Application CPU Scheduling Simulation

Given three applications, a simulation will run a three sets of process sizes to determine the performance rate of the application using FCFS, SJF, LJF, and Round Robin algorithms.

Instructions

To compile and run application, within the folder of the project enter the following in terminal in order:

1. javac \*.java

2. java Main

Choose one of the application programs provided, choose a process set size, and then click on the **simulate** **button** to obtain the results of that application's overall turnaround time, waiting time, and throughput as well as the averages for each scheduler for the specified process set size. For every trial, please reselect the process set size you want the application to simulate. As each scheduler for an application runs asynchronously, please allow between 30 seconds to 2 minutes to pass for the results to appear on the GUI.

To reset the simulation, click on the **reset button** to clear the application selection and the tables generated.

Trials

To test a new trial: press the **reset button** to start a new trial.

For example: (assuming the user starts with trial one) once you finish that trial (completed simulating all applications for the following process set), please press the **reset button** to start a trial two, and then press the **reset button** to start trial three.

Please note that the simulation is defaulted to start with trial one for every application, which process set size of three.

Trial 1: Process Set Containing a Process Count of Three

Microsoft Outlook uses the following burst times for process count of 3:

|  |
| --- |
| Burst Times |
| 2 |
| 4 |
| 6 |

YouTube uses the following burst times for process count of 3:

|  |
| --- |
| Burst Times |
| 1 |
| 3 |
| 5 |

Google Chrome uses the following burst times for process count of 3:

|  |
| --- |
| Burst Times |
| 3 |
| 6 |
| 9 |

Trial 2: Process Set Containing a Process Count of Six

Microsoft Outlook uses the following burst times for process count of 6:

|  |
| --- |
| Burst Times |
| 2 |
| 4 |
| 6 |
| 8 |
| 10 |
| 12 |

YouTube uses the following burst times for process count of 6:

|  |
| --- |
| Burst Times |
| 1 |
| 3 |
| 5 |
| 7 |
| 9 |
| 11 |

Google Chrome uses the following burst times for a process count of 6:

|  |
| --- |
| Burst Times |
| 3 |
| 6 |
| 9 |
| 12 |
| 15 |
| 18 |

Trial 3: Process Set Containing a Process Count of Ten

Microsoft Outlook uses the following burst times for process count of 10:

|  |
| --- |
| Burst Times |
| 2 |
| 4 |
| 6 |
| 8 |
| 10 |
| 12 |
| 14 |
| 16 |
| 18 |
| 20 |

YouTube uses the following burst times for process count of 10:

|  |
| --- |
| Burst Times |
| 1 |
| 3 |
| 5 |
| 7 |
| 9 |
| 11 |
| 13 |
| 15 |
| 17 |
| 19 |

Google Chrome uses the following burst times for a process count of 10:

|  |
| --- |
| Burst Times |
| 3 |
| 6 |
| 9 |
| 12 |
| 15 |
| 18 |
| 21 |
| 24 |
| 27 |
| 30 |

Application Information Per Trial

Trial One:

Microsoft Outlook

The arrival order and the order of burst times assigned to an individual process in the Microsoft Outlook application for trial one is as follows:

P1 has a burst time of 2,

P2 has a burst time of 4,

And P3 has a burst time of 6.

YouTube

The arrival order and the order of burst times assigned to an individual process in the YouTube application for trial one is as follows:

P1 has a burst time of 1,

P2 has a burst time of 3,

and P3 has a burst time of 5.

Google Chrome

The arrival order and the order of burst times assigned to an individual process in the Google Chrome application for trial one is as follows:

P1 has a burst time of 3,

P2 has a burst time of 6,

and P3 has a burst time of 9.

Trial Two:

Microsoft Outlook

The arrival order and the order of burst times assigned to an individual process in the Microsoft Outlook application for trial two is as follows:

P1 has a burst time of 2,

P2 has a burst time of 4,

P3 has a burst time of 6,

P4 has a burst time of 8,

P5 has a burst time of 10,

and P6 has a burst time of 12.

YouTube

The arrival order and the order of burst times assigned to an individual in the YouTube application for trial two is as follows:

P1 has a burst time of 1,

P2 has a burst time of 3,

P3 has a burst time of 5,

P4 has a burst time of 7,

P5 has a burst time of 9,

and P6 has a burst time of 11.

Google Chrome

The arrival order and the order of burst times assigned to an individual process in the Google Chrome application for trial two is as follows:

P1 has a burst time of 3,

P2 has a burst time of 6,

P3 has a burst time of 9,

P4 has a burst time of 12,

P5 has a burst time of 15,

and P6 has a burst time of 18.

Trial Three:

Microsoft Outlook

The arrival order and the order of burst times assigned to an individual process in the Microsoft Outlook application for trial three is as follows:

P1 has a burst time of 2,

P2 has a burst time of 4,

P3 has a burst time of 6,

P4 has a burst time of 8,

P5 has a burst time of 10,

P6 has a burst time of 12,

P7 has a burst time of 14,

P8 has a burst time of 16,

P9 has a burst time of 18,

and P10 has a burst time of 20.

YouTube

The arrival order and the order of burst times assigned to an individual process in the YouTube application for trial three is as follows:

P1 has a burst time of 1,

P2 has a burst time of 3,

P3 has a burst time of 5,

P4 has a burst time of 7,

P5 has a burst time of 9,

P6 has a burst time of 11,

P7 has a burst time of 13,

P8 has a burst time of 15,

P9 has a burst time of 17,

and P10 has a burst time of 19.

Google Chrome

The arrival order and the order of burst times assigned to an individual process in the Google Chrome application for trial three is as follows:

P1 has a burst time of 3,

P2 has a burst time of 6,

P3 has a burst time of 9,

P4 has a burst time of 12,

P5 has a burst time of 15,

P6 has a burst time of 18,

P7 has a burst time of 21,

P8 has a burst time of 24,

P9 has a burst time of 27,

and P10 has a burst time of 30.