Main.java

```java
/************Implement Interfaces - QUEUE OPERATIONS*************/
import java.util.Scanner;
interface I1
{
    int max = 3;
    int [] queue = new int[max];
}

class insert implements I1
{
    int front=-1, rear=-1;

    void in(){
        if(rear==max-1)
            System.out.println("Queue full");
        else{
rear++;
            System.out.print("Enter data: ");
            Scanner scan = new Scanner(System.in);
            queue[rear]=scan.nextInt();
        }
    }
}

class delete extends insert implements I1
{
    void out(){
        if(front==rear)
            System.out.println("Queue empty");
        else{
            front++;
```

```
32              System.out.println("Deleted data: "+queue[front]);
33          }
34      }
35  }
36
37  class display extends delete implements I1
38  {
39      void dis(){
40          int i;
41          if(front==rear)
42              System.out.println("Queue empty");
43          else{
44              System.out.print("Data: ");
45              for(i=(front+1); i<=rear; i++)
46                  System.out.print(queue[i]+" ");
47              System.out.println();
48          }
49      }
50  }
51
52  public class Main
53  {
54      public static void main(String[] args)
55      {
56          int ch;
57          display d = new display();
58          System.out.println("1. Insert \n2. Delete\n3. Display\n4. exit");
59          do{
60              System.out.println();
61              System.out.print("Enter choice: ");
62              Scanner scan = new Scanner(System.in);
```

```
63              ch = scan.nextInt();
64              switch(ch){
65                  case 1: d.in(); break;
66                  case 2: d.out(); break;
67                  case 3: d.dis(); break;
68                  case 4: break;
69              }
70          }while(ch != 4);
71      }
72  }
```

```
1. Insert
2. Delete
3. Display
4. exit

Enter choice: 1
Enter data: 11

Enter choice: 1
Enter data: 12

Enter choice: 1
Enter data: 13

Enter choice: 1
Queue full

Enter choice: 3
Data: 11 12 13
```

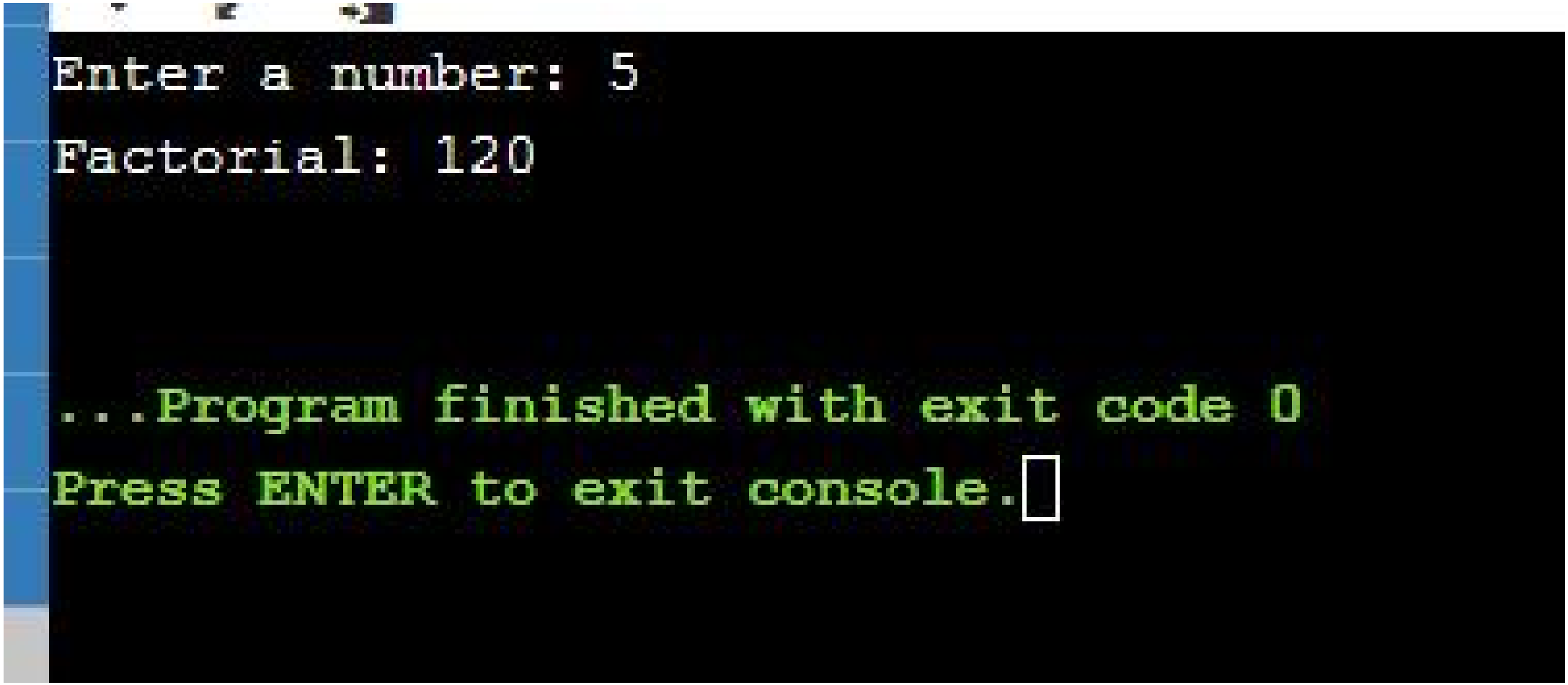
```
Enter choice: 3
Data: 11 12 13

Enter choice: 2
Deleted data: 11

Enter choice: 2
Deleted data: 12

Enter choice: 2
Deleted data: 13

Enter choice: 2
Queue empty

Enter choice: 3
Queue empty

Enter choice: 4


...Program finished with exit code 0
Press ENTER to exit console.
```

