**Experiment - 5**

# Done By: Rohit Karunakaran Roll No: 58

**Write a Java program that shows the usage of try, catch, throws and finally.**

# (a)---Try-Finally example

**Program:**

/\* File name: TryFinallyExample.java

## \*

\* Done By: Rohit Karunakaran

\* \*/

public class TryFinallyExample

{

public static void main(String args[]){ int a =3;

int len args.length; try{

int b = a/len;

finally{

System.out.println("In the finally Statement"); System.out.println("Have a nice Day");

System.out.println(" \n");

### Sample Input 1:

\*No input\*

### Sample Output 1:

In the finally Statement Have a nice Day

Exception in thread "main" java.lang.ArithmeticException: / by zero at TryFinallyExample.main(TryFinallyExample.java:12)

### Sample Input 2:

hello

### Sample Output 2:

In the finally Statement Have a nice Day

# (b)---Multiple catch example (3 catches for a single try)

**Program:**

/\* File Name : MultipleCatchExample.java

## \*

\* Done By: Rohit Karunakaran

## \*

\* \*/

public class MultipleCatchExample{

public static void main(String args[]){

//3 catches for a single try

System.out.println("Example for multiple Catch Statements"); try

{

int len inti int b int C -

= args.length; Integer.parseint(args[0]); Integer.parsei nt(args[l]); i/b;

catch(NumberFormatException e)

{

System.out.println("In the First Catch");

System.out.println("An Exception has occurred while parsing the command line input :"+e);

System.out.println("Expected an integer");

}

catch(ArrayindexOutOfBoundsException e)

{

System.out.println("In the Second Catch"); System.out.println("Expected more than 1 command line argument"); System.out.println("Exception occured is : "+e);

}

catch(ArithmeticException e)

{

System.out.println("In the Third Catch"); System.out.println("An Exception has occured

}

"+e);

finally

{

//System.out.println("");

System.out.println(" ");

### Sample input 1:

\*no input\*

### Sample Output 1

Example for multiple Catch Statements In the Second Catch

Expected more than 1 command line argument

Exception occured is : java.lang.ArrayindexOutOfBoundsException: Index 0 out of bounds for length 0

### Sample Input 2

2 hi

### Sample Output 2

Example for multiple Catch Statements In the First Catch

An Exception has occurred while parsing the command line

input :java.lang.NumberFormatException: For input string: "hi" Expected an integer

### Sample Input 3

2 0

### Sample Output 3

Example for multiple Catch Statements In the Third Catch

An Exception has occured: java.lang.ArithmeticException: / by zero

# (c)---Nested Try (3 levels of nesting)

**Program:**

/\* File name: NestedTryExample.java

## \*

\* Done By: Rohit Karunakaran

\*/

public class NestedTryExample

{

public static void main(String args[]){

//3 levels of nesting int a[] = {1,2,5,32,12};

System.out.println("\nExample With Nested Try Statements"); try

{

System.out.println("Inside the Outer Most Try Block"); System.out.print ln(" \n");

int b = a[3]; try

{

System.out.println("Inside the Inner Try Block"); System.out.println(" \n"); int c = 2\*a[1]+a[0]-a[2];

try

{

System.out.print ln("Inside the Innermost Try Block"); System.out.println(" \n"); int e = b/c;

catch(ArithmeticException e)

{

try Block"); "+e);

System.out.println("An Exception has occured in the innerMost System.out.print ln("An Arithmetic expression error occured :

finally

{

expression");

System.out.println("In the final block of the Innermost try

System.out.println(" \n");

}

//System.out.println("After the innermost try bolck Statement");

finally

{

expression");

System.out.println("In the final block of the Inner try System.out.println(" \n");

than 42,");

int d = a[41]; //Array out of bounds exception

System.out.println("I assure you that as long as the size of a is less System.out.println("This statement will not be excecuted");

catch(ArrayindexOutOfBoundsException e)

{

System.out.println("Exception :"+e+" \nhas Occured in the outermost try

block");

}

finally

{

System.out.println("The Final Block of the Outermost try is complete");

//System.out.println(" \n");

System.out.println(" \n");

### Sample input 1:

\*no input\*

### Sample output 1:

Example With Nested Try Statements Inside the Outer Most Try Block

Inside the Inner Try Block Inside the Innermost Try Block

An Exception has occured in the innerMost try Block

An Arithmetic expression error occured: java.lang.ArithmeticException: / by zero In the final block of the Innermost try expression

In the final block of the Inner try expression

Exception :java.lang.ArrayindexOutOfBoundsException: Index 41 out of bounds for length 5

has Occured in the outermost try block

The Final Block of the Outermost try is complete

# (d)---Throw an exception when there are no sufficient arguments passed into command line as input for adding two numbers.

**Program:**

/\* File Name: NoSufficientArgument.java

## \*

\* Done By: Rohit Karunakaran

\*/

public class NoSufficientArgumentForAdding

{

public static void main(String[] args) //throw Excenption

{

try

{

if(args.length<2){

throw new ArrayindexOutOfBoundsException("Less than 2 command line

arguments found");

}

else{

int a Integer.parseint(args[0]); int b Integer.parseint(args[l]); int c - a+b;

System.out.println("No Exception has occurred. The sum

}

"+c);

}

catch(ArrayindexOutOfBoundsException e)

{

System.out.println(e);

catch(NumberFormatException e)

{

System.out.println("Pass an Integer as a command line argument"); System.out.println(e);

### Sample Input 1:

\*no input\* Sample Output 1:

java.lang.ArrayindexOutOfBoundsException: Less than 2 command line arguments found

### Sample Input 2:

3

### Sample Output 2:

java.lang.ArrayindexOutOfBoundsException: Less than 2 command line arguments found

### Sample Input 3:

3 4

### Sample Output 3:

No Exception has occurred. The sum 7

# (e)---Throws example (for handling two exceptions in a method)

**Program:**

/\*File Name: ThrowsExample.java

## \*

\*Done By: Rohit Karunakaran

\*/

import java.io.\*;

public class ThrowsExample

{

public static void main(String args[]) throws IOException, ArithmeticException

{

try{

File f = new File("Filel.txt"); FileReader fl= new FileReader(f);

catch (IOException ie)

{

System.out.println(ie);

int C = 5/0;

**Sample Input:**

\*no input\*

**Sample Output:**

java.io.FileNotFoundException: Filel.txt (No such file or directory)

Exception in thread "main" java.lang.ArithmeticException: / by zero at Throws.main(Throws.java:22)