

## Lab 4

**Submit your java file on MS Teams, make sure you write your ID and name in the file**

- 1- **Task 1 [50 marks]** Provide an ADT java class for Queue using arrays named "ArrayQueue " that supports the following functionalities :
  1. **[5 marks]** Queue construction
  2. **[10 marks]** Queue display
  3. **[15 marks]** Enqueue value in queue
  4. **[15 marks]** Dequeue value from queue
  5. **[5 marks]** isEmpty to check if the queue empty or not
  
- 2- **Task 2 [50 marks]** Provide an ADT java class for Queue using LinkedList named "LinkedListQueue " that supports the following functionalities :
  1. **[5 marks]** Queue construction
  2. **[10 marks]** Queue display
  3. **[15 marks]** Enqueue value in queue
  4. **[15 marks]** Dequeue value from queue
  5. **[5 marks]** isEmpty to check if the queue empty or not

### Hints:

- Create the proper data members , methods signatures, and proper class interface.
- Use the clean code rules indicated in class . Use refactoring and follow OOP.
- Create the proper test cases that show that your code is working correctly for every method :

    Create the queue with size 5

    Enqueue(5)

    Enqueue(60)

    Display()

    Dequeue()

    Dequeue()

    Display()

```
Dequeue()  
Enqueue(90)  
Display()  
Dequeue()  
Display()  
Enqueue(25)  
Enqueue(6)  
Display()  
Dequeue()  
Display()
```

- Use comments in your code