Week-10

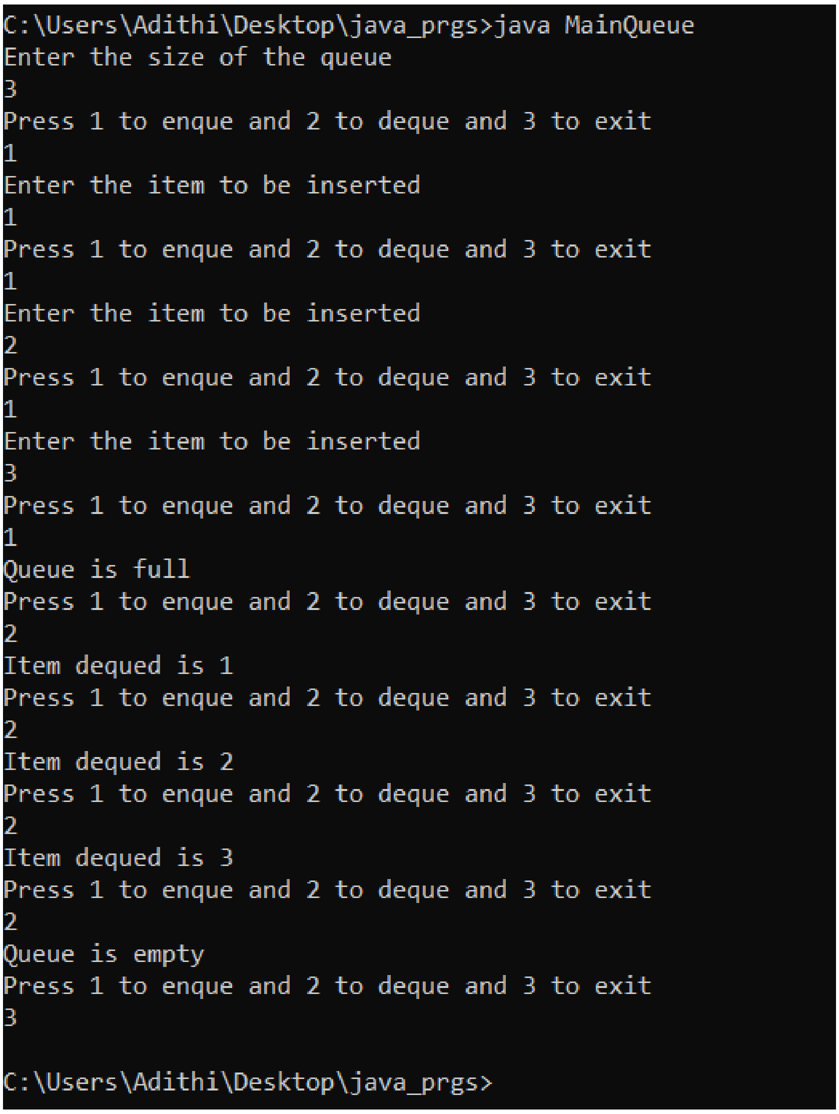
Extra programs:

```
1.  import java.util.Scanner;
    interface IntQueue (
    void enque();
    void deque();
    }
    class FixedQueue implements IntQueue
    { int queue[];
       int front; int rear;

    FixedQueue (int size)
    {   queue= new int[size];
        rear=-1; front=0;
    }
    public void enque()
    {   int item;
       Scanner sc= new Scanner(System.in);
       if( rear== queue.length-1)
       System.out.println(" Queue is full");
       else
      { System.out.println(" Enter the item to be
       inserted ");
       item = sc.nextInt();
       queue[++rear] = item;
     }}
    public void deque()
    { if( rear <0)
     { System.out.println (" Queue is empty");
     } else {
     System.out.println(" Item dequeed is "+ queue
                                          front]);
     front++;
```

```
  if (front > rear)
  { front = 0; rear=-1; }
}}}
class MainQueue
{ public static void main(String args[])
   { int i,s;
       Scanner sc= new Scanner(System.in);
       System.out.println("Enter the size of the
     queue");
     s= sc.nextInt();
     FixedQueue ob= new FixedQueue(s);
     do{
     System.out.println("Press 1 to enque, & 2 to
     dque & 3 to exit");
     i= sc.nextInt();
     if (i==1)
     {   ob.enque(); }
 else if (i==2)
   {  ob.dque(); }
  else if(i==3)
  { break; }
   else
   System.out.println("Wrong choice")
 }while(True);
}}
```

```
import java.util.Scanner;
interface IntQueue {
 void enque();
 void deque();
}
class FixedQueue implements IntQueue {
 int queue[];
 int front;
 int rear;


 FixedQueue(int size) {
 queue = new int[size];
 rear = -1;
 front=0;
 }

 public void enque() {
               int item;
               Scanner sc=new Scanner(System.in);
 if(rear==queue.length-1)
 System.out.println("Queue is full");
 else{
               System.out.println("Enter the item to be inserted");
               item=sc.nextInt();
 queue[++rear] = item;
 }}

public void deque() {
 if(rear < 0) {
 System.out.println("Queue is empty");
 }
 else{
