KR MANGALAM UNIVERSITY

SOHNA ROAD, GURUGRAM

OPERATING SYSTEM LAB FILE

COURSE CODE-ENCS351

Submitted by

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Program: BTech CSE

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Submitted To

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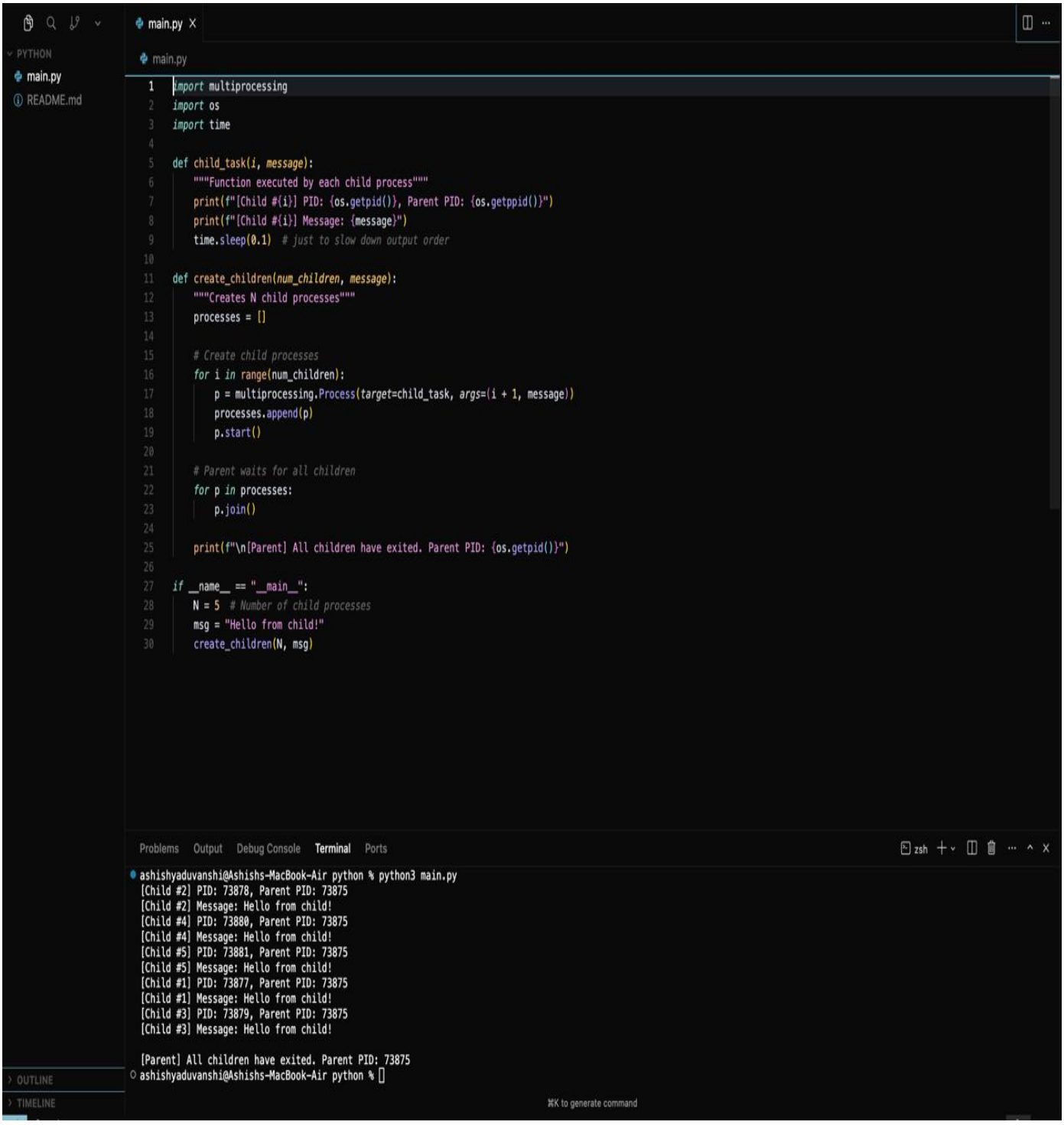
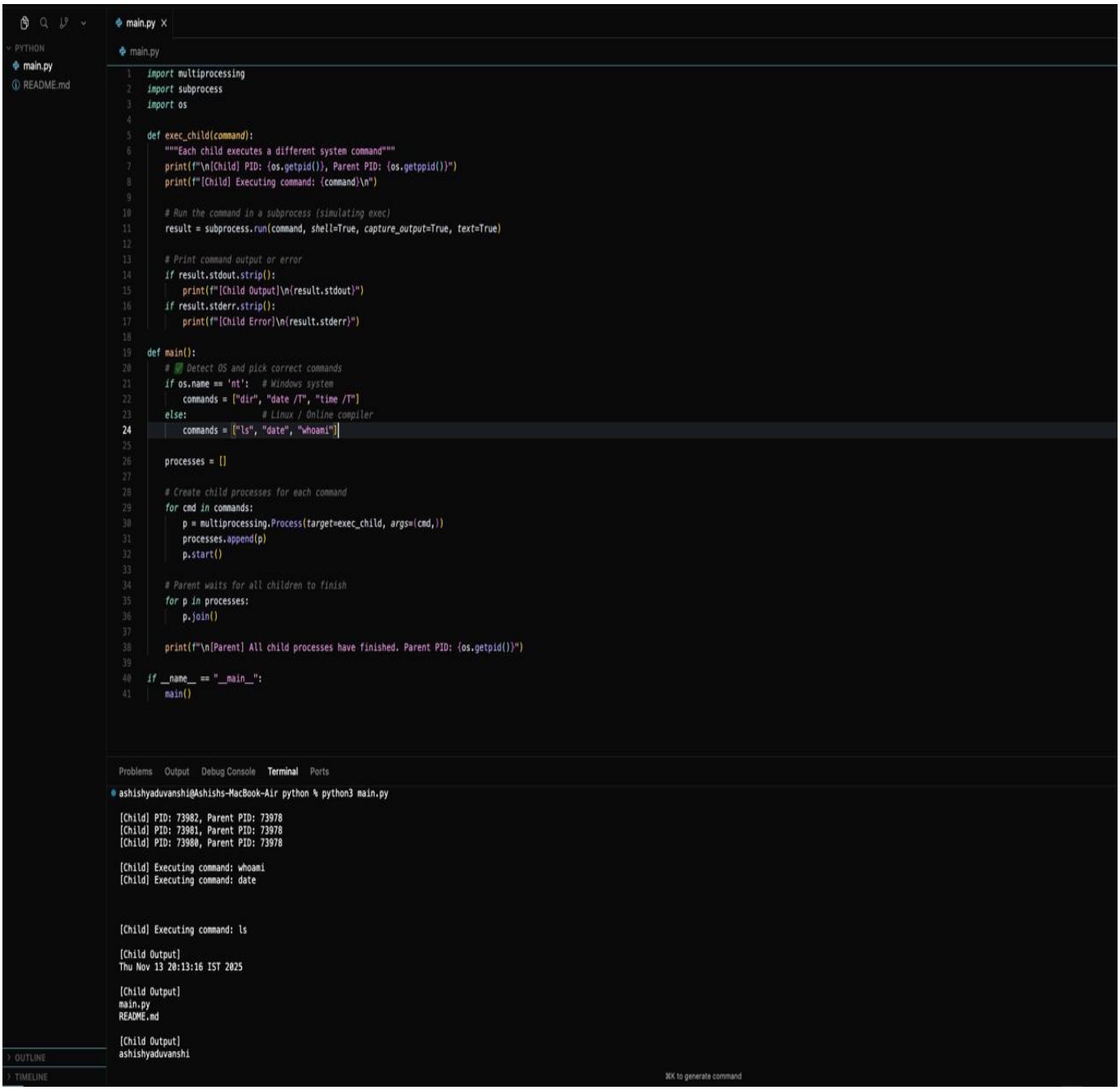
1. Write a Python program that creates N child processes using os.fork(). Each child prints:
   - Its PID
   - Its Parent PID
   - A custom message
   The parent should wait for all children using os.wait().

