**LAB # 12**

**EXCEPTION HANDLING**

**Objective:**

Constructing a fault tolerant program by implementing exception handling techniques.

**Lab Task:**

1. Write a program that meets the following requirements:

➢ Creates an array with 10 randomly chosen integers.

➢ Prompts the user to enter the index of the array, then displays the corresponding element.

value. If the specified index is out of bounds, display the message Out of Bounds.

(ArrayIndexOutOfBoundsException).

**SOURCE CODE:**

package lab12;

import java.util.Scanner;

public class Exception\_Handling {

public static void main(String[] args) {

Scanner input = new Scanner(System.in);

int[] array = getArray();

System.out.print("Enter the index of the array: ");

try {

System.out.println("The corresponding element value is " +

array[input.nextInt()]);}

catch (ArrayIndexOutOfBoundsException ex) {

System.out.println("Index Out of Bounds.");}}

public static int[] getArray() {

int[] array = new int[100];

for (int i = 0; i < array.length; i++) {

array[i] = (int)(Math.random() \* 100) + 1;}

return array;

**Output:**

Text

Description automatically generated

1. Suppose you are developing a game for kids in which they are learning the division operation in math. Your game will take input from kids (2 integers) and then perform the division and displays the answer. Think and apply exception handling in this scenario. For e.g. Arithmetic Exception might occur here. Also suppose, this game has the limitation that it only performs division between integers so if it gets a decimal number as input, it throws an exception stating that the input is invalid, please give integer number etc.

**SOURCE CODE:**

package lab12p2;

import java.util.InputMismatchException;

import java.util.Scanner;

public class task2 {

public static void main(String[] args) {

int n1, n2, ans;

Scanner obj = new Scanner(System.in);

try {

System.out.print("Enter First number: ");

n1 = obj.nextInt();

System.out.print("Enter Second number: ");

n2 = obj.nextInt();

ans = n1/n2;

System.out.println(n1+"/"+n2+" = "+ans);}

catch (ArithmeticException e){

System.out.println("Cannot divide number by zero");}

catch (InputMismatchException e){

System.out.println("Input is invalid, please give integer number");}

finally {

System.out.println("Game Has been Ended");}}

**Output:**

**EXCEPTION TYPE # 01:**

Text

Description automatically generated

**EXCEPTION TYPE # 02:**

