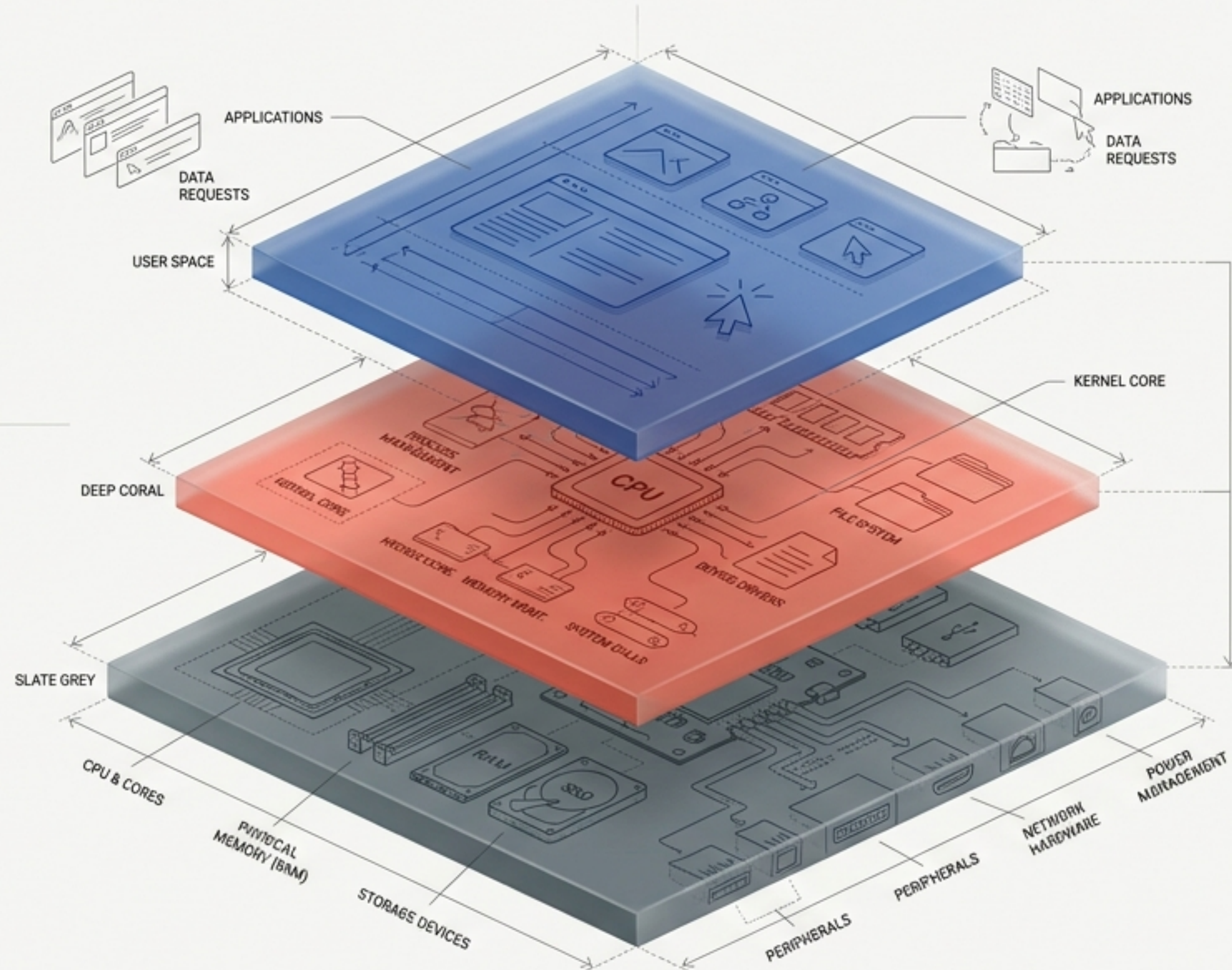
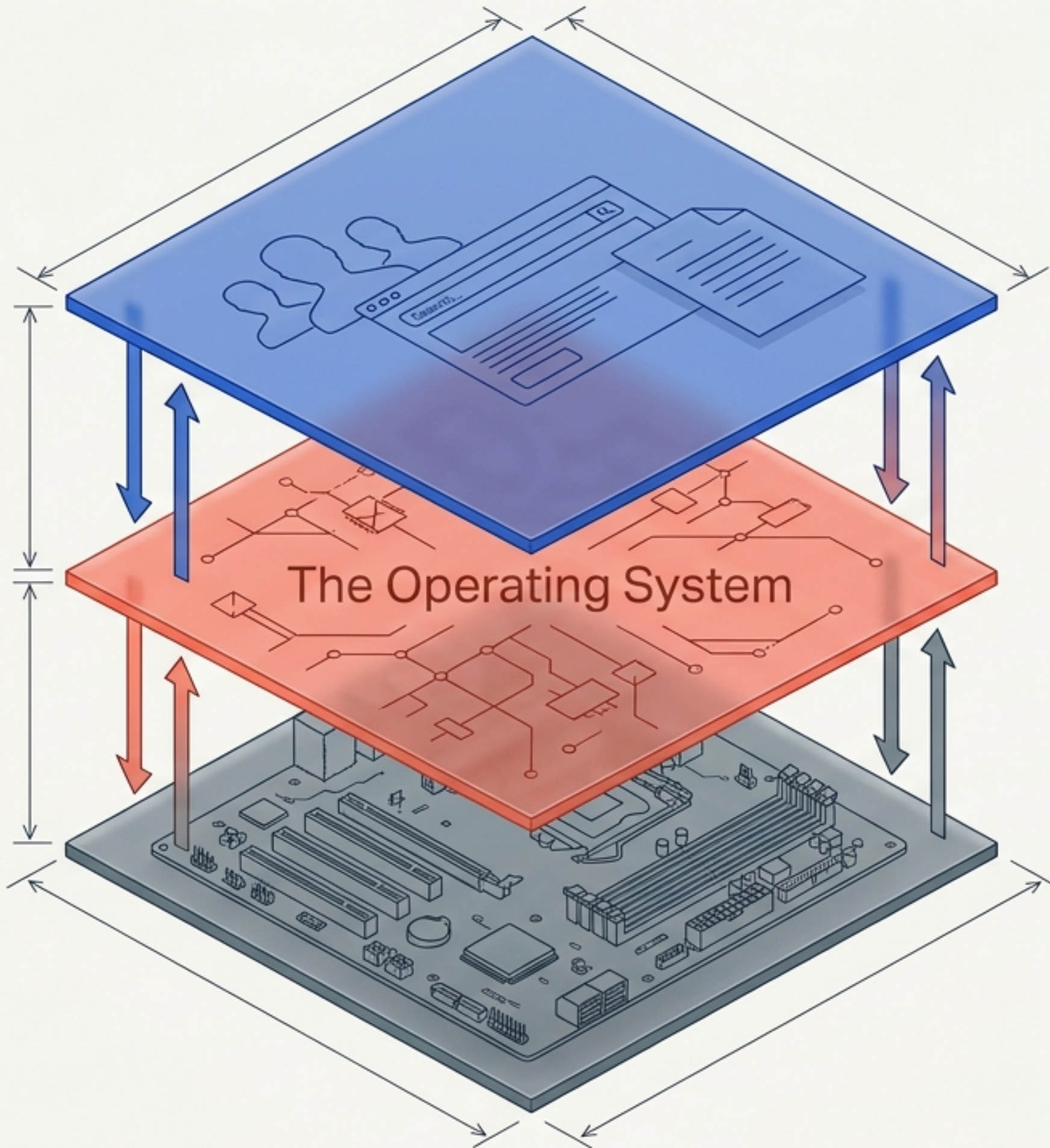


