

OS: OPERATING SYSTEM->main software->starts the computer

Allows to use the apps (chrome ,ms word,etc.)

Acts as a bridge b/w user and hardware

->>>without os ,the computer is useless

Functions: why we need os?

1.process management->runs multiple programs

2.memory management->manage the ram usage

3.file management->manages files,folders

4.device management->keyboard , mouse , printer

5.security->users,passwords,permissions

TYPES OF OS:

Desktop os: windows,linux,macos

Server os: windows server , linux server

Mobile os: android ,ios

Embedded os : atm ,washing machine,routers

Windows vs linux

Gui based cli+gui

Paid mostly free

Easy for users powerful for servers

Common in offices common in servers/cloud

User account->

Allows to login into system

Use apps and files

Have specific permissions

TYPES OF USER ACCOUNTS IN WINDOWS:

1.ADMINISTRATOR:FULL CONTROL -> ISNTALL AND UNISTALL SOFTWARE->CHANGE SYSTEM SETTINGS

2.STANDARD USER: CAN USE THE APPLICATIONS -> CAN'T CHANGE THE SETTINGS

3.GUEST: TEMPORARY USE ->LIMITED ACCESS

WHAT ARE THE PERMISSIONS:

PERMISSIONS DECIDE ->who can access the file /folder->what actions they can perform

Common permissions->

Read-> view files

Write-> writing or adding the content to the file

Modify-> read +write +delete

Full control-> all permissions

Hands-On Practice (DO THIS)

◆ **Create a New User**

1. Control Panel → User Accounts

2. Manage another account → Add user

(Or Settings → Accounts → Family & other users)

Control Panel > User Accounts > User Accounts > Manage Accounts

Choose the user you would like to change



VALLAPU ARJUN

Local Account

Administrator

Password protected

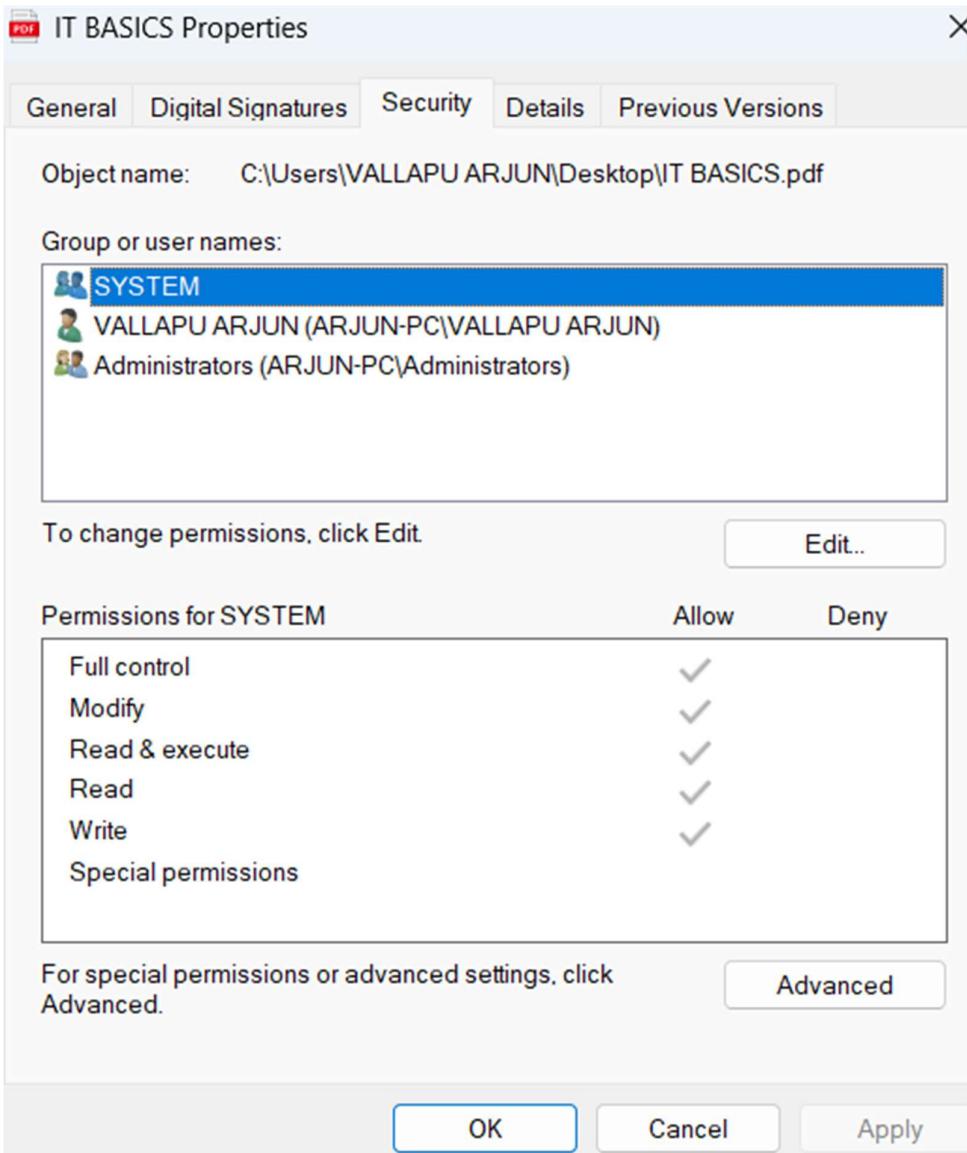
[Add a new user in PC settings](#)

◆ **Check Folder Permissions**

1. Right-click any folder

2. Properties → Security tab

3. View permissions for users



4.