              System.out.println("Item dequed is "+queue[front]);
              front++;
              if(front>rear)
              {
                            front=0;
                            rear=-1;
              }
 }
}
}
class MainQueue
{
             public static void main(String args[])
             {
                          int i,s;
                          Scanner sc=new Scanner(System.in);
                          System.out.println("Enter the size of the queue");
                          s=sc.nextInt();
                          FixedQueue ob=new FixedQueue(s);
                          do
                          {
                                       System.out.println("Press 1 to enque and 2 to deque and 3 to exit");
                                       i=sc.nextInt();
                                       if(i==1)
                                       {
                                                    ob.enque();
                                       }
                                       else if(i==2)
                                       {
```

```
                        ob.deque();
                    }
                    else if(i==3)
                        break;
                    else
                        System.out.println("Wrong choice");
            }while(true);
        }
}
```



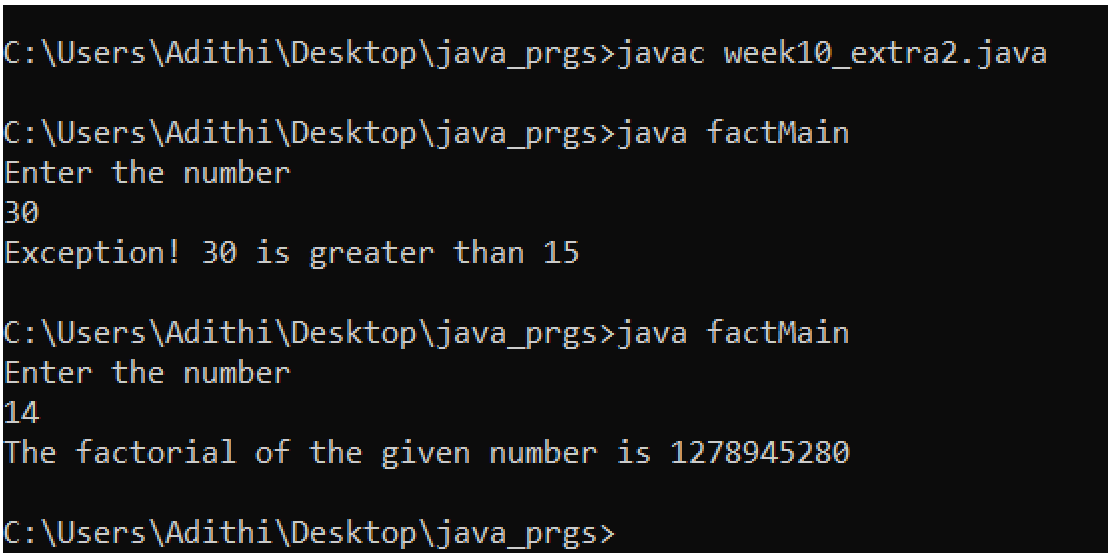
```
C:\Users\Adithi\Desktop\java_prgs>java MainQueue
Enter the size of the queue
3
Press 1 to enque and 2 to deque and 3 to exit
1
Enter the item to be inserted
1
Press 1 to enque and 2 to deque and 3 to exit
1
Enter the item to be inserted
2
Press 1 to enque and 2 to deque and 3 to exit
1
Enter the item to be inserted
3
Press 1 to enque and 2 to deque and 3 to exit
1
Queue is full
Press 1 to enque and 2 to deque and 3 to exit
2
Item dequed is 1
Press 1 to enque and 2 to deque and 3 to exit
2
Item dequed is 2
Press 1 to enque and 2 to deque and 3 to exit
2
Item dequed is 3
Press 1 to enque and 2 to deque and 3 to exit
2
Queue is empty
Press 1 to enque and 2 to deque and 3 to exit
3

C:\Users\Adithi\Desktop\java_prgs>
```

2.

