1. **Shortest Job First (SJF) Scheduling**

SJF scheduling algorithm, schedules the processes according to their burst time.In SJF scheduling, the process with the lowest burst time, among the list of available processes in the ready queue, is going to be scheduled next. However, it is very difficult to predict the burst time needed for a process hence this algorithm is very difficult to implement in the system.

Advantages of SJF

Maximum throughput

Minimum average waiting and turnaround time

Disadvantages of SJF

May suffer with the problem of starvation

It is not implementable because the exact Burst time for a process can't be known in advance.

**What is Non-Preemptive Scheduling?**

In this type of scheduling method, the CPU has been allocated to a specific process. The process that keeps the CPU busy will release the CPU either by switching context or terminating.

It is the only method that can be used for various hardware platforms. That’s because it doesn’t need specialized hardware (for example, a timer) like preemptive Scheduling.

Non-Preemptive Scheduling occurs when a process voluntarily enters the wait state or terminates.

**What is Preemptive Scheduling?**

Preemptive Scheduling is a scheduling method where 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.

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

Difference between Preemptive and Non-preemptive scheduling

In preemptive scheduling, the CPU can be taken back from the process at any time during the execution of the process. But in non-preemptive scheduling, if the CPU is allocated, then it will not be taken back until the process completes its execution.

In preemptive scheduling, a process can be interrupted by some high priority process but in non-preemptive scheduling no interruption by other processes is allowed.

The preemptive approach is flexible in nature while the non-preemptive approach is rigid in nature.

In preemptive scheduling, the CPU utilization is more as compared to the non-preemptive approach.

In preemptive scheduling, the waiting and response time is more. While in non-preemptive scheduling, the waiting and response time is less(learn more about waiting and response time from here).

In a preemptive approach, if higher priority process keeps on coming, then it can lead to starvation(read more about starvation from here). But in a non-preemptive approach, if process having higher burst time keeps on coming, then it can lead to starvation.