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CS342 Operating Systems - Spring 2021
Project Report #2

Effect of avgA

Effect of avgA on FCFS

Effect of avgA does not have a consistent effect.

Sample outputs:

./schedule 4 5 100 200 1000 2000 FCFS
Average waiting time for thread 1: 0.000000
Average waiting time for thread 2: 44.400000
Average waiting time for thread 3: 49.400000
Average waiting time for thread 4: 71.000000

./schedule 4 5 100 200 1000 3000 FCFS
Average waiting time for thread 1: 78.600000
Average waiting time for thread 2: 106.800000
Average waiting time for thread 3: 107.000000
Average waiting time for thread 4: 107.000000

./schedule 4 5 100 200 1000 4000 FCFS
Average waiting time for thread 1: 17.000000
Average waiting time for thread 2: 17.200000
Average waiting time for thread 3: 17.200000
Average waiting time for thread 4: 77.200000

Effect of avgA on SJF

Effect of avgA does not have a consistent effect.

./schedule 4 5 100 200 1000 2000 SJF
Average waiting time for thread 1: 0.000000
Average waiting time for thread 2: 0.200000
Average waiting time for thread 3: 0.200000
Average waiting time for thread 4: 109.000000

./schedule 4 5 100 200 1000 3000 SJF
Average waiting time for thread 1: 58.000000
Average waiting time for thread 2: 58.000000

Average waiting time for thread 3: 76.200000
Average waiting time for thread 4: 137.400000

./schedule 4 5 100 200 1000 4000 SJF
Average waiting time for thread 1: 43.000000
Average waiting time for thread 2: 43.000000
Average waiting time for thread 3: 223.000000
Average waiting time for thread 4: 223.000000

Effect of avgA on PRIO

Effect of avgA does not have a consistent effect.

./schedule 4 5 100 200 1000 2000 PRIO
Average waiting time for thread 1: 88.200000
Average waiting time for thread 2: 88.200000
Average waiting time for thread 3: 89.000000
Average waiting time for thread 4: 119.000000

./schedule 4 5 100 200 1000 4000 PRIO
Average waiting time for thread 1: 97.600000
Average waiting time for thread 2: 97.600000
Average waiting time for thread 3: 97.600000
Average waiting time for thread 4: 97.600000

Effect of avgA on VRUNTIME

As the avgA increases, average waiting time increases.

Sample outputs:

./schedule 4 5 100 200 1000 3000 VRUNTIME
Average waiting time for thread 1: 53.400000
Average waiting time for thread 2: 74.200000
Average waiting time for thread 3: 222.800000
Average waiting time for thread 4: 269.600000

./schedule 4 5 100 200 1000 4000 VRUNTIME
Average waiting time for thread 1: 254.400000
Average waiting time for thread 2: 254.400000
Average waiting time for thread 3: 276.600000
Average waiting time for thread 4: 276.600000

Effect of N

Effect of N on FCFS

When N increases the average waiting times increase in general.

Sample outputs:

./schedule 3 5 100 200 1000 1500 FCFS
Average waiting time for thread 1: 107.800000
Average waiting time for thread 2: 107.800000
Average waiting time for thread 3: 203.400000

./schedule 5 5 100 200 1000 1500 FCFS
Average waiting time for thread 1: 0.000000
Average waiting time for thread 2: 139.800000
Average waiting time for thread 3: 198.600000
Average waiting time for thread 4: 306.600000
Average waiting time for thread 5: 365.600000

./schedule 7 5 100 200 1000 1500 FCFS
Average waiting time for thread 1: 259.200000
Average waiting time for thread 2: 747.000000
Average waiting time for thread 3: 932.400000
Average waiting time for thread 4: 1030.800000
Average waiting time for thread 5: 1380.400000
Average waiting time for thread 6: 1564.600000
Average waiting time for thread 7: 2061.600000

Effect of N on SJF

When N increases the average waiting times increase in general.