```
 import java.util.Scanner;
class MyException extends Exception
{ private int n;
   MyException(int a)
   { n=a; }
   public String toString
   { return (n+" is greater than 15");
     }
}
class fact
{ static void ComputeFactorial(int a) throws
    MyException
   {  if(a>15)
       throw new MyException;
       int f=1;
       for(int i=1; i<=a; i++)
       {   f=f*i; }
       System.out.println("The factorial of the
       given number is" + f);
 } }
class factMain
{ public static void main(String args[])
  {  Scanner sc=new Scanner(System.in);
     int a;
    System.out.println("Enter the number");
     a=sc.nextInt();
     try{
          fact.ComputeFactorial(a);
        }
     catch(MyException e)
     { System.out.println("Exception!"+e);
} } }
```

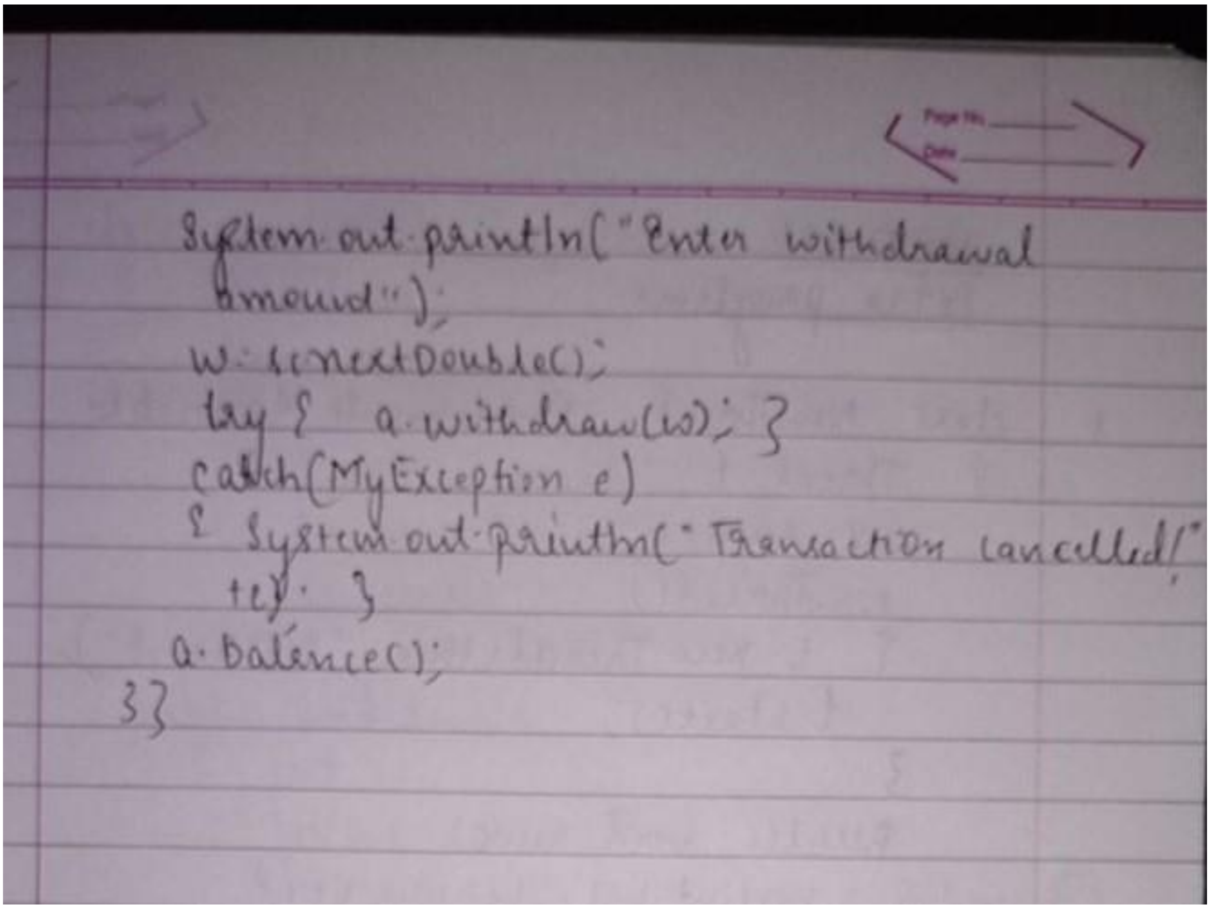
```
import java.util.Scanner;
class MyException extends Exception
{
        private int n;
        MyException(int a)
        {
                n=a;
        }
        public String toString()
        {
                return (n+" is greater than 15");
        }
}
class fact
{
        static void ComputeFactorial(int a) throws MyException
        {
                if(a>15)
                        throw new MyException(a);
                int f=1;
                for(int i=1;i<=a;i++)
                {
                        f=f*i;
                }
                System.out.println("The factorial of the given number is "+f);
        }
}
class factMain
{
        public static void main(String args[])
        {
```

```
		Scanner sc=new Scanner(System.in);

		int a;

		System.out.println("Enter the number");

		a=sc.nextInt();

		try

		{

			fact.ComputeFactorial(a);