The Invisible Engine: Understanding Operating Systems

ICT 101 – The ultimate manager of your hardware and software.





The Indispensable Intermediary

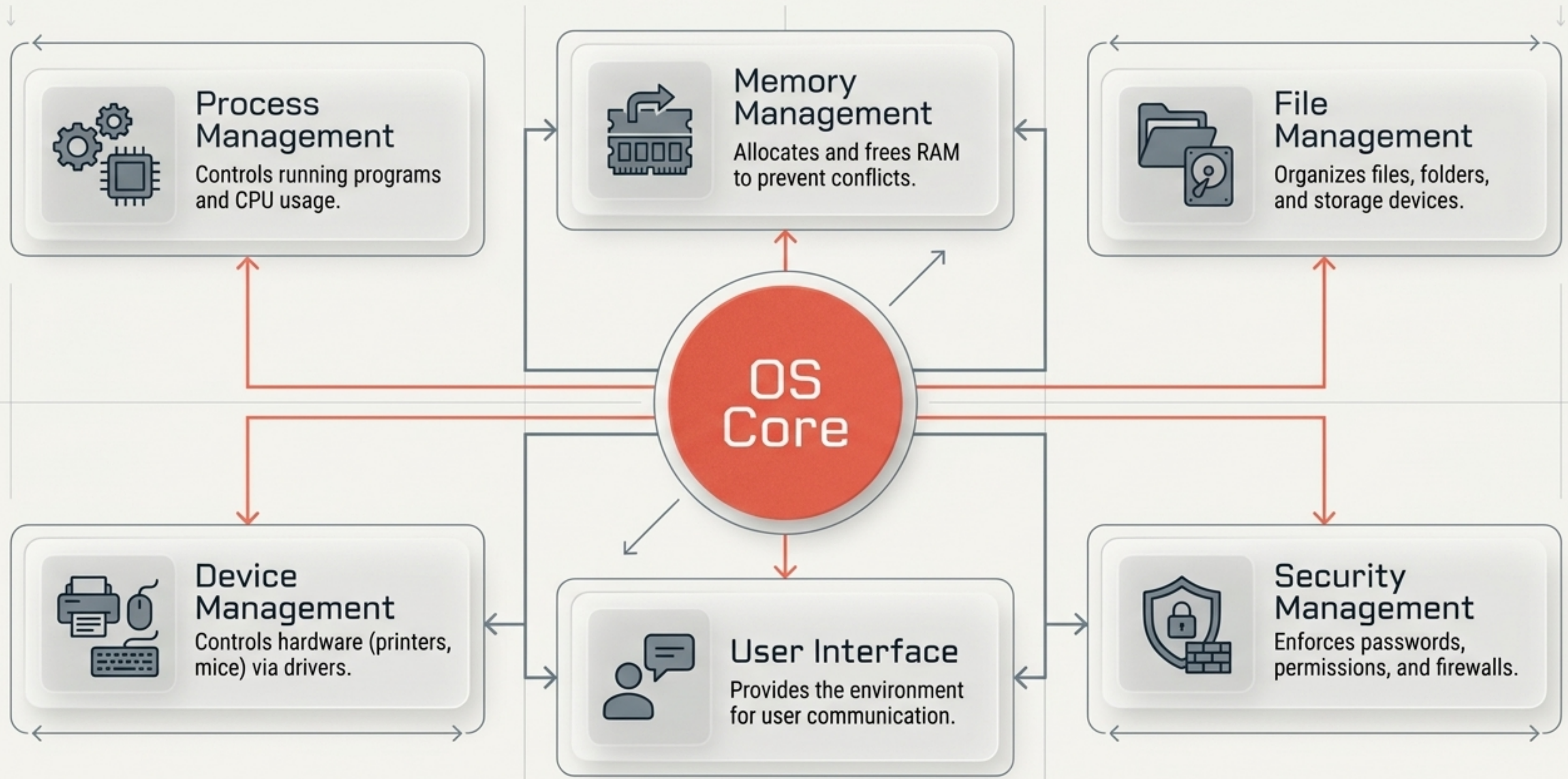
The Manager

An Operating System (OS) is system