

Dispatcher

When the processes are in the ready state, then the CPU applies some process scheduling algorithm and choose one process from a list of processes that will be executed at a particular instant of time. This is done by a scheduler i.e. selecting one process from a number of processes is done by a scheduler.

Now, the selected process has to be transferred from the current state to the desired or scheduled state. So, it is the duty of the dispatcher to dispatch or transfer a process from one state to another. A dispatcher is responsible for context switching and switching to user mode.

For example, if we have three processes P1, P2, and P3 in the ready state. The arrival time of all these processes is T_0 , T_1 , and T_2 respectively. If we are using the First Come First Serve approach, then the scheduler will first select the process P1 and the dispatcher will transfer the process P1 from the ready state to the running state. After completion of the execution of the process P1, the scheduler will then select the process P2 and the dispatcher will transfer the process P2 from ready to running state and so on.

Difference between Dispatcher and Scheduler

Till now, we are familiar with the concept of dispatcher and scheduler. Now in this section of the blog, we will see the difference between a dispatcher and a scheduler.

- The scheduler selects a process from a list of processes by applying some process scheduling algorithm. On the other hand, the dispatcher transfers the process selected by the short-term scheduler from one state to another.

- The scheduler works independently, while the dispatcher has to be dependent on the scheduler i.e. the dispatcher transfers only those processes that are selected by the scheduler.
- For selecting a process, the scheduler uses some process scheduling algorithm like FCFS, Round-Robin, SJF, etc. But the dispatcher doesn't use any kind of scheduling algorithms.
- The only duty of a scheduler is to select a process from a list of processes. But apart from transferring a process from one state to another, the dispatcher can also be used for switching to user mode. Also, the dispatcher can be used to jump to a proper location when the process is restarted.