Lab Activity 7

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Batch – B6 (SPZ - AI ML)

TITLE: Exceptions

1. Write a program in Java to display the names and roll numbers of students. Initialize respective array variables for 10 students. Handle ArrayIndexOutOfBoundsExeption, so that any such problem doesn't cause illegal termination of the program.

Code

```java
public class Student1{
    String Name;
    int Rollno;

    public Student1(String n, int r){
        Name = n;
        Rollno = r;
        System.out.println("Name: " + Name + "        " + "Roll No: " + Rollno);
    }

    public void print(String name, int rollno){
        Name = name;
        Rollno = rollno;
        System.out.println("Name : " + Name + "        " + "Roll_no : " + Rollno);

    }

    Run | Debug
    public static void main(String[] args){
        Student1[] stu = new Student1[10];

        stu[0] = new Student1("Ridhi", 11);
        stu[1] = new Student1("Aryan", 12);
        stu[2] = new Student1("Naman", 13);
        stu[3] = new Student1("Tanya", 14);
        stu[4] = new Student1("Nidhi", 15);
        stu[5] = new Student1("Mohit", 16);
        stu[6] = new Student1("Prany", 17);
        stu[7] = new Student1("Rohit", 18);
        stu[8] = new Student1("Aditi", 19);
        stu[9] = new Student1("Rajat", 20);

        try{
            stu[10].print("Harsh", 21);
        }
```

```
        catch(ArrayIndexOutOfBoundsException e){
            System.out.println("Array index is out of bound");
        }

    }
}
```

Output

```
Name: Ridhi          Roll No: 11
Name: Aryan          Roll No: 12
Name: Naman          Roll No: 13
Name: Tanya          Roll No: 14
Name: Nidhi          Roll No: 15
Name: Mohit          Roll No: 16
Name: Prany          Roll No: 17
Name: Rohit          Roll No: 18
Name: Aditi          Roll No: 19
Name: Rajat          Roll No: 20
Array index is out of bound
```

2. Create an exception class, which throws an exception if the operand is non-numeric in calculating modules. (Use command-line arguments).

Code

```
public class nonnumeric extends Exception{
    public String toString(){
        return "The value is non-numeric";
    }
}
```

```java
public class ques2{
    Run | Debug
    public static void main(String[] args){
        int a;

        try{
            a = Integer.parseInt(args[0]);
            throw new nonnumeric();
        }
        catch(nonnumeric e){
            System.out.print(e.toString());
        }
        catch(Exception e){
            System.out.print(e.toString());
        }
    }
}
```

Output

```
The value is non-numeric
```

3. Write a code to create your own exception class. Create another class, inside the main method prompt the user to enter a number if the number is less than 500 throw instances of your custom exception class.

Code

```
public class MyException extends Exception{
    public String toString(){
        return"Number is less than 500";
    }
}
```

```
public class ques3{
    public void number(int num) throws MyException{
        if(num < 500){
            throw new MyException();
        }
    System.out.println("The number is: " + num);
    }

    Run | Debug
    public static void main(String[] args){
        ques3 a = new ques3();

        try{
            a.number(66);
        }
        catch(MyException e){
            System.out.print(e.toString());
        }
    }
}
```

Output

4. You are given two integers, a and b as input, you have to compute a/b: If a and b are not bit signed integers or are zero, an exception will occur and you have to report it. Read sample Input/Output to know what to report in case of exceptions.

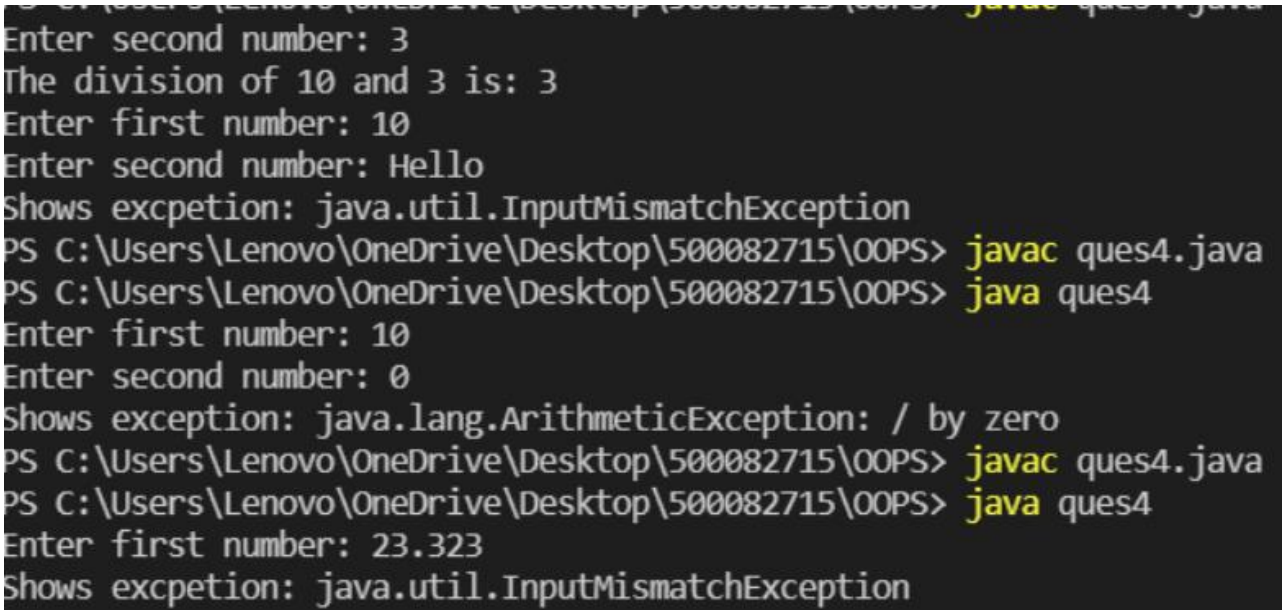
Code

```
import java.util.Scanner;
import java.util.InputMismatchException;

public class ques4{
    Run | Debug
    public static void main(String[] args){
        Scanner sc = new Scanner(System.in);

        try{
            System.out.print("Enter first number: ");
            int a = sc.nextInt();
            System.out.print("Enter second number: ");
            int b = sc.nextInt();
            int c = a/b;
            System.out.println("The division of " + a + " and " + b + " is: " + c);
        }
        catch(Exception e){
            System.out.println("Shows exception: " + e);
        }
    }
}
```

Output


Enter second number: 3
The division of 10 and 3 is: 3
Enter first number: 10
Enter second number: Hello
Shows excpetion: java.util.InputMismatchException
PS C:\Users\Lenovo\OneDrive\Desktop\500082715\OOPS> javac ques4.java
PS C:\Users\Lenovo\OneDrive\Desktop\500082715\OOPS> java ques4
Enter first number: 10
Enter second number: 0
Shows exception: java.lang.ArithmeticException: / by zero
PS C:\Users\Lenovo\OneDrive\Desktop\500082715\OOPS> javac ques4.java
PS C:\Users\Lenovo\OneDrive\Desktop\500082715\OOPS> java ques4
Enter first number: 23.323
Shows excpetion: java.util.InputMismatchException