Chapter 2.2: The Windows Operating System

Computer Fundamentals and Introduction to Programming

Desktop | Windows | File management | Settings | Maintenance and security

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https://sercankulcu.github.io/files/computer/slides/Chapter_02_02_The_Windows_Operating_System.html

INTRODUCTION

Learning Outcomes

Interface

Use Start, the taskbar, windows and virtual desktops.

File management

Apply the ideas of files, folders, drives, paths and extensions.

Settings

Manage account, app and accessibility options.

Maintenance

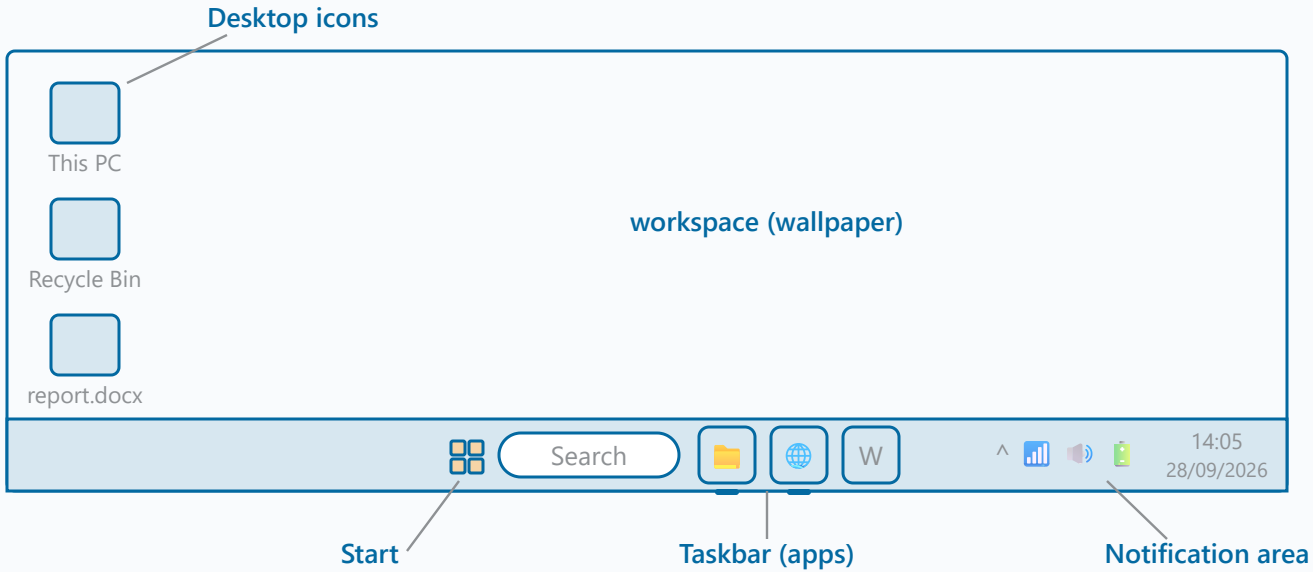
Use storage, update, backup and security tools.

The slides follow Windows 11; Windows 10 reached end of support on 14 October 2025. Menu names may differ slightly between versions.

DESKTOP

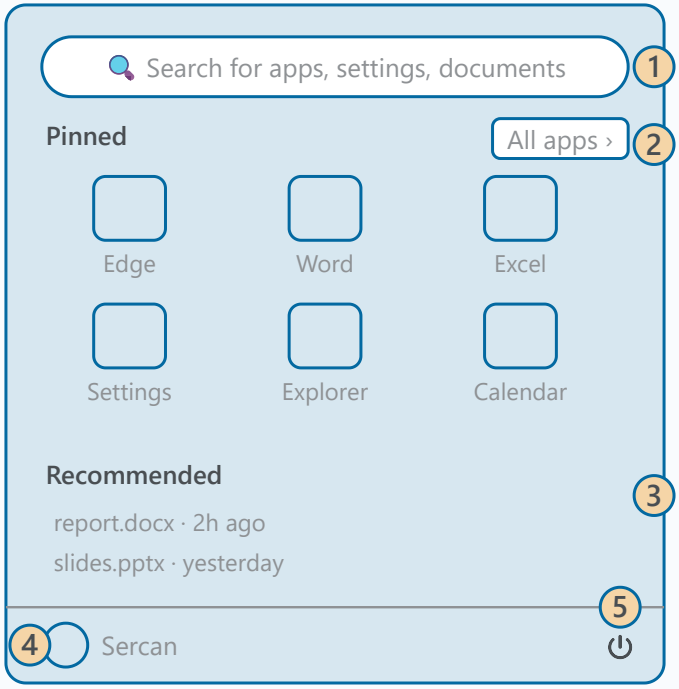
The Windows Desktop

The desktop is the main workspace, giving access to apps, files and system functions.



Where things appear depends on the Windows version and your personalization settings.

Start Menu and Search

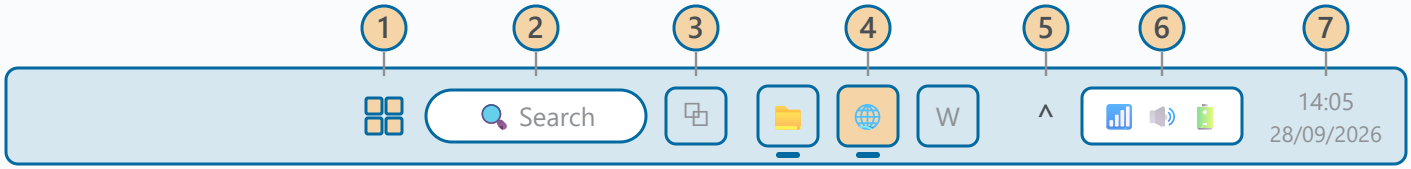


1. **Search:** finds apps, files, settings and help content (just start typing).
2. **Pinned:** frequently used apps; **All apps** opens the full installed list.
3. **Recommended:** recently opened files.
4. **User menu:** account options, lock, sign out.
5. **Power:** sleep, shut down, restart.

Right-clicking the Start button opens a context menu with extra system commands.

DESKTOP

The Taskbar



underline = open · highlighted = active · no line = pinned only

1 Start

Apps, search, power.

2 Search

Find files, apps and settings.

3 Task view

Open windows, virtual desktops.

4 Apps

Pin apps and switch between open windows.

5 System tray

Background apps.

6 Quick settings

Network, volume, battery.

7 Clock / notifications

Calendar and notification center.

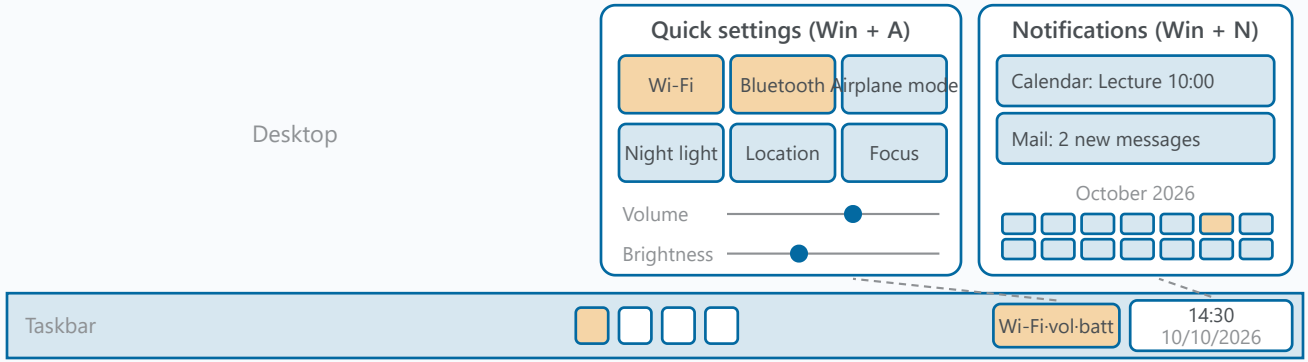
Quick Settings and Notifications

Quick settings

Quick access to common settings such as Wi-Fi, Bluetooth, volume, brightness and accessibility.

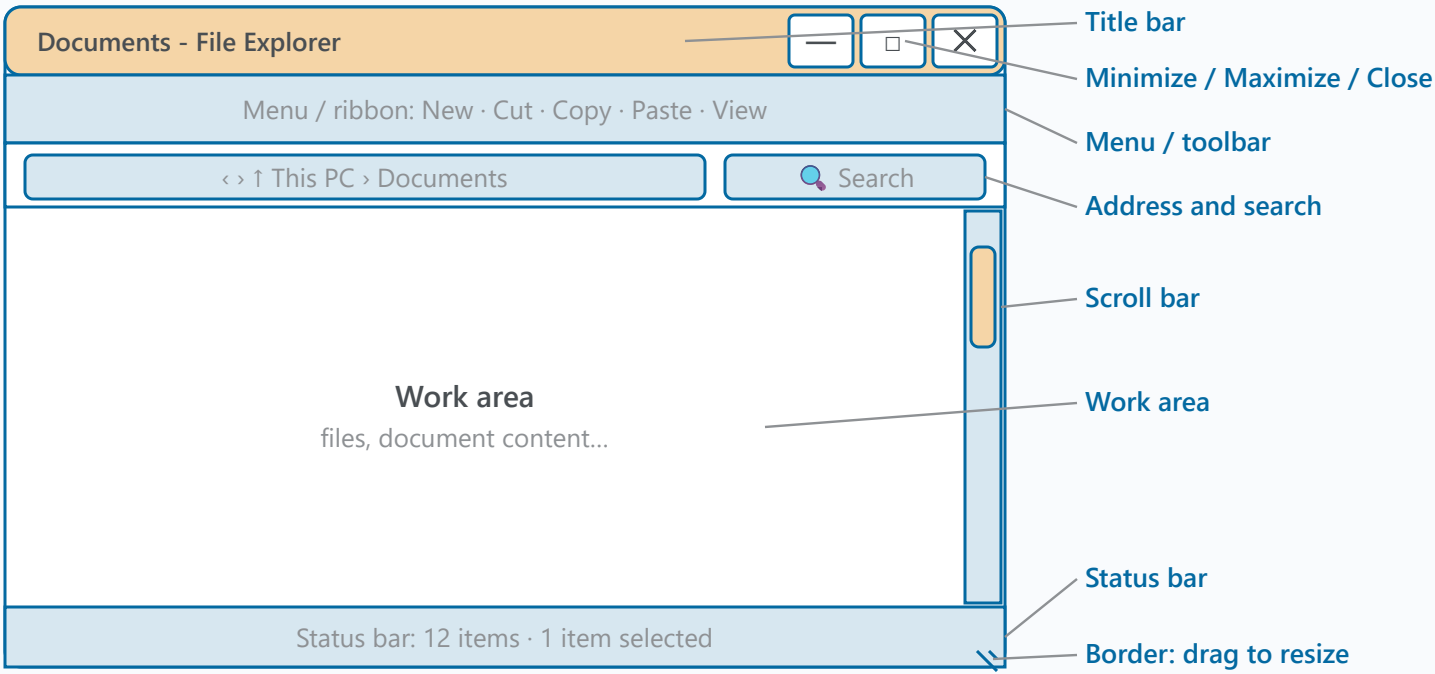
Notification center

Gathers app notifications and the calendar view.



- Distracting notifications can be turned off per app.
- Do not disturb limits notifications at set times.
- Read critical system warnings before dismissing them.

Parts of a Window



Window Management

Minimize

Sends the window to the taskbar.

Maximize / restore

Fills the screen with the window, or returns it to its previous size.

Close

Closes the window and, if needed, the app.

Snap

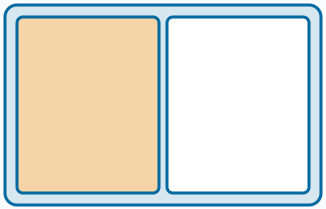
Arranges the window along the edges or corners of the screen.

Alt + Tab

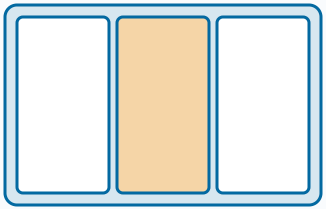
Switches between open apps.

Win + arrow key

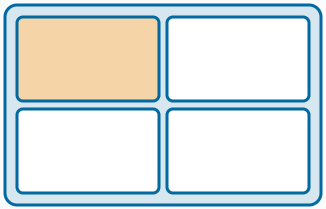
Positions the active window on the screen.



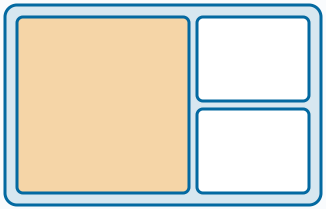
Win + ←: left half



Three columns (Win + Z)

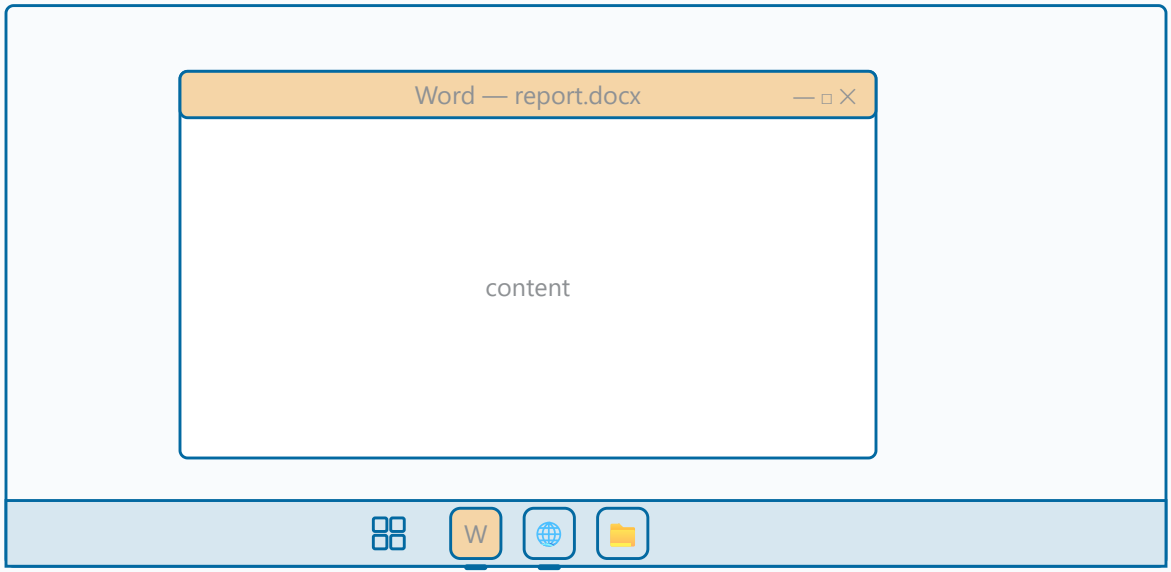


Four quarters



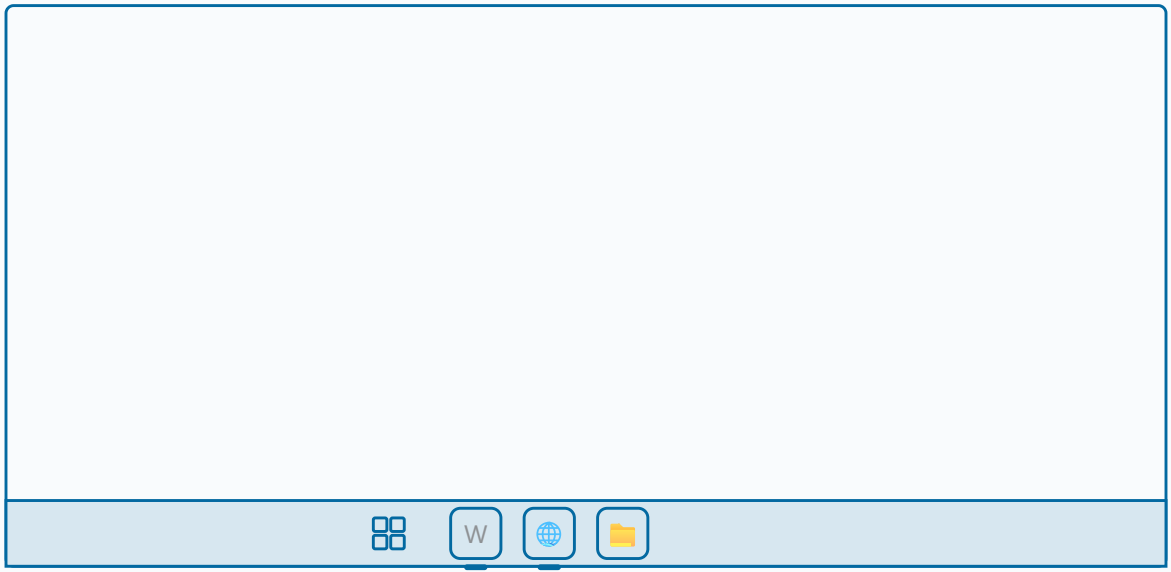
Large + two small

Window States Step by Step



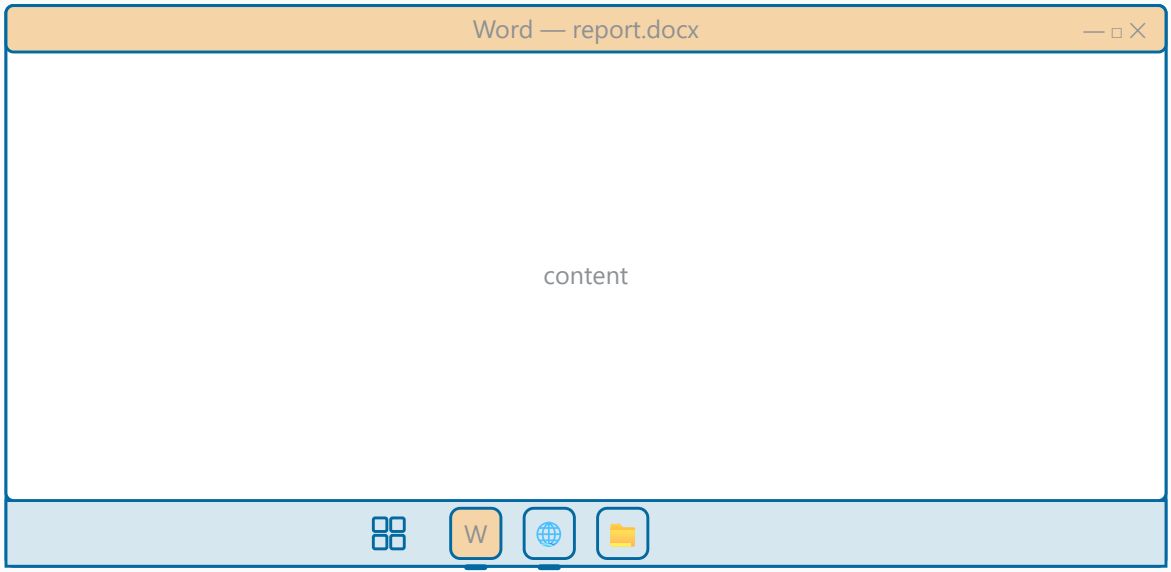
The window is at **normal** size: you can drag it and resize it from its edges.