software that acts as an intermediary between computer hardware and the user.

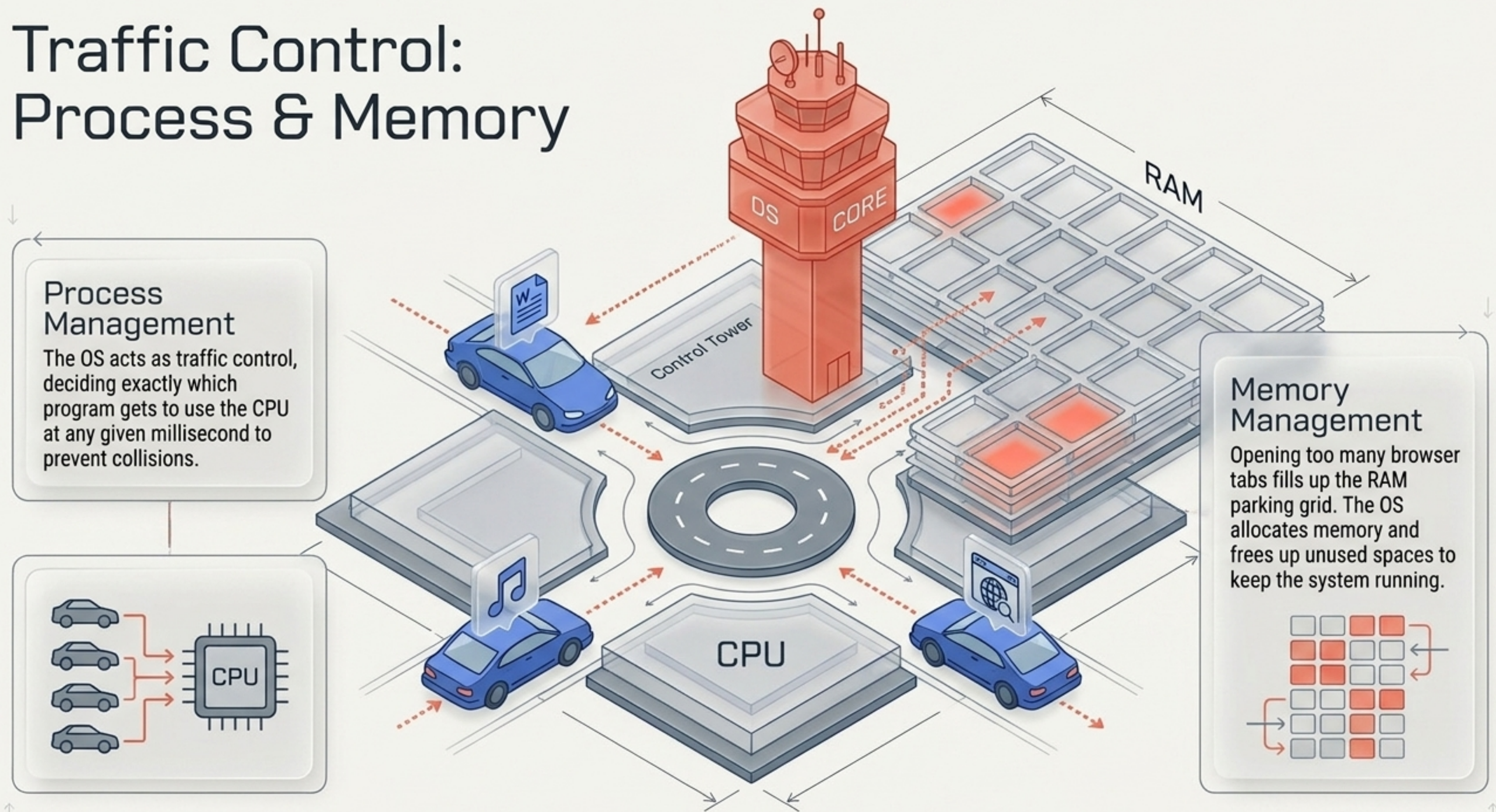
The Reality

Without it, applications cannot run, hardware cannot communicate, and users are completely locked out of the machine.

