

LAB 9: EXCEPTION HANDLING IN JAVA

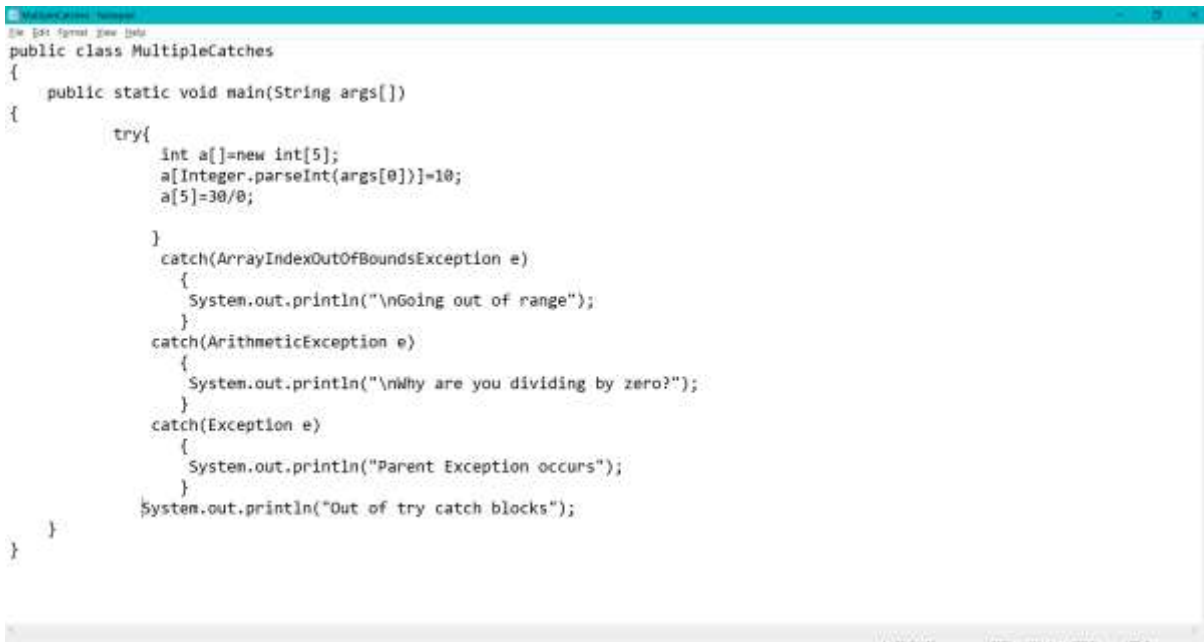
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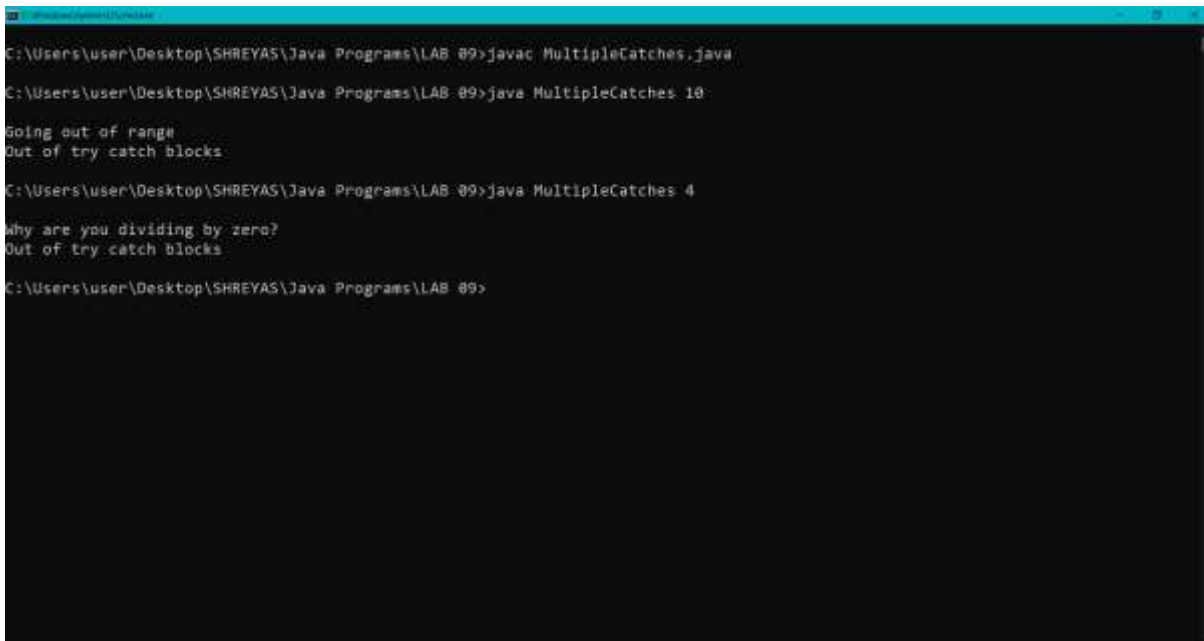
Q. 1. Write a program to demonstrate the concept of multiple catch statements.

