

Task: Bathroom Stall Simulation

Design a concurrent system using three classes:

1. BathroomStall

- **Counting Semaphore:** Tracks available bathroom slots.
- **Binary Semaphore (Mutex):** Ensures mutual exclusion—only one thread enters a slot at a time.
- **Methods:**
 - enterBathroom()
 - leaveBathroom()
 - useBathroom() (simulates usage)

2. Simulator

- Contains the main() method.
- Initializes the BathroomStall.
- Spawns threads and invokes enterBathroom() and leaveBathroom().

3. Employee (Thread Class)

- Represents individual threads accessing the bathroom concurrently.