A
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On

Optimization in Round Robin Process Scheduling Algorithm

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By

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DECLARATION

I hereby declare that the major project – II work entitled **"Optimization in Round robin scheduling algorithm"**, which is being submitted to Delhi Technological university, in partial fulfillment of requirements for the award of degree of Master of Technology (Software Engineering) is a genuine report carried out by me. The material contained in the report has not been submitted to any university or institution for the award of any degree**.**

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CERTIFICATE

This is to certify that the Major project – II entitled **"Optimization in Round Robin Process Scheduling Algorithm"**, is a genuine work done by **"Anurag Upadhyay"**, University roll number **2K13/SWE/01**. The project was completed under my supervision and forms a part of Master of Technology (Software engineering) course curriculum in the department of Computer Science and Engineering at Delhi Technological University, Delhi.

DATE……. **Dr .S.K.Saxena**

Project guide

Department of Computer Engineering

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Abstract

One of the most important tasks of an operating system is to share and schedule resources among various competing processes. This task is achieved through various process scheduling algorithms. In this regard, Round Robin (RR) algorithm certainly is one of the most popular algorithms. In this algorithm, a static time quantum is given to each process. However it suffers from certain problems which are mainly related to the size of time quantum. Larger the time quantum, larger is the response and waiting time of processes. Similarly if the time quantum is too small then the overhead of CPU increases because CPU has to perform greater number of context switches.

This thesis focuses on the optimization techniques in Round Robin algorithm. Several algorithms have been proposed which use a dynamic time quantum, rather than a static one. The concept of mean, median, dispersion and others are used to calculate time quantum for processes in ready queue based on their remaining burst time. An approach based on multiple time quanta has also been proposed. Finally it has been shown through implementation and results that these algorithms are able to solve the problems of conventional Round Robin algorithm. A better turnaround time, response time and waiting time has been achieved through the implementation of these algorithms.

Keywords: Round Robin algorithm, Dynamic and multiple time quantum, means, median, dispersion.

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