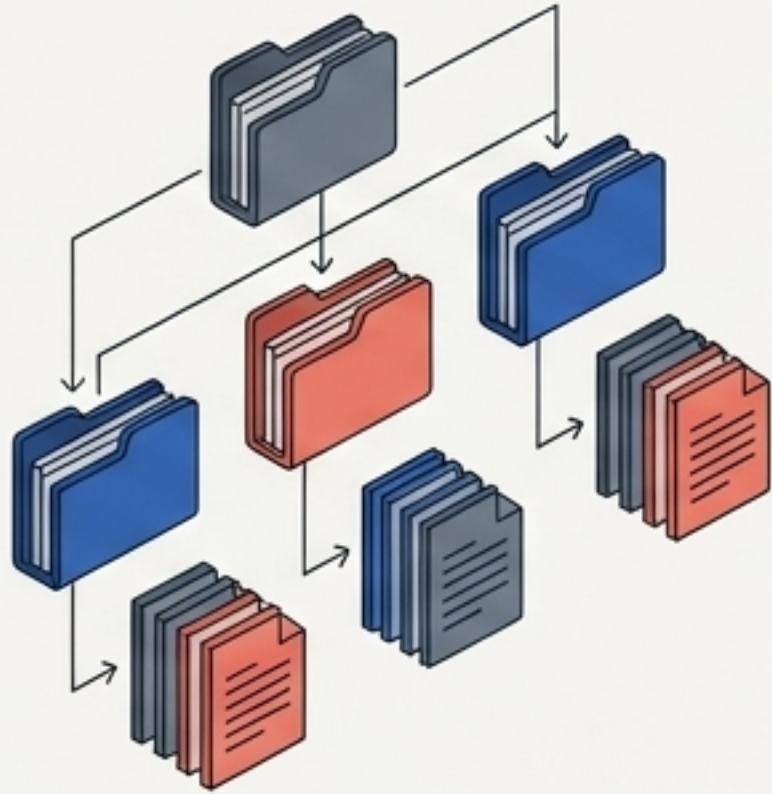
The Command Center: 6 Core Functions



Traffic Control: Process & Memory

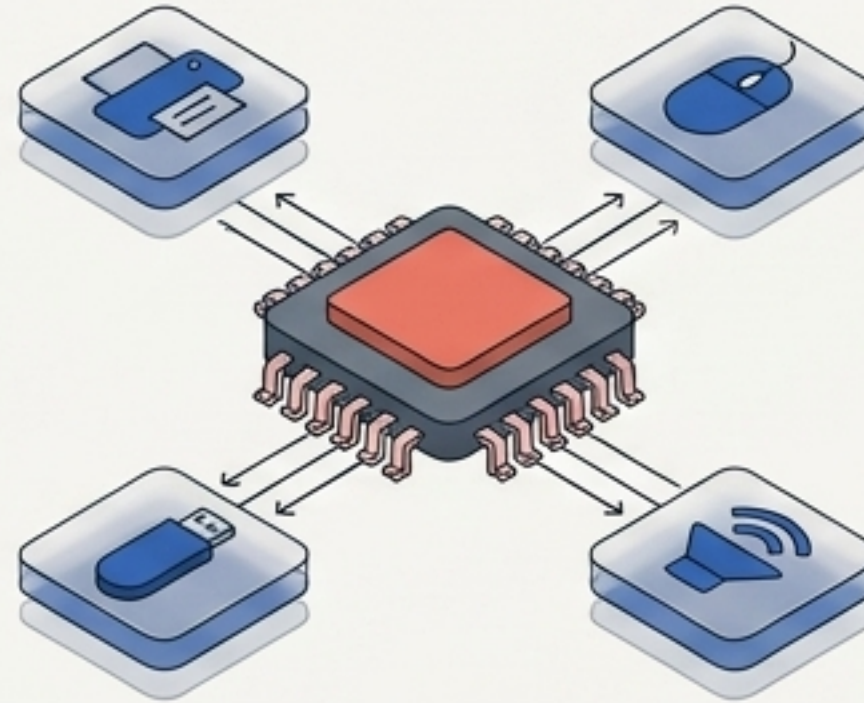


Organization, Communication, and Defense



File Management

Copies, moves, deletes, renames, and searches files across all storage devices.



