```java
import java.util.Scanner;
interface IntQueue{
    void insert_rear(int item);
    void delete_front();
    void display();
}
class Queue implements IntQueue{
    int[] q;
    int f=0,r=-1;
    Queue(int size)
    {
        q=new int[size];
    }
    public void insert_rear(int item)
    {
        if (r==(q.length-1))
        {
            System.out.println("Queue overflow");
        }
        else
        {
            r=r+1;
            q[r]=item;
        }
    }
    public void delete_front()
    {
```

```java
28          if (f>r)
29          {
30              System.out.println("Queue underflow");
31              f=0;
32              r=-1;
33          }
34          else
35          {
36              System.out.println("Item deleted is:"+q[f]);
37              f=f+1;
38          }
39      }
40      public void display() {
41          int i;
42          if (f>r)
43          {
44              System.out.println("Queue is empty");
45          }
46          else
47          {
48              System.out.println("The contents of the queue are:");
49              for (i=f;i<=r;i++)
50              {
51                  System.out.println(q[i]);
52              }
53
54      }
```

```java
55          }
56      }
57  ▶  public class Week10Extra1 {
58  ▶      public static void main(String[] args)
59          {
60              Scanner s=new Scanner(System.in);
61              int ch,item;
62              IntQueue iq;
63              iq=new Queue( size: 5);
64              for (;;)
65              {
66                  System.out.println("1:Insert\n2:Delete\n3:Display\n4:Exit");
67                  System.out.println("Enter your choice:");
68                  ch=s.nextInt();
69                  switch (ch)
70                  {
71                      case 1:System.out.println("Enter the item to be inserted:");
72                          item=s.nextInt();
73                          iq.insert_rear(item);
74                          break;
75                      case 2:iq.delete_front();
76                          break;
77                      case 3:iq.display();
78                          break;
79                      case 4:System.exit( status: 0);
80                          break;
81                      default:System.out.println("Please enter a valid choice number");
```

```java
            switch (ch)
            {
                case 1:System.out.println("Enter the item to be inserted:");
                    item=s.nextInt();
                    iq.insert_rear(item);
                    break;
                case 2:iq.delete_front();
                    break;
                case 3:iq.display();
                    break;
                case 4:System.exit( status: 0);
                    break;
                default:System.out.println("Please enter a valid choice number");
                    break;
            }
        }
    }
}
```

```
"C:\Program Files\Java\jdk1.8.0_261\bin\java.exe" ...
1:Insert
2:Delete
3:Display
4:Exit
Enter your choice:
1

Enter the item to be inserted:
10

1:Insert
2:Delete
3:Display
4:Exit
Enter your choice:
1

Enter the item to be inserted:
20

1:Insert
2:Delete
3:Display
4:Exit
Enter your choice:
3

The contents of the queue are:
10
20
1:Insert
```

```
2:Delete
3:Display
4:Exit
Enter your choice:
2

Item deleted is:10
1:Insert
2:Delete
3:Display
4:Exit
Enter your choice:
2

Item deleted is:20
1:Insert
2:Delete
3:Display
4:Exit
Enter your choice:
2

Queue underflow
1:Insert
2:Delete
3:Display
4:Exit
Enter your choice:

Queue is empty
```

```
1:Insert
2:Delete
3:Display
4:Exit
Enter your choice:
4


Process finished with exit code 0
```