

## CSC508 Data Structures

### Assignment 2

#### Course Learning Outcome

CLO3: Construct computational solutions using appropriate data structures. (P4)

#### Instruction

Queue is a linear data structure that follows First In First Out (FIFO). Priority queue on the other hand operates with relaxed FIFO based on priority rules.

A bank has classified their customer based on tiers. The tiers determine their priority for counter service. Develop a prototype of a queue management system (QMS) using a priority queue for the bank with the following priority rules.

- i. Silver customer does not have any priority.
- ii. Gold customer may skip 5 people in the queue.
- iii. Platinum customer should be entertained first.
- iv. Customers of the same tier should be treated as FIFO.

Your prototype should contain the following functionalities:

1. Registering new customer into the queue.
2. Call the customer in the queue for service.
3. Check the remaining customer in the queue.

Test your prototype using a menu-based console application.

#### Submission

For this assignment, you need to submit the following items:

1. JAVA source code.
2. Output screenshot in PDF file (maximum 5 pages).

Submit your assignment through MS Teams no later than **2/1/2024 (Wednesday), 6:00 pm.**

Late submission will not be accepted.