

Computer Literacy for Daily OS Use

A scaffolded course for students using Windows 11 and macOS

Files, folders, file system structure, memory, task managers, networking,
and VPNs

April 2026

Why This Course Matters

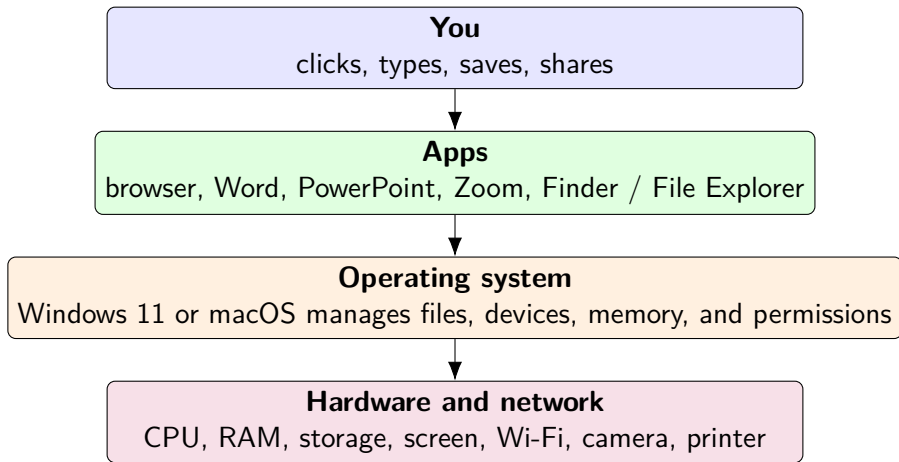
- Most student problems are not advanced computer science problems
- They are everyday workflow problems: lost files, low storage, app freezes, bad Wi-Fi, sync confusion
- A good mental model saves time and reduces stress
- You do not need deep internals to be highly competent

Learning Outcomes

- Explain what files, folders, storage, RAM, processes, IP addresses, and VPNs are
- Navigate Windows 11 and macOS with less hesitation
- Use Task Manager or Activity Monitor to diagnose common slowdowns
- Organize work so documents are easier to find, share, and back up

- 1. Interface and navigation
- 2. Files, folders, and file system structure
- 3. Apps, processes, memory, and performance
- 4. Task Manager, Activity Monitor, networking, VPNs, and troubleshooting

A Practical Mental Model



- If something feels wrong, ask: is it the file, the app, the OS setting, or the hardware/network?

What an Operating System Actually Does

- Shows the interface you interact with
- Lets apps run and share resources fairly
- Organizes files and storage locations
- Connects hardware, accounts, permissions, and networks

Windows 11 and macOS: Shared Ideas

Shared concepts

- Desktop, windows, apps, files, folders, search, settings
- Both support cloud sync, external drives, Wi-Fi, VPNs, and printers
- Both can be fast and productive when organized well

Different flavors

- Names, layouts, shortcuts, and default behaviors differ
- Windows often exposes more device and file details
- macOS often emphasizes consistency and app integration

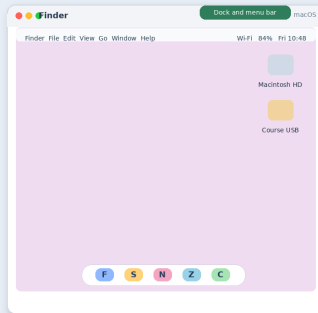
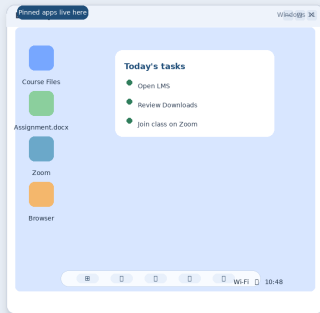
A Good Daily Workflow

- Know where you save things before you start
- Name files clearly the first time
- Use search intentionally instead of browsing randomly
- When the device is slow, check resources before guessing

