Mathematical Model for Real Time Disk Scheduling Problem

Abstract

A real time system is a system that must satisfy explicit bounded response-time constraints. Real time database systems combine the concepts from real time systems and conventional database systems. Real time systems are mainly characterized by their strict timing constraints. Conventional databases are mainly characterized by their strict data consistency and integrity requirements. Thus, real time database systems should satisfy both the timing constraints with data integrity and consistency constraints. Real-time systems can be defined as those computing systems that are designed to operate in a timely manner. That is, performing certain actions within specific timing constraints; e.g. producing results while
meeting predefined deadlines. Real-time disk I/O scheduling is extremely important to the performance improvement of the whole real-time system since the disk devices are the system’s bottleneck. The design of mathematical model shows the correctness of real-time disk scheduling algorithms, as the effectiveness of any algorithm can only be detected or calculated using the mathematical model. This paper represents the design of our mathematical model which helps in evaluating the result of different scheduling algorithms.

References


Index Terms

Computer Science

Emerging Trends in Technology

Keywords

Real-time Disk Deadline Scheduling Parameters