SCHEDULERS

Schedulers manages and controls every resource in the computer system.

CPU SCHEDULERS

CPU Schedulers or *short-term schedulers* selects from those READY processes in memory. This makes sure that the next process will not be blocked for I/O immediately after it is dispatched.

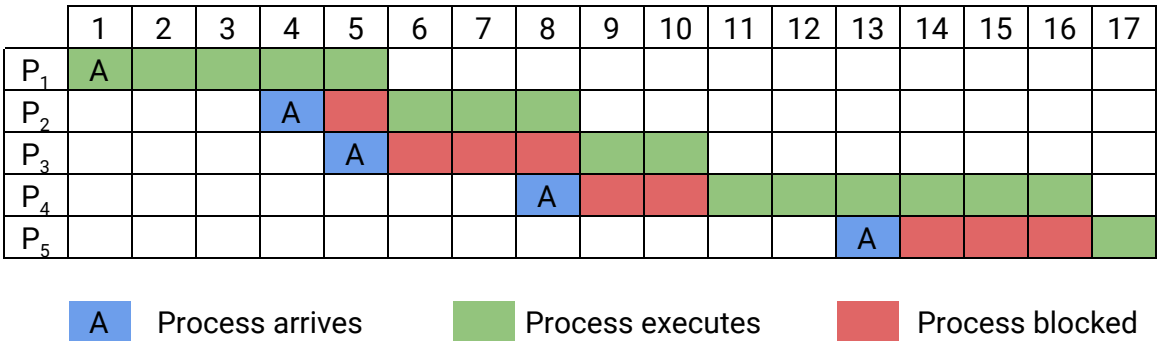
SCHEDULING ALGORITHMS

1. FIRST-COME-FIRST-SERVE SCHEDULING (FCFS)

The first job that arrives in the ready queue will be executed first.

Example:
Given the following process arrival times and processing times:

P_1 1, 5 ; P_2 4, 3 ; P_3 5, 2 ; P_4 8, 6 ; P_5 13, 1

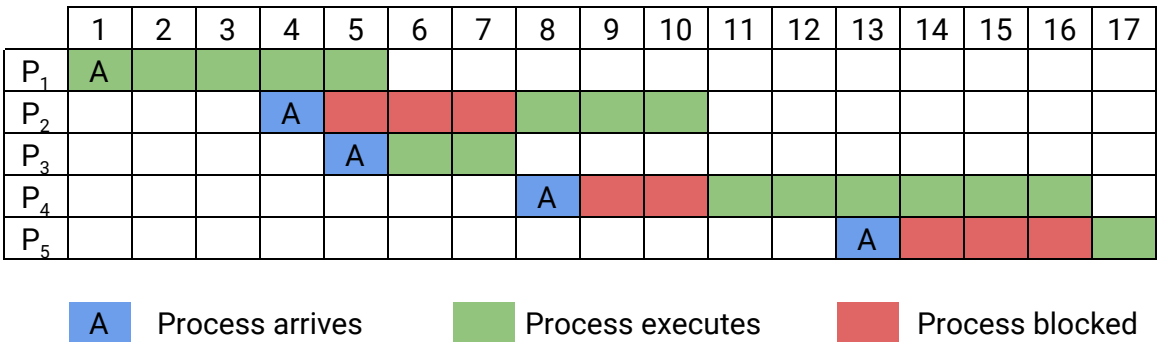


2. SHORTEST JOB FIRST (SJF)

This scheduling algorithm selects the job with the shortest execution time. This algorithm assumes that the execution time is known upon arrival of the job on the queue.

Example:
Given the following process arrival times and processing times:

P_1 1, 5 ; P_2 4, 3 ; P_3 5, 2 ; P_4 8, 6 ; P_5 13, 1

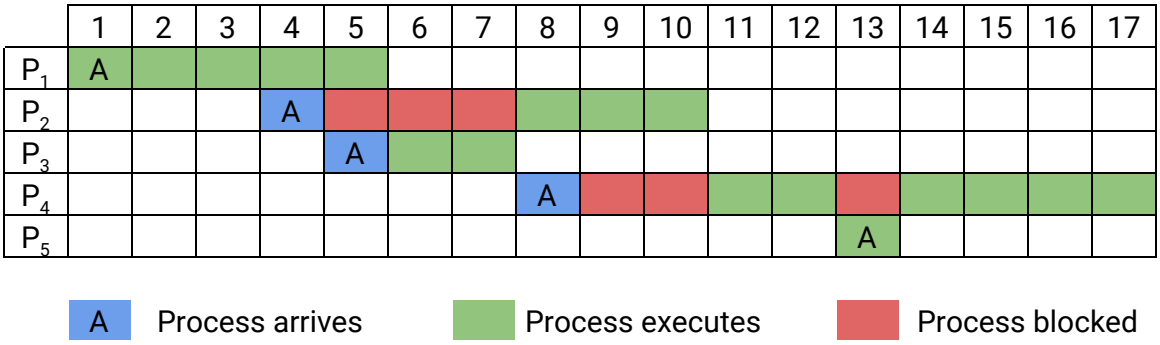


3. SHORTEST REMAINING PROCESSING TIME (SRPT)

This is the *preemptive version of SFJ*. If the new process has an execution time shorter than the remaining time of the current job.

Example:
Given the following process arrival times and processing times:

P_1 1, 5 ; P_2 4, 3 ; P_3 5, 2 ; P_4 8, 6 ; P_5 13, 1



4. ROUND-ROBIN

Each job is allocated an amount of time ***Q*** — ***Q*** this time being shared by all the jobs in the queue. If a job was not able to finish within this time, it is moved to the end of the ready queue. This is the *preemptive version of FCFS*.

Example:
Given Q = 3, and the following process arrival times and processing times:

P_1 1, 5 ; P_2 4, 3 ; P_3 5, 2 ; P_4 8, 6 ; P_5 13, 1