Queues Lab

# Part 1

1. Download Queues lab instructions from e-learning portal
2. Download Queue.java class from the e-learning portal.
3. Create a new Netbeans project for the lab on Queues
4. Add the Queue.java class to the project
5. Modify the Queue.java class so that when a new item joins the queue, their queue position will be displayed. Use system print out for this.
6. Create a test class for the queue class. Call it QueueTest.java. It should have a main method.
7. Create a queue with 10 elements. Hint: make use of the constructor just like the Stacks lab.
8. Print out the queue array index values of the current of the front and rear.
9. Insert 10 elements to the queue.
10. Print out the contents of the queue. Identify the elements in front and rear.
11. Print out the indexes of the front and rear
12. Dequeue 3 elements
13. Enqueue 2 elements
14. Dequeue 2 elements
15. Print out the contents of the queue.
16. Print out the indexes of the front and rear
17. Enqueue 6 elements. Do you get an error? How can such an error be prevented? Make necessary changes to the insert method.
18. Dequeue 11 elements. Do you get an error? How can such an error be prevented? Make necessary changes to the insert method.

**Required**: Modified Queue.java class and a test class with a main method.

# Part 2

Modify the code in Part 1 so that it can work like that in bank but assume single queue. The system should accept strings and not just numbers. Thereafter create a test class. The test class should allow someone e.g a security guard to enque a person once a new customer arrives. The test class should allow the person using the system (bank teller) to deque a person once person is served. The system should automatically assign codes (a string) to people in the queue. The system should further allow you calling out the person (using the code) in front after a person has been served. System print out can be used for this. Be creative but keep it simple.

**Required**: modified Queue.java class and a test class with a main method.