Window States Step by Step



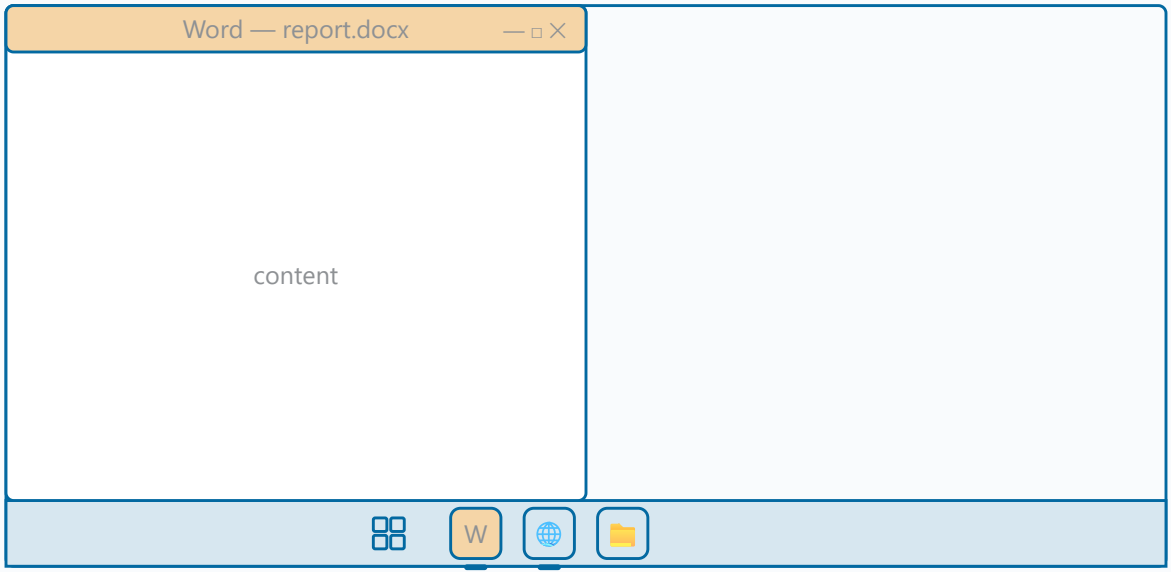
Minimize (—): the window doesn't close, it just drops to the taskbar. The line under the Word icon shows it is still open.

Window States Step by Step



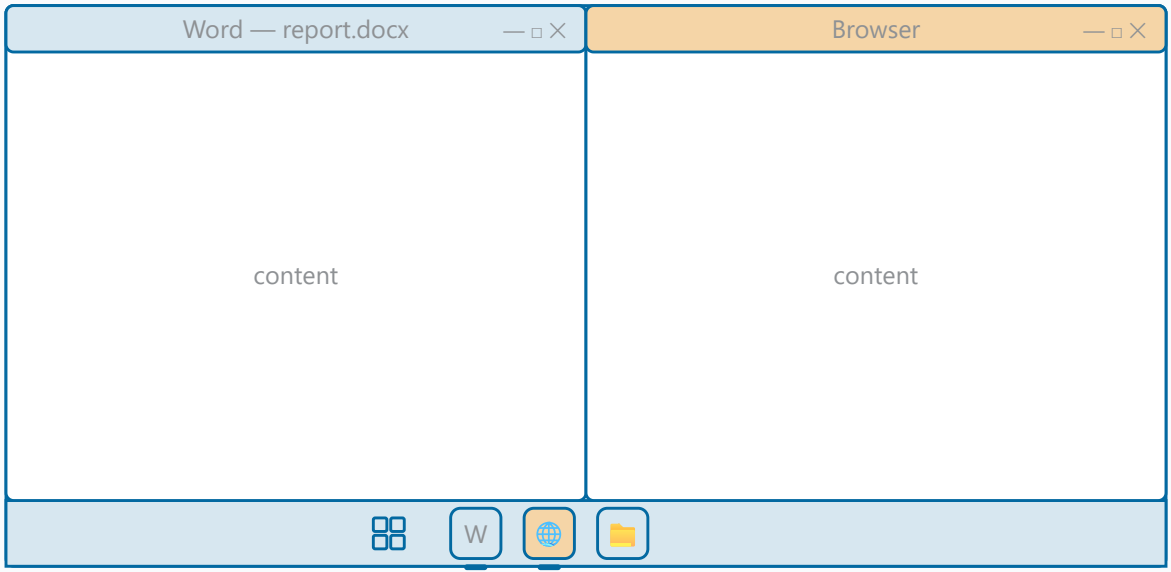
Clicking the icon and choosing **Maximize (□)** makes the window fill the screen. The same button now becomes **Restore**.

Window States Step by Step



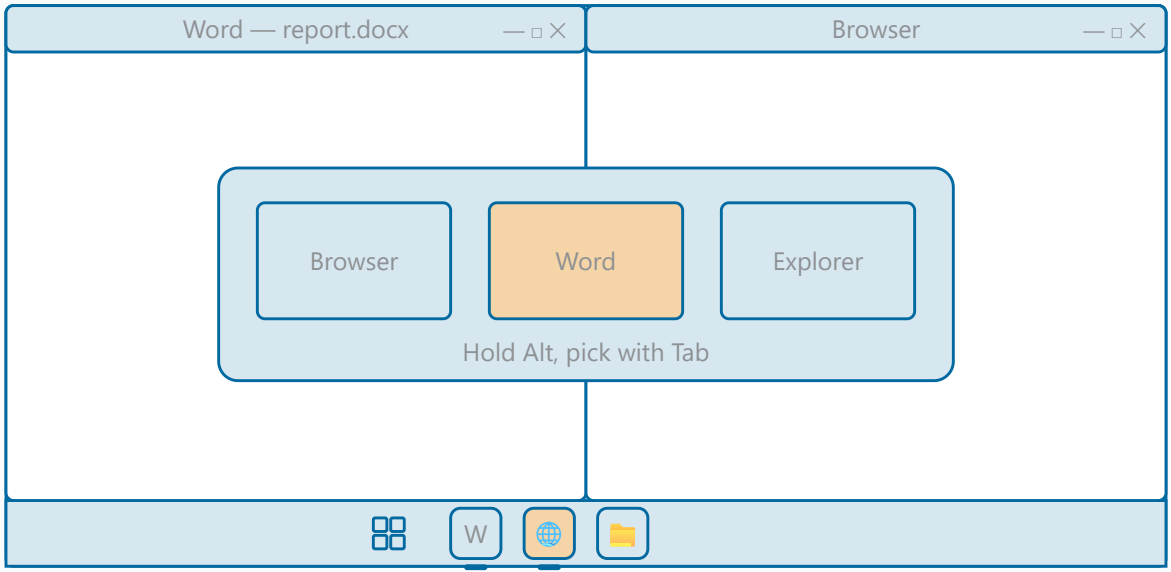
Win + ←: the window **snaps** to the left half of the screen.

Window States Step by Step



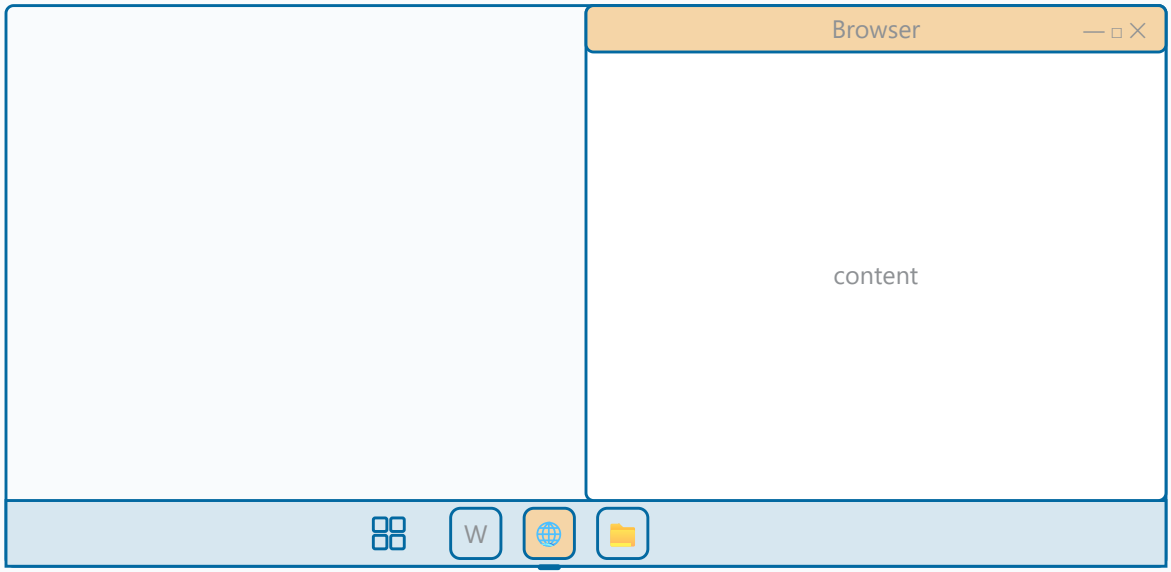
Win + → snaps the browser to the right: two windows side by side, handy for reading a source while writing a report.

Window States Step by Step



Alt + Tab shows thumbnails of open windows; pick Word with Tab, let go, and Word comes to the front.

Window States Step by Step



Close (✕) closes only this window; if the document is unsaved, Word asks to save it first.

WINDOW MANAGEMENT

Virtual Desktops

Virtual desktops help group open apps into separate workspaces.

Task view

Shows open windows and desktops.

`Win + Tab`

New desktop

Creates a new workspace.

`Win + Ctrl + D`

Switch

Moves between desktops.

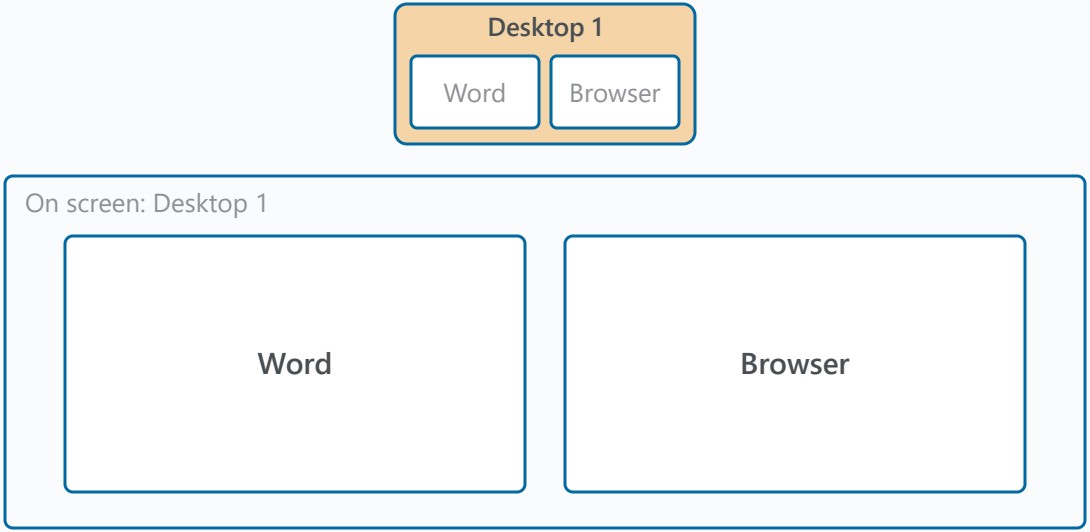
`Win + Ctrl + ← / →`

Close

Closes the active desktop; its windows move to another desktop.

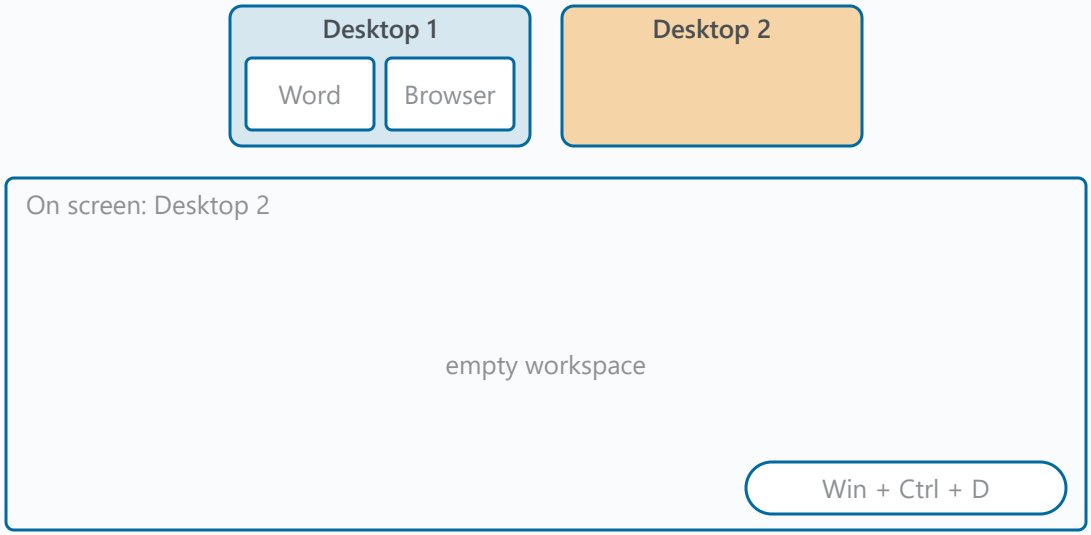
`Win + Ctrl + F4`

Virtual Desktops Step by Step



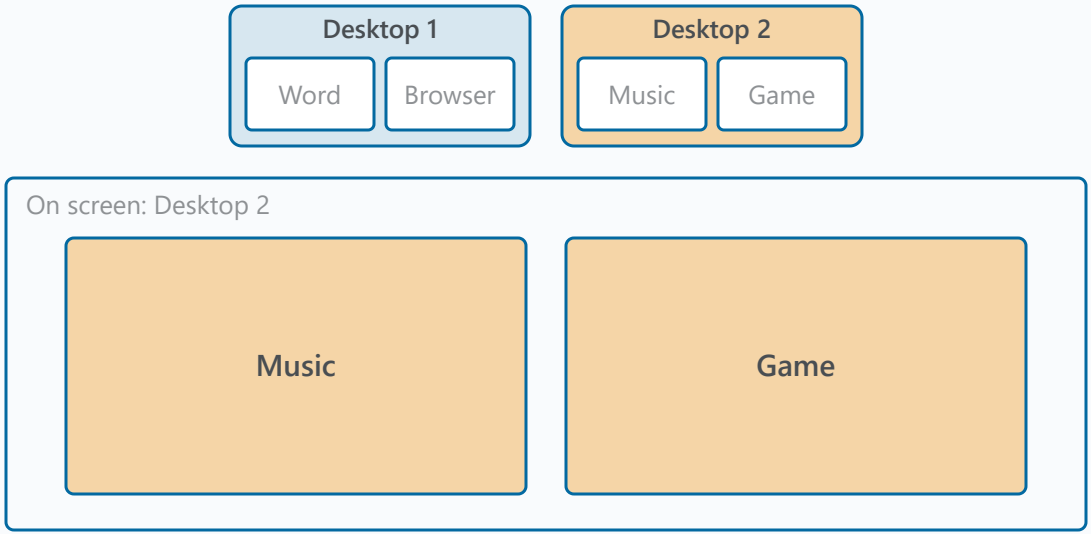
Desktop 1 has the study windows open: Word and a browser.

