IE HOMEWORK 3 GROUP 32

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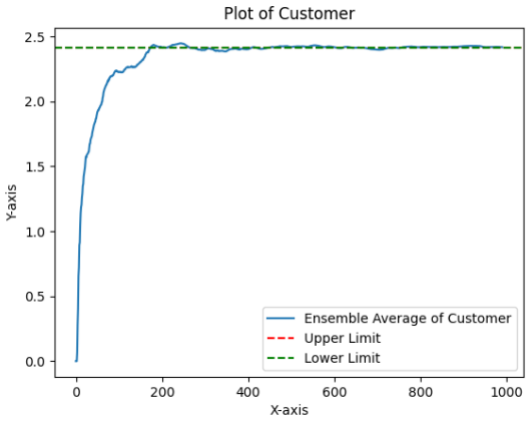
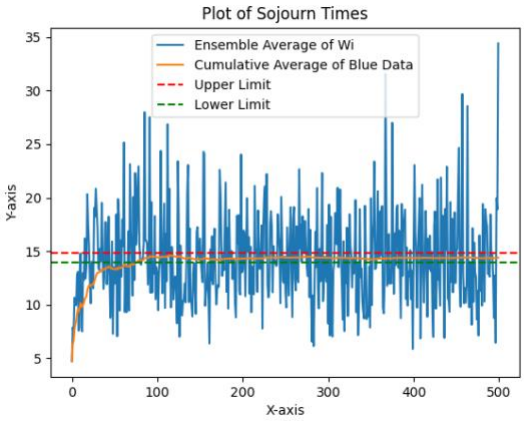
PHASE 1

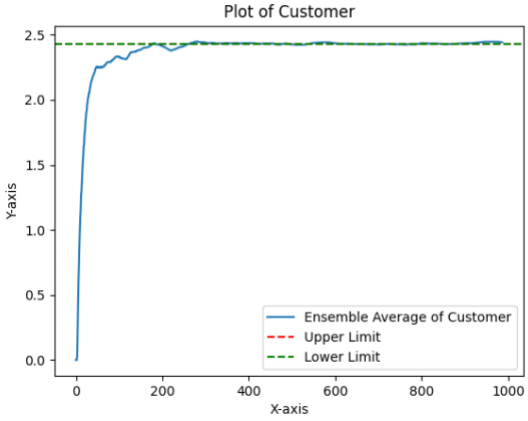
Utilization = 0.6:

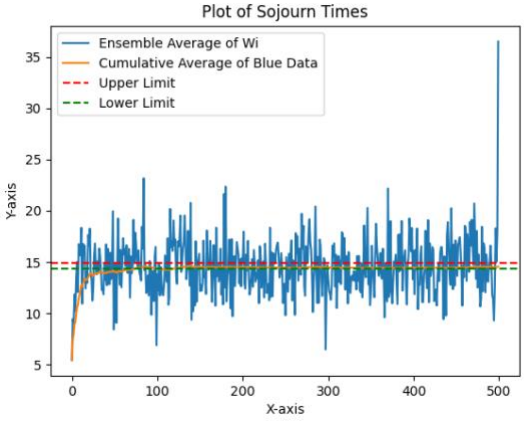
10 runs (Confidence intervals are calculated with data after warm-up period)





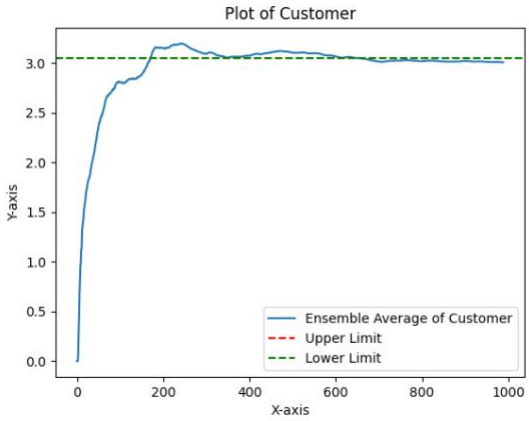
30 runs (Confidence intervals are calculated with data after warm-up period)

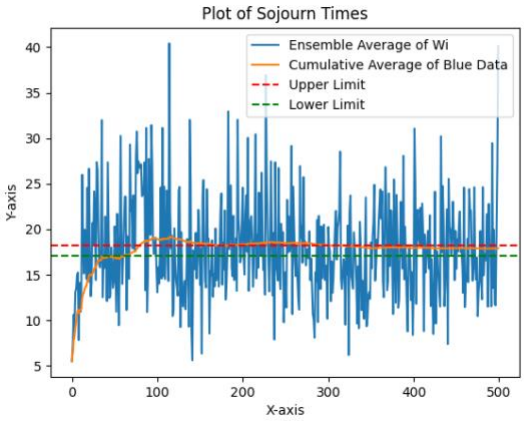




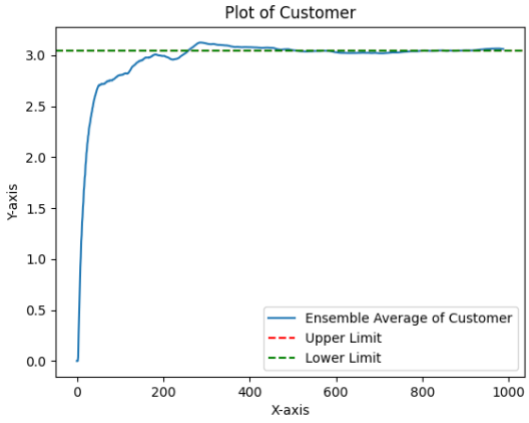
Utilization = 0.7:

