**Rate Monotonic Scheduling**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Process | Period (ms) | Computation Time(ms) | Priority | Response Time |
| Arrival Sensors | 50 | 1512.697 |  | 30.254 |
| Elevator Buttons | 100 | 3857.375 |  | 38.574 |
| Floor Buttons | 200 | 1872.655 |  | 9.363 |

Total = 78.17

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Process | Period (s) | Computation Time(s) | Priority | Response Time |
| Arrival Sensors | 50 | 1.512 |  | 0.03024 |
| Elevator Buttons | 100 | 3.857 |  | 0.03857 |
| Floor Buttons | 200 | 1.872 |  | 0.00936 |

Total = 0.07817

The utilization time is 7.817% which is below the theoretical bound of 77%. This system of three processes is schedulable (which means that each of the processes can meet its deadline).

**Arrival Sensors Interface:**

From the arrival\_sensors.txt file, we took 33 observations and calculated the mean, standard deviation and variance. The following results are shown below:

Mean = 1512.697 (using the AVERAGE function in MS Excel)

Standard deviation = 593.4224 (using the STDEV function in MS Excel)

Variance = 352150.1 (using the VAR function in MS Excel)

**Elevator Buttons Interface:**

From the elevator\_buttons.txt file, we took 25 observations and calculated the mean, standard deviation and variance. The following results are shown below:

Mean = 3857.375 (using the AVERAGE function in MS Excel)

Standard Deviation = 803.3267 (using the STDEV function in MS Excel)

Variance = 645333.8 (using the VAR function in MS Excel)

**Floor Buttons Interface:**

From the floor\_buttons.txt file, we took 30 observations and calculated the mean, standard deviation and variance. The following results are shown below:

Mean = 1872.655 (using the AVERAGE function in MS Excel)

Standard Deviation = 1625.268 (using the STDEV function in MS Excel)

Variance = 2641495 (using the VAR function in MS Excel)