 Data Line
USB2.0 Data Line
USB3.1 Data Line
GND
SS RX+
SS RX−
VBUS
SBU1
D−
D+
CC
VBUS
SS TX−
SS TX+
GND
GND
SS TX+
SS TX−
VBUS
CC
SBU2
VBUS
SS RX−
SS RX+
GND
Reversible Connector for ease of use
USB PD Communication
Power Line
Ground
USB PD utilizes a dedicated line that does not affect data transmission

- USB is a common and popular external port available with computers.
- 2 to 4 USB ports are provided on a PC.
- USB allows different devices to be connected to the computer without requiring re-boot of the computer.
- USB also has the plug and play feature which allows devices ready to be run simply by plugging them to the USB port.
- A single USB port can support connection of up to 127 devices.

Parallel Port; eg DB25



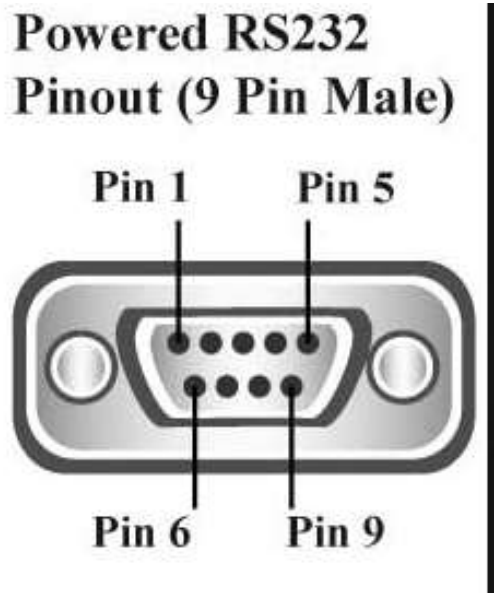

Parallel port pin connections
Set low by computer to enable automatic line feed when CR character transmitted.
AUTOLF
ERR
INIT
SELIN
Set low by printer if there is a fault condition in the printer.
Set low by computer to initialise the printer.
Set low by computer to enable printing.
1
14
25
13
GND
STB
D0
D1
D2
D3
D4
D5
D6
D7
ACK
BSY
PE
SEL
Negative going strobe signal loads data onto the data lines.
Data lines
Negative going acknowledge signal sent to computer by printer when data has been latched.
Set high by printer when printer is not ready to receive data.
Set high by printer when printer is out of paper.
Set high by printer when printer is "online".
25 pin (computer side)
36 pin (printer side)
not shown

- A parallel port is an interface for connecting eight or more data wires. The data flows through the eight wires simultaneously.
- They can transmit eight bits of data in parallel.
- As a result, parallel ports provide high speed data transmission.
- Parallel port is used to connect printer to the computer.

Serial Port; eg DB9/RS232

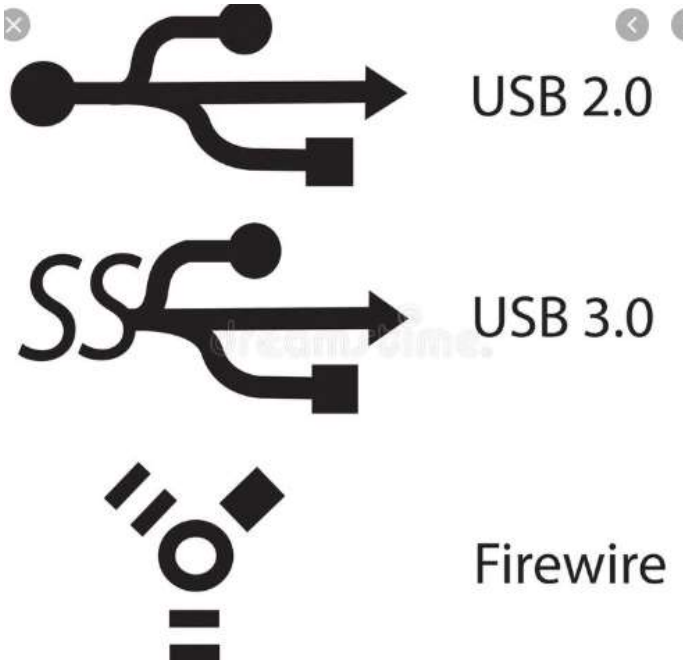
PIN	PURPOSE	SIGNAL NAME
1	Data Carrier Detect	DCD
2	Received Data	RxData
3	Transmitted Data	TxData
4	Data Terminal Ready	DTR
5	Signal Ground	Gnd
6	Data Set Ready	DSR
7	Request To Send	RTS
8	Clear To Send	CTS
9	Ring Indicator	RI

Pin 1	DCD/12V/GND
Pin 2	RXD
Pin 3	TXD
Pin 4	DTR
Pin 5	GND
Pin 6	DSR
Pin 7	RTS
Pin 8	CTS
Pin 9	RI/12V/5V



- A serial port transmits one bit of data through a single wire.
- Data is transmitted serially as single bits,
- Serial ports provide slow speed data transmission.
- Serial port is used to connect external modems, plotters, barcode reader , etc

FireWire



- It is used to connect audio and video multimedia devices like video camera and removable drives.
- Supports plug and play
- bandwidth of 400-800 Mbps and higher.
- It was first developed by Apple in 1995.
- It is an expensive technology and is used for large data movement.

FireWire specifications and versions

- **FireWire 400 (IEEE-1394)** - The original specification, capable of data transfer speeds of 100, 200, and 400 Mbps; released in 1995.
- **IEEE-1394a** - An improvement over FireWire 400, adding asynchronous streaming, and reduced power consumption;
- **FireWire 800 (IEEE-1394b)** - Increased data transfer rate of up to 3200 Mbps using " released in 2002.
- **FireWire S800T (IEEE-1394c)** - Technology improvements to provide 800 Mbps data transfer rate using the same connection as a Cat 5e cable; released in June 2007.
- **FireWire S1600 and S3200** - Capable of data transfer speeds of 1.57 Mbps and 3.14 Mbps respectively, and are compatible with FireWire S400 and S800 devices; announced in December 2007.