Prompts and Responses Summary

Prompt 1:

- **File Name:** 2025_02_02_OS_AI_PCSw.pdf
- **File Content:** A document describing a virtual lab for operating systems, including experiments on processes, context switching, and pedagogical value.
- **Request:** Follow the steps given in the document and provide a codebase.

Response:

- **Provided a foundational implementation of a virtual lab for process lifecycle and context switching.**
- **Included features:**
    - Process creation with auto-incrementing PID.
    - Basic scheduling (FCFS).
    - Context switching mechanism.
    - Simulated I/O wait with timeout.
    - Color-coded process states (ready, running, waiting, terminated).
    - Real-time PCB details display.
    - Used vanilla JavaScript, HTML, and CSS for compatibility.
    - Suggested enhancements for future development.

Prompt 2:

- **File Name:** image.png
- **File Content:** A layout description for the virtual lab interface, including sections for PCB, memory, log, CPU, registers, task list, and controls.
- **Request:** Ensure the codebase follows this layout.

Response:

- **Updated the codebase to match the specified layout.**
- **Divided the interface into four main sections:**
    - CPU Section: Displays registers (PC, R1, R2, R3) and process states.
    - Memory Section: Shows PCB details of the active process.
    - Controls Section: Includes buttons for Load Process, Save Process, and Advance Clock.
    - Log Section: Displays timestamped system events.
- **Added functionality:**
    - Clock advancement with process execution.
    - Save Process functionality.
    - Timestamped logging for system events.
    - Improved visual hierarchy and consistency across sections.

Summary of Responses

- **First Response:** Created a foundational codebase for a virtual lab experiment based on the document's specifications. Focused on process lifecycle and context switching, with a simple UI and core functionality.
- **Second Response:** Updated the codebase to align with the layout described in the image. Organized the interface into distinct sections (CPU, Memory, Controls, Log) and added features like clock advancement and logging.