Virtual Desktops Step by Step



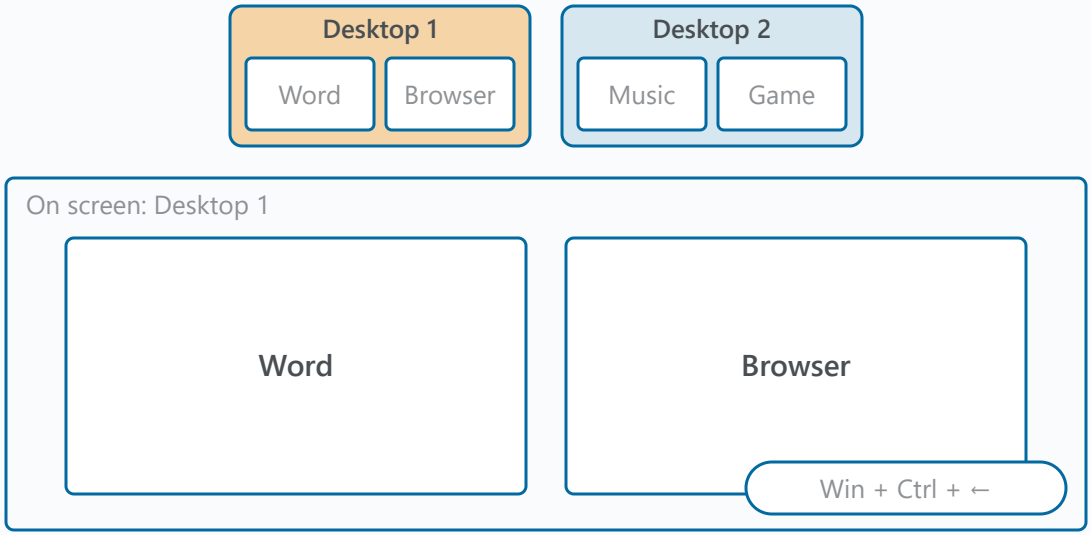
Win + Ctrl + D creates a new, empty **Desktop 2** and switches to it. The windows on Desktop 1 are still open.

Virtual Desktops Step by Step



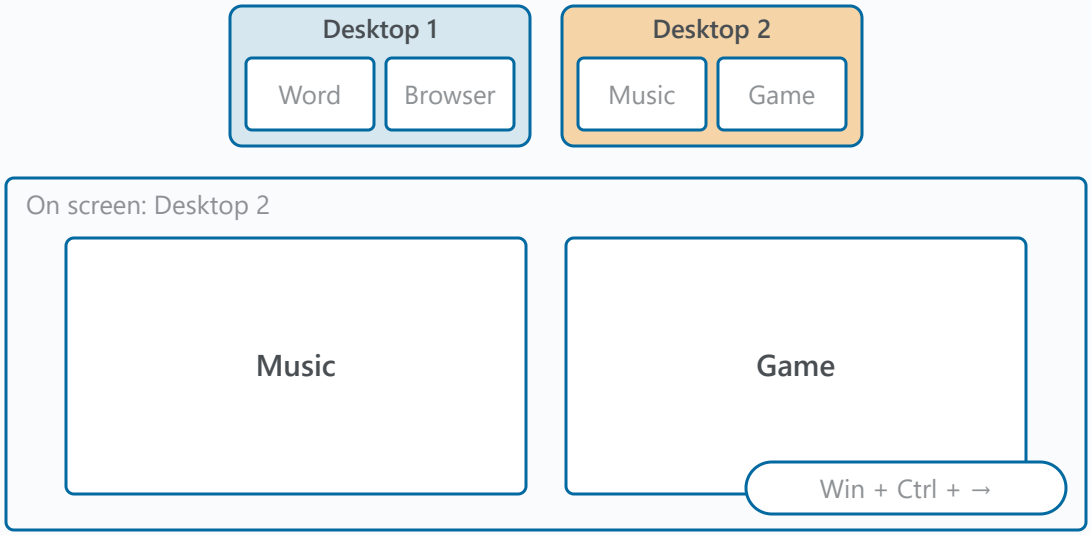
Music and a **Game** are opened on Desktop 2; they appear only on this desktop.

Virtual Desktops Step by Step



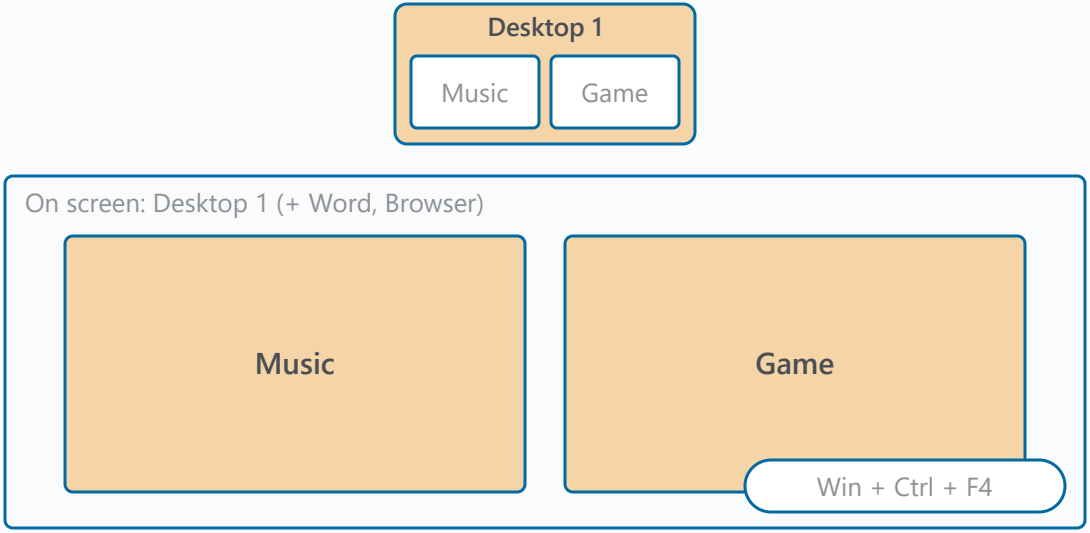
Win + Ctrl + ← goes back to Desktop 1. The apps on the other desktop keep running in the background.

Virtual Desktops Step by Step



Win + Ctrl + → returns to Desktop 2. **Win + Tab** (Task view) shows all desktops, as at the top.

Virtual Desktops Step by Step



Win + Ctrl + F4 closes Desktop 2; its windows don't close, they **move to Desktop 1**.

WINDOW MANAGEMENT

Basic Keyboard Shortcuts

Copy	Ctrl+C	Paste	Ctrl+V
Cut	Ctrl+X	Undo	Ctrl+Z
File Explorer	Win+E	Settings	Win+I
Run	Win+R	Lock screen	Win+L
Screenshot of an area	Win+Shift+S	Task Manager	Ctrl+Shift+Esc
Clipboard history	Win+V	Show desktop	Win+D

WINDOW MANAGEMENT

More Handy Shortcuts

Quick Link menu	`Win+X`	Quick settings	`Win+A`
Notifications and calendar	`Win+N`	Snap layouts	`Win+Z`
Emoji and symbol panel	`Win+.`	Permanent delete (skips Recycle Bin)	`Shift+Delete`
New tab in Explorer	`Ctrl+T`	Compress to ZIP	`Right-click → Compress to → ZIP File`

Shift+Delete deletes a file without sending it to the Recycle Bin, so it can't be restored from there (dedicated recovery software can sometimes get it back). File Explorer tabs exist in current Windows 11 builds.

Ways to Take a Screenshot

Shortcut	What is captured?	Where does the image go?
`Win+Shift+S`	A selected area: rectangle, freeform, window or full screen	To the clipboard; open it from the notification to edit and save
`Win+PrtSc`	Full screen	As a file in the **Pictures\Screenshots** folder (PNG)
`Alt+PrtSc`	Active window only	To the clipboard; paste into a document with Ctrl+V
`PrtSc`	Opens the Snipping Tool in current Windows 11	If that option is off, the full screen goes to the clipboard

Clipboard images

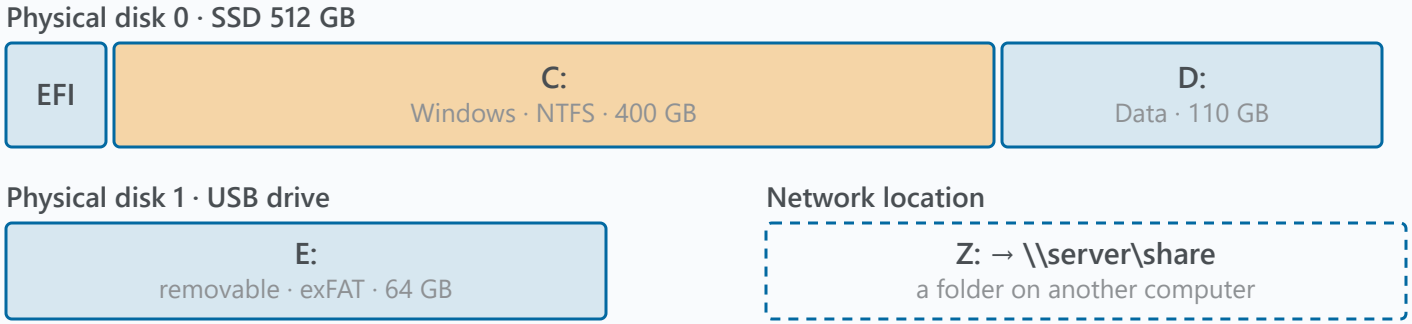
They are not files; the next copy overwrites them. To keep one, paste and save it, or use the Win+V clipboard history.

Before sharing

Make sure no personal details remain, such as email addresses, password hints, notifications or open tabs; crop if needed.

FILE MANAGEMENT

Drives, Volumes and Letters



Disk = device · Partition (volume) = logical area on the disk · Letter = the name Windows gives the volume

- One physical disk can be split into several **partitions**; each can get its own letter (C:, D:).
- Windows is usually installed on **C:**; some small system partitions have no letter.
- USB drives and network shares also get letters and show up in File Explorer.

FILE MANAGEMENT

Files and Folders

File

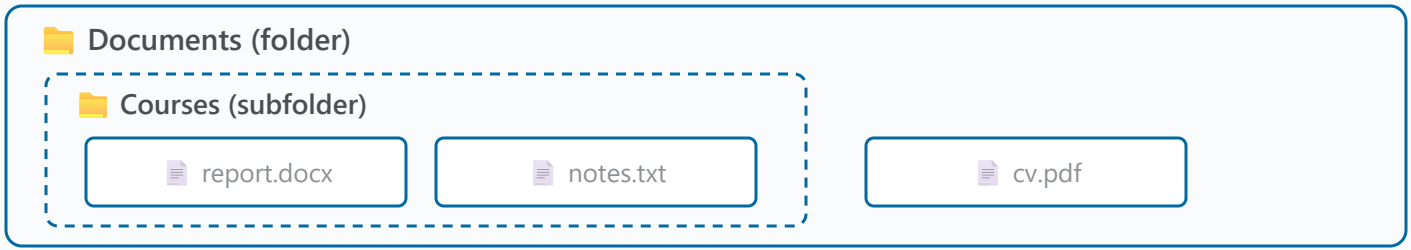
A unit of data with a name, contents and properties.

`report.docx`

Folder

A logical container that organizes files and subfolders.

`Documents\Courses`



A folder is not file content itself; it gives files a location and an order.

FILE MANAGEMENT

File Names and Extensions

project_report.pdf

File name

The name the user gives to describe the contents.

Extension

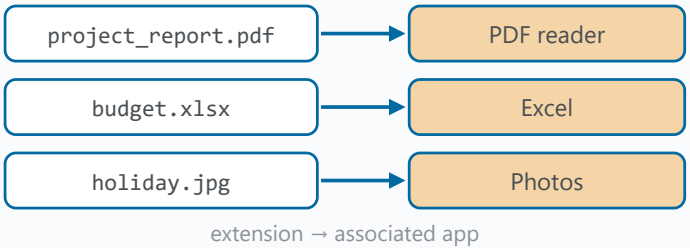
Hints at the file format and determines which app opens it.

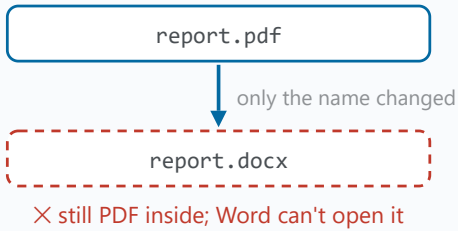
Visibility

Extensions can be shown from File Explorer's view settings.

Caution

Changing the extension doesn't convert the file's actual format.





FILE MANAGEMENT

File Naming Rules

Forbidden characters

`\ / : * ? " < > |` can't be used in file names; most of them have special meaning in paths and searches.

Reserved names

Device names such as `CON`, `PRN`, `AUX`, `NUL`, `COM1` and `LPT1` can't be file names, even with an extension.

Upper/lower case

Windows treats `Report.docx` and `report.docx` as the same name; they can't share one folder.

Path length

The classic limit is 260 characters for the full path; in very deep folders, copying and opening can fail.

Weak name	Better name	Why?
final FINAL new (2).docx	2026-10-17_report_v2.docx	Date first: sorting by name becomes sorting by date
homework 1 Ayşe .pdf	hw1_name-surname.pdf	Spaces and non-English letters can cause trouble in email and web systems

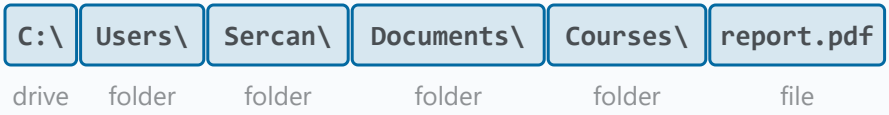
Common File Types

Category	Extensions	Typical use
Document	.docx, .pdf, .txt	Text and reports
Spreadsheet	.xlsx, .csv	Calculations and data
Presentation	.pptx	Slide show
Image	.jpg, .png, .gif	Photos and graphics
Audio / video	.mp3, .wav, .mp4	Media
Archive	.zip, .7z	Compressed files
Executable	.exe, .msi	Program or installer

FILE MANAGEMENT

File Paths

```
C:\Users\Sercan\Documents\Courses\report.pdf
```



"\" (backslash) separates folder names.

Absolute path

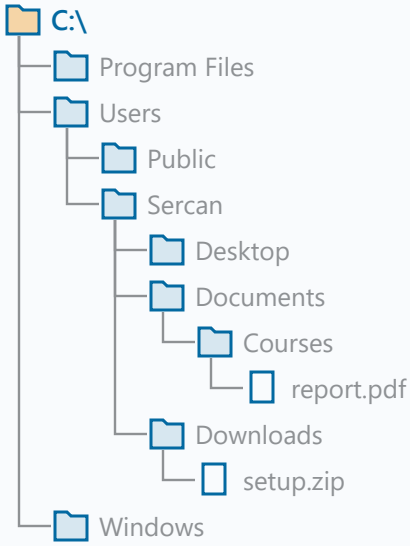
Starts at the drive root; points to the same file from anywhere.

Relative path

Written relative to the current folder; `..` is the parent folder.

On a localized Windows the Documents folder may show a translated name, but its real path is still `C:\Users\Sercan\Documents`.

An Absolute Path Step by Step: C:\…\report.pdf



C:\ | Users\ | Sercan\ | Documents\ | Courses\ | report.pdf

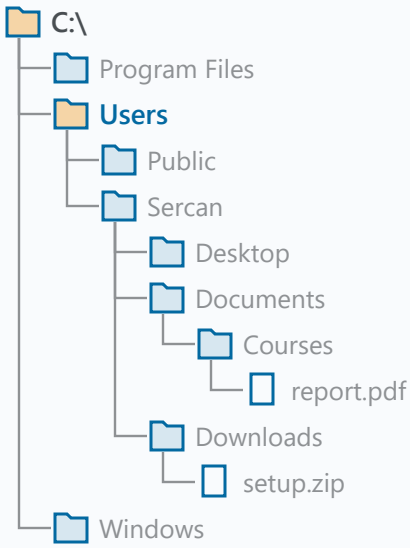
Part read: C:

We are here:

C:\

A path is read left to right. **C:** is the root folder of the drive; the search starts here.

An Absolute Path Step by Step: C:\...\report.pdf



C:\ | Users\ | Sercan\ | Documents\ | Courses\ | report.pdf

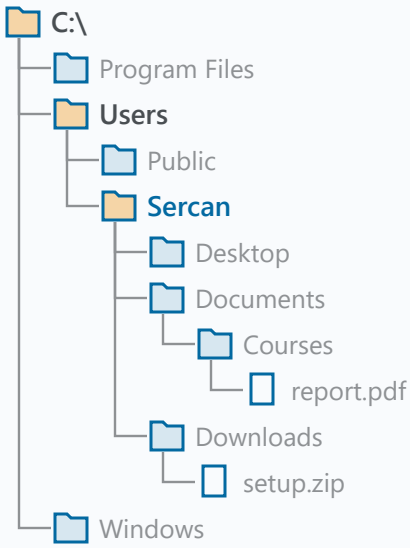
Part read: **Users**

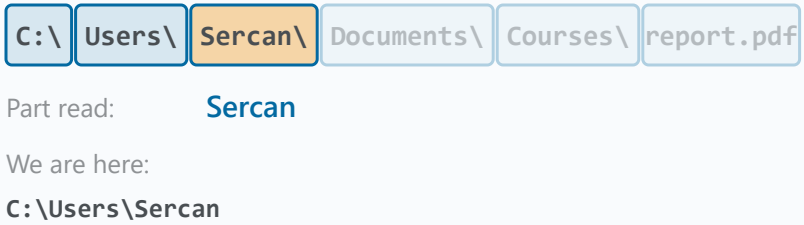
We are here:

`C:\Users`

The root contains the **Users** folder (Program Files and Windows are skipped).

