A Proposed Priority Dynamic Quantum Time Algorithm to Enhance Varying Time Quantum Round Robin Algorithm

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ABSTRACT

Management of the processes is an essential task performed by the scheduler in an Operating System (OS). One of the important units of the OS is Central Processing Unit (CPU), which is scheduling by many algorithms of scheduling. The main purpose of these algorithms is to enhance the system's performance by increasing the utilisation of CPU, increasing the throughput of the system, reducing the turnaround and waiting times and reducing the context switches. Some of the famous scheduling algorithms are First-Come, First-Served, Shortest Job First (SJF), Round Robin (RR) and Priority Scheduling. RR scheduling algorithm is the most suitable choice for time shared system but not for soft real-time systems owing to a large turnaround time, large waiting time and high number of context switches. The choice of the quantum time in RR is the optimal solution for the problem of large turnaround and waiting time with RR. This paper proposes a new algorithm to improve the work of RR by proposing a new algorithm to improve the concept of Improved Round Robin with Varying time Quantum (IRRVQ). The proposed algorithm gave results better than IRRVQ in terms of minimising the number of context switches, average waiting time and average turnaround time.