Name: Khushi Satyaprakash Singh

Branch: Information Technology

Div: B

Roll number: 45

Batch: [B-2]

Assignment Number :06

```java
import java.util.*;

class ExceptionHandling {
    Scanner sc = new Scanner(System.in);

    void ArithmeticExc() {
        // Function to check arithmetic exception
        try {
            int num1, num2, result = 0;
            System.out.println("Enter the first number: ");
            num1 = sc.nextInt();
            System.out.println("Enter the second number: ");
            num2 = sc.nextInt();
            result = num1 / num2;
        } catch (ArithmeticException e) {
            System.out.println(e);
        }
        System.out.println("Continuing with the rest of the code...");
    }

    void ArrayIndexOutOfBounds(int[] arr) {
        // Function to check array index out of bounds exception
        System.out.println("Array elements are: ");
        for (int i = 0; i < arr.length; i++) {
            System.out.print(arr[i] + " ");
        }
        System.out.println();
        try {
            System.out.println("Enter the index number to print the array element: ");
            int index = sc.nextInt();
            System.out.println(arr[index] + " is present at the given index.");
        } catch (ArrayIndexOutOfBoundsException e) {
            System.out.println(e);
        }
    }
```

```java
            System.out.println("Resuming normal flow...");
    }

    void NumberFormatExc() {
        // Function to check number format exception
        try {
            System.out.println("Enter the first number: ");
            String str1 = sc.next();
            System.out.println("Enter the second number: ");
            String str2 = sc.next();
            int a = Integer.parseInt(str1);
            int b = Integer.parseInt(str2);
            System.out.println("The entered numbers are: " + a + " & " + b);
        } catch (NumberFormatException e) {
            System.out.println(e);
        }
        System.out.println("Proceeding with the regular code...");
    }
}
public class Main {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);
        int choice;
        ExceptionHandling exHandler = new ExceptionHandling();
        do {
            System.out.println("Which exception would you like to see?");
            System.out.println("1. Arithmetic Exception");
            System.out.println("2. ArrayIndexOutOfBounds Exception");
            System.out.println("3. Number Format Exception");
            choice = sc.nextInt();
            switch (choice) {
                case 1:
                    exHandler.ArithmeticExc();
                    System.out.println("================================");
                    break;
                case 2:
                    int[] arr = {10, 20, 30, 40, 50};
                    exHandler.ArrayIndexOutOfBounds(arr);
                    System.out.println("================================");
                    break;
                case 3:
                    exHandler.NumberFormatExc();
                    System.out.println("================================");
                    break;
```

```
            default:
                System.out.println("Please enter a valid input!");
                break;
        }
    } while (choice != 4);
}
}
```
Output:
Which exception would you like to see?
1. Arithmetic Exception
2. ArrayIndexOutOfBounds Exception
3. Number Format Exception
1
Enter the first number:
8
Enter the second number:
0
java.lang.ArithmeticException: / by zero
Continuing with the rest of the code...
================================
Which exception would you like to see?
1. Arithmetic Exception
2. ArrayIndexOutOfBounds Exception
3. Number Format Exception
2
Array elements are:
10 20 30 40 50
Enter the index number to print the array element:
6
java.lang.ArrayIndexOutOfBoundsException: Index 6 out of bounds for length 5
Resuming normal flow...
================================
Which exception would you like to see?
1. Arithmetic Exception
2. ArrayIndexOutOfBounds Exception
3. Number Format Exception
3
Enter the first number:
45
Enter the second number:
ABC
java.lang.NumberFormatException: For input string: "ABC"
Proceeding with the regular code...
================================