		}

		catch(MyException e)

		{

			System.out.println("Exception! "+e);

		}

	}

}
```



```
C:\Users\Adithi\Desktop\java_prgs>javac week10_extra2.java

C:\Users\Adithi\Desktop\java_prgs>java factMain
Enter the number
30
Exception! 30 is greater than 15

C:\Users\Adithi\Desktop\java_prgs>java factMain
Enter the number
14
The factorial of the given number is 1278945280

C:\Users\Adithi\Desktop\java_prgs>
```

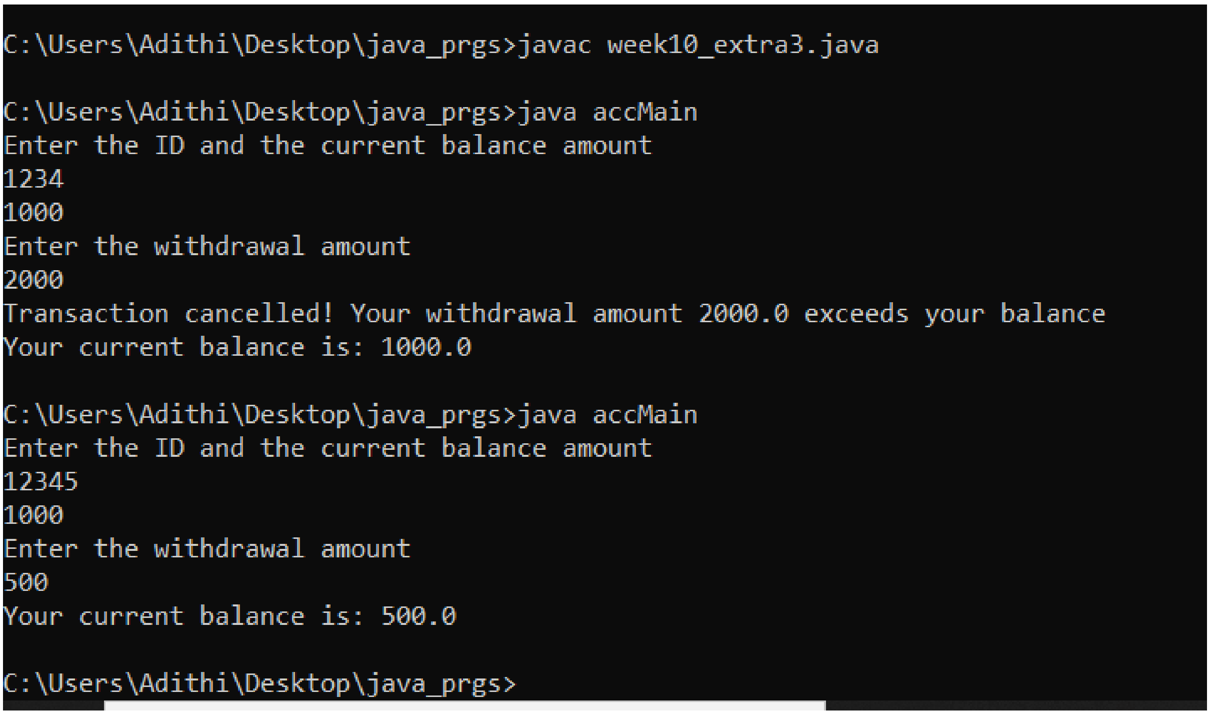
3.
```
import java.util.Scanner;
class account
{ double bal, w;
  int id;
  Scanner sc=new Scanner(System.in);
  account()
  {   System.out.println(" Enter the ID and
      current balance amount");
      id=sc.nextInt();
      bal= sc.nextDouble();
  }
  void withdraw(~~$~~double a)throws MyException
  {
      w=a;
      if(w>bal)
      Throw new MyException(w);
      else
      bal= bal-w;
  }
  void balance()
  { System.out.println("Your current balance is: "
   +bal); }}
class MyException extends Exception
{   private double f;
    MyException(double w)
    { f=w; }
    public String toString()
    { return("Your withdrawal amount "+f+"
     exceeds your balance");
 }  }
class accMain
{ public static void main(String argS[])
  { double w;
    Scanner sc=new Scanner(System.in);
    account a= new account();
```



```
System.out.println("Enter withdrawal
 amound");
w=sc.nextDouble();
try {  a.withdraw(w); }
catch(MyException e)
{  System.out.println("Transaction cancelled/"
  +e); }
a.balence();
}}
```

```
import java.util.Scanner;
class account
{
	double bal,w;
	int id;
	Scanner sc=new Scanner(System.in);
	account()
	{
		System.out.println("Enter the ID and the current balance amount");
		id=sc.nextInt();