Device Management

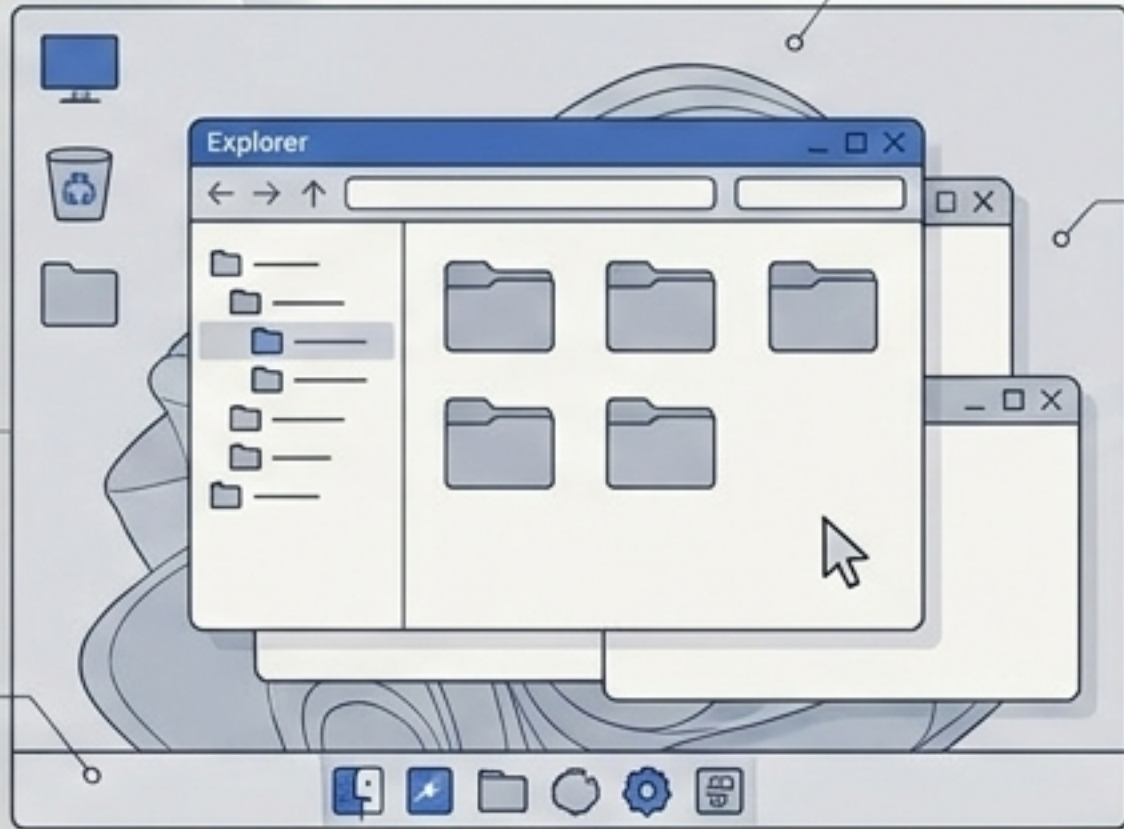
Communicates directly with external hardware using specific device drivers.



Security Management

Protects the system via user accounts, passwords, permissions, and antivirus support.

The User Interface: GUI vs. CLI



GUI (Graphical User Interface)

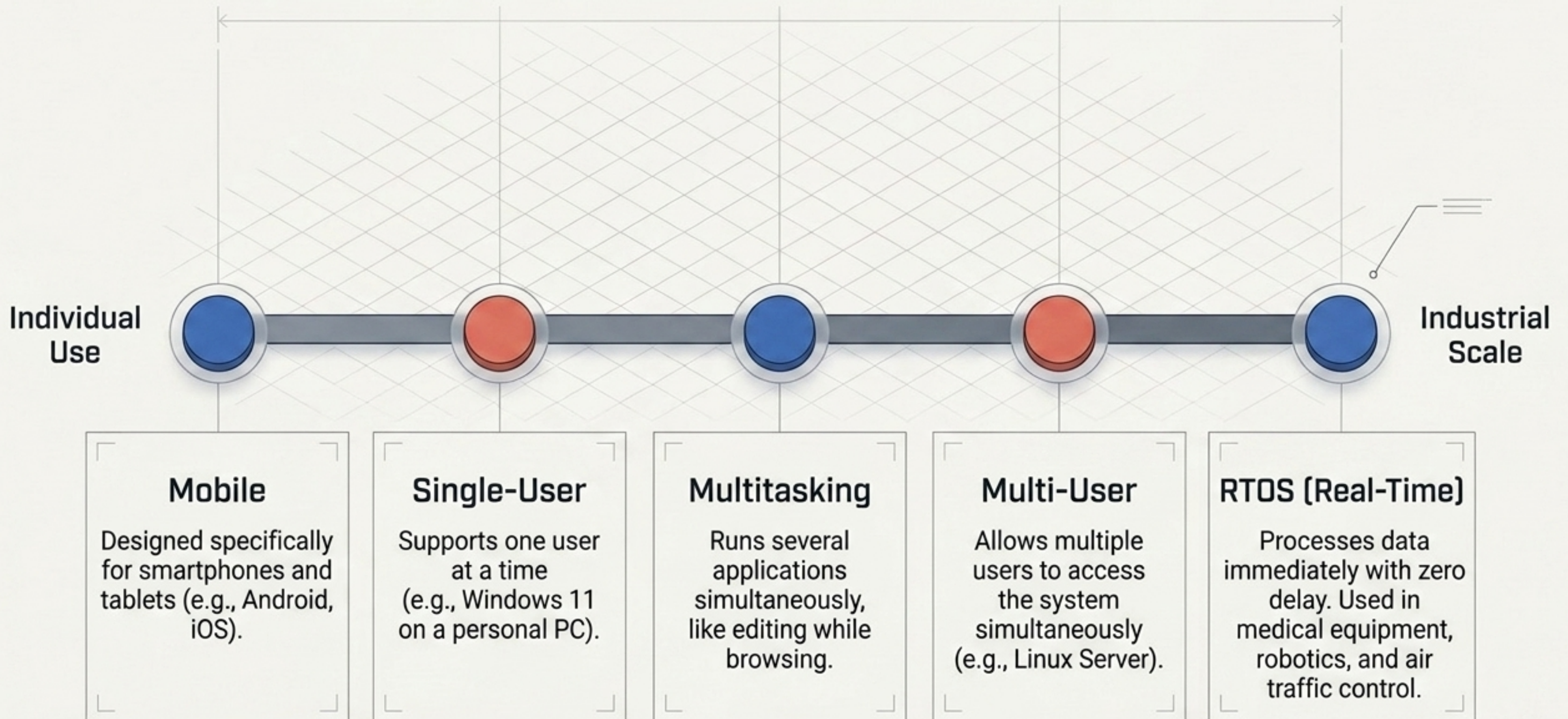
Uses icons, windows, menus, and a mouse.
Designed for intuitive, visual navigation
(e.g., Windows, macOS).