The Desktop, the Taskbar, and the Dock

Windows 11 and macOS desktop areas

Illustrative screenshots for teaching interface literacy

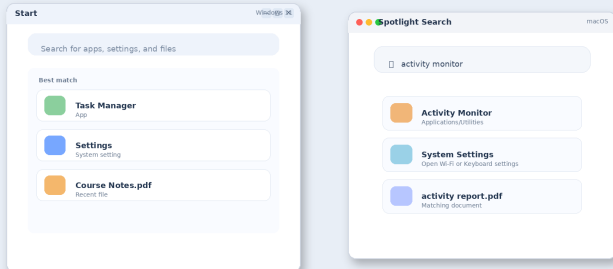


- The desktop is only one location, not your whole file system
- Windows uses the taskbar; macOS uses the Dock and menu bar
- Pinned icons launch apps quickly but do not replace folders
- Avoid treating the desktop as long-term storage

How You Launch Things Quickly

Launching apps by search

Students should search first instead of hunting through folders or menus



Windows 11

- Use Start and type the app or setting name
- Search is usually faster than menu hunting

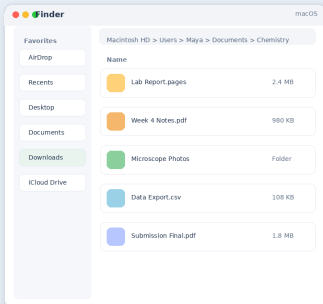
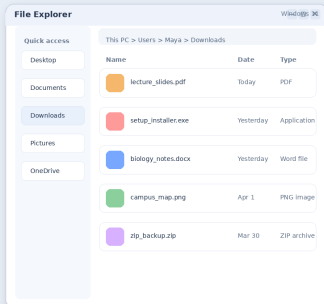
macOS

- Use Spotlight with Command-Space
- Search for apps, files, folders, settings, or calculations

File Explorer and Finder

File managers are where organization happens

Illustrative Explorer and Finder layouts with sidebar, path, and file list

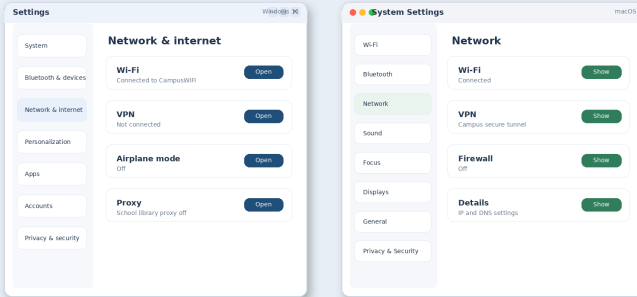


- These are file managers, not just places to open documents
- Use them to move, rename, tag, preview, compress, and organize files
- The sidebar gives quick access to common locations and drives
- Learning the sidebar saves many clicks

Settings Panels

Settings and quick controls

Use quick controls for routine toggles and the full settings app for configuration



Windows 11

- Use Settings for networking, accounts, storage, privacy, and devices

macOS

- Use System Settings for displays, Wi-Fi, Apple ID, sound, and keyboard

Notifications and Quick Controls

- Windows: Quick Settings gives Wi-Fi, Bluetooth, sound, battery, and more
- macOS: Control Center and menu bar provide similar controls
- Use quick controls for routine changes; use full settings for configuration
- Check whether Do Not Disturb or Focus mode is affecting alerts

Window Management Basics

- Minimize hides a window but keeps the app running
- Maximize or full screen changes layout, not file location
- Snap layouts in Windows and Split View or tiling in macOS help with multitasking
- Too many open windows creates confusion even when the computer is fine

Keyboard Shortcuts That Matter

- Copy, paste, cut, undo, save, print, search, switch apps, and take screenshots
- Windows often uses Control; macOS often uses Command
- You do not need dozens of shortcuts to gain a lot of speed
- Learn the few you use every day

Mini Practice: Navigation

- Launch an app using search, not by browsing menus
- Open the file manager and pin your most-used folder to quick access or favorites
- Arrange two windows side by side
- Change Wi-Fi or sound from the quick controls

What Is a File?

- A file is a named unit of information stored on a device or in cloud sync storage
- Examples: an essay, image, spreadsheet, PDF, video, or downloaded installer
- A file usually has a name, a location, and a type
- Apps open files; they do not replace them

Common File Types Students Meet

- Documents: .docx, .pdf, .txt, .pages
- Presentations: .pptx, .key
- Data and spreadsheets: .xlsx, .csv, .numbers
- Images and media: .jpg, .png, .mp4, .mp3

What Is a Folder?