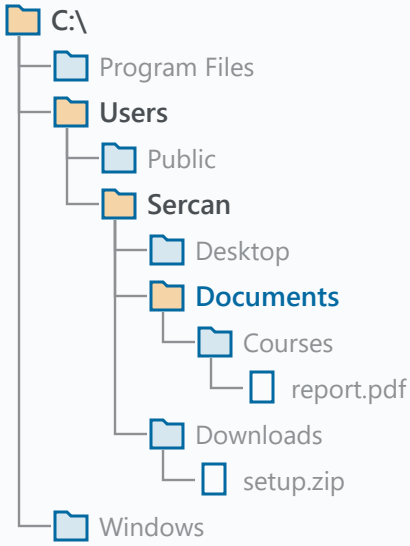
An Absolute Path Step by Step: C:\...\report.pdf

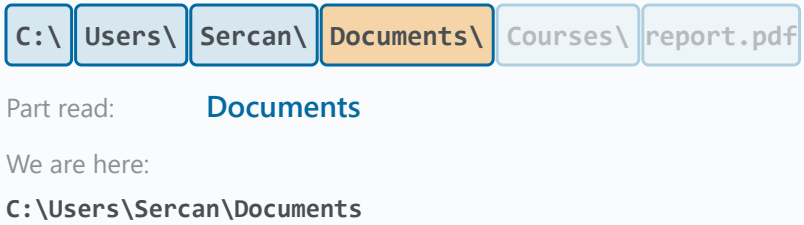




Inside Users we go down into the user's own **Sercan** folder.

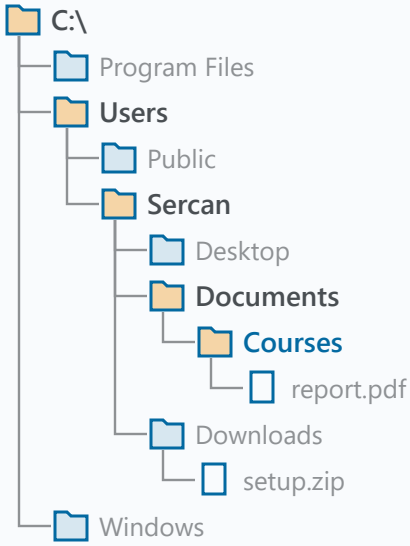
An Absolute Path Step by Step: C:\...\report.pdf





Documents: the user's documents folder.

An Absolute Path Step by Step: C:\…\report.pdf



`C:\` `Users\` `Sercan\` `Documents\` `Courses\` `report.pdf`

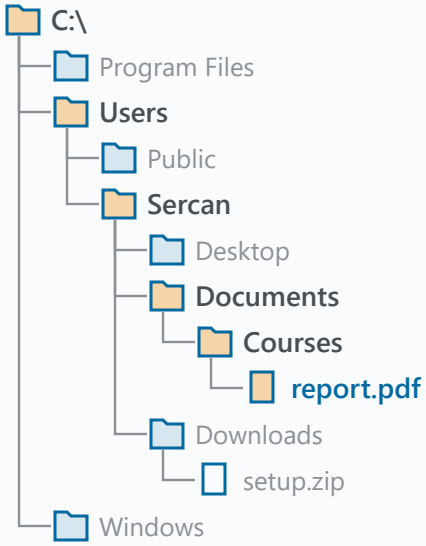
Part read: **Courses**

We are here:

`C:\Users\Sercan\Documents\Courses`

Down into the **Courses** subfolder.

An Absolute Path Step by Step: C:\…\report.pdf



`C:\` `Users\` `Sercan\` `Documents\` `Courses\` `report.pdf`

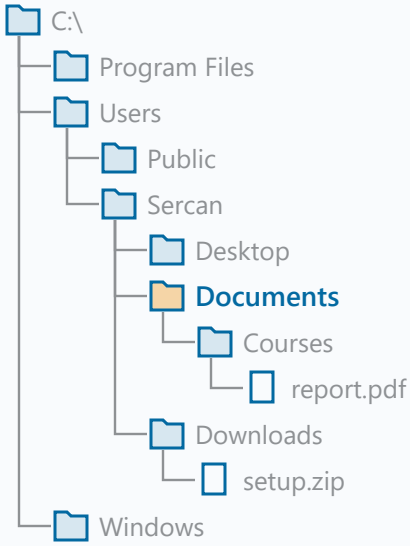
Part read: **report.pdf**

We are here:

`C:\Users\Sercan\Documents\Courses\report.pdf`

The last part is a **file**: **report.pdf** is found. Each "\" means one level down.

A Relative Path Step by Step: ..\Downloads\setup.zip



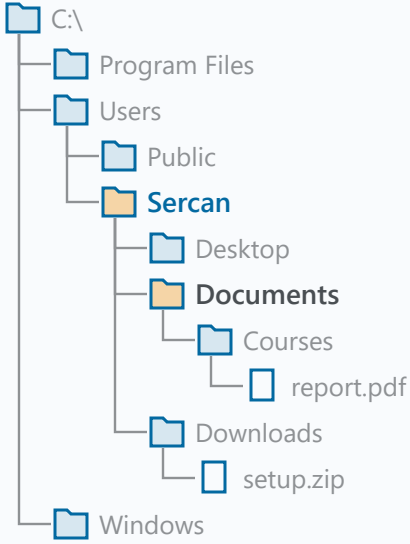
`..\` `Downloads\` `setup.zip`

Current folder:

`C:\Users\Sercan\Documents`

The current folder is **Documents**. The relative path `..\Downloads\setup.zip` is read starting from here.

A Relative Path Step by Step: ..\Downloads\setup.zip



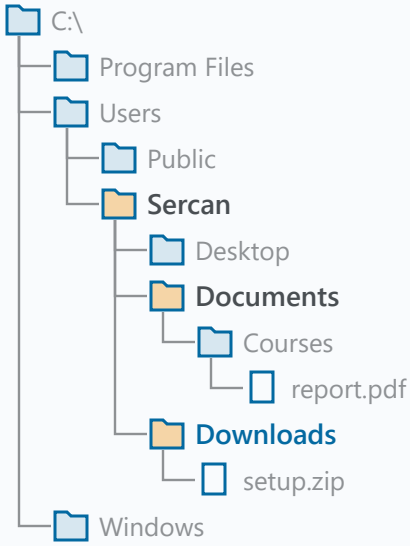
`..\` `Downloads\` `setup.zip`

Current folder:

`C:\Users\Sercan`

.. = the **parent** folder: from Documents up to **Sercan**.

A Relative Path Step by Step: ..\Downloads\setup.zip



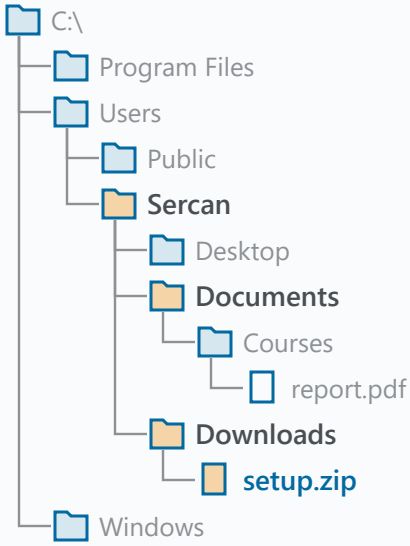
`..\` `Downloads\` `setup.zip`

Current folder:

`C:\Users\Sercan\Downloads`

Down into the **Downloads** folder.

A Relative Path Step by Step: ..\Downloads\setup.zip



`..\` `Downloads\` `setup.zip`

Current folder:

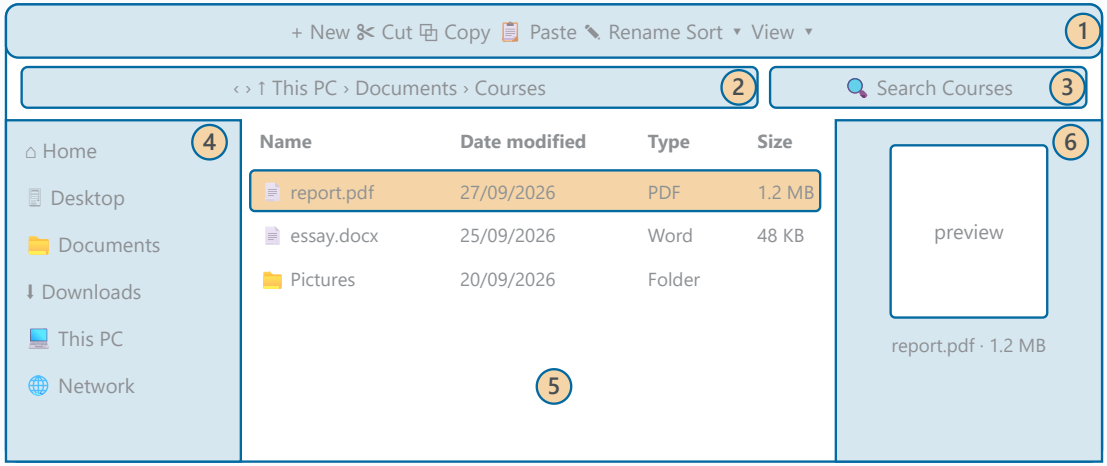
`C:\Users\Sercan\Downloads\setup.zip`

setup.zip is found. The absolute equivalent: `C:\Users\Sercan\Downloads\setup.zip`.

Common mistake: forget the leading `..\` and Downloads is looked for inside Documents, so the file isn't found.

FILE MANAGEMENT

File Explorer



1 Command bar

New folder, cut, copy, paste, view.

2 Address bar

Current path; click it to type a path.

3 Search

Searches the current folder and its subfolders.

4 Navigation pane

Home, This PC, Network…

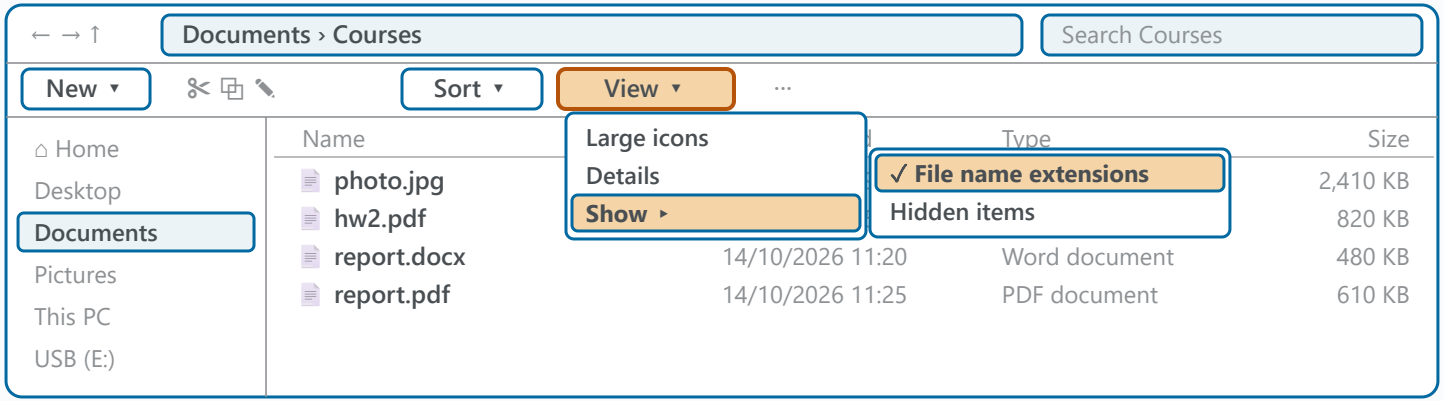
5 File list

Details view: sort, group.

6 Preview / details

Contents or properties of the selected file.

File Explorer: Extensions, Folders and Search



File name extensions is checked: of the two “report” files, one is a Word document and the other a PDF. With extensions hidden, only the icon and the **Type** column tell them apart.

Step 1 / 5

```
▶ View → Show → File name extensions
2 View → Show → Hidden items
3 New → Folder → “Homework” → Enter
4 drag report.docx onto Homework
5 type *.pdf in the search box
```

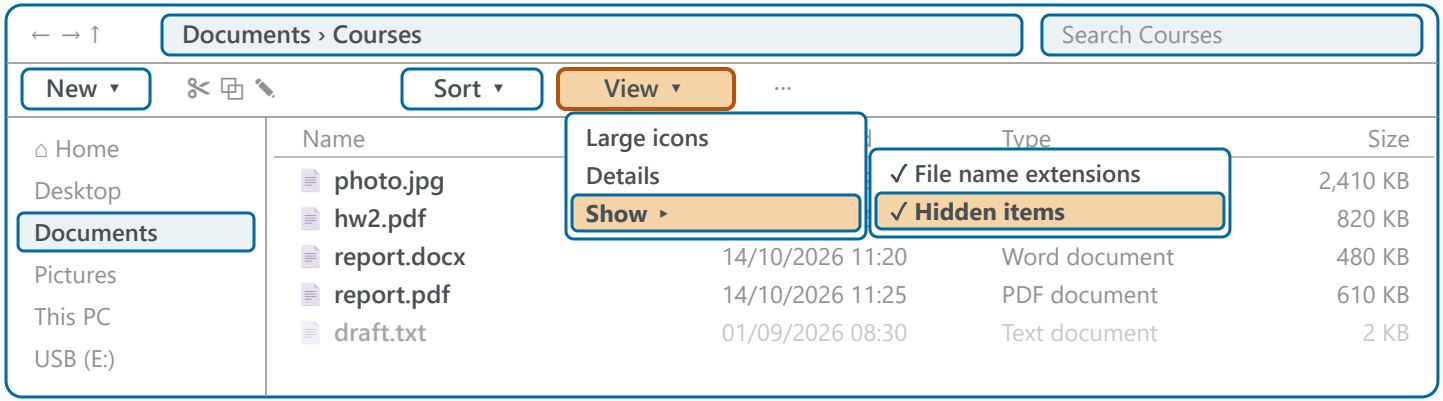
VARIABLES

`extensions = shown`

`hidden items = not shown`

`items = 4`

File Explorer: Extensions, Folders and Search



Hidden items is on: draft.txt, which has the **hidden** attribute, appears with a faded icon. Hidden doesn't protect a file; it only keeps it out of the list.

Step 2 / 5

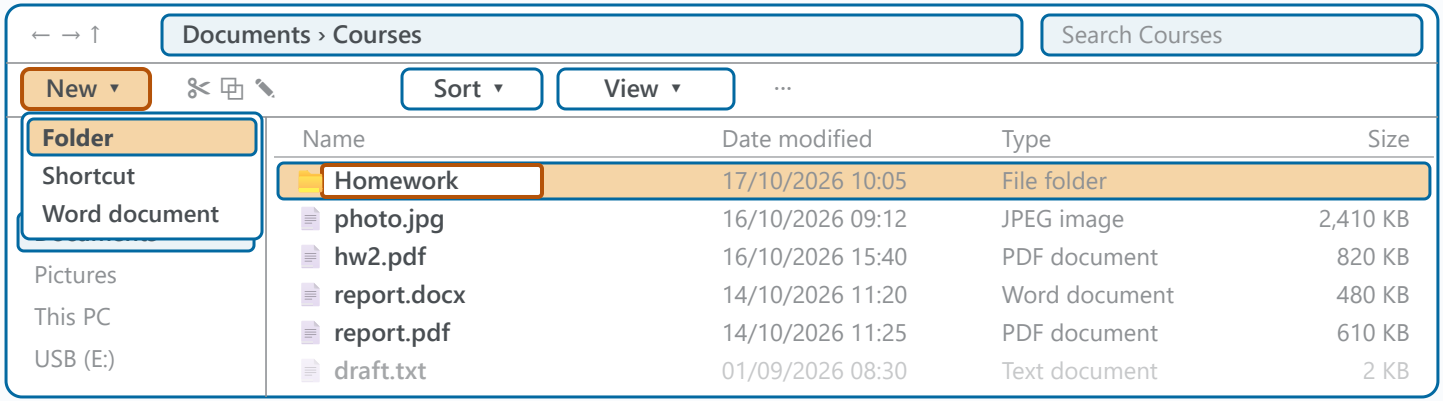
```
1 View → Show → File name extensions
▶ View → Show → Hidden items
3 New → Folder → “Homework” → Enter
4 drag report.docx onto Homework
5 type *.pdf in the search box
```

VARIABLES

`extensions = shown`

`hidden items = shown` `items = 5`

File Explorer: Extensions, Folders and Search



New → Folder: the name “New folder” comes up selected; just type **Homework** and press Enter. Sorted by name, folders are listed before files.

