EXCEPTION HANDLING

1. WHAT IS THE EXCEPTION HANDLING

When executing a program, sometimes program execution cannot continue because of, for example, memory access violations or division by zero. Exception handling is to deal with such exceptional events.

2. EXCENPTION HANDRING BY JAVA

A. How to code exception handing by Java

In Java, try-catch statement is used for exception handling. Statement is like follows:

```
try{
        // Normal processing
} catch(class_of_exception  name_of_object){
        //Processing when an exception occurs
}
```

B. Writing program

I wrote 2 programs. First one is the program WITHOUT exception handling and the other one is WITH exception handling. Both programs ask 2 **integer** and return sum of them. Next chapter, we are going to check what happen if user input not integer number.

WITH exception handling

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

public class ExceptionInAddition{
    public static void main(String[] args){
        Scanner reader = new Scanner(System.in);
        int firstNumber = 0;
        int secondNumber = 0;
        int result;
        boolean inputCorrect = true;

        try{
            System.out.print("Type in the first number: ");
            firstNumber = reader.nextInt();

            System.out.print("Type in the second number: ");
            secondNumber = reader.nextInt();
        }
        catch(InputMismatchException e){
            inputCorrect = false;
        }
        if(inputCorrect == true){
            result = firstNumber + secondNumber;
            System.out.println("Result: " + result);
        }
        else{
            System.out.println("You did not type in an integer!")
        }
    }
}
```

WITHOUT exception handling

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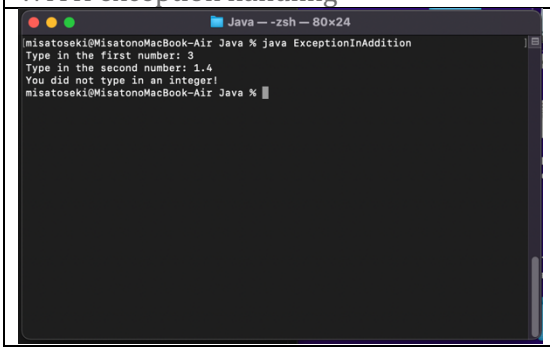
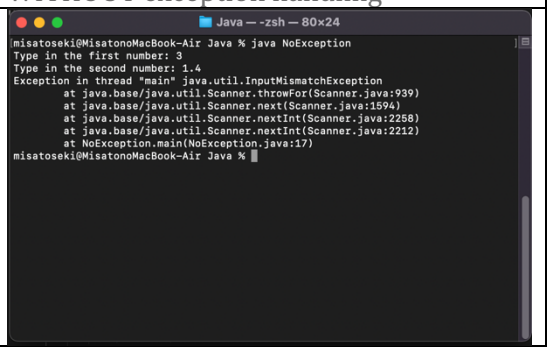
```java
import java.util.Scanner;
import java.util.*;

public class NoException{
    public static void main(String[] args){
        Scanner reader = new Scanner(System.in);
        int firstNumber = 0;
        int secondNumber = 0;
        int result;



            System.out.print("Type in the first number: ");
            firstNumber = reader.nextInt();

            System.out.print("Type in the second number: ");
            secondNumber = reader.nextInt();




            result = firstNumber + secondNumber;
            System.out.println("Result: " + result);



    }
}
```

C. Testing program

The program WITH exception handling was able to continue the processing, however the program WITHOUT exception handling was NOT able to continue the processing and occurred error.

WITH exception handling	WITHOUT exception handling
	

3. WHAT I LEARED THROUGH THIS REPORT

When exception occurs, we must not leave it and we need to prevent forced shutdown of application by writing program which process the error.

4. REFFERENCES

Introduction to Java Programming: https://vw4.viope.com/student/4496/#/