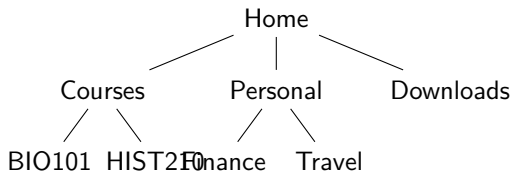
- A folder is a container used to group files and other folders
- Folders help you organize by course, project, semester, or task
- A folder can contain subfolders to create structure
- Good folders reduce search time and naming chaos

Folders, Shortcuts, Aliases, and Tags

- A real folder stores content in one place
- A shortcut in Windows or an alias in macOS points to something elsewhere
- Tags add labels without moving files
- Use folders for structure and tags for cross-cutting categories

The File Tree Idea

- Files and folders form a tree: broad at the top, more specific as you go down
- You usually want a few stable top-level folders and clear subfolders below them
- Avoid too many deep levels for everyday student work



What a Path Means

- A path is the address of a file or folder inside the file system
- It tells you exactly where something lives
- Different systems write paths differently, but the idea is the same
- If you understand paths, you understand location

Windows Path Example

- Example file path:
- `C:\Users\Alice\Documents\ECON102\Essay Draft.docx`
- Read it from left to right as: drive → user folder → Documents → course folder → file
- The file extension `.docx` helps the system know which app can open it

macOS Path Example

- Example file path:
- `/Users/Alice/Documents/ECON102/Essay Draft.docx`
- Read it from left to right as: system root → user folder → Documents → course folder → file
- Same idea as Windows: location plus file name and type

Home Folder: Your Personal Base

- Both Windows and macOS give each user a home folder
- This is where your Desktop, Documents, Downloads, Pictures, and other personal folders live
- Think of it as your main workspace, not the system's workspace
- Most of your school material should live somewhere under here

File Names Matter

- A good name answers: what is it, for which class, and which version?
- Use readable words, dates, and version labels where helpful
- Bad example: finalfinalREAL2.docx
- Better example: HIST210_Essay2_2026-04-03.docx

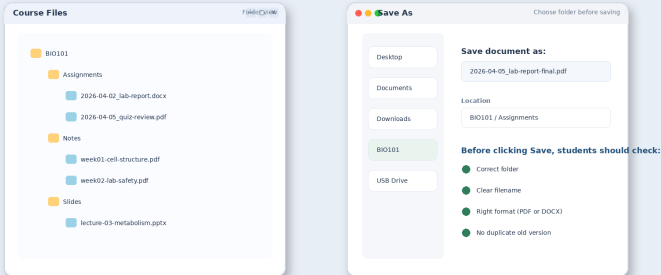
Versioning Without Confusion

- Use version numbers or dates when a file changes significantly
- Avoid saving ten slightly different copies in random places
- If you use cloud tools, watch for duplicate conflict copies
- When collaborating, agree on naming rules early

Save, Save As, Duplicate, Export

A course folder structure that students can copy

Illustrative file tree and save dialog mental model



- **Save** updates the current file
- **Save As** creates a new copy or stores it in a new location
- **Duplicate** makes a safe copy before risky edits
- **Export** creates another format, such as PDF

The Downloads Folder Is Not a Filing System

- Downloads is a landing zone, not a long-term archive
- Installers, PDFs, images, and attachments pile up there quickly
- Review it regularly and move important items out
- A messy Downloads folder makes everything feel lost

The Desktop Is Convenient but Dangerous

- Desktop files are visible, so they attract clutter
- Too many items slow your own thinking even if performance is okay
- Use the desktop for temporary working items only
- Clear it at the end of the day or week

Search Is a Skill, Not a Last Resort

- Search by file name when you know it
- Search by type or date when you do not know the exact name
- Preview results before opening random files
- Search beats clicking through dozens of folders

Recycle Bin and Trash

- Deleting usually moves items to a holding area first
- You can often restore files until that holding area is emptied
- Deleting from cloud folders may sync the deletion elsewhere
- Do not assume 'deleted' means instantly unrecoverable or permanently gone

