Abstract

Round Robin scheduling algorithm is the widely used scheduling algorithm in multitasking and real time environment. It is the most popular algorithm due to its fairness and starvation free nature towards the processes, which is achieved by using the time quantum. As the time quantum is static, it causes less context switching incase of high time quantum and high context switching incase of less time quantum. Increasing context switch leads to high avg. waiting time, high avg. turnaround time which is an overhead and degrades the system performance. So, the performance of the system solely depends upon the choice of optimal time quantum which is dynamic in nature. In this paper, we have proposed a new variant of RR scheduling algorithm known as Improved Round Robin (IRR) Scheduling algorithm, by arranging the processes according to their shortest burst time and assigning each of them with an optimal time quantum which is able to reduce all the above said disadvantages. Experimentally we have shown that our proposed algorithm performs better than the RR algorithm, by reducing context switching, average waiting and average turnaround time.
Improved Round Robin Scheduling using Dynamic Time Quantum

References


Index Terms

Computer Science
Algorithms

Keywords
RR Scheduling  Context Switching  Average waiting time  Average turnaround time.