CSE131: Computer — Major Task

Aim

This project aims to design, simulate, and implement a bank queuing system. A customer takes a ticket with a number and the waits until calling his number to be served. The project includes the aspects and requirements that makes the students focus on the C++ developing skills given in the course topics.

Specifications & Requirements:

1) Assume any missing information.
2) The user sets up the program by defining:
    - Number of tellers.
    - Amount of working hours for each teller.
    - The working hours of the bank.
    - Number of customers per week or per day.
    - Number of served customers per year. This must be greater than 30,000 persons. It is better to make random around such an average.
    - Types of transactions and its required durations.
3) Customer arrival times are completely random during the working days.
4) Any customer can be served by the corresponding teller.
5) The time for switching between customers is random.
6) Customers are served based on the first in first out criteria.
7) Your program must generate the following data (table in a text file): -
    - Customer Id.
    - Customer arrival time.
    - Customer leaving time.
    - Customer waiting time.
    - Customer required transaction is served or not.
8) Your program must generate the following data (table in a text file): -
    - Teller Id.
    - Teller idle time.

- Teller working times and utility per day. Utility means how much time the teller is busy during the day.

9) Your program generates how many customers are served every day.
10) For implementation, you are allowed only to use the course material given during this semester except for those of file handling.
11) Visualizing the system output will be rewarded.
12) You will work in a team of three students.
13) GUI will be rewarded.

Milestone 1: -

Implementation to the specification number 7 – deadline 4 May.

Milestone 2: -

Implementation of the rest of specifications – deadline 18 May.

For both milestones: -

1- A detailed technical report must be provided in addition to the codes included in the appendix.
2- Plagiarism is prohibited. Copying codes from others or from the internet will result in getting big zero.
