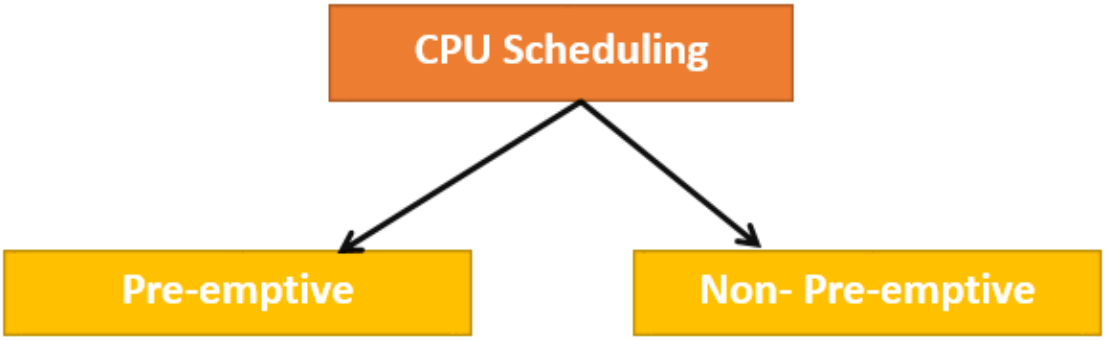
What is CPU Scheduling?

CPU Scheduling is a process of determining which process will own CPU for execution while another process is on hold.
The main task of CPU scheduling is to make sure that whenever the CPU remains idle, the OS at least select one of the processes available in the ready queue for execution.
The selection process will be carried out by the CPU scheduler. It selects one of the processes in memory that are ready for execution.



Preemptive Scheduling

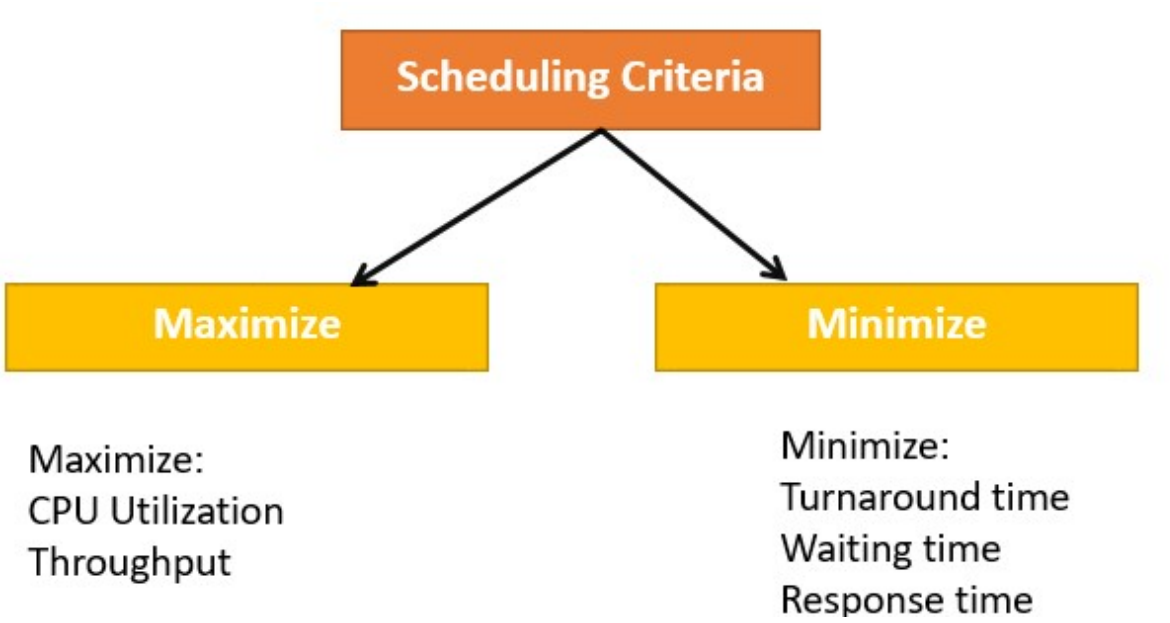
In Preemptive Scheduling, the tasks are mostly assigned with their priorities. Sometimes it is important to run a task with a higher priority before another lower priority task, even if the lower priority task is still running.

The lower priority task holds for some time and resumes when the higher priority task finishes its execution.

Non-preemptive Scheduling

is a CPU scheduling technique the process takes the resource (CPU time) and holds it till the process gets terminated or is pushed to the waiting state.

No process is interrupted until it is completed, and after that processor switches to another process.



Maximize:

CPU utilization: CPU utilization is the main task in which the operating system needs to make sure that CPU remains as busy as possible. It can range from 0 to 100 percent.

Throughput: The number of processes that finish their execution per unit time is known Throughput. So, when the CPU is busy executing the process, at that time, work is being done, and the work completed per unit time is called Throughput.

Minimize:

Waiting time: Waiting time is an amount that specific process needs to wait in the ready queue.

Response time: It is an amount to time in which the request was submitted until the first response is produced.

Turnaround Time: Turnaround time is an amount of time to execute a specific process. It is the calculation of the total time spent waiting to get into the memory, waiting in the queue and, executing on the CPU. The period between the time of process submission to the completion time is the turnaround time.