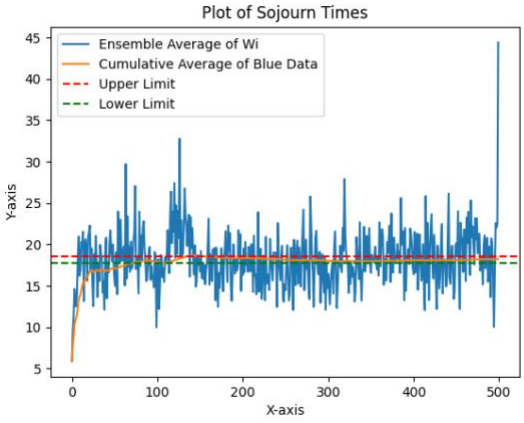
10 runs (Confidence intervals are calculated with data after warm-up period)





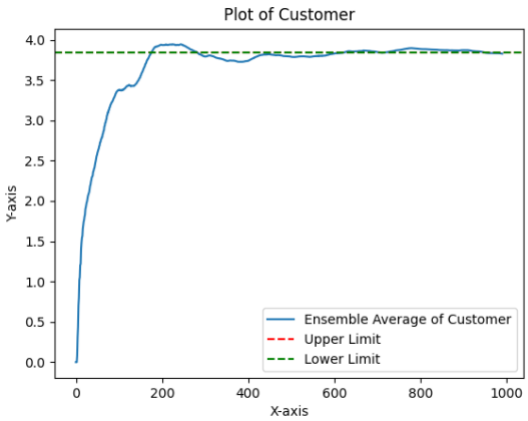
30 runs (Confidence intervals are calculated with data after warm-up period)

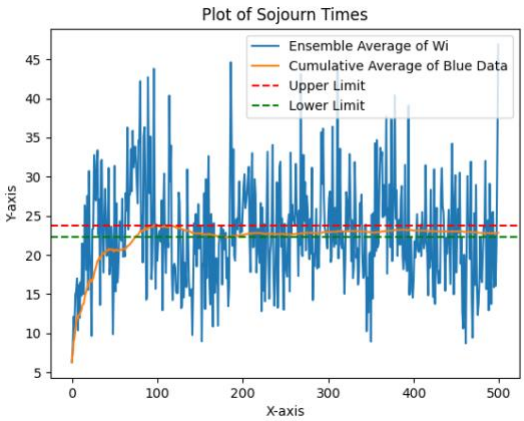




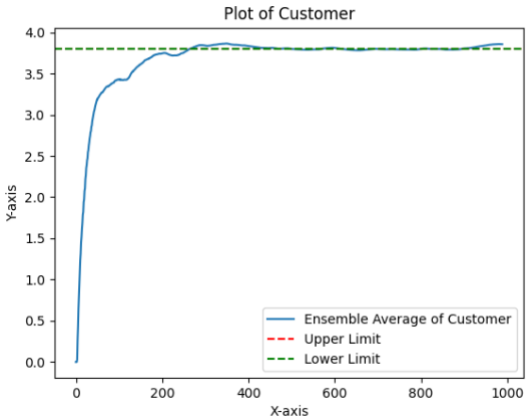
Utilization = 0.8:

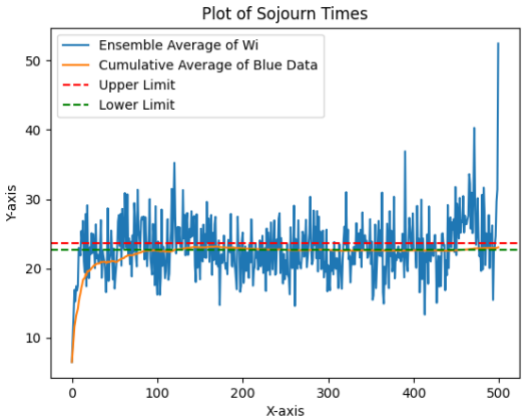
10 runs (Confidence intervals are calculated with data after warm-up period)





