CE 412 – PROJECT 2
"SIMULATION OF A GROCERY STORE"

A small grocery store has only one checkout counter. Customers arrive at this checkout counter at random from 1 to 8 minutes apart. The service times vary from 1 to 6 minutes. Analyze the system and answer the following questions through a simulation study. The distribution of inter arrival times and service times are illustrated in the tables below. Assume that the first customer arrives at the checkout counter at time *t=0* .

Distribution of time between arrivals	
Time between arrivals (mins)	**Probability**
1	1/8
2	1/8
3	1/8
4	1/8
5	1/8
6	1/8
7	1/8
8	1/8

Service Time Distribution	
Service time (mins)	**Probability**
1	1/10
2	1/5
3	3/10
4	1/4
5	1/10
6	1/20

- What is the average time a customer spends in the system?
- What is the average waiting time of a customer?
- What is the average service time of a customer?
- What percentage of the customers wait at the checkout counter?
- What is the average waiting time of the customers who wait?
- What percentage of the time the checkout counter is idle?
- What is the average time between arrivals to the checkout counter?

Project 2 Submission:
Name your program as *yournamePrj2.X* and submit it to Blackboard or e-mail it to tamer.dag@khas.edu.tr by October 27th, 2016. You have to submit your project report (hard copy) in class on October 27th, 2016. You will also make a demo of your project in class. Late submissions up to one week has a penalty of 50%. Late submissions beyond one week will not be accepted.

Project 2 Grading:
- Project Report 30%
- Program 70% (If your program does not produce correct results, you might only get at most 35%)