CODE:



```
public class MultipleCatches
{
    public static void main(String args[])
    {
        try{
            int a[]=new int[5];
            a[Integer.parseInt(args[0])]=10;
            a[5]=30/0;
        }
        catch(ArrayIndexOutOfBoundsException e)
        {
            System.out.println("\nGoing out of range");
        }
        catch(ArithmeticException e)
        {
            System.out.println("\nWhy are you dividing by zero?");
        }
        catch(Exception e)
        {
            System.out.println("Parent Exception occurs");
        }
        System.out.println("Out of try catch blocks");
    }
}
```

OUTPUT:



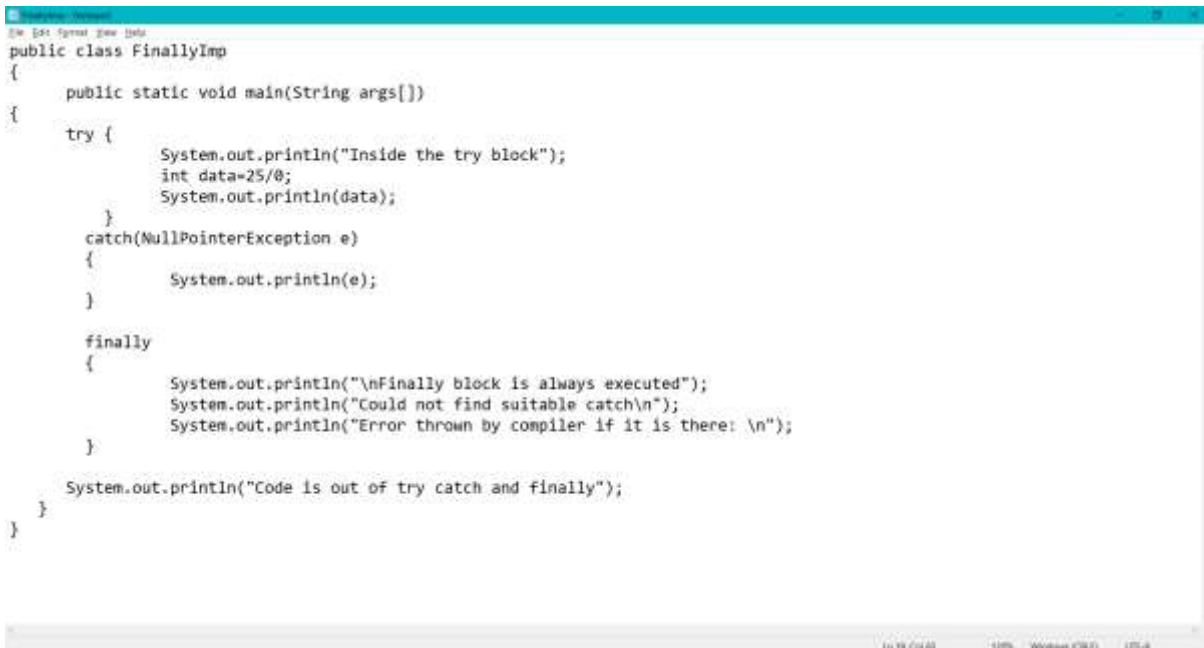
```
C:\Users\user\Desktop\SHREYAS\Java Programs\LAB 09>javac MultipleCatches.java
C:\Users\user\Desktop\SHREYAS\Java Programs\LAB 09>java MultipleCatches 10
Going out of range
Out of try catch blocks

C:\Users\user\Desktop\SHREYAS\Java Programs\LAB 09>java MultipleCatches 4
Why are you dividing by zero?
Out of try catch blocks

C:\Users\user\Desktop\SHREYAS\Java Programs\LAB 09>
```