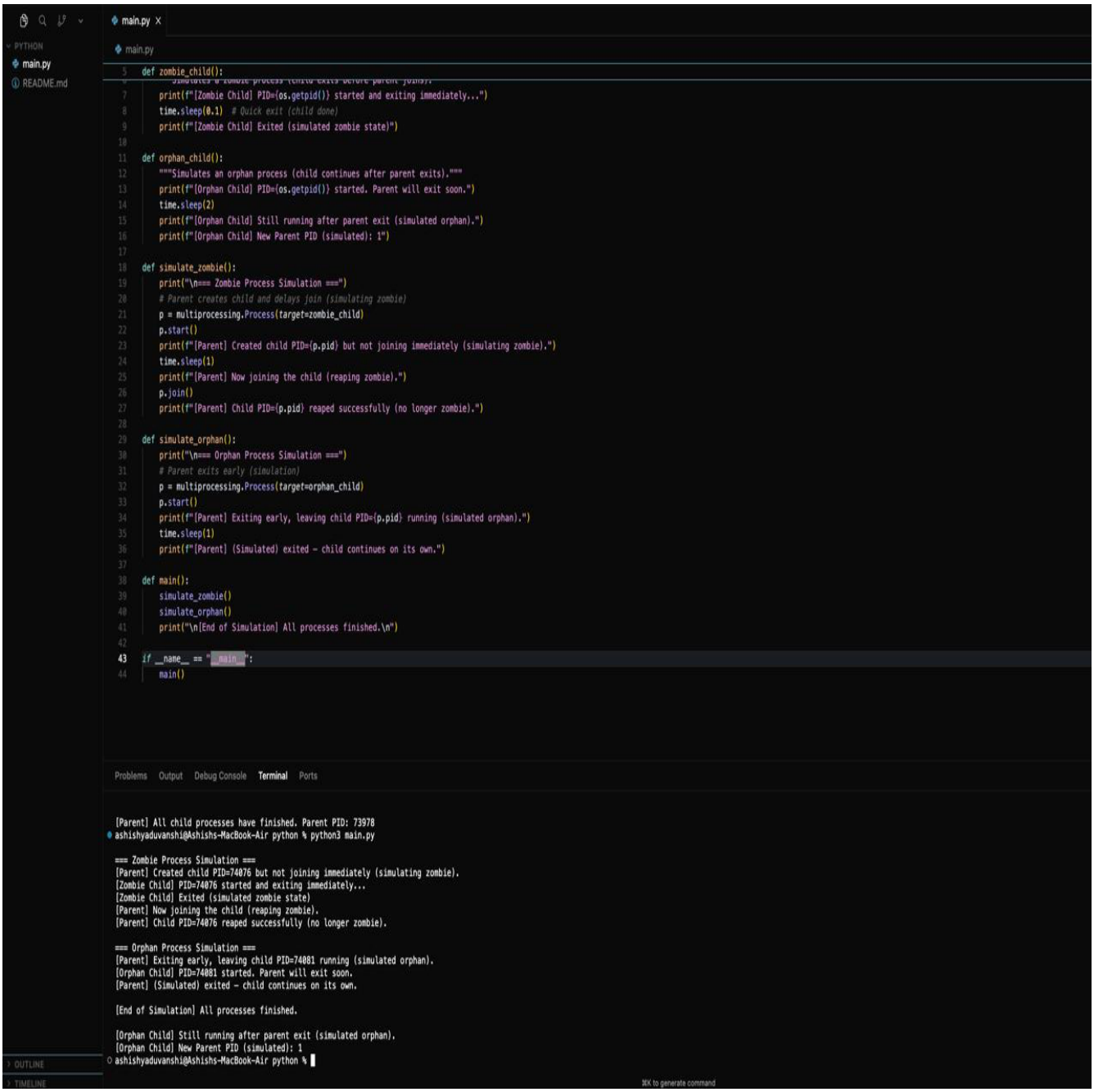


Task 2: Command Execution Using exec()
Modify Task 1 so that each child process executes a Linux command (ls, date, ps, etc.) using os.execvp() or subprocess.run().



Task 3: Zombie & Orphan Processes

Zombie: Fork a child and skip wait() in the parent.
Orphan: Parent exits before the child finishes.
Use ps -el | grep defunct to identify zombies.



Task 4: Inspecting Process Info from /proc

Take a PID as input. Read and print:
- Process name, state, memory usage from /proc/[pid]/status
- Executable path from /proc/[pid]/exe
- Open file descriptors from /proc/[pid]/fd

Task 5: Process Prioritization

Create multiple CPU-intensive child processes. Assign different nice() values. Observe and log execution order to show scheduler impact.