Experiment No. __7__

Date of performance: 24/08/22

Date of Submission: 24/08/22

SAP Id: 500091584

Roll No.: R2142210822

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1. **Title: Exceptions**

2. **Objective:Exceptions**

3. **List of lab activities:**

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

2) Write a Java program to enable the user to handle any chance of divide by zero exception.

3) Create an exception class, which throws an exception if operand is nonnumeric in calculatingmodules. (Use command line arguments).

4) On a single track two vehicles are running. As vehicles are going in same direction there is noproblem. If the vehicles are running in different direction there is a chance of collision. To avoidcollisions write a Java program using exception handling. You are free to make necessaryassumptions.

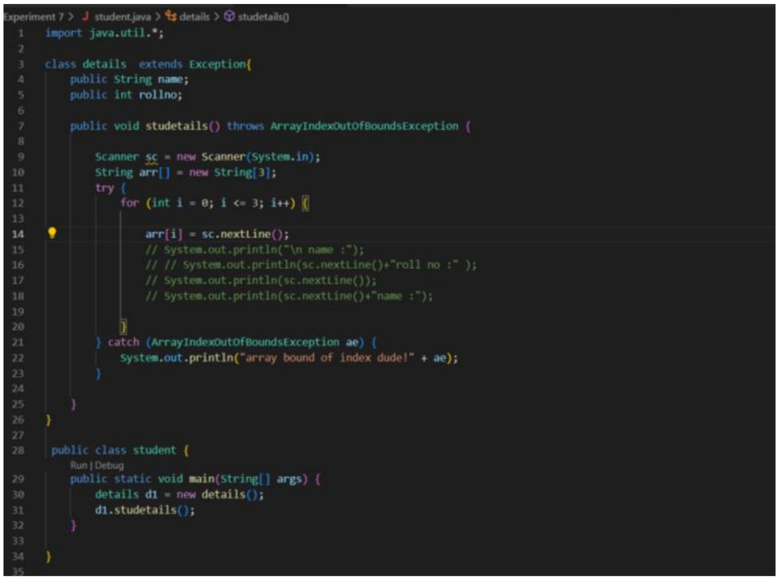
5) Write a java program to throw an exception for an employee details.

- If an employee name is a number, a name exception must be thrown.

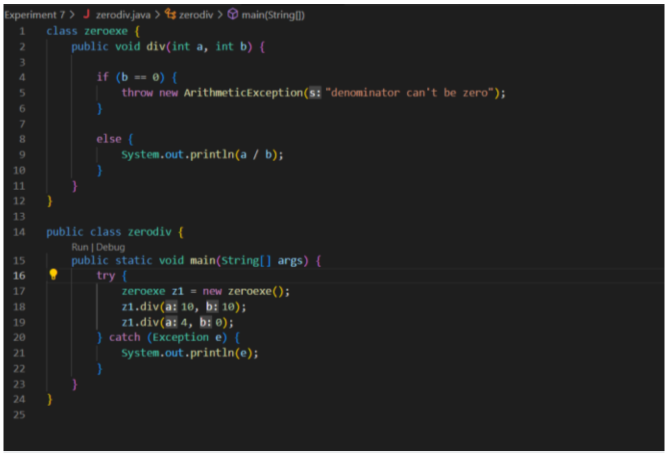
- If an employee age is greater than 50, an age exception must be thrown.

- Or else an object must be created for the entered employee details

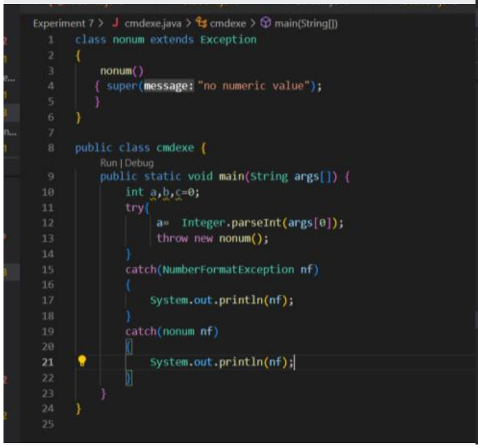
4. **Algorithm/Flowchart and Code followed by Output screenshot (2samples for each program):**