Mini Practice: File Skills

- Create a course folder with two subfolders: Notes and Assignments
- Rename three files using a clear naming pattern
- Move one downloaded PDF out of Downloads into the correct course folder
- Find the file again using search, not by browsing

What 'File System Structure' Means in Practice

- For this course, it means the overall layout of locations on your computer
- Where user files live, where apps live, where external drives appear, and which folders are sensitive
- You do not need low-level internal details to work confidently
- You do need a map of the places you should and should not edit casually

Your Personal Folders on Windows and macOS

Windows 11

- Desktop, Documents, Downloads, Pictures, Music, Videos under your user profile
- OneDrive may also appear as a major synced location

macOS

- Desktop, Documents, Downloads, Movies, Music, Pictures under your home folder
- iCloud Drive may also appear as a major synced location

System Folders: Respect the Boundary

- System folders hold operating system files and app support files
- Do not reorganize them just to 'clean things up'
- Deleting from system locations can break apps or the OS
- Clean your own folders first, not the system's internals

Apps, Documents, and Storage Are Related but Different

- Apps are installed software
- Documents are the files you create or receive
- Storage is the larger space that holds both apps and documents
- A full drive can affect app behavior and updates

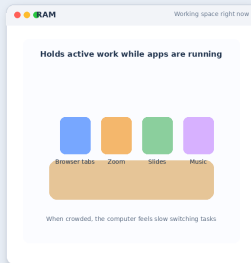
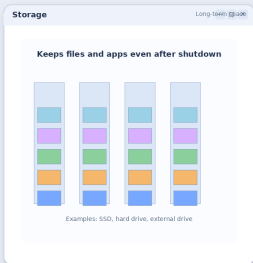
External Drives and USB Storage

- External drives appear as separate storage locations or volumes
- Always eject safely before unplugging when possible
- Remember that removing the drive removes access to the files on it
- Good for backup, transfer, and large media collections

Storage vs. RAM

Storage is shelves; RAM is desk space

A screenshot-like explainer for the most common student confusion



Storage

Long-term space for files and apps. It keeps data when the machine is off.

RAM

Short-term working space for running apps. It affects how many tasks feel smooth at once.

- Low storage and low RAM are different problems

Low Storage: Common Symptoms

- Updates fail or complain about space
- Large downloads or exports do not complete
- Apps may struggle to cache temporary data
- The solution is usually cleanup or moving data, not buying more RAM

Cloud-Synced Folders

- OneDrive, iCloud Drive, Google Drive, and Dropbox may sync files across devices
- A synced folder is still a folder, but changes may spread elsewhere
- Learn which folders are local only and which are synced
- Conflicts happen when multiple devices or apps edit the same file

Backups: Different from Sync

- Sync keeps versions aligned across devices
- Backup protects you when files are deleted, corrupted, or ransomware hits
- A backup can live on an external drive or backup service
- Students need at least one reliable backup habit

Mini Practice: Storage Awareness

- Find your biggest personal folders and identify what can move or delete
- Check which folders are cloud-synced
- Locate a file on an external drive and note that its availability depends on the drive being connected
- Explain out loud whether a problem sounds like low storage or low RAM

App, Process, and Window Are Not the Same

- An app is the software product, such as Chrome or Word
- A process is a running instance doing work in memory
- A window is the visible container you interact with
- Closing a window does not always end the process

Foreground and Background Activity

- Foreground activity is what you actively see and use
- Background activity includes syncing, updates, indexing, uploads, and helper processes
- Background work is normal, but too much can slow other tasks
- Performance tools help you see what is active

What Memory Means Here

- Memory usually means RAM: the short-term working space of the computer
- Running apps, open browser tabs, and active documents use RAM
- When RAM pressure rises, the system has to work harder to keep things smooth
- Many everyday slowdowns are really memory-management stories

What Uses RAM in Daily Student Life

- Web browsers with many tabs
- Video meetings, streaming, and screen sharing
- Large documents, datasets, design tools, or virtual machines
- Background apps you forgot were still open