🧠 Real-World IT Support Scenario

- ◆ **Problem:** User cannot access a folder
- ◆ **Solution:**
 - Check user account
 - Verify folder permissions
 - Give Read/Modify access if required

TASK MANAGER:

It is a windows tool used to monitor running applications & processes

Check CPU, RAM, Disk, Network usage

End unresponsive programs

Manage startup applications

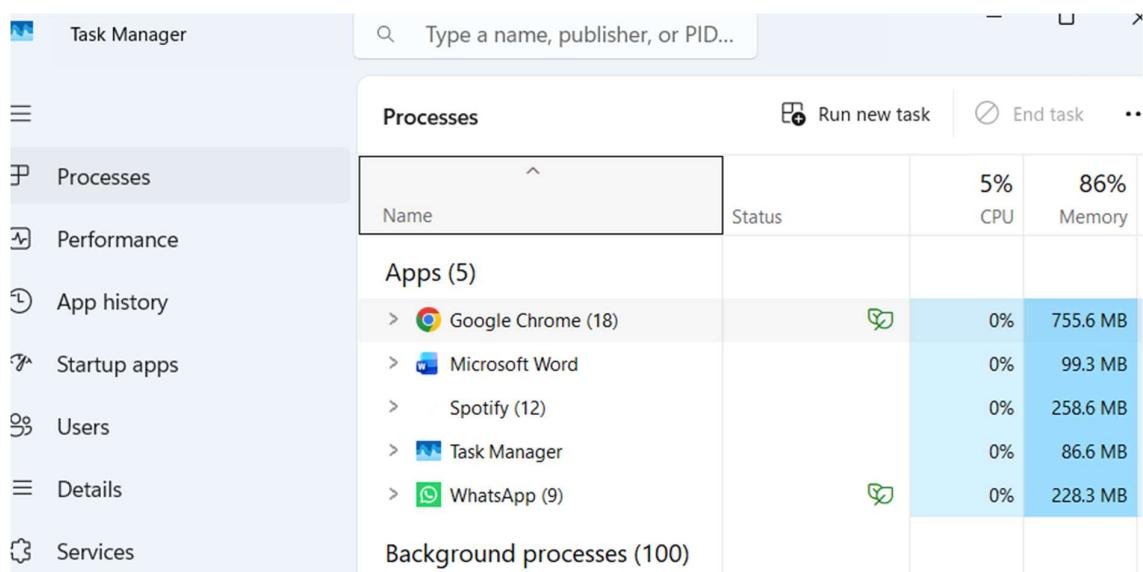
Ctrl+ alt + del->task manager

Real IT Support Scenario

- ◆ **Problem: System is very slow**

- ◆ **Steps:**

1. **Open Task Manager**
2. **Check CPU/RAM/Disk usage**
3. **End unnecessary processes**
4. **Disable unwanted startup apps**



Name	Status	5% CPU	86% Memory
Apps (5)			
> Google Chrome (18)		0%	755.6 MB
> Microsoft Word		0%	99.3 MB
> Spotify (12)		0%	258.6 MB
> Task Manager		0%	86.6 MB
> WhatsApp (9)		0%	228.3 MB
Background processes (100)			

Computer hardware:

Physical parts of a computer that we can **see and touch**

Main hardware components:

- 1.CPU** ->brain of computer and controls all operations
- 2.RAM** ->stores temporary data while programs are running, faster than hard disk
- 3.STORAGE(SDD.HDD)** ->permanent storage , stores os,software,files
- 4.MOTHERBOARD** ->connects all hardware components , main circuit board
- 5.POWERSUPPLY(SMPS)** ->supplies power to all components
- 6.PERIPHERAL DEVICES** ->i/p: keyboard , mouse, scanner
o/p: monitor ,printer , speaker

OPEN DEVICE MANAGER:

