Vlad Predovic IE 415 HW 3 Winter 2015: Problem1)

For problem 1

* Average Time in que: 2.52833
* Average Time in system: 6.44
* Time Average # in Que: 0.789
* Utilization: .917

Problem 2)

* Consider a system similar to the prior system except now there are two servers who work independently. Customers in queue move to the first available server for service.
  + a. What changes to the pseudo code for the prior problem must be made so that it is applicable to this system?
    - Have to change the way that equation for B(t) works since we can now have one idle machine and one working. Need to change join queue requirement to B(t) = 2. Right now it is set as if B(t) != 0, then join the queue.
    - Not really sure how this will affect values such as B(t)
  + b. What is the range for the B(t) variable?
    - 0 – 2 because you need an option for having two servers running at once.
  + c. What is the range for the number of arrival events and departure events that may be found in the event calendar?
  + d. Apply the changed pseudo code and execute the manual simulation using the same inter-arrival and service times as in problem 1.
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* Average Time in que: .2943
* Average Time in system: 3.818
* Time Average # in Que: .103
* Utilization = 18.95/(2\*20) = .4736 Because twice the servers so utilization changes.

