**Data Structure Used:**

* queue
* priority\_queue

**Algorithm Explanation and Results:**

1. **Highest Priority First (HPF):**
   * The scheduler waits for processes to enter the queue.
   * Once a process arrives, the scheduler runs it until it finishes.
   * When a process is done, the scheduler starts running the next one.
   * If more than one process has arrived, the highest-priority process is scheduled first.
2. **Round Robin (RR):**
   * The scheduler waits for processes to enter the queue.
   * Once a process arrives, the scheduler runs it until it finishes or the quantum expires.
   * If the process finishes, the scheduler starts the next one.
   * If the process is not finished but the quantum expires, the scheduler puts the process at the end of the queue.
   * FCFS algorithm: the process that comes first runs first.
3. **Shortest Remaining Time Next (SRTN):**
   * The scheduler waits for processes to enter the queue.
   * Once a process arrives, the scheduler runs it until it finishes.
   * If another process arrives while the first process is still running, it compares the running process's remaining time with the new process's run time.
   * If the remaining time is less than the run time of the new process, it continues running the original one.
   * Otherwise, it runs the new one and stops the first.

**Assumptions:**

* No assumptions were made.

**Workload Distribution:**

* Mohamed Yasser: Process Generator + Data structures
* Aser Mohamed: Scheduler + Semaphores sync
* Beshoy Sorial: HPF + SRTN + RR

**Table for Time Taken:**

* Time was not traced.