Q.2. Write a program to demonstrate the working/importance of finally block.

CODE:

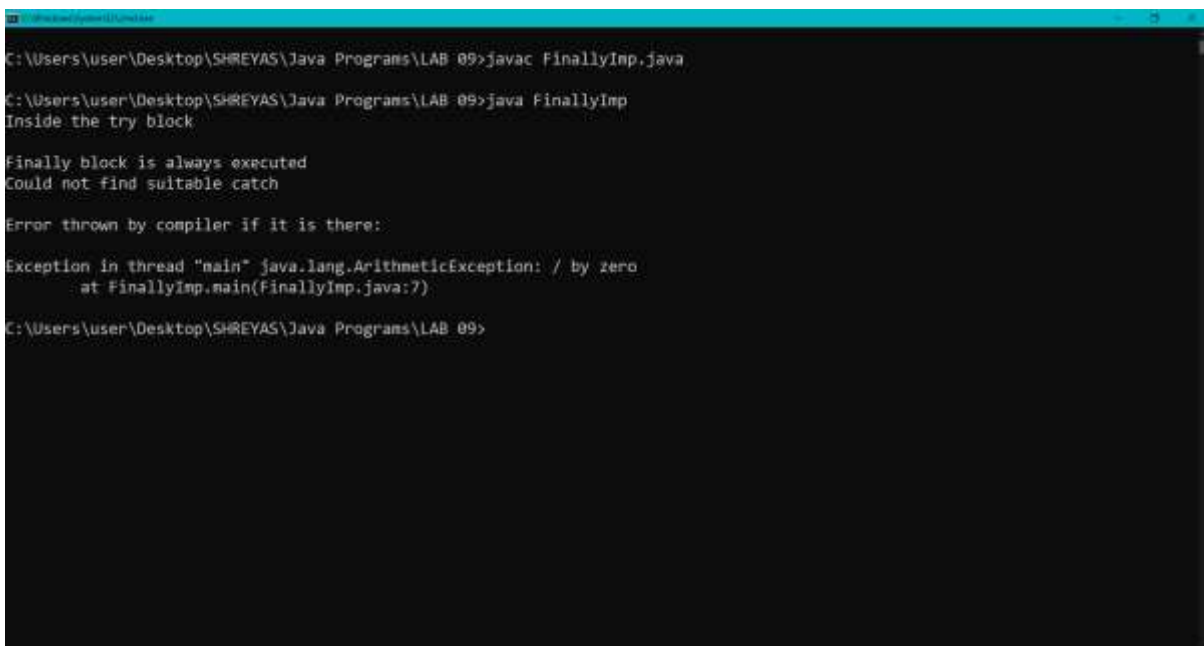


```
public class FinallyImp
{
    public static void main(String args[])
    {
        try {
            System.out.println("Inside the try block");
            int data=25/0;
            System.out.println(data);
        }
        catch(NullPointerException e)
        {
            System.out.println(e);
        }

        finally
        {
            System.out.println("\nFinally block is always executed");
            System.out.println("Could not find suitable catch\n");
            System.out.println("Error thrown by compiler if it is there: \n");
        }

        System.out.println("Code is out of try catch and finally");
    }
}
```