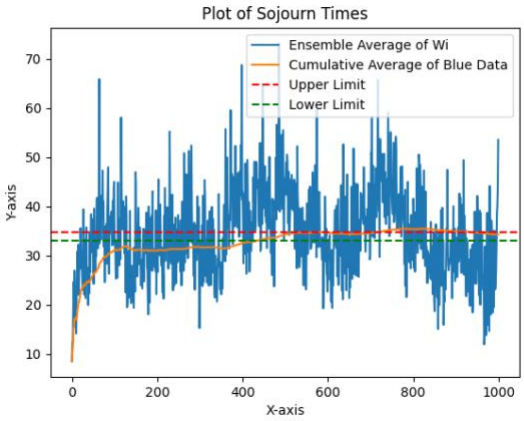
30 runs (Confidence intervals are calculated with data after warm-up period)



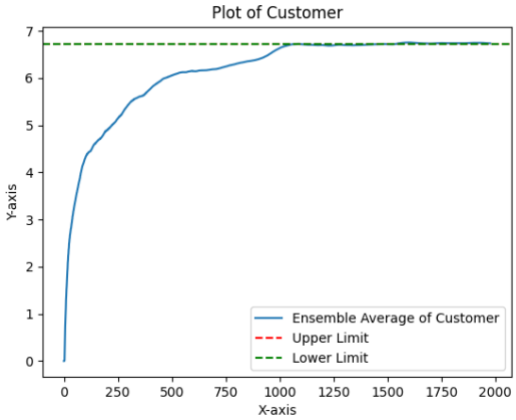


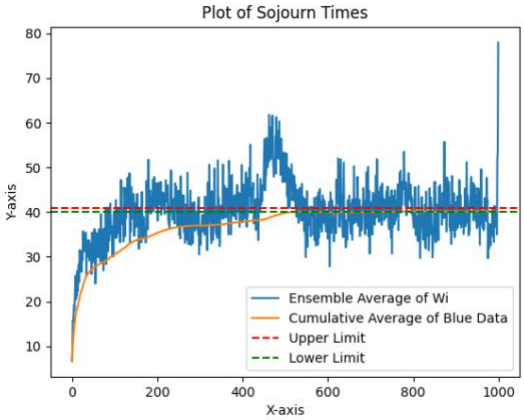
Utilization = 0.9:

10 runs (Confidence intervals are calculated with data after warm-up period)



30 runs (Confidence intervals are calculated with data after warm-up period)





Conclusions on Phase 1:

Warm-up period for 0.6 = approx. 100 customers / time = 200
Warm-up period for 0.7 = approx. 130 customers / time = 300
Warm-up period for 0.8 = approx. 150 customers / time = 400
Warm-up period for 0.9 = approx. 500 customers / time = 1000

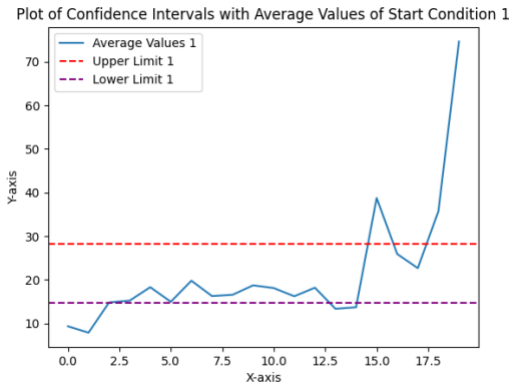
Comments on Phase 1:

There is no significant difference between response's time to converge. However, sojourn time seems to be a bit quicker.

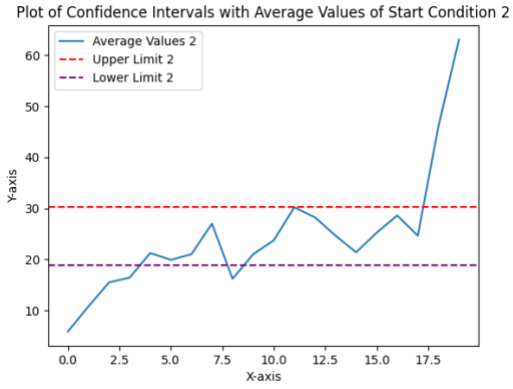
There is an explicit relation between utilization value and the warm-up period. From the plots, it is clear that as utilization increases, warm-up period increases.

PHASE 2

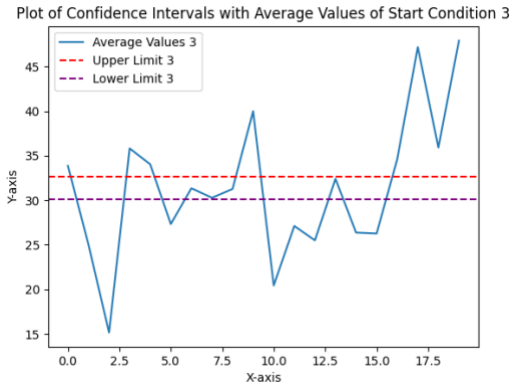
Start Condition 1:



Start Condition 2:



Start Condition 3:



Comments on Phase 2:

Start condition 3 is the best in terms of eliminating the effects of warm-up period, since we collect data after that period. Start condition 1 is the worst in terms of eliminating the effects of warm-up period, since the system starts empty.