**Ex No 6 Exception Handling**

**Date:**

**Ex No 6**

**Aim:**

To write the java program using Exception and algorithm for the following

1. Create a CalculatorDemo program that asked the user to solve an arithmetic problem and provided the system calculator for assistance. Now modify that program to include the following improvements: Both numbers in the arithmetic problem should be random integers between 1 and 5,000. The program should ask the user to solve five problems. The program should handle any noninteger data entry by displaying an appropriate message and continuing with the next problem. Save the file as CalculatorDemo2.java

**Algorithm:**

1. Start
2. Import Scanner Class
3. Create a object for the Scanner Class to access
4. Using Math.random we regenerate two number and choice get from the user to which operation to be performed
5. Create a object for the class calculator to access method
   1. Call the corresponding method for operation
   2. If user gives non integer then display the error and continue next operation
6. Create class calculator
   1. Create a individual method for Add, Sub ,Multiply, Division
7. Display the corresponding result of the operation
8. Stop

**Program:**

package oops;

import java.util.Scanner;

public class CalculatorDemo2

{

public static void main(String[] args)

{

// TODO code application logic here

Scanner obj=new Scanner(System.in);

calculator o=new calculator();

double a,b;

int c,i=1;

OUTER:

while(i<6)

{ System.out.println("1.addition\n2.Substraction\n3.Multiplication\n4.Division\n5.Modulus\n6.Exit");

try

{

double h=Math.random();

double i1=Math.random();

System.out.print("Enter Your Choice:");

c=obj.nextInt();

a=h\*5000;

b=i1\*5000;

switch(c)

{

case 1 -> o.add(a, b);

case 2 -> o.sub(a, b);

case 3 -> o.mul(a, b);

case 4 -> o.div(a, b);

case 5 -> o.mol(a, b);

case 6 -> {

break OUTER;

}

}

}

catch(Exception e)

{

System.out.println(e+" : Wrong Input");

if (i!=6)

{

obj.nextLine();

}

}

i++;

}

System.out.println("Successfully Done!!!!");

}

}

class calculator

{

double result;

void add(double n,double v)

{

try

{

result=n+v;

System.out.println("The Addition of "+n+" + "+v+" = "+result);

}

catch(Exception e)

{

System.out.println(e);

}

}

void sub(double n,double v)

{

try

{

result=n-v;

System.out.println("The Substraction of "+n+" - "+v+" = "+result);

}

catch(Exception e)

{

System.out.println(e);

}

}

void mul(double n,double v)

{

try

{

result=n\*v;

System.out.println("The Multiplication of "+n+" \* "+v+" = "+result);

}

catch(Exception e)

{

System.out.println(e);

}

}

void div(double n,double v)

{

try

{

result=n/v;

System.out.println("The Division of "+n+" / "+v+" = "+result);

}

catch(Exception e)

{

System.out.println(e);

}

}

void mol(double n,double v)

{

try

{

result=n%v;

System.out.println("The Modulus(Remainder) of "+n+" % "+v+" = "+result);

}

catch(Exception e)

{

System.out.println(e);

}

}

}

**Output:**

1.addition

2.Substraction

3.Multiplication

4.Division

5.Modulus

6.Exit

Enter Your Choice:1

The Addition of 3671.8748365744555 + 177.79357801894992 = 3849.6684145934055

1.addition

2.Substraction

3.Multiplication

4.Division

5.Modulus

6.Exit

Enter Your Choice:2

The Substraction of 493.3614667773006 - 3975.8357250031513 = -3482.4742582258505

1.addition

2.Substraction

3.Multiplication

4.Division

5.Modulus

6.Exit

Enter Your Choice:e

java.util.InputMismatchException : Wrong Input

1.addition

2.Substraction

3.Multiplication

4.Division

5.Modulus

6.Exit

Enter Your Choice:4

The Division of 4974.990332602326 / 4225.49852230284 = 1.1773735823935452

1.addition

2.Substraction

3.Multiplication

4.Division

5.Modulus

6.Exit

Enter Your Choice:5

The Modulus(Remainder) of 3752.516242518577 % 267.0264432528785 = 14.146036978278289

Successfully Done!!!!

|  |  |
| --- | --- |
| Observation (20) |  |
| Record(5) |  |
| Total(25) |  |
| Initial |  |

**Result:**

The Java Program for the given problem have been solved using Netbeans IDE 8.2.