**Validation:**

With D\_H=D\_L=2 then the mean is equal to 18 seconds {D\_H + (1/µ\_d) + the mean time in the M/M/1 queue (6 seconds)}

After running the program I get the following results for D\_H=D\_L=2seconds

Mean(95th Percentile): 40.706264 seconds

Standard Deviation: 2.4995108

Mean end to end delay: 18.108059 seconds (which is very near to the theoretical mean)

Confidence Interval: 39.811826055727096, 41.60070293597212

**Solution to the problem**:

With,

Number of Packets that departed from the client queue = 90000

Mean time to transmit a packet from the server at high rate (sec) = 1

Mean time to transmit a packet from the server at low rate (sec) = 2

Mean service time in the infinite server queue (sec) = 10

Mean service time in the client queue (sec) = 1.5

Low threshold level in the server queue (sec) = 3

High threshold level in the server queue (sec) = 6

