GIFT School of Engineering and Applied Sciences

Spring 2022

CS-242: Data Structures and Algorithms

Week-10 Manual

Queue

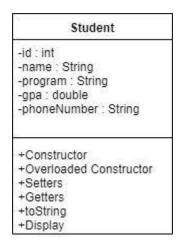# Task #1: Wrapper Queue

1. Read **QueueInterface.java, LinkedQueue.java**, **ArrayQueue.java** and **Driver.java** files carefully.

Note: You may copy these files from the **Code** folder.

2. Create another class **WrapperQueue.java** with the main method.
3. Write a Display method, which display all the entries from the queue by using the **dequeue** method. You may use the following header for display method **displayStack(QueueInterface queue)**
4. Create a new queue **IntegerQueue** using the **LinkedQueue** class of type **Integer** in main method of **WrapperQueue**.
5. Enqueue 3 new entries in queue.
6. Display the queue using the **displayStack** method.
7. Repeat the Same process from point 4 to onwards for the types **Double** and **Character** as well.

Task #2: Student Queue

1. Complete the implementation the class given below

```
                Student
    -id : int
    -name : String
    -program : String
    -gpa : double
    -phoneNumber : String


    +Constructor
    +Overloaded Constructor
    +Setters
    +Getters
    +toString
    +Display
```

2. Create another class **StudentQueue.java** with the main method.
3. Write another method to display the queue.
8. **Note:** You may use the **displayStack(QueueInterface queue)** method from the **WrapperQueue.java** you have already implemented in **Task-1**
4. Create a new queue **studentQueue** using the **LinkedQueue** class.
5. Enqueue 2 new objects of student in the **studentQueue** you have created.
6. Display the queue using the **displayQueue** method.

Task #3: Priority Queue

1. In this task you are required to implement the priority queue using the Stack and Queue.