Step 3 / 5

```
1 View → Show → File name extensions
2 View → Show → Hidden items
▶ New → Folder → “Homework” → Enter
4 drag report.docx onto Homework
5 type *.pdf in the search box
```

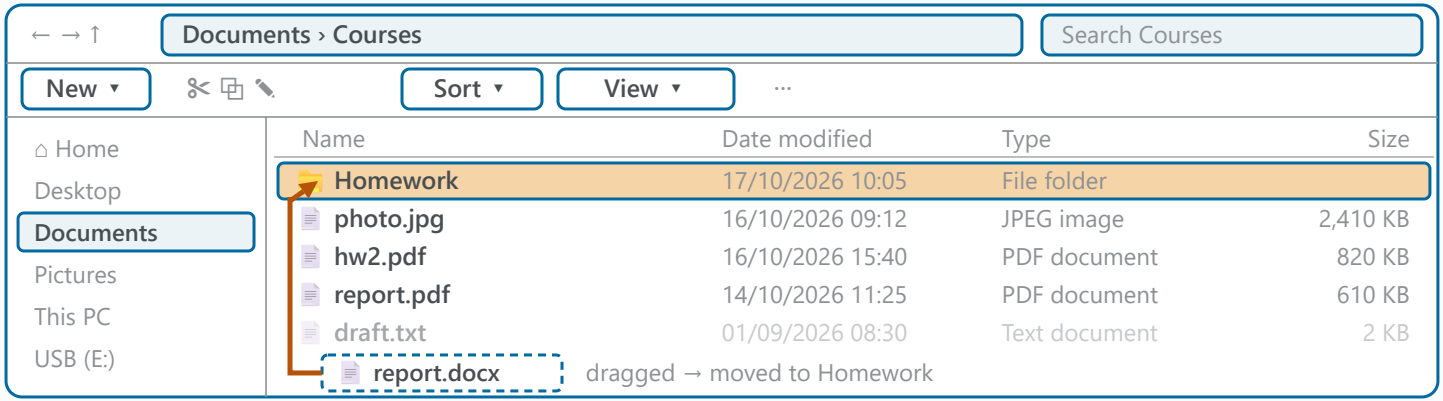
VARIABLES

`extensions = shown`

`hidden items = shown` `items = 6`

`Homework = empty`

File Explorer: Extensions, Folders and Search



report.docx is dragged and dropped onto the Homework folder. Drag and drop within the same drive is a **move**: the file leaves Courses and goes into Homework.

Step 4 / 5

```
1 View → Show → File name extensions
2 View → Show → Hidden items
3 New → Folder → "Homework" → Enter
▶ drag report.docx onto Homework
5 type *.pdf in the search box
```

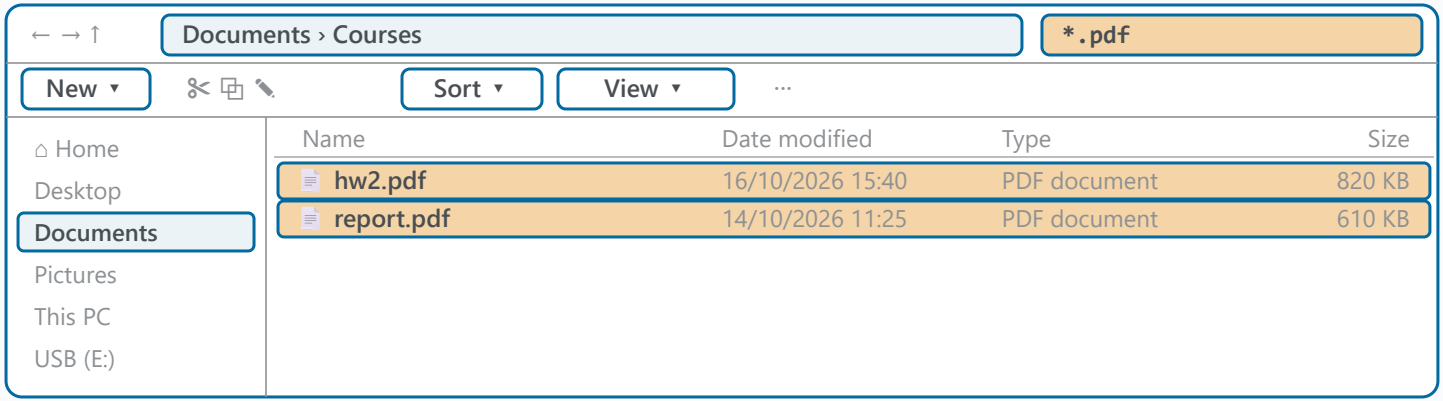
VARIABLES

`extensions = shown`

`hidden items = shown` `items = 5`

`Homework = report.docx`

File Explorer: Extensions, Folders and Search



.pdf** is typed in the search box: ** is a wildcard meaning “any name”. Only PDF files in Courses and its subfolders are listed; clear the search and the full list returns.

Step 5 / 5

```
1 View → Show → File name extensions
2 View → Show → Hidden items
3 New → Folder → “Homework” → Enter
4 drag report.docx onto Homework
▶ type *.pdf in the search box
```

VARIABLES

`extensions = shown`

`hidden items = shown`

`search = *.pdf`

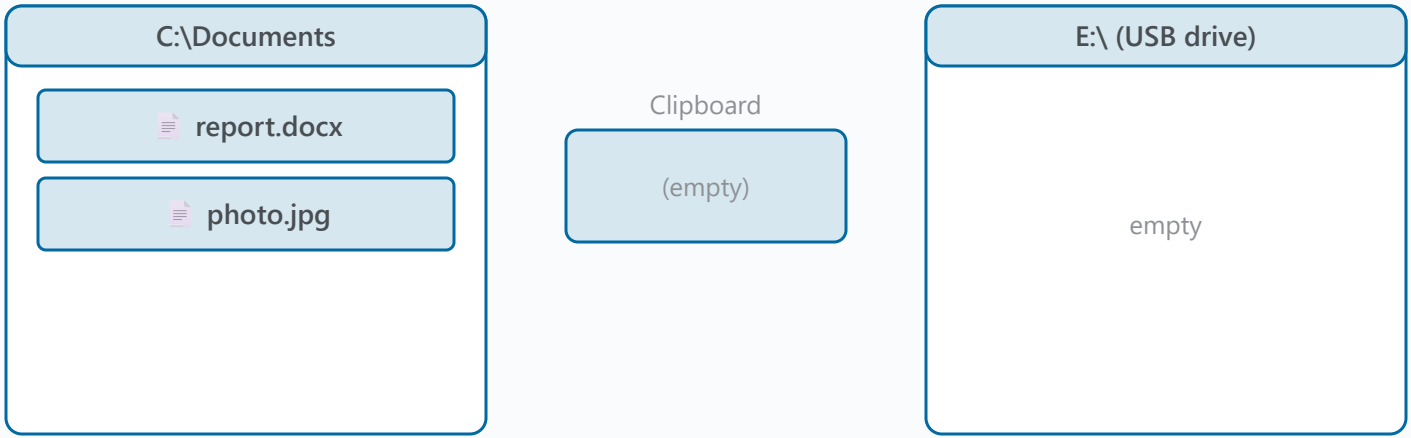
`results = 2`

Copying and Moving

Operation	What happens at the source?	What happens at the destination?
Copy + Paste	The original stays	A new copy appears
Cut + Paste	The item is removed from the source	The item moves to the destination
Drag	Moves within the same drive, copies to a different drive	Check the icon and tooltip to see which

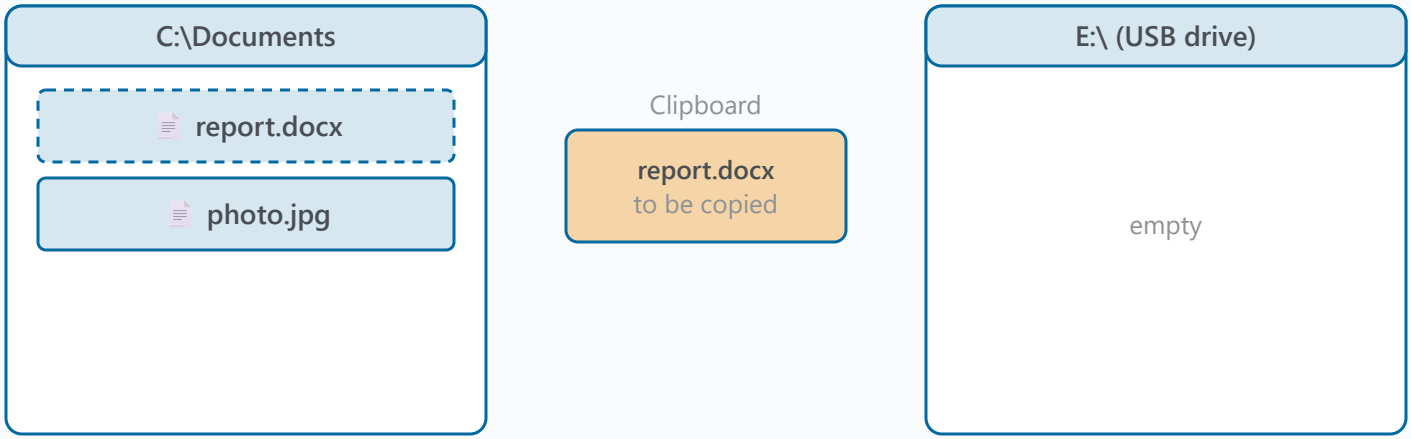
For important files, keep a backup and double-check the destination before moving.

Copy and Move Step by Step



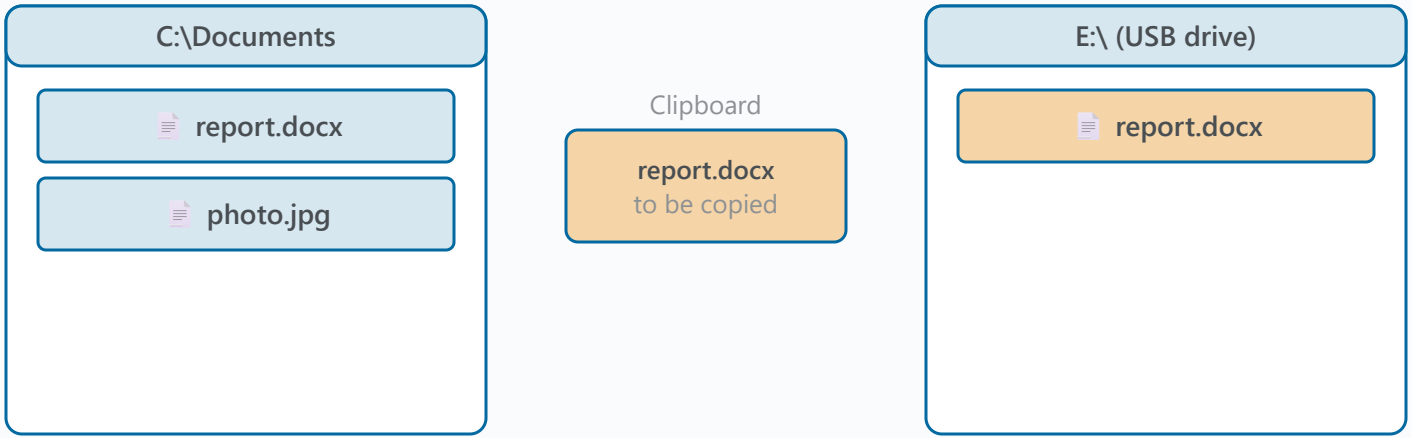
Start: two files in C:\Documents, an empty USB drive.

Copy and Move Step by Step



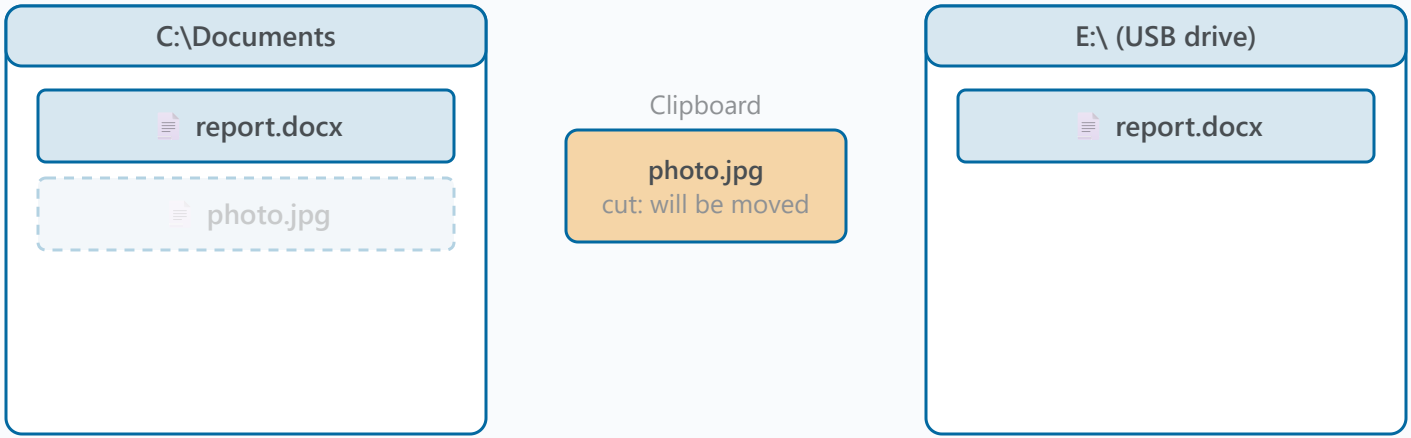
Select **report.docx** and press **Ctrl + C**: the clipboard remembers the file. Nothing changes at the source.

Copy and Move Step by Step



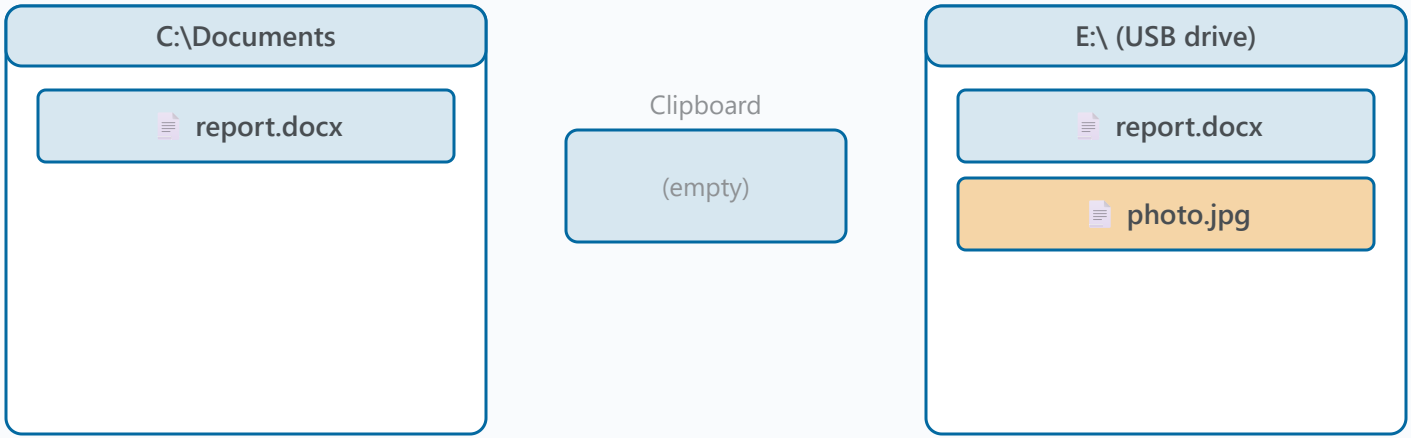
Open E:\ and press **Ctrl + V**: a new **copy** appears. There are now two separate files; changing one doesn't affect the other.

Copy and Move Step by Step



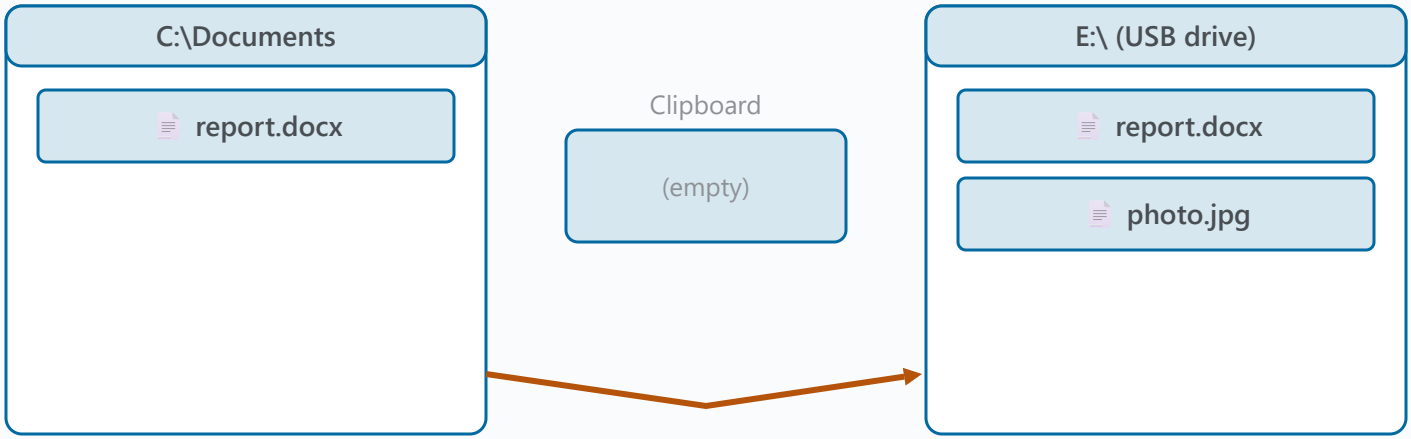
Select **photo.jpg** and press **Ctrl + X**: the icon fades. The file hasn't **left** yet; it is only marked for moving.

