Round Robin (RR) Scheduling is the basis of time sharing environment. It is the combination of First Come First Served (FCFS) scheduling algorithm and preemption among processes. It is basically used in a time sharing operating system. It switches from one process to another process in a time interval. The time interval or Time Quantum (TQ) is fixed for all available processes. So, the larger process suffers from Context Switches (CS). To increase efficiency, we have to select different TQ for processes. The main objective of RR is to reduce the CS, maximize the utilization of CPU and minimize the turn around and the waiting time. In this paper, we have considered different TQ for a group of processes. It reduces CS as well as enhancing the performance of RR algorithm. TQ can be calculated using min-max dispersion measure. Our experimental analysis shows that Group Based Time Quantum (GBTQ) RR algorithm performs better than existing RR algorithm with respect to Average Turn Around Time (ATAT), Average Waiting Time (AWT) and CS.


Index Terms

Computer Science
Operating Systems
Keywords
Round Robin  Time Quantum  Min-Max  Ready Queue  Group Based Time Quantum