Programming Assignment 5
Introduction to Queues

1 Objectives

1. Implement queue using linked representation.
2. Implement queue using array based representation.

2 Queue Interface

```
1 public interface MyQueue {
2     public void enqueue(Object item)
3     public Object dequeue();
4     public boolean isEmpty();
5     public int size();
6 }
```

Returns	Function signature	Description
void	Inserts an item at the queue front.	enqueue(Object item)
Object	Removes the object at the queue rear and returns it.	dequeue()
boolean	Tests if this queue is empty.	isEmpty()
int	Returns the number of elements in the queue	size()

Your class should inherit from this interface **twice** once to implement a queue using linked-based representation and once using an array based implementation and supply all it's method with the exact signature. Any modification will deduct out from the total grade.
In the array based implementation, your queue won't have more than n elements where n is a parameter in your class constructor and a user defined input in your testing class.
You should provide any user interface (UI) for testing **both** the implementation of the Queue. Your user interface should ask for input and process it properly. The UI should include all the above mentioned functionalities. UI should include options for the 5 operations listed before. It can be as follows:
1: Enqueue
2: Dequeue
3: Get size
4: Check if empty

Try to make use of interfaces to facilitate the UI used for testing. (As soon as you repeat code, stop and go back think how to make your design looks better).

3 Notes

- Take into consideration that your implementation will be used later in the project, so it has to be fully functional, well documented and reusable. Try very hard to clean up your implementation. Remove all unused variables. Do not write redundant and repeated code.
- You may use Checkstyle http://checkstyle.sourceforge.net/ with your IDE to ensure that your code style follows the JAVA coding style standards.
- You should work individually.
- Late submission is accepted for only one week.

Good Luck