

Lab Report 8

Course Title :Data Structure

Course Code: CSE207

Course Instructor :Dr. Anup Kumar Paul

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Section:03

Experiment Name:Write a program to implement insert delete and display operations on the queue.

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Node class :

```
package QueueOperations;
class Node {
    int data;
    Node next;
    public Node(int data) {
        this.data = data;
        this.next = null;
    }
}
```

Main Class:

```
package QueueOperations;
public class Main {
    public static void main(String[] args) {
        QueueOperations q = new QueueOperations();
        q.dequeue();
        q.enqueue(5);
        q.enqueue(10);
        q.enqueue(63);
        q.enqueue(65);
        q.enqueue(44);
        q.display();
        q.dequeue();
        q.dequeue();
        q.display();
        q.enqueue(12);
        q.enqueue(15);
        q.enqueue(20);
        q.display();
    }
}
```

QueueOperation :

```
package QueueOperations;

public class QueueOperations {
    private Node front;
    private Node rear;
    public QueueOperations() {
        front = null;
        rear = null;
    }
    public boolean isEmpty() {
        return front == null;
    }
    public void enqueue(int data) {
        Node newNode = new Node(data);
        if (isEmpty()) {
            front = rear = newNode;
        } else {
            rear.next = newNode;
            rear = newNode;
        }
        System.out.println(data + " enqueued.");
    }
    public void dequeue() {
        if (isEmpty()) {
            System.out.println("Queue is empty.");
        } else {
            int dequeuedData = front.data;
            front = front.next;
            System.out.println(dequeuedData + " dequeued.");
        }
    }
    public void display() {
        if (isEmpty()) {
            System.out.println("Queue is empty.");
        } else {
            System.out.println("Queue elements are:");
            Node current = front;
            while (current != null) {
                System.out.print(current.data + " ");
                current = current.next;
            }
        }
    }
}
```

```
    }  
    System.out.println();  
  }  
}  
}
```

Output :

```
Queue is empty.  
5 enqueued.  
10 enqueued.  
63 enqueued.  
65 enqueued.  
44 enqueued.  
Queue elements are:  
5 10 63 65 44  
5 dequeued.  
10 dequeued.  
Queue elements are:  
63 65 44  
12 enqueued.  
15 enqueued.  
20 enqueued.  
Queue elements are:  
63 65 44 12 15 20
```