OUTPUT:



```
C:\Users\user\Desktop\SHREYAS\Java Programs\LAB 09>javac FinallyImp.java

C:\Users\user\Desktop\SHREYAS\Java Programs\LAB 09>java FinallyImp
Inside the try block

Finally block is always executed
Could not find suitable catch

Error thrown by compiler if it is there:

Exception in thread "main" java.lang.ArithmeticException: / by zero
    at FinallyImp.main(FinallyImp.java:7)

C:\Users\user\Desktop\SHREYAS\Java Programs\LAB 09>
```

Q.3. Write a program to create a user defined exception to calculate the result. The result should consist of name, seat no, date, centre no and marks of 3 semesters. Create a user defined exception class MarksOutOfBoundsException. If entered marks of any subject is greater than 100 or less than 0 then program should create a user defined exception of the type MarksOutOfBoundsException and must have a provision to handle it.

CODE:

```
import java.util.*;
class MarksOutOfBoundsException extends Exception
{
    int a;
    MarksOutOfBoundsException(int m)
    {
        a=m;
    }
    public String toString(){
        return "java.MarksOutOfBoundsException: "+a+" must be in range of 0 to 100 ";
    }
}

class Result
{
    void check(int a)throws MarksOutOfBoundsException
    {
        if(a<0||a>100)
            throw new MarksOutOfBoundsException(a);
    }

    void input()
    {
        Scanner s=new Scanner(System.in);
        int seat_no,date,centre_no,marks1=0,marks2=0,marks3=0;
        String name;
    }
}
```

```
String name;
System.out.print("\nStudent's name: ");
name=s.nextLine();
System.out.print("\nSeat number: ");
seat_no=s.nextInt();
System.out.print("\nDate: ");
date=s.nextInt();
System.out.print("\nCentre number: ");
centre_no=s.nextInt();
System.out.print("\nMarks of 3 semesters: ");
int k=2;
do
{
    k=2;
    marks1=s.nextInt();
    marks2=s.nextInt();
    marks3=s.nextInt();
    try
    {
        check(marks1);
        check(marks2);
        check(marks3);
    }
    catch(MarksOutOfBoundsException e)
    {
        System.out.println("You made an error: "+e);
        System.out.print("\nEnter marks again: ");
        k=1;
    }
}
```

```
        check(marks3);
    }
    catch(MarksOutOfBoundsException e)
    {
        System.out.println("You made an error: "+e);
        System.out.print("\nEnter marks again: ");
        k=1;
    }
}

}while(k==1);

System.out.println("\nResult of "+name);
System.out.println("Student's Name: "+name);
System.out.println("Seat No. "+seat_no);
System.out.println("Exam Date "+date);
System.out.println("Centre No. "+centre_no);
System.out.println("Marks: "+marks1+" "+marks2+" "+marks3);
}

public static void main(String args[])
{
    Result a=new Result();
    a.input();
}
}
```

OUTPUT:

```
C:\Users\user\Desktop\SHREYAS\Java Programs\LAB 09>javac Result.java
C:\Users\user\Desktop\SHREYAS\Java Programs\LAB 09>java Result

Student's name: Liton Dhu
Seat number: 4568
Date: 050221
Centre number: 456987
Marks of 3 semesters: 45 65 21

Result of Liton Dhu
Student's Name: Liton Dhu
Seat No. 4568
Exam Date 50221
Centre No. 456987
Marks: 45 65 21

C:\Users\user\Desktop\SHREYAS\Java Programs\LAB 09>java Result

Student's name: Poli Kio
Seat number: 4865
Date: 090620
Centre number: 4578213
```

```
Centre number: 4578213

Marks of 3 semesters: 102 112 12
You made an error: java.MarksOutOfBoundsException: 102 must be in range of 0 to 100

Enter marks again: 12 45 96

Result of Poll Kio
Student's Name: Poll Kio
Seat No. 4865
Exam Date 90620
Centre No. 4578213
Marks: 12 45 96

C:\Users\user\Desktop\SHREYAS\Java Programs\LAB 09>
```