Operating Systems

**PROJECT 1: CPU SCHEDULING**

**1. Overview and objective(s) of the project**

Our project CPU SCHEDULING primarily focuses on demonstrating a simulator for process scheduling and the way different scheduling algorithms behave. Initially, computers were able to allocate resources only one task at a time and the possibility of allocating resources to multiple processes at a time is done by the introduction of the CPU Scheduling. It is a crucial job in accomplishing the operating system design as it facilitates by distributing the CPU time among different processes at the same time. The primary objective of an efficient operating system is to allocate the maximum number of processes to run at the same time to extract the best use of the processor’s time. It is quite dependent on managing the CPU by efficiently managing it’s time with the use of suitable algorithms. The scheduling algorithms should satisfy the goals of process scheduling.

In achieving the goals of this project, we have the following objectives.

* To demonstrate CPU SCHEDULING by using different scheduling algorithms.
* To be able to simulate the behavior of the scheduling algorithms.
* To use algorithms such as First Come First Serve (FCFS), Shortest Job First (SJF), Shortest Remaining Time, Priority Scheduling, and Robin Scheduling.

**2. TEAM SIZE AND TEAM MEMBERS**

Team size: 4

Team members:

Rishwanth Reddy Baddipadaga, 11515020

Amit Reddy Baddam, 11507588

Roja Kamble, 11454258

Pranavanath Reddy Jaggari, 11503083

**3. Project plan**

* A process scheduler plans various processes and assigns them to the CPU in accordance with scheduling algorithms.
* For a very long time, computers could only accomplish one task at a time.
* Today's multi-core devices enable the CPU to complete multiple tasks at simultaneously, but because each of these cores quickly switches between processes, the collection of cores makes process scheduling more difficult.
* WKT, how algorithms work, making use of working logic we will implement them programmatically and achieve the scheduling tasks.

This project deals with 5 Algorithms for scheduling which are:

* First-Come, First-Served FCFS Scheduling
* Shortest-Job-First SJF Scheduling
* Shortest Remaining Time
* Priority Scheduling
* Round Robin Scheduling

a. Task divisions for the team members.

Each member working on different scheduling algorithms.

b. Due date for subtasks.

November 10th for all tasks

[Submission Date – November 12th]

**4. EXPERIMENTAL ENVIRONMENT**

Editor: Visual Studio

Command Line: Terminal

a. Programming language for implementation.

Java

b. Operating system to test the project.

Mac OS/Windows

c. Test cases.

There are 5-10 test cases overall.