Priority Scheduling

Definition - What does *Priority Scheduling* mean?

Priority scheduling is a method of scheduling processes based on priority. In this method, the scheduler chooses the tasks to work as per the priority, which is different from other types of scheduling, for example, a simple round robin.

Priority scheduling involves priority assignment to every process, and processes with higher priorities are carried out first, whereas tasks with equal priorities are carried out on a first-come-first-served (FCFS) or round robin basis. An example of a general-priority-scheduling algorithm is the shortest-job-first (SJF) algorithm.

Techopedia explains *Priority Scheduling*

Priorities can be either dynamic or static. Static priorities are allocated during creation, whereas dynamic priorities are assigned depending on the behavior of the processes while in the system. To illustrate, the scheduler could favor input/output (I/O) intensive tasks, which lets expensive requests to be issued as soon as possible.

Priorities may be defined internally or externally. Internally defined priorities make use of some measurable quantity to calculate the priority of a given process. In contrast, external priorities are defined using criteria beyond the operating system (OS), which can include the significance of the process, the type as well as the sum of resources being utilized for computer use, user preference, commerce and other factors like politics, etc.

Priority scheduling can be either of the following:

- Preemptive: This type of scheduling may preempt the central processing unit (CPU) in the case the priority of the freshly arrived process being greater than those of the existing processes.
- Non-preemptive: This type of scheduling algorithm simply places the new process at the top of the ready queue.

Indefinite blocking, otherwise called starvation, is one of the major issues concerning priority scheduling algorithms. It is a state where a process is ready to be executed, but faces a long wait in getting assigned to the CPU.

It is often possible that a priority scheduling algorithm can make a low-priority process wait indefinitely. For example, in an intensely loaded system, if there are a number of higher priority processes, the low-priority processes may never get the CPU for execution.

A remedy to starvation is aging, which is a technique used to gradually increase the priority of those processes that wait for long periods in the system.

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