



**Artificial Intelligence and Data Science Department.**

**OOPM / Odd Sem 2021-22 / Experiment 12.**

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**EXPERIMENT - 12.**

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Ques: Write a program to calculate the Result.  
It should consists of name, seat no., date, centre no., and marks of three semesters.

Create a user defined Exception class Marks Out Of Bounds - Exception, If entered marks of any subject is greater than 100 or less than 0, then program should create a user defined Exception of type Marks Out Of BoundsException and must have a provision to handle it.

Theory: Exception handling in Java:

The exception handling in Java is one of the powerful mechanism to handle the runtime errors so that the normal flow of the application can be maintained.

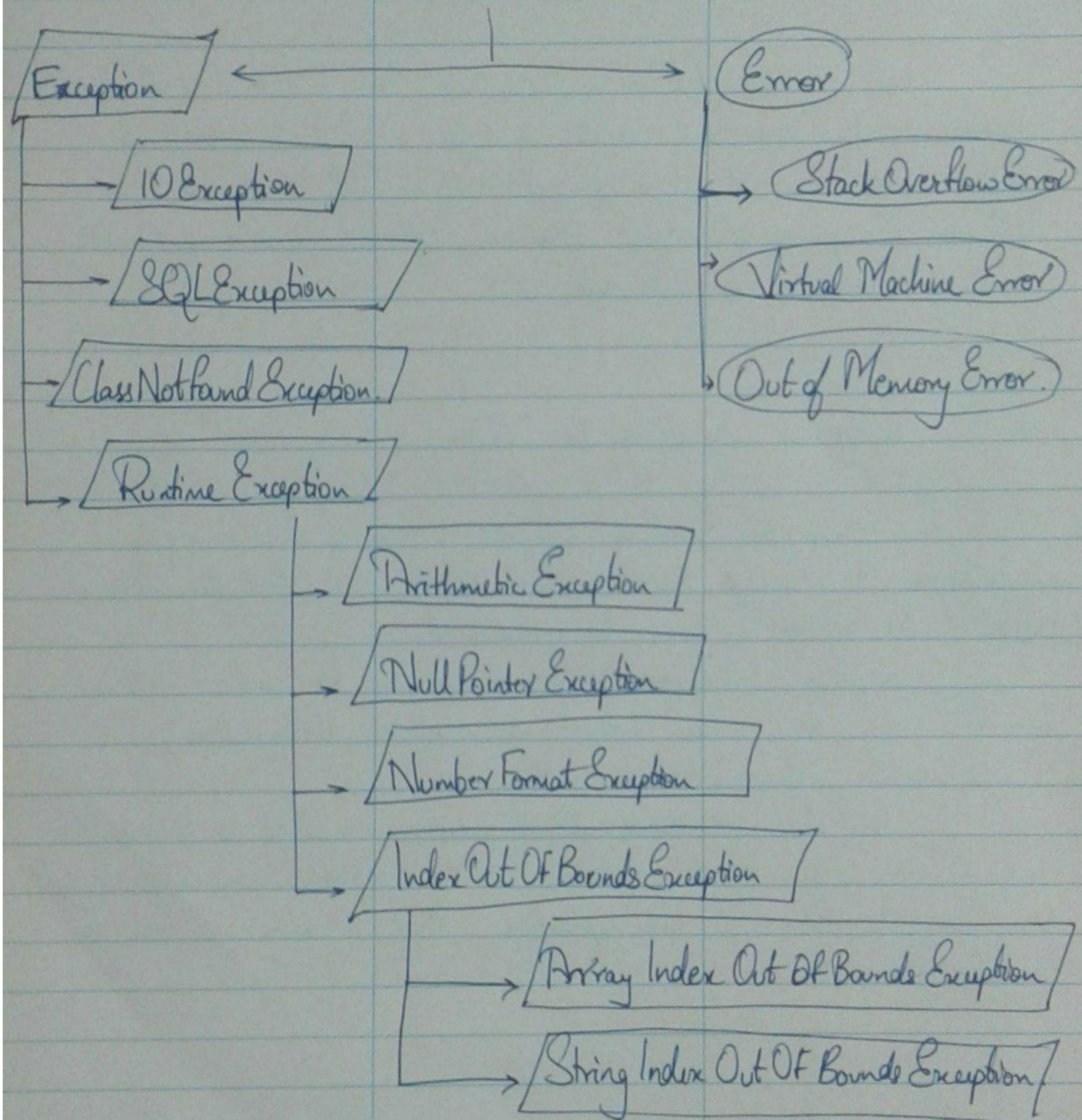
Exception handling is a mechanism to handle runtime errors such as ClassNotFoundException, IOException, SQLException, RemoteException, etc.

