Homework 3

CSE 274
Deadline: 09/23/2022

The `Application.java` file includes a class `Queue` that implements queue data structure. Erase the body of the `main` method, copy the following lines of code into the body of the `main` method, run the application and see the output:

```
public static void main(String[] args){
Queue myQueue= new Queue();

myQueue.enQueue(11);
myQueue.enQueue(22);
myQueue.enQueue(33);
myQueue.enQueue(44);
myQueue.enQueue(55);

while (!myQueue.isEmpty())
System.out.println(myQueue.deQueue());
```

As it can be seen from the `Application.java` file, the class `Queue` is developed using the class `DoublyLinkedList`, and the class `DoublyLinkedList` is developed using the class `Link`. One limitation of the class `Queue` is that, the objects of this class create queue data structures that can only store data elements of type `int`.

Make adjustments on the class `Queue` to make it a generic class, so that a user can use the class `Queue` to create a queue that stores data elements of type `String`, or a queue that stores data elements of type `Long`, or a queue that stores data elements of type `Character`, or a queue that stores data elements of any other type. For instance, a user should be able to erase the body of the `main` method, copy the following lines of code into the body of the `main` method, run the application and see the expected output:

```
Queue<String> myQueue = new Queue<String>();

myQueue.enQueue("11");
myQueue.enQueue("22");
myQueue.enQueue("33");
myQueue.enQueue("44");
myQueue.enQueue("55");

while (!myQueue.isEmpty())
System.out.println(myQueue.deQueue());
```

The expected output is printed below:

```
11
22
33
44
55
```

When submitting the edited `Application.java`, keep the above lines of code in the body of the `main` method.