		bal=sc.nextDouble();
	}
	void withdraw(double a) throws MyException
	{
		w=a;
		if(w>bal)
```

```
                        throw new MyException(w);
                else
                        bal=bal-w;
        }
        void balance()
        {
                System.out.println("Your current balance is: "+bal);
        }
}

class MyException extends Exception
{
        private double f;
        MyException(double w)
        {
                f=w;
        }
        public String toString()
        {
                return ("Your withdrawal amount "+f+" exceeds your balance");
        }
}

class accMain
{
        public static void main(String args[])
        {
                double w;
                Scanner sc=new Scanner(System.in);
                account a=new account();
                System.out.println("Enter the withdrawal amount");
                w=sc.nextDouble();
                try
                {
                        a.withdraw(w);
                }
                catch(MyException e)
                {
                        System.out.println("Transaction cancelled! "+e);
                }
                a.balance();
        }
}
```



```
C:\Users\Adithi\Desktop\java_prgs>javac week10_extra3.java

C:\Users\Adithi\Desktop\java_prgs>java accMain
Enter the ID and the current balance amount
1234
1000
Enter the withdrawal amount
2000
Transaction cancelled! Your withdrawal amount 2000.0 exceeds your balance
Your current balance is: 1000.0

C:\Users\Adithi\Desktop\java_prgs>java accMain
Enter the ID and the current balance amount
12345
1000
Enter the withdrawal amount
500
Your current balance is: 500.0

C:\Users\Adithi\Desktop\java_prgs>
```