Main.java

```java
/*Compute the factorial of a number. The input value must be tested
for validity. If it is greater than 15, the method ComputeFactorial()
should raise Userdefined Exception MyException with appropriate message*/
import java.util.Scanner;
class MyException extends Exception
{
    public String toString()
    {
        return("Input value must not be greater than 15");
    }
}


class factorial
{
    int n;

    void data(){
        System.out.print("Enter a number: ");
        Scanner scan = new Scanner(System.in);
        n = scan.nextInt();
    }

    void ex() throws MyException{
        if(n>15)
            throw new MyException();
        else{
            int f=1;
            for(int i=n; i>=1; i--)
                f = f*i;
            System.out.println("Factorial: "+f);
```

```
        }
    }
}

public class Main
{
    public static void main(String[] args)
    {
        factorial f = new factorial();
        f.data();
        try{
            f.ex();
        }
        catch (MyException e)
        {
            System.out.println(e);
        }
    }
}
```

```
Enter a number: 34
Input value must not be greater than 15


...Program finished with exit code 0
Press ENTER to exit console.
```


Enter a number: 5
Factorial: 120
...Program finished with exit code 0
Press ENTER to exit console.

Main.java

```java
/*create an account class. Define appropriate constructor for this
class.Implement a separate methods to display account balance and
withdraw money.Raise a user defined exception if there is an attempt
to withdraw money which is greater than the account balance*/
import java.util.Scanner;
class MyException extends Exception
{
    public String toString()
    {
        return("The amount you entered is greater than your account balance");
    }
}


class account
{
    int n, wd;

    void collect(){
        System.out.print("Enter your account balance: ");
        Scanner scan = new Scanner(System.in);
        n = scan.nextInt();
        System.out.print("Enter withdrawal amount: ");
        wd = scan.nextInt();
    }

    void display(){
        System.out.println("Account balance: "+n);
        System.out.println("Withdrawal: "+wd);
    }

    void withdraw() throws MyException{
```

```
    void withdraw() throws MyException{
        if(wd>n)
            throw new MyException();
        else
            System.out.println("Balance: "+(n-wd));
    }
}

public class Main
{
    public static void main(String[] args)
    {
        account f = new account();
        f.collect();
        f.display();
        try{
            f.withdraw();
        }
        catch (MyException e)
        {
            System.out.println(e);
        }
    }
}
```

```
Enter your account balance: 500
Enter withdrawal amount: 1000
Account balance: 500
Withdrawal: 1000
The amount you entered is greater than your account balance

C:\Users\Pardeep\Desktop>java Main
Enter your account balance: 1500
Enter withdrawal amount: 500
Account balance: 1500
Withdrawal: 500
Balance: 1000
```