Why More Open Tabs Can Feel Slow

- Each tab can hold scripts, media, accounts, and cached data
- Some tabs are lightweight; others are surprisingly heavy
- It is the active resource use, not just the count, that matters
- A tab explosion is often a RAM and CPU problem combined

CPU, Memory, Disk, and Network: Four Different Bottlenecks

- CPU: too much calculation work
- Memory: too many active things competing for RAM
- Disk or storage: reading and writing data is the limiter
- Network: internet or local connectivity is the bottleneck

Signs of Memory Pressure

- App switching becomes sluggish
- Browsers reload tabs you thought were still ready
- Video calls stutter while many apps are open
- The machine may not be broken; it may simply be overloaded

Slow, Frozen, or Crashed?

- Slow means the app still responds, but poorly
- Frozen means the app stops responding for a while
- Crashed means it closes unexpectedly or reports an error
- Different symptoms call for different responses

Closing a Window vs Quitting an App

- On Windows, closing the last window often exits the app
- On macOS, some apps remain open after the last window closes
- If you need resources back, make sure the app actually quits
- Use the dock, menu, or monitor tools to verify

Startup and Login Items

- Some apps start automatically when you sign in
- Useful examples: cloud sync, security tools, messaging apps
- Too many startup items can slow login and clutter memory
- Review them occasionally instead of allowing every app to auto-start

Restarting Is Simple but Powerful

- A restart clears many temporary problems and releases stuck resources
- It is often better than endlessly force quitting multiple apps
- Save work first and close sensitive documents
- Restart early when the whole device feels odd, not just one app

Installing Apps Safely

- Prefer official app stores or the vendor's official website
- Avoid random download sites that bundle junk or malware
- Read prompts carefully: some installers add login items or browser extras
- Install fewer but better apps

Updates: Why They Matter

- Updates fix bugs, improve compatibility, and patch security issues
- An outdated app may not work well with a newer OS and vice versa
- Schedule updates at reasonable times instead of ignoring them forever
- Keep backup and storage space in mind before major OS updates

Mini Practice: Performance Habits

- Close or quit apps you are not using
- Reduce browser tab overload before a video call
- Check login items and disable one unnecessary auto-start app
- Describe whether a slowdown sounds like CPU, RAM, disk, or network

Why System Monitors Matter

- They turn guessing into observation
- Instead of saying 'my laptop is bad,' you can ask what resource is under pressure
- You can spot runaway apps, startup overload, network spikes, and memory hogs
- This is practical literacy, not advanced engineering

Opening Task Manager in Windows 11

- Common methods: right-click taskbar or press Control-Shift-Escape
- Use the simplified view if you only need to close an obvious frozen app
- Use the detailed view when you want performance insight
- Get comfortable opening it before you urgently need it

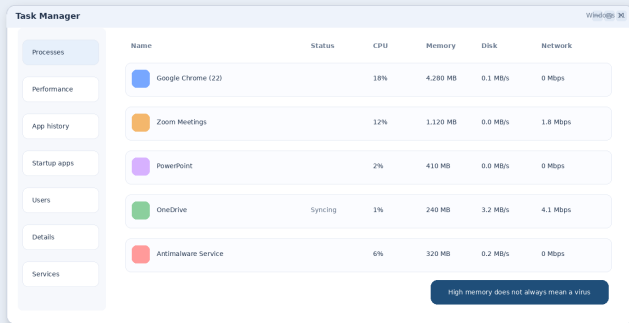
Best Task Manager Areas for Students

- Processes: what is running right now
- Performance: overall CPU, memory, storage, and network activity
- Startup apps: what launches at sign-in
- Users or details are useful later, but the first three are the daily essentials

Reading the Columns in Task Manager

Task Manager: read the columns before panic-closing apps

Processes, memory, CPU, disk, and startup impact in one place



Name	Status	CPU	Memory	Disk	Network
Google Chrome (22)		18%	4,280 MB	0.1 MB/s	0 Mbps
Zoom Meetings		12%	1,120 MB	0.0 MB/s	1.8 Mbps
PowerPoint		2%	410 MB	0.0 MB/s	0 Mbps
OneDrive	Syncing	1%	240 MB	3.2 MB/s	4.1 Mbps
Antimalware Service		6%	320 MB	0.2 MB/s	0 Mbps

