

PROGRAM 7.1

Aim: Write a java program to define an exception called “MarksOutOfBounds” Exception, that is thrown if the entered marks are greater than 100

Description:

Program:

```
import java.util.Scanner;
class MarksOutOfBounds extends Exception
{
    public void showError()
    {
        System.out.println("Invalid Marks");
    }
}
class ErrorTest
{
    public static void main(String[] args)
    {
        Scanner sc=new Scanner(System.in);
        int m=0;
        try
        {
            System.out.println("Enter Marks");
            m=sc.nextInt();
            if(m>100)
                throw new MarksOutOfBounds();
            System.out.println("Your marks:"+m);
        }
        catch(MarksOutOfBounds e)
        {
            e.showError();
        }
    }
}
```

Output:

```
student@student-HP-245-G6-Notebook-PC:~$ javac ErrorTest.java
student@student-HP-245-G6-Notebook-PC:~$ java ErrorTest
Enter Marks
110
Invalid Marks
```

PROGRAM 7.2

AIM: Write a java program to accept name of person and validate it. If the name contains any numeric value throw an exception "InvalidName".

Description:

Program:

```
import java.util.Scanner;
class InvalidName extends Exception
{
    public void showError()
    {
        System.out.println("Error: Name contains digits");
    }
}
class NameTest
{
    public static void main(String[] args)
    {
        Scanner sc=new Scanner(System.in);
        String name;
        int i;
        try
        {
            System.out.print("Enter Name:");
            name=sc.next();
            for(i=0;i<name.length();i++)
            {
                char ch=name.charAt(i);
                if(Character.isDigit(ch))
                    throw new InvalidName();
            }
            System.out.println("Your Name:"+name);
        }
        catch(InvalidName e)
        {
            e.showError();
        }
    }
}
```

Output:

```
student@student-HP-245-G6-Notebook-PC:~$ javac NameTest.java
student@student-HP-245-G6-Notebook-PC:~$ java NameTest
Enter Name:sreenivas12
Error: Name contains digits
```

PROGRAM 7.3

Aim: Write a java program using try catch

Description:

Program:

```
class Test12
{
    public static void main(String[] args)
    {
        int a=10;
        int b=5;
        int c=5;
        int x,y;
        try
        {
            x=a/(b-c); //Exception here
        }
        catch(ArithmeticException e)
        {
            System.out.println("Division by zero");
        }
        y=a/(b+c);
        System.out.println("y="+y);
    }
}
```

Output:

```
student@student-HP-245-G6-Notebook-PC:~$ javac Test12.java
student@student-HP-245-G6-Notebook-PC:~$ java Test12
Division by zero
y=1
```

PROGRAM 7.4

Aim: Write a java program using try with multiple catches

Description:

Program:

```
class Test13
{
    public static void main(String[] args)
    {
        int a[]={5,10};
        int b=5;
        try
        {
            int x=a[2]/b-a[1];
        }
        catch(ArithmeticException e)
        {
            System.out.println("Division by zero");
        }
        catch(ArrayIndexOutOfBoundsException e)
        {
            System.out.println("Array Index Error");
        }
        catch(ArrayStoreException e)
        {
            System.out.println("Wrong data type");
        }
        int y=a[1]/a[0];
        System.out.println("y="+y);
    }
}
```

Output:

```
student@student-HP-245-G6-Notebook-PC:~$ javac Test13.java
student@student-HP-245-G6-Notebook-PC:~$ java Test13
Array Index Error
y=2
```

PROGRAM 7.5

Aim: Write a java program using try catch finally

Description:

Program:

```
class Test14
{
    public static void main(String[] args)
    {
        int a[]={5,10};
        int b=5;
        try
        {
            int x=a[2]/b-a[1];
        }
        catch(ArithmeticException e)
        {
            System.out.println("Division by zero");
        }
        catch(ArrayIndexOutOfBoundsException e)
        {
            System.out.println("Array Index Error");
        }
        catch(ArrayStoreException e)
        {
            System.out.println("Wrong data type");
        }
        finally
        {
            int y=a[1]/a[0];
            System.out.println("y="+y);
        }
    }
}
```

Output:

```
student@student-HP-245-G6-Notebook-PC:~$ javac Test14.java
student@student-HP-245-G6-Notebook-PC:~$ java Test14
Array Index Error
y=2
```

PROGRAM 7.6(i)

Aim: Write a java program using user-defined Exceptions

Description:

Program:

```
import java.lang.Exception;
class MyException extends Exception
{
    MyException(String message)
    {
        super(message);
    }
}
class TestMyException
{
    public static void main(String[] args)
    {
        int x=5,y=1000;
        try
        {
            float z=(float)x/(float)y;
            if(z<0.01)
                throw new MyException("Number is too small");
        }
        catch(MyException e)
        {
            System.out.println("Caught my exception");
            System.out.println(e.getMessage());
        }
        finally
        {
            System.out.println("I am always here");
        }
    }
}
```

Output:

```
student@student-HP-245-G6-Notebook-PC:~$ javac TestMyException.java
student@student-HP-245-G6-Notebook-PC:~$ java TestMyException
Caught my exception
Number is too small
I am always here
```


PROGRAM 7.6(ii)

Aim: Write a java program using user-defined Exceptions

Description:

Program:

```
class TooYoungException extends RuntimeException
{
    TooYoungException(String s)
    {
        super(s);
    }
}
class TooOldException extends RuntimeException
{
    TooOldException(String s)
    {
        super(s);
    }
}
class CustomizedExceptionDemo
{
    public static void main(String[] args)
    {
        int age=Integer.parseInt(args[0]);
        if(age>60)
        {
            throw new TooYoungException("please wait some more time.... u will get best match");
        }
        else if(age<18)
        {
            throw new TooOldException("u r age already crossed....no chance of getting married");
        }
        else
        {
            System.out.println("you will get match details soon by e-mail");
        }
    }
}
```

OUTPUT:

```
student@student-HP-245-G6-Notebook-PC:~$ javac CustomizedExceptionDemo.java
student@student-HP-245-G6-Notebook-PC:~$ java CustomizedExceptionDemo 65
Exception in thread "main" TooYoungException: please wait some more time.... u will get best match
at CustomizedExceptionDemo.main(CustomizedExceptionDemo.java:22)
```