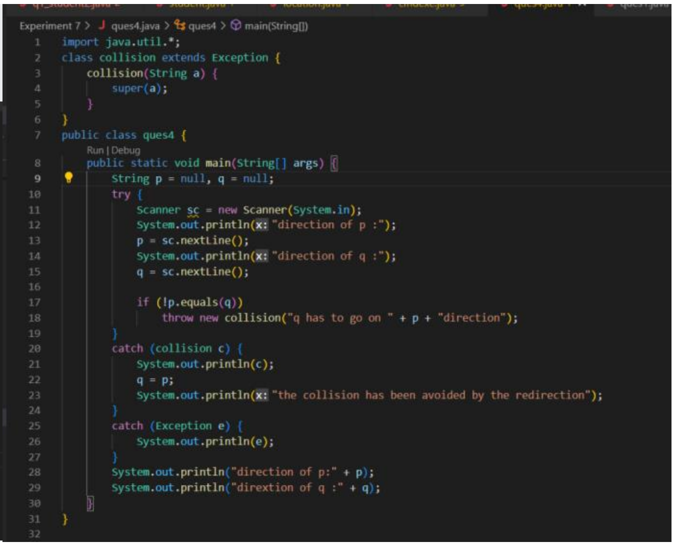
```java
import java.util.*;

class details  extends Exception{
    public String name;
    public int rollno;

    public void studetails() throws ArrayIndexOutOfBoundsException {

        Scanner sc = new Scanner(System.in);
        String arr[] = new String[3];
        try {
            for (int i = 0; i <= 3; i++) {

                arr[i] = sc.nextLine();
                // System.out.println("\n name :");
                // // System.out.println(sc.nextLine()+"roll no :" );
                // System.out.println(sc.nextLine());
                // System.out.println(sc.nextLine()+"name :");

            }
        } catch (ArrayIndexOutOfBoundsException ae) {
            System.out.println("array bound of index dude!" + ae);
        }

    }
}

 public class student {
    public static void main(String[] args) {
        details d1 = new details();
        d1.studetails();
    }

}
```



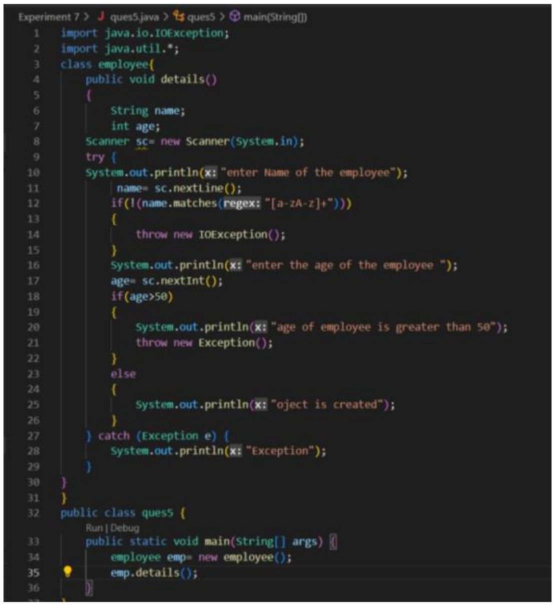
```java
class zeroexe {
    public void div(int a, int b) {

        if (b == 0) {
            throw new ArithmeticException(s: "denominator can't be zero");
        }

        else {
            System.out.println(a / b);
        }
    }
}

public class zerodiv {
    public static void main(String[] args) {
        try {
            zeroexe z1 = new zeroexe();
            z1.div(a: 10, b: 10);
            z1.div(a: 4, b: 0);
        } catch (Exception e) {
            System.out.println(e);
        }
    }
}
```



```java
class nonum extends Exception
{
    nonum()
   { super(message: "no numeric value");
    }
}

public class cmdexe {
    public static void main(String args[]) {
        int a,b,c=0;
        try{
            a=  Integer.parseInt(args[0]);
            throw new nonum();
        }
        catch(NumberFormatException nf)
        {
            System.out.println(nf);
        }
        catch(nonum nf)
        {
            System.out.println(nf);
        }
    }
}
```



```java
import java.util.*;
class collision extends Exception {
    collision(String a) {
        super(a);
    }
}
public class ques4 {
    public static void main(String[] args) {
        String p = null, q = null;
        try {
            Scanner sc = new Scanner(System.in);
            System.out.println(x: "direction of p :");
            p = sc.nextLine();
            System.out.println(x: "direction of q :");
            q = sc.nextLine();

            if (!p.equals(q))
                throw new collision("q has to go on " + p + "direction");
        }
        catch (collision c) {
            System.out.println(c);
            q = p;
            System.out.println(x: "the collision has been avoided by the redirection");
        }
        catch (Exception e) {
            System.out.println(e);
        }
        System.out.println("direction of p:" + p);
        System.out.println("dirextion of q :" + q);
    }
}
```



```java
import java.io.IOException;
import java.util.*;
class employee{
    public void details()
    {
        String name;
        int age;
    Scanner sc= new Scanner(System.in);
    try {
    System.out.println(x: "enter Name of the employee");
         name= sc.nextLine();
        if(!(name.matches(regex: "[a-zA-Z]+")))
        {
            throw new IOException();
        }
        System.out.println(x: "enter the age of the employee ");
        age= sc.nextInt();
        if(age>50)
        {
            System.out.println(x: "age of employee is greater than 50");
            throw new Exception();
        }
        else
        {
            System.out.println(x: "oject is created");
        }
    } catch (Exception e) {
        System.out.println(x: "Exception");
    }
}
}
public class ques5 {
    public static void main(String[] args) {
        employee emp= new employee();
        emp.details();
    }
```

5. Brief notes about all the concepts related to the lab experiment