High memory does not always mean a virus

- **CPU**: current processing load
- **Memory**: how much RAM a process is using
- **Disk**: read and write activity
- **Network**: current data transfer
- Look for patterns before ending tasks

Startup Apps in Task Manager

- Review apps that start automatically
- Disable nonessential startup items if login feels slow
- Do not disable security software just to make the list shorter
- Ask whether you need the app running every single sign-in

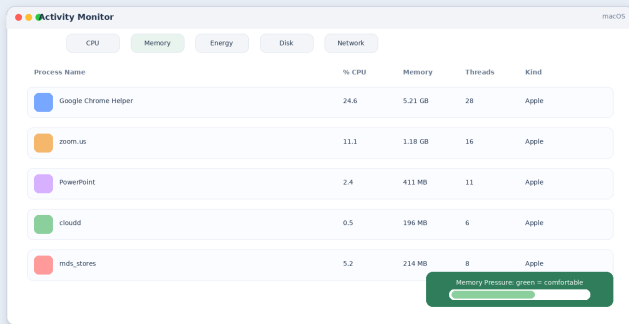
Opening Activity Monitor on macOS

- Use Spotlight and type Activity Monitor
- It is the macOS equivalent of a system monitor, not exactly a clone of Task Manager
- You can inspect CPU, Memory, Energy, Disk, and Network
- Also learn the Force Quit shortcut for urgent app exits

Best Activity Monitor Areas for Students

Activity Monitor: the macOS equivalent

Students mostly need CPU, Memory, Energy, Disk, and Network tabs



- CPU tab: spot a runaway process or heavy browser activity
- Memory tab: check whether memory pressure is high
- Disk and Network tabs: see syncing, downloads, or backups
- Decide whether the issue is system-wide or app-specific

Force Quit: Useful, but Use It Carefully

- Use Force Quit when an app will not respond and normal closing fails
- Save work first if you still can
- Force quitting may lose unsaved work in that app
- If the whole computer feels unstable, a restart may be cleaner

A Simple Monitor-Based Troubleshooting Flow

- 1. Observe the symptom clearly
- 2. Open Task Manager or Activity Monitor
- 3. Identify the stressed resource or misbehaving app
- 4. Close, quit, restart, update, or reduce load based on evidence

Mini Practice: Read the Situation

- If memory is high but CPU is normal, what should you try first?
- If one app has extreme CPU usage, what does that suggest?
- If disk activity is high during cloud sync, is the machine necessarily broken?
- If network is saturated during a backup, why might video calls suffer?

Default Apps and File Associations

- A file type opens with a default app unless you choose another one
- Windows and macOS both let you change defaults
- A strange default can make a file feel broken when it is not
- Know how to use 'Open with' when needed

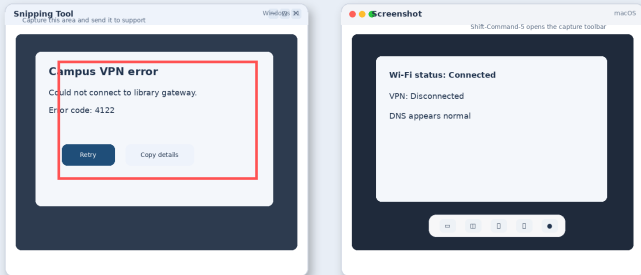
Compression and Archive Files

- ZIP files bundle one or more files for easier transfer
- Compressed archives save space and keep groups together
- Extract before editing unless the app clearly supports direct editing
- Do not confuse a ZIP archive with a normal folder

Screenshots and Screen Recording

Built-in screenshot tools

Students should capture the exact error, dialog, or setting page when asking for help



- Capture the exact error message, not just a vague description
- Both Windows and macOS include built-in screenshot tools
- A labeled screenshot speeds up troubleshooting and tech support
- Screen recording helps when the issue appears only during a process

Printing, PDFs, and Exports

- Printing to PDF is often a reliable way to preserve layout
- Exporting is better than screenshotting a whole document
- Check page size, margins, and destination printer or PDF option
- Many 'printer problems' are actually export or queue problems