Sample outputs:

./schedule 3 5 100 200 1000 3000 SJF
Average waiting time for thread 1: 32.200000
Average waiting time for thread 2: 32.200000
Average waiting time for thread 3: 32.200000

./schedule 5 5 100 200 1000 3000 SJF
Average waiting time for thread 1: 102.000000
Average waiting time for thread 2: 176.600000

Average waiting time for thread 3: 246.600000
Average waiting time for thread 4: 307.400000
Average waiting time for thread 5: 322.800000

Effect of N on PRIO

N does not have a consistent effect.

Sample outputs:

./schedule 3 5 100 200 1000 1500 PRIO
Average waiting time for thread 1: 0.200000
Average waiting time for thread 2: 63.200000
Average waiting time for thread 3: 209.000000

./schedule 5 5 100 200 1000 1500 PRIO
Average waiting time for thread 1: 34.200000
Average waiting time for thread 2: 83.600000
Average waiting time for thread 3: 112.600000
Average waiting time for thread 4: 133.600000
Average waiting time for thread 5: 147.400000

Effect of N on VRUNTIME

N does not have a consistent effect.

Sample outputs:

./schedule 2 5 100 200 1000 3000 VRUNTIME
Average waiting time for thread 1: 8.400000
Average waiting time for thread 2: 8.400000

./schedule 4 5 100 200 1000 3000 VRUNTIME
Average waiting time for thread 1: 0.000000
Average waiting time for thread 2: 7.400000
Average waiting time for thread 3: 60.800000
Average waiting time for thread 4: 75.800000

Effect of avgB

Effect of avgB on FCFS

As the length of bursts increase, average waiting times for all of the threads tend to increase.

Sample outputs:

./schedule 3 5 100 200 100 200 FCFS
Average waiting time for thread 1: 369.000000
Average waiting time for thread 2: 1141.000000
Average waiting time for thread 3: 1697.200000

./schedule 3 5 100 400 100 200 FCFS
Average waiting time for thread 1: 900.200000
Average waiting time for thread 2: 1471.400000
Average waiting time for thread 3: 2530.400000

./schedule 3 5 100 600 100 200 FCFS
Average waiting time for thread 1: 1211.800000
Average waiting time for thread 2: 2392.400000
Average waiting time for thread 3: 3920.800000

Effect of avgB on SJF

As the length of bursts increase, average waiting times for all of the threads tend to increase.

Sample outputs:

./schedule 5 5 100 200 1000 3000 SJF
Average waiting time for thread 1: 0.400000
Average waiting time for thread 2: 0.400000
Average waiting time for thread 3: 8.200000

./schedule 3 5 100 300 1000 3000 SJF
Average waiting time for thread 1: 0.200000
Average waiting time for thread 2: 94.600000
Average waiting time for thread 3: 192.000000

./schedule 3 5 100 400 1000 3000 SJF
Average waiting time for thread 1: 115.600000
Average waiting time for thread 2: 115.600000
Average waiting time for thread 3: 138.800000

Effect of avgB on PRIO

As the length of bursts increase, average waiting times for all of the threads tend to increase.

Sample outputs:

./schedule 3 5 100 200 1000 3000 PRIO
Average waiting time for thread 1: 24.000000
Average waiting time for thread 2: 24.000000
Average waiting time for thread 3: 24.000000

./schedule 3 5 100 300 1000 3000 PRIO
Average waiting time for thread 1: 24.600000
Average waiting time for thread 2: 38.200000
Average waiting time for thread 3: 38.400000

./schedule 3 5 100 400 1000 3000 PRIO
Average waiting time for thread 1: 186.400000
Average waiting time for thread 2: 186.400000
Average waiting time for thread 3: 259.600000

Effect of avgB on VRUNTIME

As the length of bursts increase, average waiting times for all of the threads tend to increase in general.

Sample outputs:

./schedule 3 5 100 100 1000 3000 VRUNTIME
Average waiting time for thread 1: 46.400000
Average waiting time for thread 2: 46.400000
Average waiting time for thread 3: 46.600000

./schedule 3 5 100 150 1000 3000 VRUNTIME
Average waiting time for thread 1: 0.200000
Average waiting time for thread 2: 103.800000
Average waiting time for thread 3: 103.800000

./schedule 3 5 100 200 1000 3000 VRUNTIME

Average waiting time for thread 1: 90.600000
Average waiting time for thread 2: 184.000000
Average waiting time for thread 3: 404.600000