

CPSC 457 Fall 2025 - Assignment 1 Part 1

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Git Repository URL: <https://github.com/jtoor2005/cpsc457-a1-treasure-hunt>

Reflection for Part 1: The most challenging part was coordinating 100 child processes cleanly while abiding by the constraint to communicate only via `exit()` and `wait()`. Exit codes are limited to 8 bits, so we cannot directly return a 0 999 column index from a child. I addressed this by having each child exit with a simple success/fail code. The parent then maps the winning PID back to its row and rescans that row in memory to compute the exact column index deterministically. This keeps the design simple and avoids shared memory entirely. I also ensured all children terminate and are reaped to avoid zombies or server overload, using `_exit(...)` in children and `wait(...)` in the parent.