An illustration of a command line interface (CLI) showing a terminal window. The terminal has a dark background with white text. It displays a command prompt followed by the command 'dir'. Below the command, the output shows the volume information for drive C and a list of files and directories including '.', '..', 'Desktop', 'Documents', 'Downloads', 'Music', 'Pictures', and 'Videos...'. A vertical arrow on the left side of the terminal indicates the flow of execution from the command to the output.

CLI (Command Line Interface)

Uses specific text commands for precise, rapid
execution, such as typing 'dir' to list files
(e.g., Command Prompt, Linux Terminal).

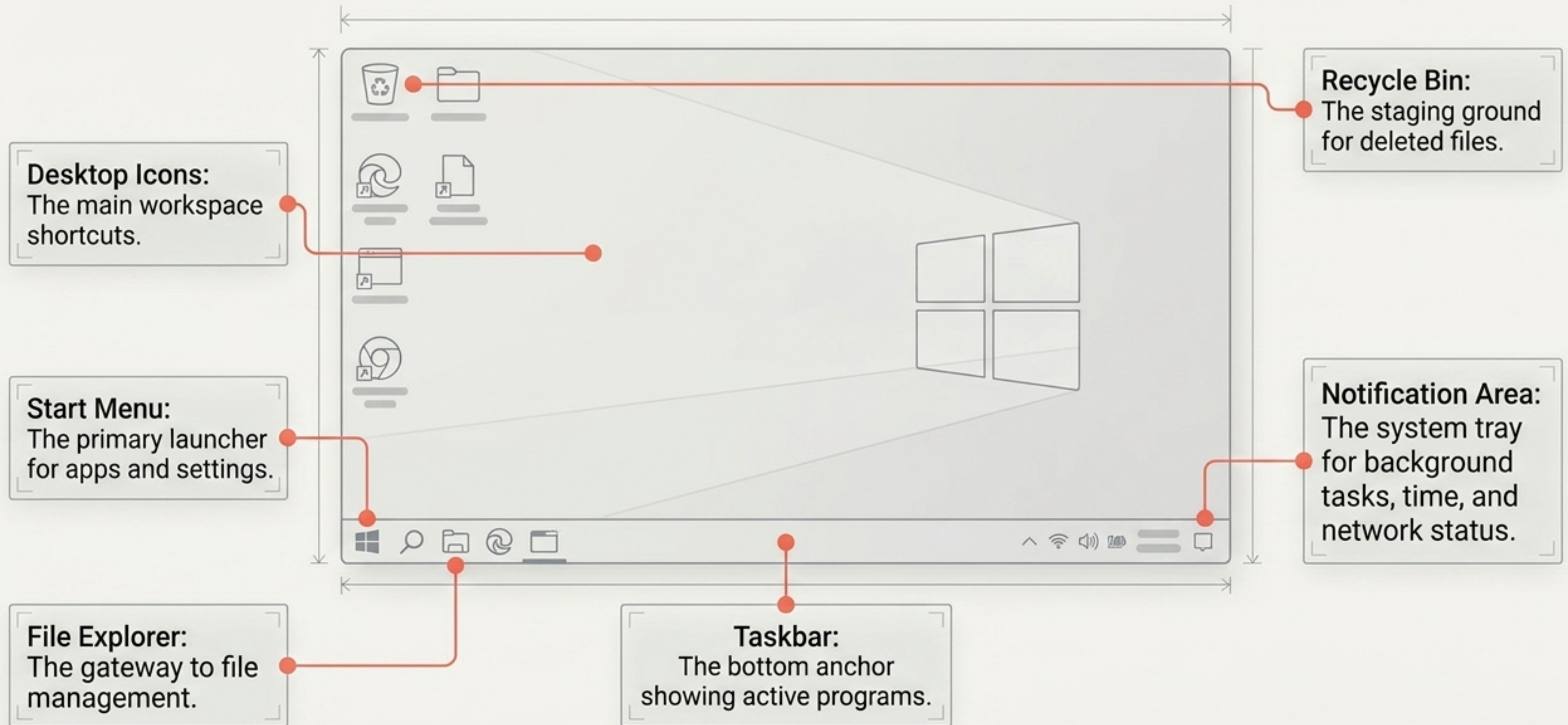
The OS Ecosystem: Built for Purpose



The OS Landscape Matrix

Operating System	Developer	Primary Form Factor
Windows	Microsoft	Desktop and Laptop
macOS	Apple	Mac Computers
Linux	Open-source Community	Servers and PCs
Android	Google	Smartphones
iOS	Apple	iPhone and iPad
ChromeOS	Google	Chromebooks