Copy and Move Step by Step



Ctrl + V in E:\: photo.jpg **moves** to the destination and disappears from the source. The number of files is the same; only the location changed.

Copy and Move Step by Step

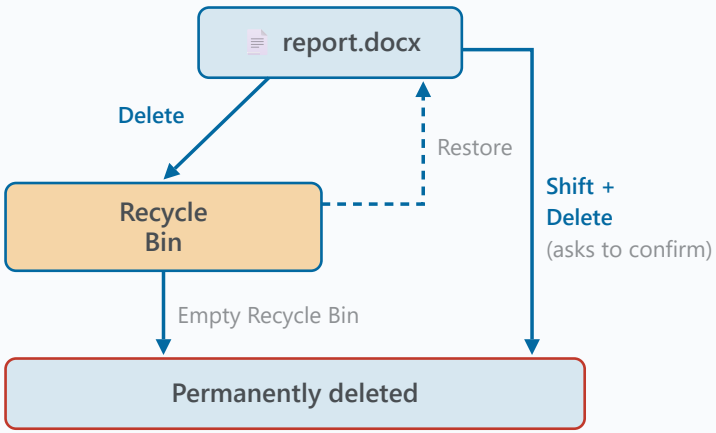


different drive: drag = copy · same drive: drag = move

Drag and drop defaults to **move** within the same drive and **copy** to a different drive. Holding **Shift** while dropping forces a move, **Ctrl** forces a copy.

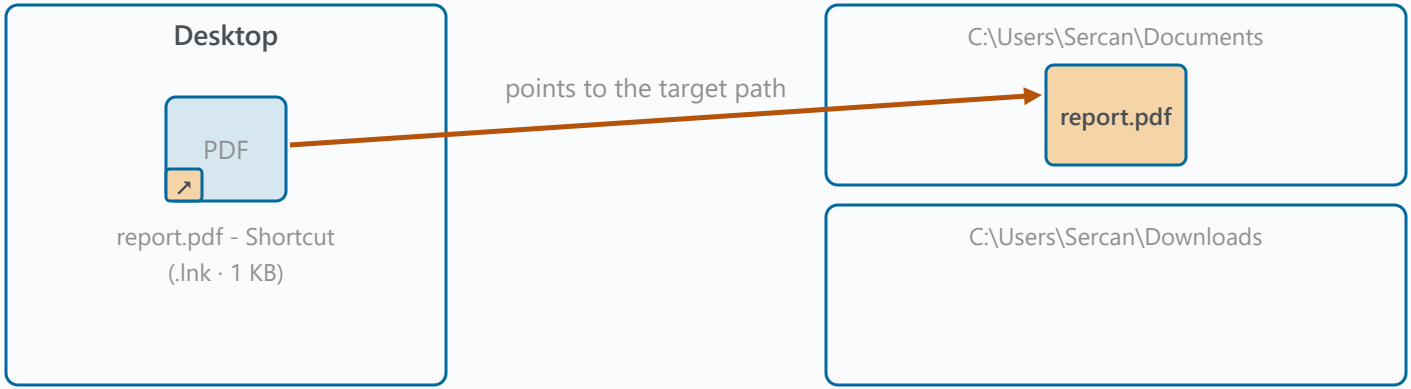
FILE MANAGEMENT

Renaming and Deleting



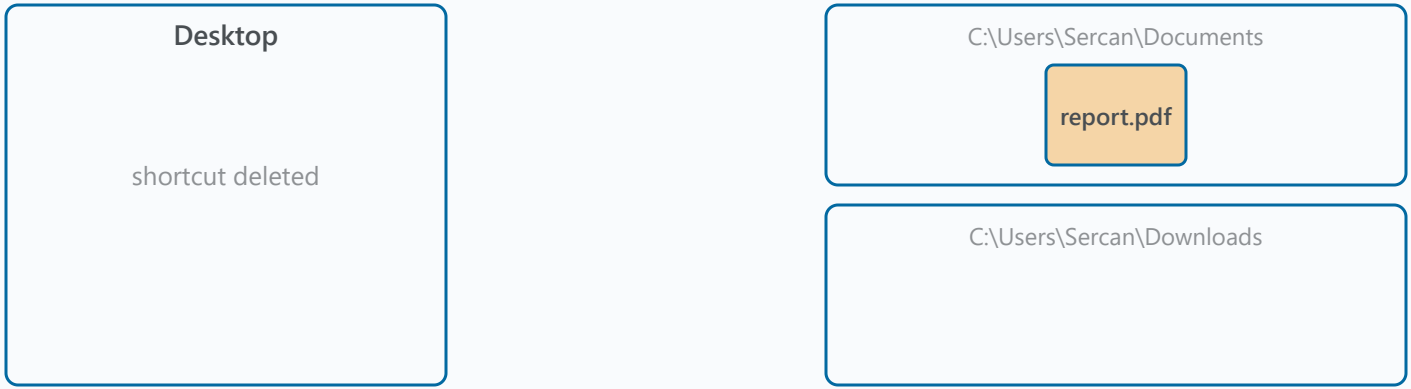
- **F2** renames; be careful not to change the extension (`.docx`).
- An item in the Recycle Bin can be restored to its **original location**.
- Files deleted from USB drives and network locations usually skip the Recycle Bin and are deleted outright.
- An open or locked file can’t be deleted; deleting in a cloud folder also deletes it on your other devices.

Shortcuts and Original Files Step by Step



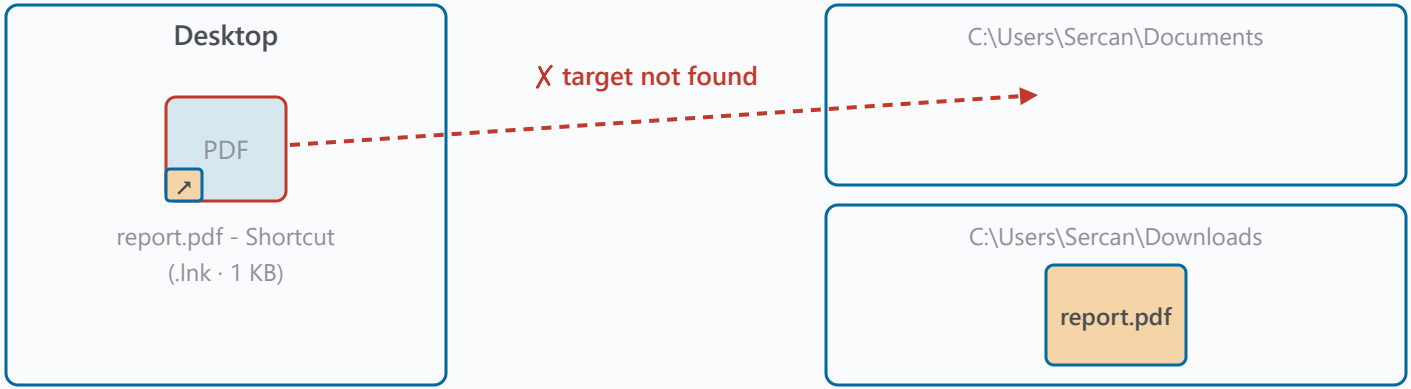
A **shortcut** on the desktop is a small `.lnk` file that holds only the **path** of the original. The arrow on the icon marks it.

Shortcuts and Original Files Step by Step



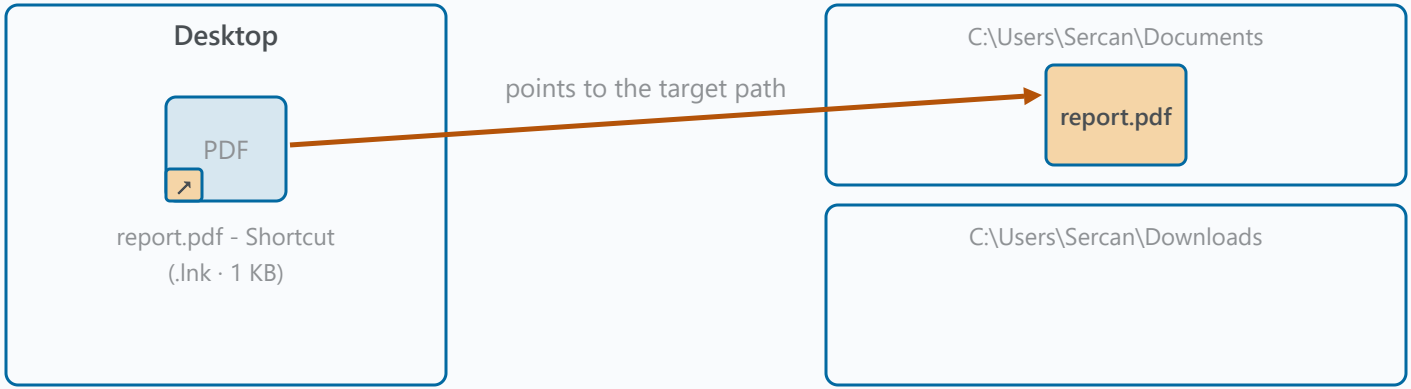
The shortcut is deleted, but the original **report.pdf** is still there. Deleting a shortcut doesn't delete the file.

Shortcuts and Original Files Step by Step



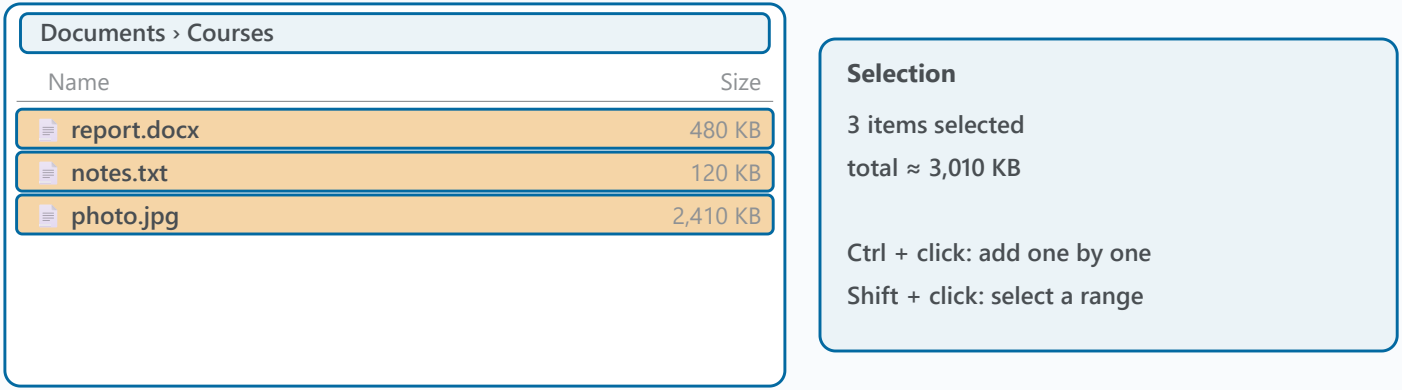
A new shortcut is made and the original is **moved** to Downloads: the shortcut still points to the old path and may not open.

Shortcuts and Original Files Step by Step



Make a shortcut with right-click → **Create shortcut**, or by dragging the file while holding **Alt**. Copying a shortcut to USB doesn't back up the file!

Creating and Extracting a ZIP Archive



Ctrl + clicking three files one by one selects them all. Shift + click selects every row between two clicks.

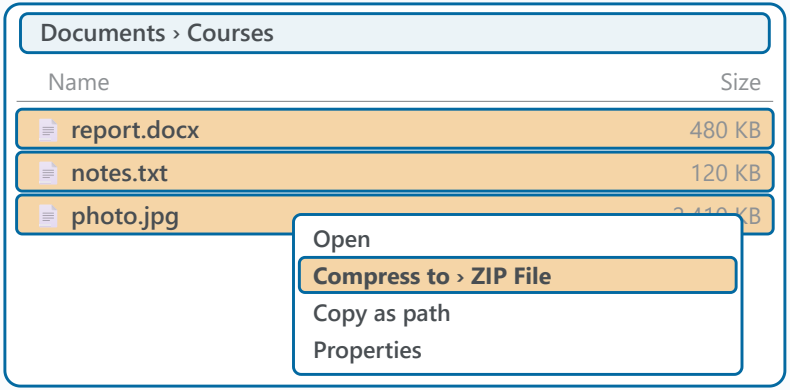
Step 1 / 5

```
▶ Ctrl + click: report.docx, notes.txt, photo.jpg
2 Right-click → Compress to → ZIP File
3 Name: hw_sercan.zip → Enter
4 double-click the ZIP → open report.docx
5 Right-click → Extract All… → Extract
```

VARIABLES

`selected = 3 files` `ZIP = –` `originals = in place`

Creating and Extracting a ZIP Archive



Right-click the selection → **Compress to** → **ZIP File**. Windows creates the archive without extra software (older versions: Send to → Compressed (zipped) folder).

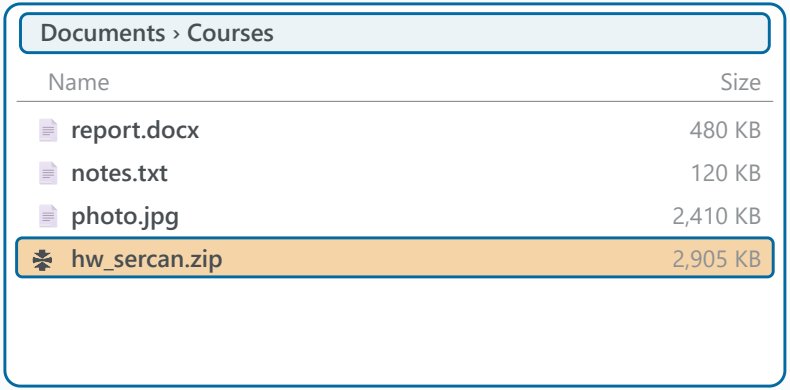
Step 2 / 5

```
1 Ctrl + click: report.docx, notes.txt, photo.jpg
▶ Right-click → Compress to → ZIP File
3 Name: hw_sercan.zip → Enter
4 double-click the ZIP → open report.docx
5 Right-click → Extract All… → Extract
```

VARIABLES

- `selected = 3 files`
- `ZIP = being created`
- `originals = in place`

Creating and Extracting a ZIP Archive



Compression result

notes.txt 120 → 31 KB

report.docx 480 → 468 KB

photo.jpg 2,410 → 2,405 KB

originals not deleted

The archive **hw_sercan.zip** is created. The text file shrank to a quarter; JPEG and DOCX are already compressed formats, so they barely changed.

Step 3 / 5

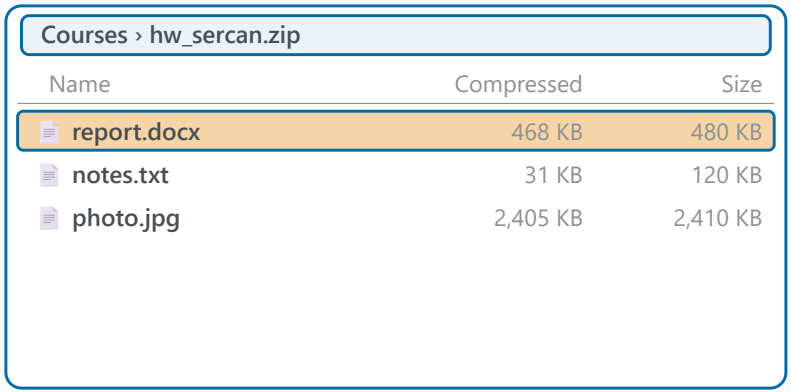
```
1 Ctrl + click: report.docx, notes.txt, photo.jpg
2 Right-click → Compress to → ZIP File
▶ Name: hw_sercan.zip → Enter
4 double-click the ZIP → open report.docx
5 Right-click → Extract All… → Extract
```

VARIABLES

`selected = hw_sercan.zip`

`ZIP = 2,905 KB` `originals = in place`

Creating and Extracting a ZIP Archive



Common mistake

Word: report.docx
opened a copy in a temp folder

save → writes to the temp copy
the file in the ZIP is unchanged

Double-clicking a ZIP shows its contents like a folder. A document opened from there is a **temporary copy**: your changes aren't written back to the ZIP and are easily lost.

