1. Operating System Overview

🔻 **Puzzle:**
I am the brain of the computer but not the hardware. I manage tasks and resources, ensuring smooth operation. Without me, the computer would be a useless box. What am I?

Answer: Operating System

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2. Objectives and Functions of OS

🔻 **Puzzle:**
I act like a **traffic controller** for programs, ensuring no two processes collide while running. I allocate memory and CPU time efficiently, allowing multiple users to work together. Who am I?

Answer: Process Management

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3. Evolution of Operating Systems

🔻 **Puzzle:**
I was the first of my kind, handling only one task at a time. As technology improved, I gained the ability to multitask, support multiple users, and even become invisible to users. What am I?

Answer: Operating System Evolution (Single-tasking → Multi-tasking → Time-Sharing → Distributed OS)

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4. Operating System Structures

🔻 **Puzzle:**
I can be **monolithic**, **layered**, or **microkernel-based**.
I define how an OS is built and how components communicate. What am I?

Answer: OS Structure

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5. Operating System Services

🔻 **Puzzle:**
I allow you to **execute programs, manage files, and ensure security**.
Without me, users would struggle to interact with their system.
I am a set of functionalities provided by the OS. What am I?

Answer: Operating System Services

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6. User Operating System Interface

🔻 **Puzzle:**
I can be **command-based, menu-driven, or graphical**.
I help users talk to the operating system in different ways.
Without me, you wouldn't know how to control the computer. What am I?

Answer: User Interface (CLI, GUI, Menu-driven Interface)

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7. System Calls

🔻 **Puzzle:**
I am the secret language between programs and the OS.
When a program needs to **read a file, allocate memory, or create a process**, it whispers my name.
What am I?

Answer: System Calls

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8. System Programs

🔻 **Puzzle:**
I am not part of the OS but help users interact with it.
I include **compilers, text editors, file managers, and debuggers**.
I provide utilities to make computing easier. What am I?

Answer: System Programs

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9. Design and Implementation of OS

🔻 **Puzzle:**
I am the **blueprint of an OS**, defining how components work together.
I am written in **C, C++, or assembly**, balancing efficiency and maintainability.
I determine whether the OS is **monolithic, modular, or layered**. What am I?

Answer: OS Design and Implementation

Riddle:
I am invisible but control everything.
I let programs run and make them sing.
I manage hardware, memory, and CPU,
Without me, your computer won't work for you!
What am I?

Answer: Operating System

2. Objectives and Functions of OS

🔻 **Puzzle:**
Four friends (P, Q, R, and S) are running a race.

- **P** is in charge of scheduling who runs next.
- **Q** keeps track of the energy (memory) used by each runner.
- **R** ensures no one crashes into each other.
- **S** helps them communicate with the audience (I/O).
  Together, they keep the race running smoothly.

Which OS functions do P, Q, R, and S represent?

Answer:

- **P → Process Management**
- **Q → Memory Management**
- **R → File System & Security**
- **S → I/O Management**

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3. Evolution of OS

🔻 **Riddle:**
I started simple, just one job at a time.
Then I learned to share, which was quite fine.
With multiple users, I became wise,
Now I live in the cloud, beyond the skies!
What am I?

Answer: Evolution of Operating Systems (Single-tasking → Multi-tasking → Time-Sharing → Distributed OS → Cloud OS)