Abstract

Round Robin scheduling algorithm is the most often used scheduling algorithm in timesharing systems as it is fair to all processes and is starvation free. But along with these advantages it suffers from some drawbacks such as more number of context switches, long waiting and long turnaround time. The main objective of this paper is to improve existing round robin algorithm by extending the time quantum in real time for candidate processes in such a manner that its fairness property is not lost. The proposed algorithm in this paper finds the remaining time of a process in its last turn and then based on some threshold value, decides whether its time quantum should be extended or not. A mathematical model has been developed to prove that the proposed algorithm works better than the conventional round robin algorithm. The result of experimental study also shows that the proposed improved version of round robin algorithm performs better than the conventional round robin algorithm in terms various performance metrics such as number of context switches, average waiting and turnaround time.

References

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An Improved Round Robin Approach using Dynamic Time Quantum for Improving Average Waiting Time


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