PREFACE

The whole subject matter of the thesis is divided into Five chapters:

Chapter 1:

It contains introduction to parallel processing system and queueing model. This chapter also reviews the work done by the previous researchers on implementation of parallel processing by using queueing model. The previous work has been collected and referred from the libraries of University of Roorkee, IIT Delhi, JNU, University of Delhi and some other sources.

Chapter 2:

It contains the study of different Queueing network models. It also contains the description of different model. There is also consideration of performance gain by multitasking. Computer performance models of parallel processing systems in which a job subdivides into two or more tasks at some point during its execution are considered. Except for queueing effects, the tasks execute independently of one another and do not require synchronization. An approximate solution method is developed and results of the approximation are compared to those of simulations. Bounds on the performance improvement due to overlap are derived.

Chapter 3:

A bulk arrival $M^F/M/C$ queueing system is used to model a centralized parallel processing system with job splitting. An expression for the mean job response time is obtained for these centralized parallel processing systems are considered and their performance compared. Furthermore, the effects of parallelism and overheads due to job splitting are investigated.

Chapter 4:

This chapter contains the evaluation of performance of dynamic sharing of processors in two-stage parallel processing systems. An approximation model is given for jobs with more than two stages.

Chapter 5:

In this chapter we will develop a general model for this area based on
computation structures, Defines algorithms to extract parallelism and examines an experimental test set of programs in C to assess their potential performance improvement in expected execution time.

Extensive Computational work presented on this thesis has been carried out on P-III at Department of Computer Science, ARSD College, Dhaulakuan, New Delhi. This thesis ends with a detailed bibliography concerned with the problems and references used in the contents. All the previous work has been collected and referred from the libraries of IIT Delhi, JNU, Roorkee, University of Delhi and some other sources.

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