Abstract

The main objective of the paper is to improve the Round Robin (RR) algorithm using dynamic ITS by coalescing it with Shortest Remaining Time Next (SRTN) algorithm thus reducing the average waiting time, average turnaround time and the number of context switches. The original time slice has been calculated for each process based on its burst time. This is mostly suited for
soft real time systems where meeting of deadlines is desirable to increase its performance. The advantage is that processes that are closer to their remaining completion time will get more chances to execute and leave the ready queue. This will reduce the number of processes in the ready queue by knocking out short jobs relatively faster in a hope to reduce the average waiting time, turn around time and number of context switches. This paper improves the algorithm [8] and the experimental analysis shows that the proposed algorithm performs better than algorithm [6] and [8] when the processes are having an increasing order, decreasing order and random order of burst time.

Reference

- Round robin scheduling - a survey Rasmus V. Rasmussen and Michael A. Trick, USA
- A Modified Maximum Urgency First Scheduling Algorithm for Real-Time Tasks Vahid Salmani, Saman Taghavi Zargar, and Mahmoud Naghibzadeh-2005
- Hierarchical Fixed Priority Pre-emptive Scheduling Robert Davis and Alan Burns, Real-Time Systems Research Group, Department of Computer Science, University of York, YO10 5DD, York (UK)
- Burst Round Robin as a Proportional-Share Scheduling Algorithm Tarek Helmy, Abdellkader Dekdouk, College of Computer Science & Engineering, King Fahd University of Petroleum and Minerals, Dhahran 31261, Saudi Arabia. Computer Science Department, D’Oran Es-Sénia University, B.P.1524, EL-Mnaour, Algeria.-2010
- Design of Real Time scheduler simulator and Development of Modified Round Robin architecture Yaashuwanth .C IEEE Member, Dr.R. Ramesh Department of Electrical and Electronics Engineering, Anna University Chennai
- A New Scheduling Algorithms for Real Time Tasks, C.Yaashuwanth and Dr.R.Ramesh Department of Electrical and Electronics Engineering, Anna University Chennai, Chennai 600 025, India-2009
- Design and Performance Evaluation of a New Proposed Shortest Remaining Burst Round Robin (SRBRR) Scheduling Algorithm Prof. Rakesh Mohanty, Prof. H. S. Behera Khusbu Patwari, Manas Ranjan Das, Monisha Dash, Sudhashree, Department of Computer Science and Engineering Veer Surendra Sai University of Technology, Burla, Sambalpur, Orissa, India.-2010
- Priority Based Dynamic Round Robin (PBDRR) Algorithm with Intelligent Time Slice for Soft Real Time Systems Prof. Rakesh Mohanty, Prof. H. S. Behera, Khusbu Patwari, Monisha Dash, M. Lakshmi Prasanna, ICCA-2010

Index Terms

Computer Science

Operating Systems
Key words

Process Real Time Operating System

Waiting Time

Turnaround Time

Context Switches

Intelligent Time Slice (ITS)