Multiple Displays and Window Layouts

- External monitors expand workspace but add new settings
- Know mirror versus extend modes
- A missing window may be off-screen rather than closed
- Display settings solve many 'disappeared app' mysteries

Accessibility Tools Help Everyone

- Magnification, captions, dictation, and focus aids are not only for disabilities
- They can reduce fatigue and speed up work
- Dark mode, text size, and pointer settings can improve comfort
- A more usable computer is a more productive computer

Sign-In, Sign-Out, Lock, Sleep, Restart, Shut Down

- These are different states with different purposes
- Lock protects your session when stepping away
- Sleep preserves work quickly with low power use
- Restart is best when you need a fresh system state

Mini Practice: Healthy Routine

- Take and label one screenshot of a settings page
- Change a default app for one file type and change it back
- Explain when to sleep, lock, restart, or shut down
- Zip a small folder and extract it again

What a Network Is

- A network is a way for devices to communicate and share resources
- Your laptop talks to routers, campus systems, printers, cloud services, and websites
- Some communication is local; some goes out to the internet
- Networking literacy helps you separate device issues from connection issues

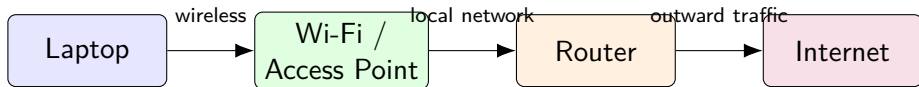
Local Network vs Internet

- The local network is nearby: your home router, campus Wi-Fi, local printer, nearby devices
- The internet is the wider collection of networks beyond your local one
- You can have local connectivity but no internet, or vice versa-like symptoms
- Always ask which layer feels broken

Router, Modem, and Wi-Fi in Simple Terms

- The router connects your devices and directs traffic
- The modem connects your home network to the internet service
- Wi-Fi is the wireless link between your device and the router or access point
- Campus networks may hide these parts from you, but the logic is similar

A Simple Network Picture



- If a problem appears before the router, it is often local; after the router, it is often internet or service related

What an IP Address Is

- An IP address is a network address used so devices know where to send data
- Think of it as a connection address, not a personal identity card
- Your device usually gets one automatically on a network
- Without an address, communication becomes much harder

Private and Public IP Addresses

- Private IP addresses are used inside local networks
- Public IP addresses are how a network appears to the wider internet
- At home, many devices often share one public-facing internet connection
- You do not need to memorize ranges to use the idea effectively

Why IP Addresses Can Change

- Most students do not manually choose an IP address on normal networks
- Routers and network services often assign them automatically
- Joining a new Wi-Fi network often means receiving a new address there
- A changing IP is normal and not necessarily a problem

Hostnames, Device Names, and Discovery

- Your device also has a name that helps identify it on local networks
- Renaming your device to something clear can help with AirDrop, printers, and support
- The device name is easier for humans than raw IP numbers
- Know both concepts: the readable name and the network address

DNS in Everyday Terms

- DNS helps translate readable site names into network destinations
- If DNS is failing, websites may stop loading by name even when the network is partly working
- Students do not need the deep protocol details to diagnose symptoms
- The symptom to remember: 'internet seems connected, but names do not resolve'

Common Wi-Fi Problems

- Weak signal or distance from the access point
- Wrong network, captive portal, or expired campus login
- Congestion in crowded places like dorms or lecture halls
- VPN, firewall, or app-specific issues that look like 'the Wi-Fi is bad'

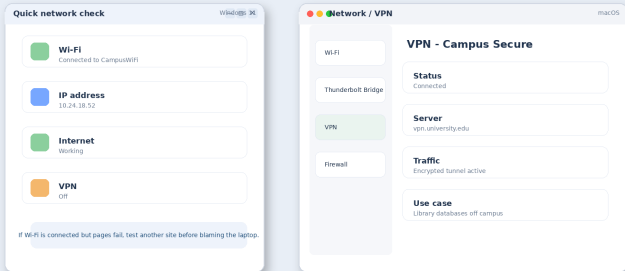
Hotspots, Metered Connections, and Data Limits