Step 4 / 5

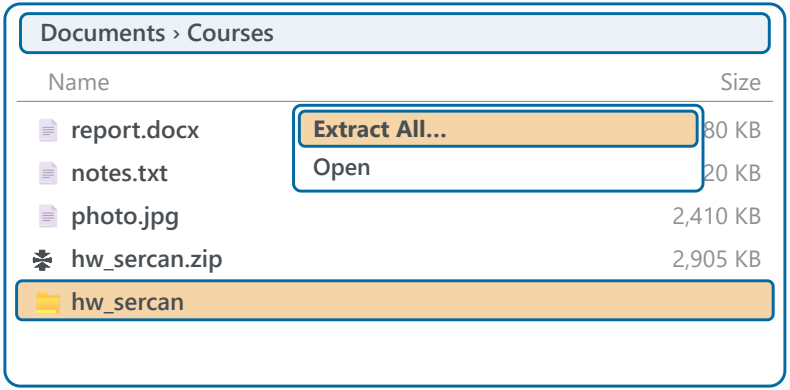
```
1 Ctrl + click: report.docx, notes.txt, photo.jpg
2 Right-click → Compress to → ZIP File
3 Name: hw_sercan.zip → Enter
▶ double-click the ZIP → open report.docx
5 Right-click → Extract All… → Extract
```

VARIABLES

`selected = report.docx (inside ZIP)`

`ZIP = unchanged` `originals = in place`

Creating and Extracting a ZIP Archive



Extraction result

hw_sercan folder:

report.docx · notes.txt · photo.jpg

files at original size

now editable and savable

Right-click → **Extract All...** → **Extract**: the three files come out at their original size into a folder named after the archive. Edit the extracted copies.


```
1 Ctrl + click: report.docx, notes.txt, photo.jpg
2 Right-click → Compress to → ZIP File
3 Name: hw_sercan.zip → Enter
4 double-click the ZIP → open report.docx
▶ Right-click → Extract All… → Extract
```

VARIABLES

`selected = hw_sercan folder`

`ZIP = 2,905 KB` `extracted = 3 files`

FILE MANAGEMENT

File and Folder Properties

Type and app

The file format and the default app that opens it.

Location

The full path of the file.

Size

The size of the contents and the space taken on disk.

Dates

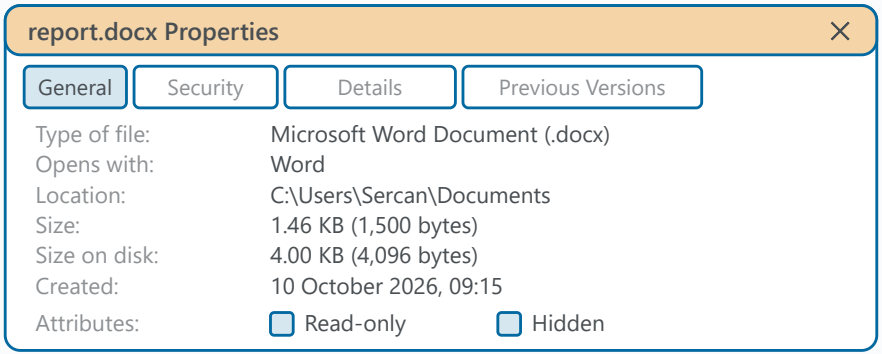
Created, modified and accessed.

Attributes

Properties such as read-only or hidden.

Security

Ownership and user permissions.



SETTINGS

Windows Settings

Open the Settings app with `Win+I`. Category names may vary by version, but the main areas are similar.

System

Display, sound, notifications, power and storage.

Bluetooth & devices

Mouse, keyboard, printers and connected devices.

Network & internet

Wi-Fi, Ethernet, VPN and data usage.

Personalization

Background, themes, Start and taskbar.

Accounts

Sign-in, backup and users.

Privacy & security

Permissions and Windows Security.

Windows Update

Updates, restarts and update history.

SETTINGS

Network, Wi-Fi and Printer Setup

Connecting to Wi-Fi

In Quick settings on the right of the taskbar: Wi-Fi arrow → network → Connect → password.

`Win + A`

Adding a printer

Settings → Bluetooth & devices → Printers & scanners → Add device. Network and USB printers are usually found automatically.

Display resolution and scale

Settings → System → Display. Keep the resolution at the screen's native (recommended) value; if text is too small, raise Scale.

Don't sign in to important accounts on public Wi-Fi. If no printer driver is found, download it from the manufacturer's site.

SETTINGS

User Accounts

Local account
Credentials are managed only on the device.

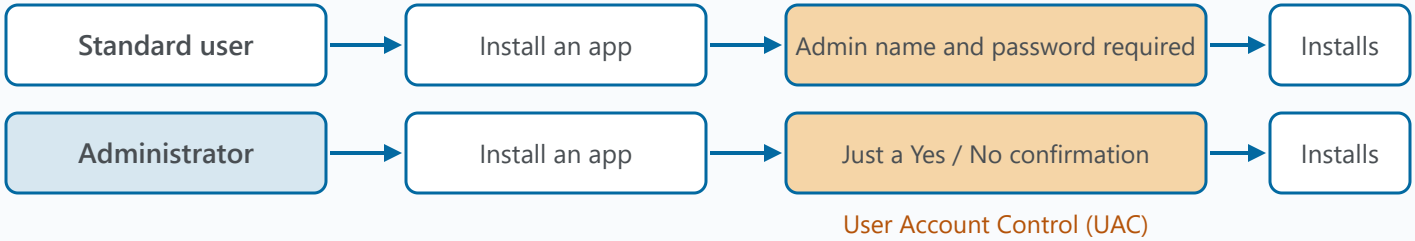
Microsoft account
Can sync supported settings and services across devices.

Standard user
System changes are limited in everyday use.

Administrator
Can install apps and change system-wide settings.

Separate accounts
Keep each user's files and settings apart.

Signing out
Closes open apps and ends the user session.



SECURITY

Windows Hello and Sign-in Security

PIN

A local gesture that unlocks a credential tied to the device.

Face / fingerprint

Biometric sign-in on compatible hardware.

Device binding

Credentials can be bound to the device with supported hardware security.

Screen lock

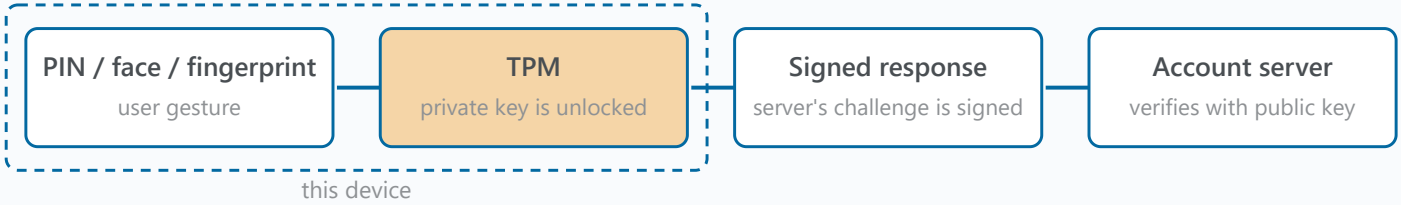
Win+L locks the session when you step away.

Multi-factor authentication

Adds another verification layer to account security.

Recovery

Set up PIN and account recovery options in advance.



The PIN and biometric data never leave the device; only a digital signature crosses the network.

SECURITY

Windows Security

Settings → Privacy & security → Windows Security (or search “Windows Security” from Start) puts these tools in one place.

Virus & threat protection

Scans for and blocks malware; quick scan and real-time protection live here.

Firewall & network protection

Controls incoming and outgoing connections; blocks unauthorized access.

SmartScreen

Warns about dangerous downloads and malicious sites (App & browser control).

Device security

Shows the status of hardware-based protection such as Secure Boot and TPM.

Account protection

Shows Microsoft account and Windows Hello sign-in protection.

Microsoft Defender

Ships with Windows. Keep real-time protection on and don't skip updates.

SETTINGS

Managing Apps

Install source

Prefer a trusted store or the vendor's own site.

Uninstalling

Managed from the Apps section of Settings.

Startup apps

Apps that run at sign-in can be limited.

Permissions

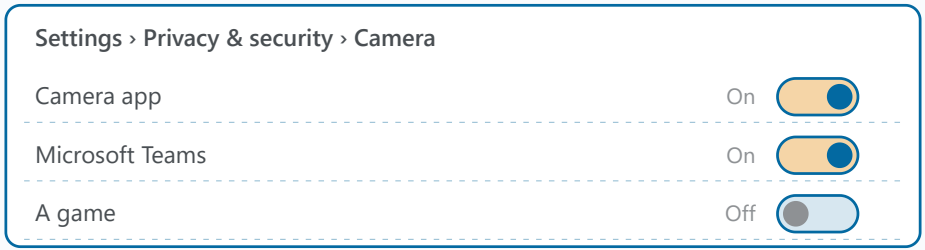
Camera, microphone, location and file access are controlled per app.

Repair / reset

Can be used to troubleshoot supported apps.

Updates

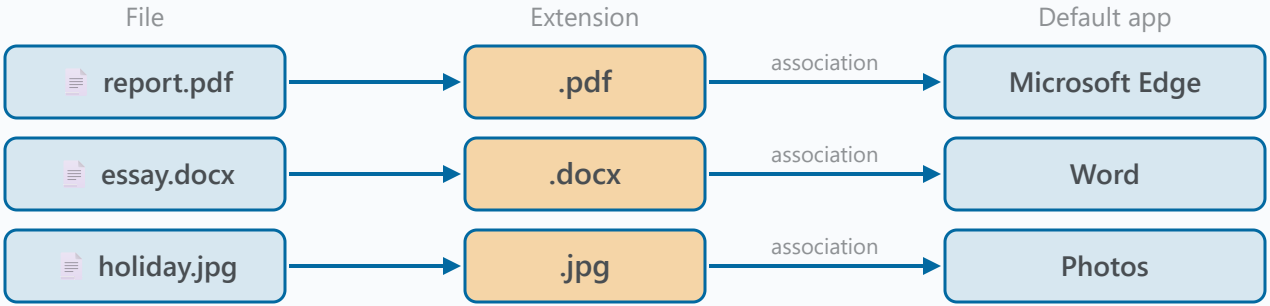
Keep apps updated for security and compatibility.



SETTINGS

Default Apps

A default app is the program Windows picks automatically when you open a certain link or file type.



- Defaults can be changed by app or by file type.
- “Open with” picks a different app just once.
- For security, don't run unknown file types.

SETTINGS

Accessibility

Narrator
Reads screen text and controls aloud.

Magnifier
Enlarges part or all of the screen.

Contrast and color
Improves text visibility and color distinction.

Live captions
Can show on-screen text for supported audio.

Voice access
Controls supported actions with voice commands.

Keyboard and mouse
Sticky keys, filter keys and pointer options.

SETTINGS · STEP BY STEP

Adding the Turkish Keyboard and Language

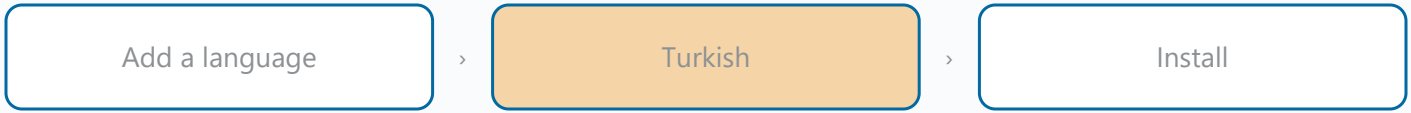
Turkish Q is the common layout; Turkish F is an alternative layout designed for fast typing.

Settings › Time & language › Language & region

Win + I opens Settings: **Time & language** → **Language & region**.

Adding the Turkish Keyboard and Language

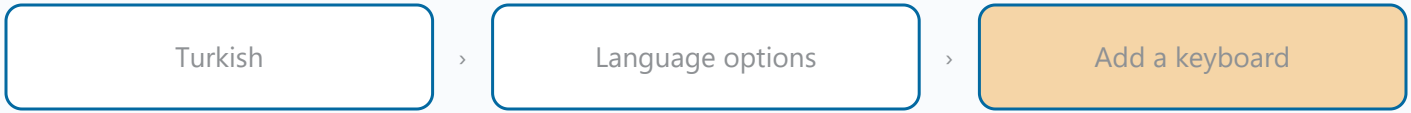
Turkish Q is the common layout; Turkish F is an alternative layout designed for fast typing.



Add a language, choose Turkish and install it; it can also serve as the display language.

Adding the Turkish Keyboard and Language

Turkish Q is the common layout; Turkish F is an alternative layout designed for fast typing.



Add a keyboard from **Language options** next to the language: **Turkish Q** (standard) or **Turkish F**.

Adding the Turkish Keyboard and Language

Turkish Q is the common layout; Turkish F is an alternative layout designed for fast typing.



Win + Space switches between installed keyboard layouts and languages; the choice shows on the taskbar.

Adding the Turkish Keyboard and Language

Turkish Q is the common layout; Turkish F is an alternative layout designed for fast typing.

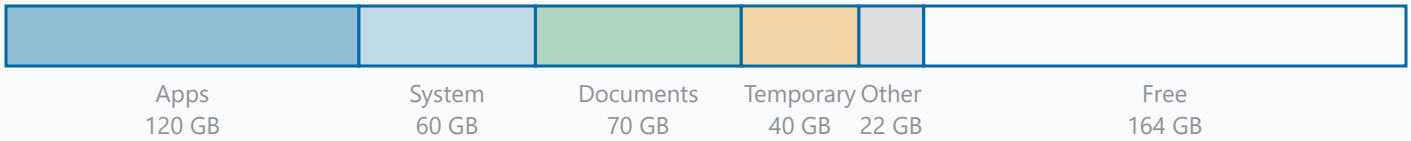


Alt + Shift is the classic language/layout shortcut; it can be changed in Settings.

MAINTENANCE

Storage Management

C: · 476 GB — 312 GB used



Storage view

Shows space by category: apps, documents, temporary files and so on.

Storage Sense

Can clean temporary files and the Recycle Bin by rules you set.

Cleanup recommendations

Helps you review large, unused or temporary items.

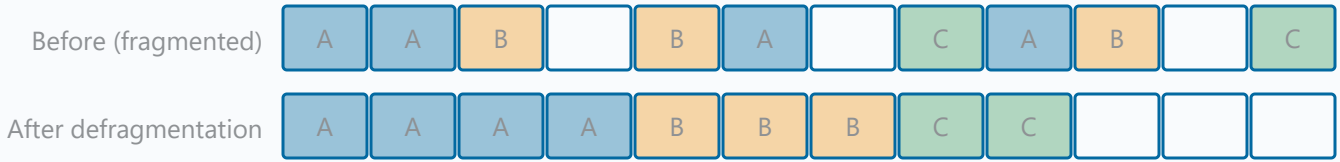
Caution

Before deleting, make sure the file really isn't needed.

MAINTENANCE

Optimizing Drives

Drive	Maintenance Windows applies	Why?
HDD	Defragmentation	Store each file's fragments together
SSD	TRIM / optimization	Tell the controller which blocks are unused



A, B, C: blocks of three files · empty box: unused space

An SSD doesn't need frequent manual defragmentation in the old HDD style. Windows picks the right optimization for the drive type.

MAINTENANCE

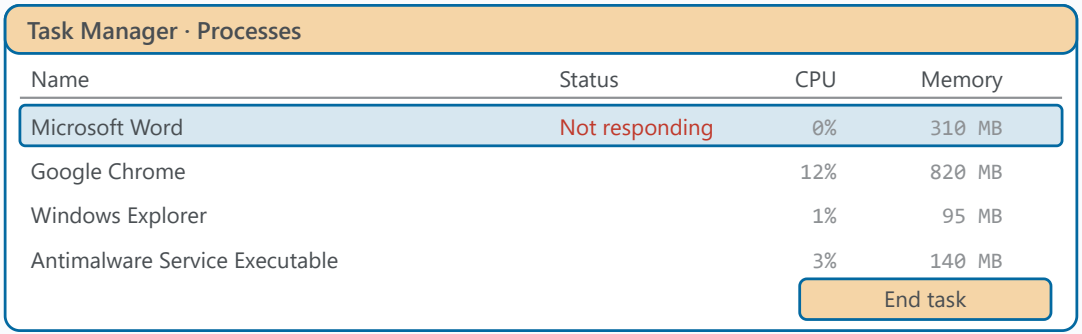
System Information and Task Manager

System Information

Shows details of the hardware, operating system, components and resources.

Task Manager

Shows running apps and processes, plus CPU, memory, disk and network use.



- An app that isn't responding can be ended; unsaved data may be lost.
- High resource use alone is no proof of malware.
- Look up unknown processes in trusted sources before removing anything.

