Abstract

Every process which runs in an operating system is processed through multiprogramming, by sharing the processor. Multiprogramming is a capability of the operating system to execute one or a lot of programs in a single processing machine. Multiprogramming's main objective is to optimize the use of CPUs, throughput and minimize average waiting time (AWT), the average turnaround time (ATT), average response time (ART) and the number of context switches (NOC). Multi-programming can be performed by several CPU scheduling algorithms. Most preferable scheduling algorithm among all is Round robin (RR). RR algorithm is mainly depended on time quantum which is stationary. Hence, the proposed work is new approach to the round-robin scheduling algorithm (RR algorithm) with an enhanced time quantum based algorithm. This enhancement of RR algorithm by using dynamic time quantum leads to minimize AWT, ATT, ART and NOC. This approach inherits the properties of Round robin, shortest job first (SJF) algorithm and first come first serve algorithm (FCFS). Therefore, the proposed algorithm is a hybrid round robin scheduling mechanism for process management (HYRR Mechanism). HYRR Mechanism is an innovative scheduling algorithm which reduces ATT,
ART, AWT and NOC to the desired levels.

References


Science and Communication Technology (ICISCT), Karachi, Pakistan, 2019, pp. 1-5.


Index Terms

Computer Science

Algorithms

Keywords

Scheduling Algorithm, number of context switches, Process Management, Dynamic time Quantum.