- A phone hotspot can rescue you, but it may be slower or limited
- Large sync jobs or updates can consume data quickly
- Metered settings help avoid surprise usage
- Treat hotspots as a backup tool, not always a permanent replacement

What a VPN Is

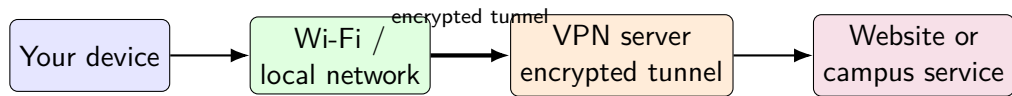
Networking and VPN status at a glance

The goal is not protocol depth - it is recognizing what to check first



- A VPN creates an encrypted connection between your device and a VPN service
- Students often use one for school resources or public Wi-Fi
- It changes part of how traffic travels, but it does not make you invisible
- VPNs solve some problems and create others if used blindly

VPN: A Simple Picture



- The VPN protects traffic between you and the VPN server; beyond that point, normal internet rules still apply

What a VPN Does and Does Not Do

- It can protect traffic on risky networks and help reach restricted school resources
- It can change which network location your traffic appears to come from
- It does not fix every slow network problem
- It does not replace strong passwords, updates, or safe browsing habits

When Students Commonly Use a VPN

- To reach library databases or campus resources from off campus
- To protect traffic on public Wi-Fi
- To comply with school or work access policies
- Not every site needs a VPN, and some services behave worse through one

A Quick Networking Troubleshooting Ladder

- Check whether Wi-Fi is on and whether you are on the correct network
- Test whether only one site fails or everything fails
- Check whether another device on the same network works
- Restart Wi-Fi, reconnect, reboot, or disable VPN based on the symptom

Accounts, Passwords, and Password Managers

- Your device account controls access to your files and settings
- Use a password manager instead of reusing weak passwords
- Multi-factor authentication protects important accounts
- Account problems can look like file or sync problems

Permissions and Admin Access

- Some actions require administrator approval
- This is a safety boundary, not just an annoyance
- If you are on a managed school device, some settings may be intentionally restricted
- Do not fight the boundary blindly; understand why it exists

Updates, Malware, and Safe Downloads

- Security tools help, but your choices matter more than a checkbox
- Be skeptical of fake update prompts and random installers
- Keep the OS, browser, and core apps updated
- Unexpected slowness can sometimes be bad software, not just low resources

A Basic Troubleshooting Ladder

- 1. Define the symptom clearly
- 2. Check the obvious basics: power, storage, network, account, permissions
- 3. Use built-in tools: search, settings, Task Manager, Activity Monitor
- 4. Restart, update, reconnect, or ask for help with evidence

When to Ask for Help

- Ask early when you risk losing important work
- Bring specifics: screenshots, error text, time of problem, and what you already tried
- Say whether it is one app, all apps, one network, or all networks
- Good reports get faster and better help

Scenario 1: Find, Organize, and Submit

- You downloaded a syllabus, edited an essay, and now cannot find the final version
- Best response: search by name and date, inspect file location, move it into the course folder, and export the correct copy to PDF
- Lesson: file naming and folder discipline prevent panic
- Question: where should the file live after submission?

Scenario 2: Your Laptop Is Slow During a Video Call

- Symptoms: fan noise, lag, frozen chat, browser tabs reloading
- Best response: check Task Manager or Activity Monitor, quit unused apps, reduce browser load, and confirm network quality
- Lesson: distinguish RAM pressure, CPU load, and Wi-Fi issues
- Question: what evidence would tell you it is mostly network?

Scenario 3: Campus Wi-Fi Works, but a Library Site Will Not Load

- Test whether other sites work and whether the library requires the campus VPN
- Try reconnecting, checking DNS-like symptoms, and signing in if the site needs authentication
- Lesson: not every 'internet issue' is the same kind of issue
- Question: when should you disable the VPN instead of enabling it?

Final Review and Core Habits

- Know where your files live and name them clearly
- Understand the difference between storage, RAM, apps, and processes
- Use Task Manager or Activity Monitor before guessing
- Separate local, account, and network problems; use VPNs intentionally