

WEEK-9

ROLL NO:230701235

1) In the following program, an array of integer data is to be initialized.

During the initialization, if a user enters a value other than an integer, it will throw an `InputMismatchException` exception.

On the occurrence of such an exception, your program should print "You entered bad data."

If there is no such exception it will print the total sum of the array.

**For example:**

Input	Result
3 5 2 1	8
2 1 g	You entered bad data.

CODE:

```
import java.util.Scanner; import
java.util.InputMismatchException; class
prog {
    public static void main(String[] args) {
        Scanner sc = new Scanner(System.in);    int
        length = sc.nextInt();
        // create an array to save user input    int[]
        name = new int[length];    int sum=0;//save
        the total sum of the array.

        /* Define try-catch block to save user input in the array "name"
        If there is an exception then catch the exception otherwise print
        the total sum of the array. */    try
        {
```

```

    for (int i=0;i<length;i++){
name[i]=sc.nextInt();    sum+=name[i];

    }
    System.out.println(sum);

    }
    catch(InputMismatchException e)
    {
        System.out.println("You entered bad data.");
    }
}

```

OUTPUT:

	Input	Expected	Got	
✓	3 5 2 1	8	8	✓
✓	2 1 g	You entered bad data.	You entered bad data.	✓

Passed all tests! ✓

2) Write a Java program to create a method that takes an integer as a parameter and throws an exception if the number is odd.

**For example:**

Result
82 is even. Error: 37 is odd.

CODE:

```

class prog {

```

```

    public static void main(String[] args) {
int n = 82;

        tryNumber(n); // Call the tryNumber method
n = 37;

        // Call the tryNumber method for the next number
tryNumber(n);
    }


    public static void tryNumber(int n) {
try {

        // Call the checkEvenNumber method
checkEvenNumber(n);

        System.out.println(n + " is even.");
    } catch (Exception e) {

        // Handle any exceptions thrown
        System.out.println("Error: " + e.getMessage());
    }
}


    public static void checkEvenNumber(int number) throws Exception {
if (number % 2 != 0) {

        // Throw an exception if the number is odd
throw new Exception(number + " is odd.");
    }
}
}

```

OUTPUT:

	Expected	Got	
✓	82 is even. Error: 37 is odd.	82 is even. Error: 37 is odd.	✓

Passed all tests! ✓

3) Write a Java program to handle `ArithmeticException` and `ArrayIndexOutOfBoundsException`.

Create an array, read the input from the user, and store it in the array.

Divide the 0th index element by the 1st index element and store it. if the 1st element is zero, it will throw an exception. if you try to access an element beyond the array limit throws an exception.

**For example:**

Test	Input	Result
1	6 1 0 4 1 2 8	java.lang.ArithmeticException: / by zero I am always executed

CODE:

```
import java.util.Scanner;
```

```
public class ExceptionHandling {    public
```

```
static void main(String[] args) {
```

```
    Scanner sc = new Scanner(System.in);
```

```
    try
```

```
{
```

```
    // Read the size of the array
```

```
int n = sc.nextInt();        int[] arr
```

```
= new int[n];
```

```
    // Read the array elements from the user
```

```

        for (int i = 0; i < n; i++) {
arr[i] = sc.nextInt();
        }

        // Attempt to divide the 0th element by the 1st element
int result = arr[0] / arr[1];

        // Attempt to access an element beyond the array limit (e.g., index 3)
System.out.println("Accessing out of bound element: " + arr[3]);

    } catch (ArithmeticException e) {
        // Handle division by zero
        System.out.println("java.lang.ArithmeticException: " + e.getMessage());
    } catch (ArrayIndexOutOfBoundsException e) {
        // Handle array index out of bounds
        System.out.println("java.lang.ArrayIndexOutOfBoundsException: " +
e.getMessage());
    } finally {
        // This block will always be executed
        System.out.println("I am always executed");
    }
}
}
}

```

OUTPUT:

	Test	Input	Expected	Got
✓	1	6 1 0 4 1 2 8	java.lang.ArithmeticException: / by zero I am always executed	java.lang.Arith I am always es
✓	2	3 10 20 30	java.lang.ArrayIndexOutOfBoundsException: Index 3 out of bounds for length 3 I am always executed	java.lang.Arre I am always es

Passed all tests! ✓