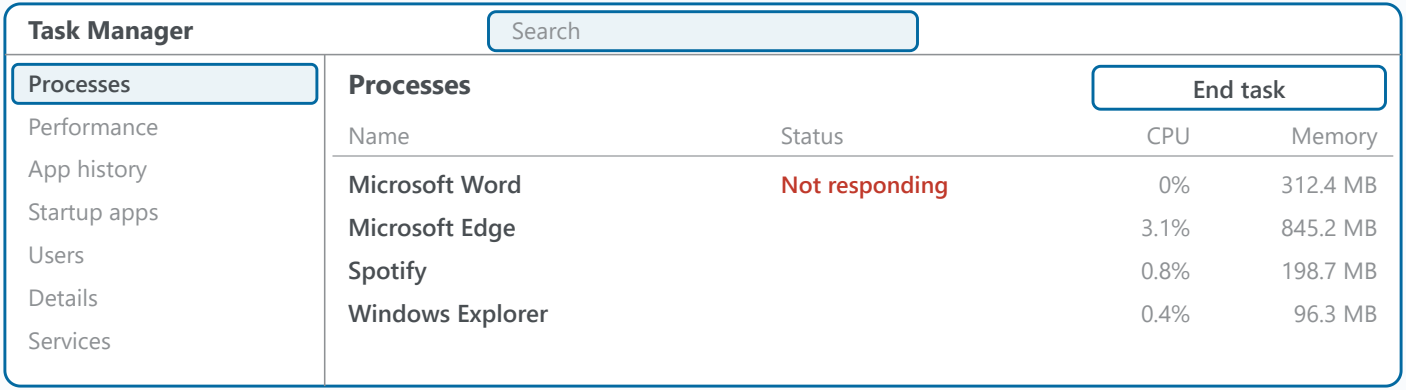
MAINTENANCE

Task Manager Pages

Page	What it shows	When to look
Processes	Apps and background processes; CPU, memory, disk, network percentages	When the PC slows down or an app freezes
Performance	Live graphs of CPU, memory, disk, network and GPU	To see which hardware is the bottleneck
App history	Resource use of apps over time	To find which app hogs network or CPU
Startup apps	Programs that run at sign-in and their impact	When startup gets slow
Users	Signed-in users and their usage	On a shared PC
Details / Services	Process IDs (PID) and Windows services	For advanced troubleshooting

High usage isn't always a problem: updates, virus scans or indexing can briefly load the CPU and disk. Sustained 100% disk or memory use, though, is a typical cause of slowness.

Task Manager: A Frozen App and Startup



Ctrl + Shift + Esc opens Task Manager directly. On the Processes page, Word's status is **Not responding**: the window ignores clicks.

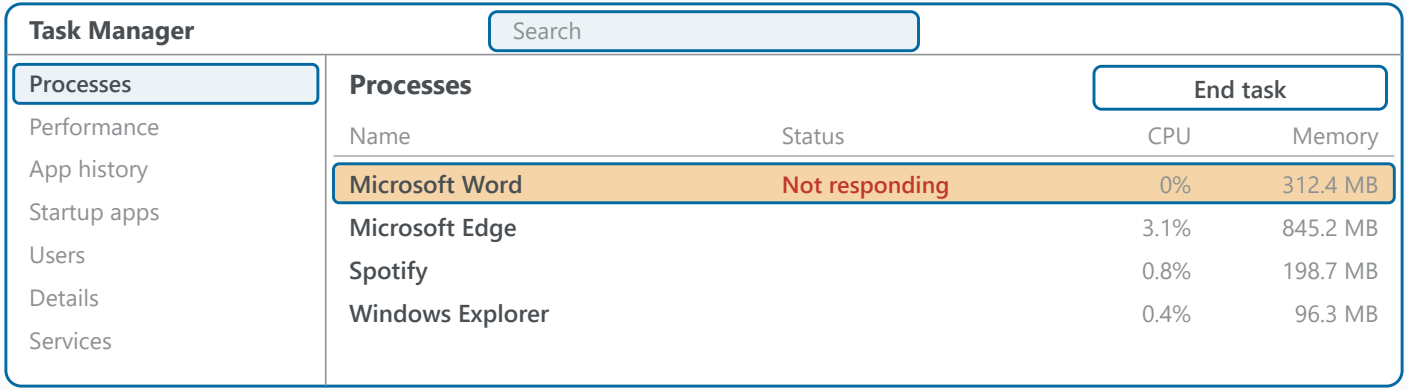
Step 1 / 6

```
▶ Ctrl + Shift + Esc
2 Processes: select the Microsoft Word row
3 End task
4 switch to the Startup apps page
5 Spotify → Disable
6 restart the computer
```

VARIABLES

`Word = not responding` `selected = –` `open apps = 4`

Task Manager: A Frozen App and Startup



The Word row is selected. It's worth waiting a few seconds first: the app may finish a long operation and recover.

Step 2 / 6

```
1 Ctrl + Shift + Esc
▶ Processes: select the Microsoft Word row
3 End task
4 switch to the Startup apps page
5 Spotify → Disable
6 restart the computer
```

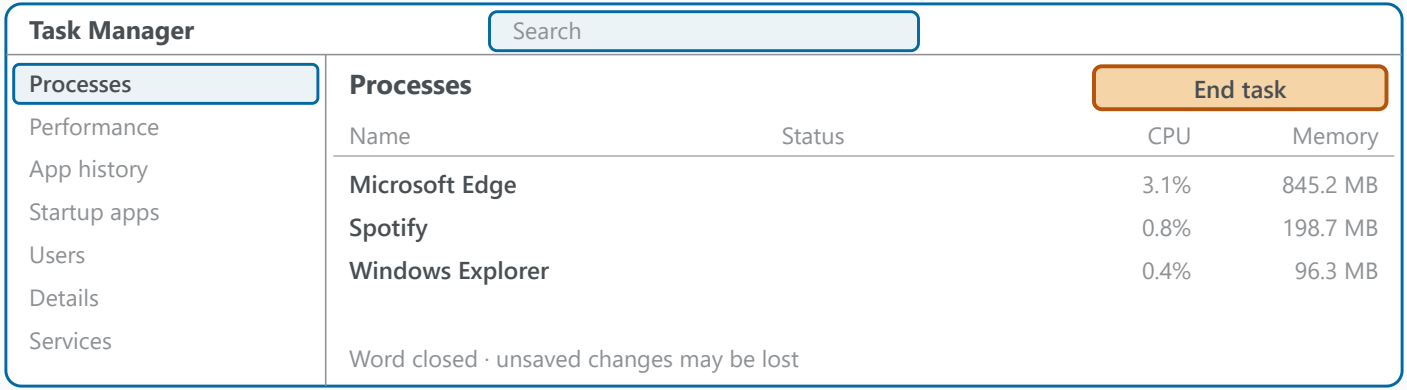
VARIABLES

`Word = not responding`

`selected = Microsoft Word`

`open apps = 4`

Task Manager: A Frozen App and Startup



End task: the Word process is forced to close and its memory is released. Changes since the last save may be lost; when reopened, Word may offer a recovered file.

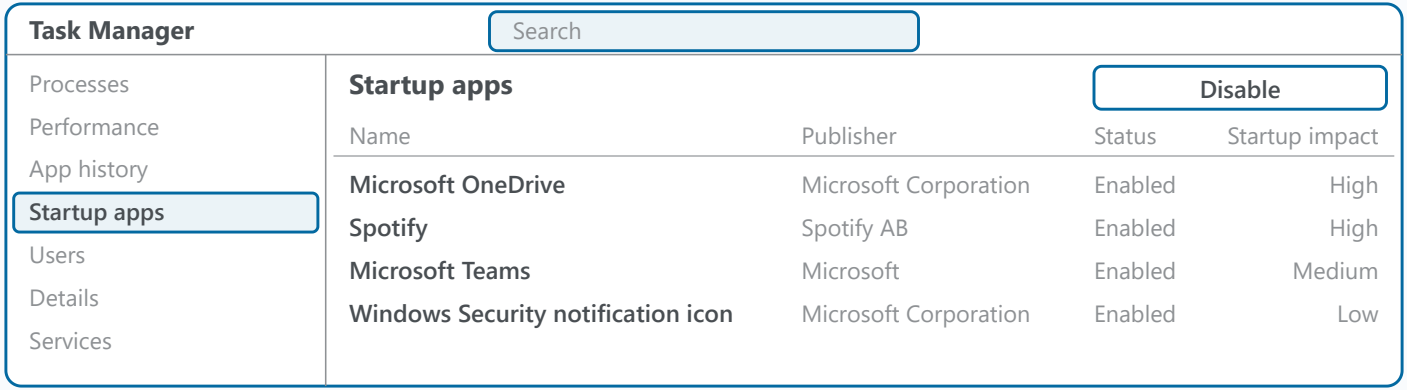
Step 3 / 6

```
1 Ctrl + Shift + Esc
2 Processes: select the Microsoft Word row
▶ End task
4 switch to the Startup apps page
5 Spotify → Disable
6 restart the computer
```

VARIABLES

`Word = closed` `selected = –` `open apps = 3`

Task Manager: A Frozen App and Startup



The **Startup apps** page lists programs that start automatically at sign-in. **Startup impact** shows how much each one slows startup.

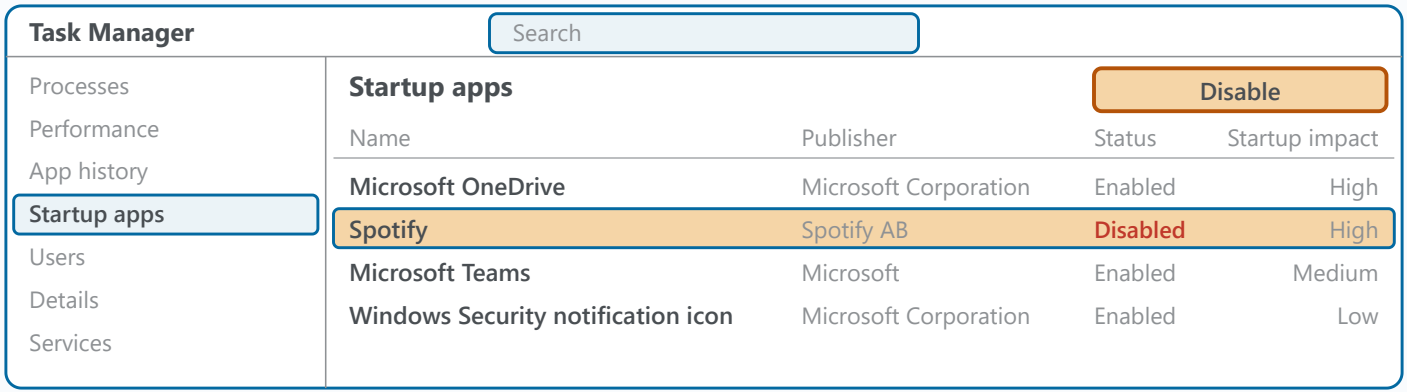
Step 4 / 6

```
1 Ctrl + Shift + Esc
2 Processes: select the Microsoft Word row
3 End task
▶ switch to the Startup apps page
5 Spotify → Disable
6 restart the computer
```

VARIABLES

`Word = closed` `enabled at startup = 4` `Spotify = Enabled`

Task Manager: A Frozen App and Startup



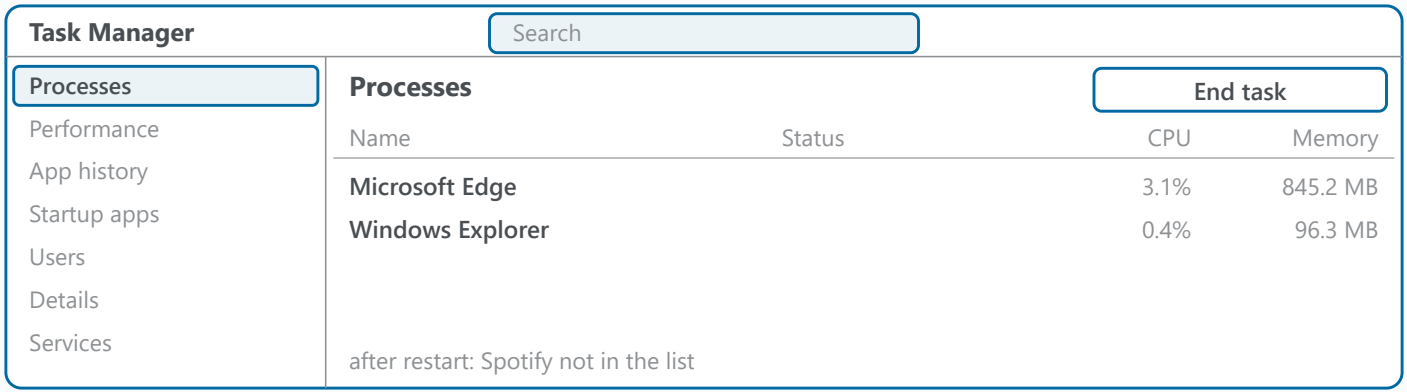
Spotify is selected and set to **Disable**: the program isn't uninstalled, it just won't start at sign-in. You can still open it from Start when needed.


```
1 Ctrl + Shift + Esc
2 Processes: select the Microsoft Word row
3 End task
4 switch to the Startup apps page
▶ Spotify → Disable
6 restart the computer
```

VARIABLES

`Word = closed` `enabled at startup = 3` `Spotify = Disabled`

Task Manager: A Frozen App and Startup



After a restart, Spotify didn't open by itself. The same list can be managed in **Settings → Apps → Startup**.


```
1 Ctrl + Shift + Esc
2 Processes: select the Microsoft Word row
3 End task
4 switch to the Startup apps page
5 Spotify → Disable
▶ restart the computer
```

VARIABLES

`Word = closed` `enabled at startup = 3` `Spotify = not running`

MAINTENANCE

Updates, Backup and Recovery

Windows Update
Delivers security and quality updates.

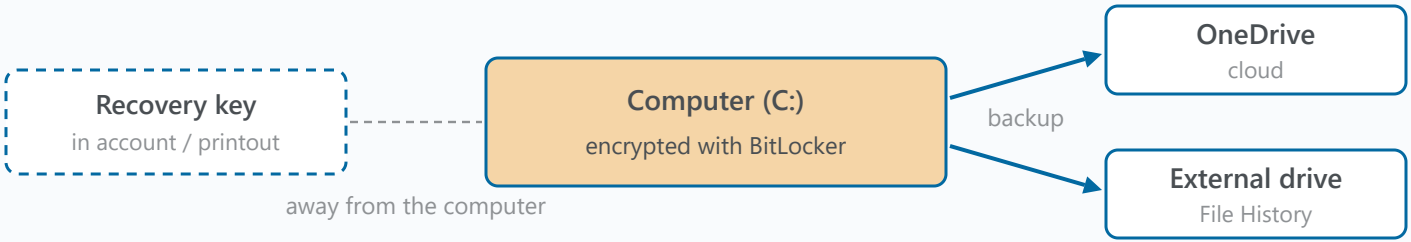
Backup
Keeps a copy of important files in a separate place.

Restore
Helps return files or the system to an earlier state.

Recovery options
May offer startup repair, reset and advanced options.

BitLocker
Encrypts drives in supported editions.

Recovery key
Store it somewhere safe; you need it to reach an encrypted drive.



OneDrive, File History and System Restore

Recovery options run from light to heavy.



OneDrive folder backup: the Desktop, Documents and Pictures folders are backed up to the cloud, reachable from other devices; deleted files can be restored from the OneDrive recycle bin.

OneDrive, File History and System Restore

Recovery options run from light to heavy.



File History: regularly saves versions of your files to an external drive; old or deleted versions can be brought back (the drive must be connected).

OneDrive, File History and System Restore

Recovery options run from light to heavy.



Restore point: returns system files and settings to an earlier state; it does not back up personal documents. Useful for driver and update problems; it must be turned on.

OneDrive, File History and System Restore

Recovery options run from light to heavy.



Reset this PC (Settings → System → Recovery) reinstalls Windows. **Keep my files** keeps personal files but removes apps; **Remove everything** erases it all. A last resort, used only after backing up.

SECURITY

Safe Everyday Use

Lock

Lock the screen with Win+L when you step away.

Updates

Keep Windows and apps up to date.

Standard account

Use admin rights only when needed.

Downloads

Get software from trusted sources.

Backups

Back up important files regularly, to a separate place.

Suspicious files

Don't open unknown attachments or executables.

SUMMARY

Chapter Summary

- Start, the taskbar and window controls make up the basic workspace.
- Virtual desktops and keyboard shortcuts speed up your workflow.
- A file is defined by its name, extension, path and properties; folders keep things organized.
- Copying keeps the original; moving changes its location.
- Settings gathers system, device, network, account, app and accessibility options.
- Storage Sense, drive optimization, updates and backups are part of routine maintenance.
- Task Manager ends unresponsive apps and limits startup apps; a ZIP archive bundles files into one smaller package.

Review Questions

1. How do the jobs of the taskbar and the Start menu differ?
2. What is the difference between copying and moving?
3. Why doesn't changing a file's extension convert its format?
4. What information does an absolute file path contain?
5. Why is an HDD optimized differently from an SSD?
6. Why is a Windows Hello PIN not the same thing as an online account password?

SUMMARY

Exercises

1. Create a **Homework** folder in `Documents\Courses`; copy a file there, then move it to a USB drive. At each step, note what happens at the source and the destination.
2. From the folder `C:\Users\Sercan\Downloads`, resolve the relative path `..\Documents\Courses\report.pdf` step by step and write the absolute path.
3. Create two virtual desktops, one for study and one for fun; switch between them and close the second. List the shortcuts you used in order.
4. Make file extensions visible. Why doesn't renaming `photo.jpg` to `photo.png` convert the file to PNG?
5. In Task Manager, find the three processes using the most memory; write down the risk of ending an app that isn't responding.
6. What happens if you copy a desktop shortcut to a USB drive and try to open it on another computer? Why?

SUMMARY

References

- Microsoft Support, Windows help and learning documentation.
- Microsoft Support, Storage Sense and drive optimization documentation.
- Microsoft Learn, Windows Hello and Windows security documentation.

The End

Chapter 2.2: The Windows Operating System

Previous: Chapter 2.1: Software and Operating Systems · Next: Chapter 3.1: Microsoft Word