~~The~~ The main advantage of exception handling is to maintain the normal flow of the application. An exception normally disrupts the normal flow of the application; that is why we need to handle exceptions.



# Hierarchy of Java Exception classes.

Throwable



## Program Code:

```
import java.util.*;
import java.lang.*;
class MarksOutOfBoundException extends java.lang.Exception
{
    MarksOutOfBoundException(String s)
    {
        super();
    }
}
class ResultException
{
    String name;
    int roll;
    String date;
    int centerNo;
    int marks1;
    int marks2;
    int marks3;
    void enteringInfo(String name,int roll,String date,int centerNo,int marks1,int marks2,int
        marks3)
    {
        this.name = name;
        this.roll = roll;
        this.date = date;
        this.centerNo = centerNo;
        this.marks1 = marks1;
        this.marks2 = marks2;
        this.marks3 = marks3;
    }
    static void checkForException(int marks) throws MarksOutOfBoundException
    {
        if(marks<0||marks>100)
            throw new MarksOutOfBoundException("Enter a valid marks between 1 and 100");
    }
    public static void main(String[] args)
    {
        ResultException[] obj = new ResultException[30]; //for creation of objects
        int objIndex = -1; //for navigating through the objects

        int choice = 0; //To repeatedly take the entries of the students
        String n;
```

```
int r;  
String d;  
int c;  
int m1;  
int m2;  
int m3;
```

```
Scanner sc = new Scanner(System.in);  
do  
{  
++objIndex;  
obj[objIndex] = new ResultException(); //New object created
```

```
//getting the name  
System.out.println("\nEnter the name of the student");  
n = sc.nextLine();
```

```
//getting the roll number  
System.out.println("\nEnter the roll number of the student");  
r = sc.nextInt();
```

```
sc.nextLine(); //To consume the stray white space
```

```
//getting the date  
System.out.println("\nEnter the date in the format: 25th July");  
d = sc.nextLine();
```

```
//getting the centre number  
System.out.println("\nEnter the centre number");  
c = sc.nextInt();
```

```
sc.nextLine(); //To consume the stray white space
```

```
//Getting marks  
System.out.println("\nEnter the marks(between 1 and 100) for the first subject: ");  
m1 = sc.nextInt();
```

```
System.out.println("\nEnter the marks(between 1 and 100) for the second subject: ");  
m2 = sc.nextInt();
```

```
System.out.println("\nEnter the marks(between 1 and 100) for the third subject: ");  
m3 = sc.nextInt();  
sc.nextLine(); //To consume the stray white space
```

```

try
{
    checkForException(m1);
    checkForException(m2);
    checkForException(m3);
}
catch(MarksOutOfBoundException e)
{
    System.out.println("\nError: " + e);
    System.out.println("Enter the details again");
    --objIndex;
    choice = 1;
    continue;
}

obj[objIndex].enteringInfo(n,r,d,c,m1,m2,m3);
System.out.println("\nThe entered info is -> \nName: " + obj[objIndex].name + "\nRoll
number: " + obj[objIndex].roll + "\nDate: " + obj[objIndex].date + "\nCentre number: " +
obj[objIndex].centerNo + "\nMarks in Subject1: " + obj[objIndex].marks1 + "\nMarks in
    Subject2: " +
obj[objIndex].marks2 + "\nMarks in subject3: " + obj[objIndex].marks3 );

System.out.println("\nIf you want to add a new entry enter 1");
choice = sc.nextInt();
}while(choice == 1);

System.out.println("\nExiting");
}
}

```

---

**The output of the program :**

Enter the name of the student

Aryan

Enter the roll number of the student

11

Enter the date in the format: 25th July

28th September

Enter the centre number

93451834

Enter the marks(between 1 and 100) for the first subject:

102

Enter the marks(between 1 and 100) for the second subject:

81

Enter the marks(between 1 and 100) for the third subject:

87

Error: MarksOutOfBoundException

Enter the details again

Error: MarksOutOfBoundException

Enter the details again

Enter the name of the student

Aryan

Enter the roll number of the student

11

Enter the date in the format: 25th July

28th September

Enter the centre number

93451834

Enter the marks(between 1 and 100) for the first subject:

92

Enter the marks(between 1 and 100) for the second subject:

81

Enter the marks(between 1 and 100) for the third subject:

87

The entered info is ->

Name: Aryan

Roll number: 11

Date: 28th September

Centre number: 93451834

Marks in Subject1: 92

Marks in Subject2: 81

Marks in subject3: 87

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