Anatomy of the Desktop



Quick Reference: File Management



Keyboard Shortcuts

Copy: Ctrl + C

Cut: Ctrl + X

Paste: Ctrl + V

Create

Right Click ->
New -> Folder

Rename

Right Click ->
Rename

Delete

Select File ->
Delete

Restore

Open Recycle Bin
-> Restore

The Reality Check: Trade-Offs

Advantages

- ✓ Easy to use and navigate.
- ✓ Supports seamless multitasking.
- ✓ Efficient hardware management.
- ✓ Provides built-in security and networking.
- ✓ Allows custom software installation.

Disadvantages

- ⚠ Can be vulnerable to viruses and malware.
- ⚠ Requires constant, regular updates.
- ⚠ Licensing fees for closed-source options.
- ⚠ Hardware and software compatibility issues may occur.

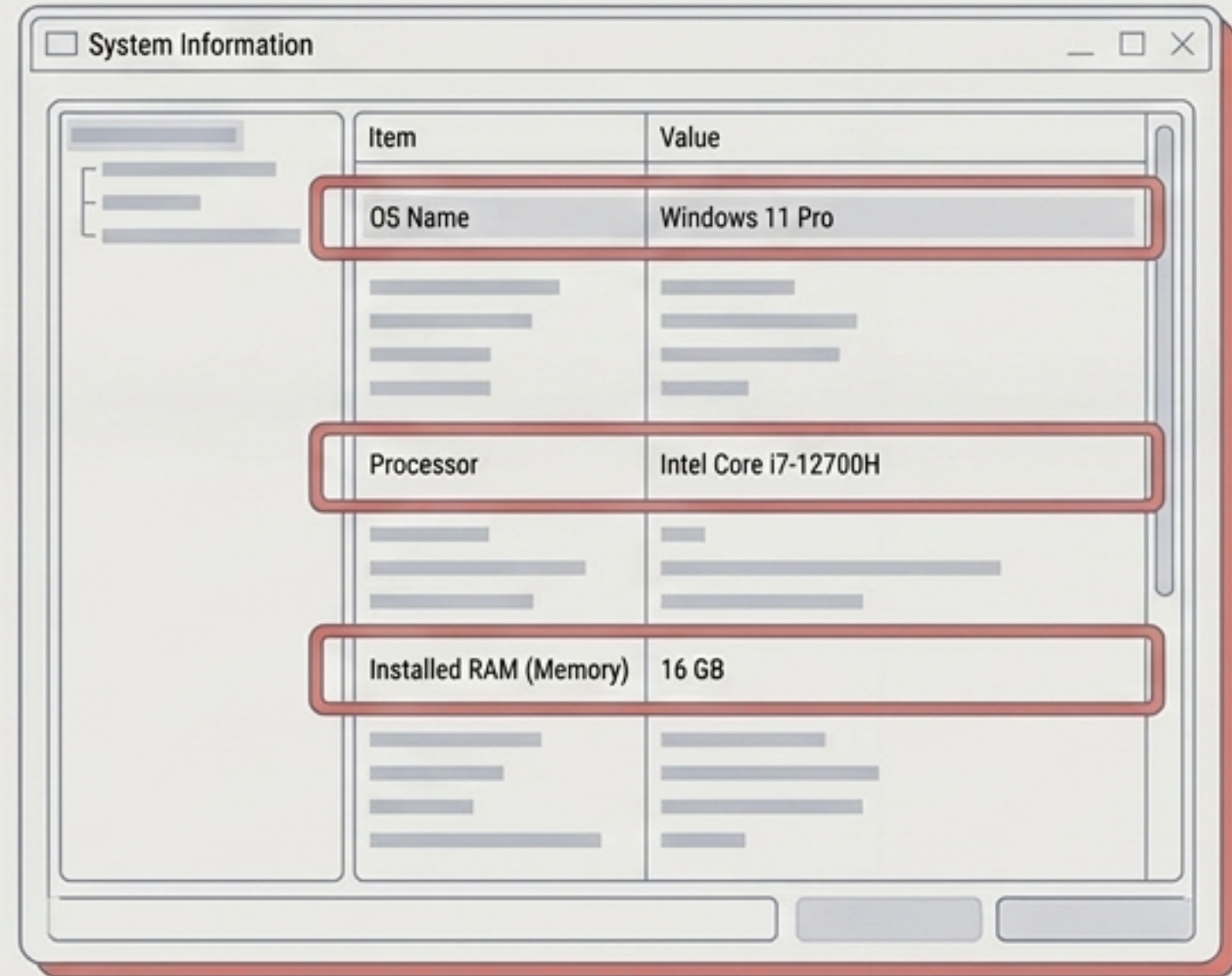
Field Activity: Explore Your Machine

Mission Instructions

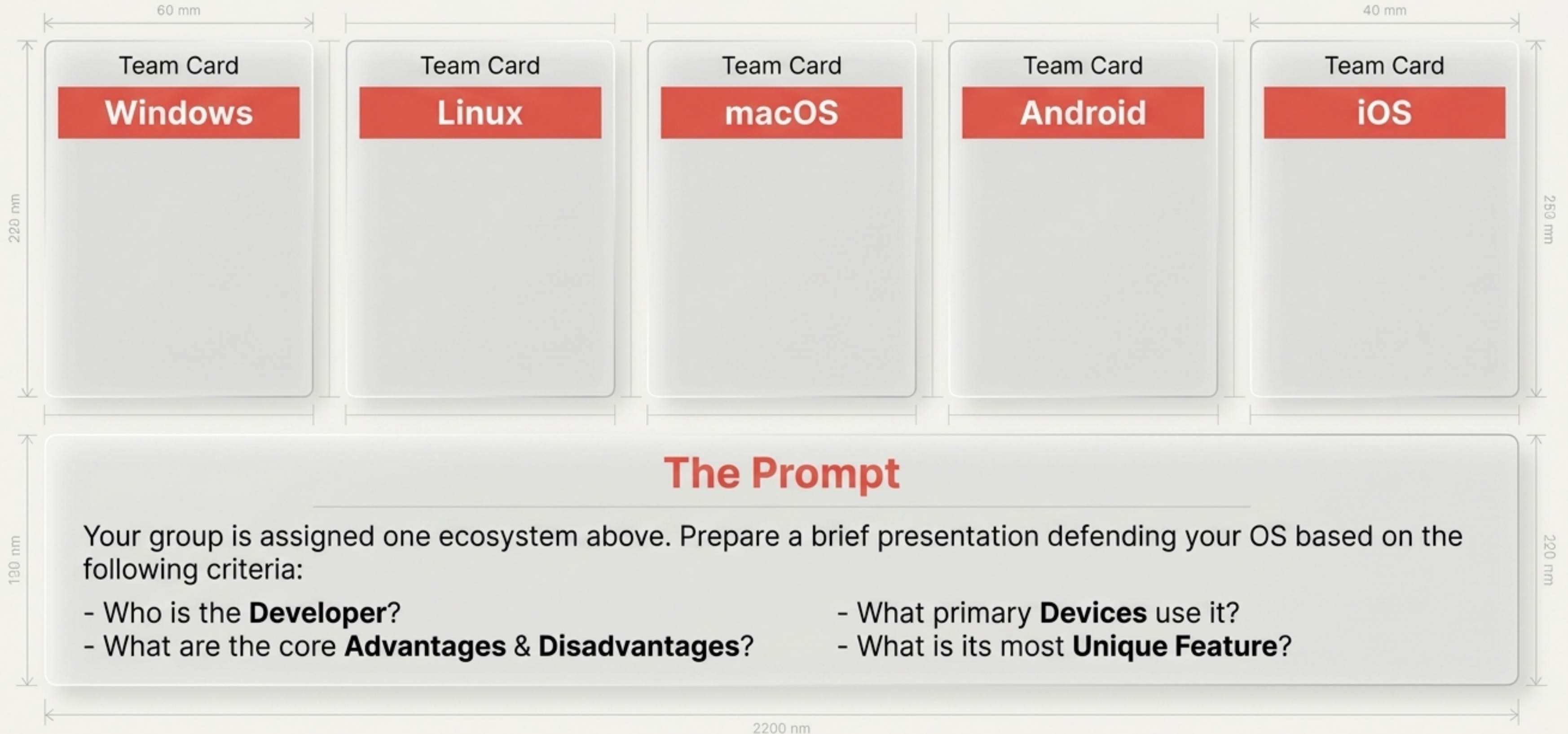
Open Settings or System Information on your current device and identify the core specs driving your hardware. Submit a screenshot capturing these specific details.

Checklist to Capture:

1. Operating System Name
2. Current Version
3. Processor Type
4. Installed RAM (Memory)
5. System Type (32-bit or 64-bit)



Group Activity: The OS Ecosystem Battle



Knowledge Check

Q1: What software manages the computer hardware?

- A. Browser
- B. Operating System**
- C. Antivirus
- D. Compiler

Q2: Which function manages RAM?

- A. File Management
- B. Memory Management**
- C. Process Management
- D. Security

Q3: Which interface uses icons and windows?

- A. CLI
- B. GUI**
- C. BIOS
- D. DOS

Q4: What is the main purpose of an OS?

- A. Create websites
- B. Manage hardware & software resources**
- C. Browse the Internet
- D. Edit pictures

The Ultimate Software



The OS is the core software enabling communication between the user, applications, and hardware. Understanding it allows you to operate efficiently, manage files securely, and troubleshoot effectively.

Reflection Assignment

Write a one-page reflection answering this prompt:

"Why is an operating system considered the most important software in a computer? Provide examples from your daily life."