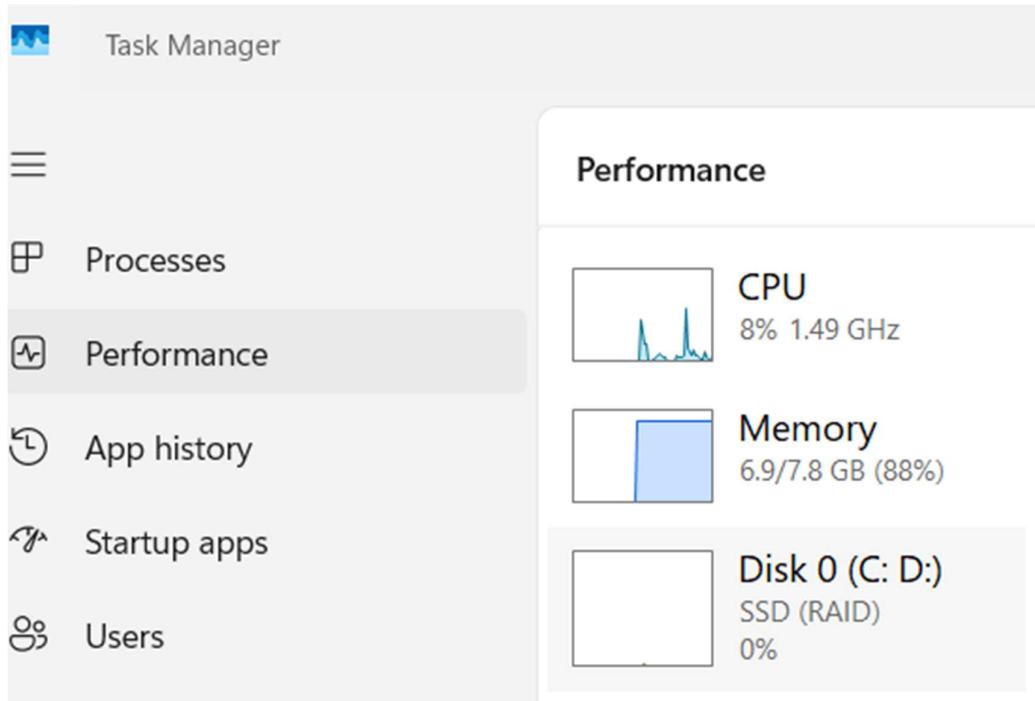
WIN+X->DEVICE MANAGER ->VIEW DISPLAY ADAPTER ,VIEW NETWORK ADAPTER

Open Task Manager → Performance

- Check CPU model
- Check RAM size

Check Disk Type

- Task Manager → Performance → Disk



Real IT Support Scenarios

◆ **PC is slow**

- Check RAM usage
- Check if HDD or SSD
- Suggest RAM upgrade or SSD

◆ **PC not powering ON**

- Check power cable
- Check SMPS

NETWORK :

A NETWORK IS A GROUP OF COMPUTERS/DEVICES CONNECTED TOGETHER TO:

Share data ->share internet ->share resources(printer,files)

Types of network:

1.LAN(LOCAL AREA NETWORK):covers a small area->used in offices , homes ,colleges->high speed

EXAMPLE: WIFI

2.WAN(WIDE AREA NETWORK):covers large geographic area ->connects multiple LANs ->slower than LAN

EXAMPLE : INTERNET

COMPONENTS:

SWICTH:WHICH CONNECTS TWO OR MORE COMPUTERS

ROUTER:WHICH CONNECTS ONE NETWORK WITH ANOTHER

MODEM:DEVICE USED FOR MODULATION AND DEMODULATION

HUB:POWER EXTENSION DUMMY DEVICE

NIC:NETWORK INTERFACE CARD WHICH IS USED TO CONNECT YOUR COMPUTER WITH THE INTERNET.IT IS PREINSTALLED ON MOTHERBOARD.HAS A MAC ADDRESS.

OPEN NETWORK SETTINGS->CONTROL PANEL ->NETWORK &SHARING CENTER

CHECK IP ADDRESS->ipconfig

IDENTIFY NETWORK ADAPTER->DEVICE MANAGER->NETWORK ADAPTERS

Real IT Support Scenario

- ◆ **User says: "Internet is not working"**

1. Check LAN cable/Wi-Fi
2. Check IP using ipconfig
3. Restart router
4. Ping gateway

IP(INTERNET PROTOCOL): is a unique number given to every device in a network to identify the device and communicate with other devices

Example:192.168.x.x

TYPES OF IP ADDRESSES:

PRIVATE->used inside LAN ->NOT accessible on the internet

PUBLIC->provided by ISP(INTERNET SERVICE PROVIDER)->USED ON THE INTERNET

Ipv4	Ipv6
32 bits	128 bits
Limited addresses	unlimited

DNS (DOMAIN NAME SYSTEM): converts the ip address to human readable address

DHCP(Dynamic Host Configuration Protocol): automatically assigns ip address , subnet mask ,gateway,dns

 **Real IT Support Scenario**

◆ **User: “Internet not working”**

- Check IP address
- Ping gateway
- Change DNS
- Restart router

1 Open Command Prompt

ipconfig

2 Test internet connectivity

ping google.com

3 Release & Renew IP

ipconfig /release

ipconfig /renew

4 Change DNS to Google

- Preferred: 8.8.8.8
- Alternate: 8.8.4.4