

Week – 9

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.

```
/* 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. */
```

Sample Input:

```
3  
5 2 1
```

Sample Output:

```
8
```

```
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.print(sum);  
        }  
        catch(InputMismatchException e)
```

```

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

}

}

```

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

2.

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.

Input:

5

10 0 20 30 40

Output:

java.lang.ArithmeticException: / by zero

I am always executed

Input:

3

10 20 30

Output

java.lang.ArrayIndexOutOfBoundsException: Index 3 out of bounds for length 3

I am always executed

```
import java.util.*;
```

```
class prog{
```

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

```

Scanner scan=new Scanner(System.in);
int size=scan.nextInt();
int arr[]=new int[size];
for(int i=0;i<size;i++)
    arr[i]=scan.nextInt();
try{
    int q=arr[0]/arr[1];
    System.out.println(arr[size]);
}
catch(ArithmeticException e1){
    System.out.println(e1);
}
catch(ArrayIndexOutOfBoundsException e2){
    System.out.println(e2);
}
finally{
    System.out.println("I am always executed");
}
}

```

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

3.

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

Sample input and Output:

82 is even.

Error: 37 is odd.

```

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

```

```

trynumber(n);

n = 37;

// call the trynumber(n);

trynumber(n);

}

public static void trynumber(int n) {
    try {
        //call the checkEvenNumber()
        checkEvenNumber(n);
        System.out.println(n + " is even.");
    } catch (Exception e) {
        System.out.println("Error: "+e.getMessage());
    }
}

public static void checkEvenNumber(int number) {
    if (number % 2 != 0) {
        throw new ArithmeticException(number+" is odd.");
    }
}
}

```

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