Exceptions in Java

Fundamentals to programming I

Jael Emerson Huarca Pallani [1]

[1]System Engineering School
System Engineering and Informatic Department
Production and Services Faculty
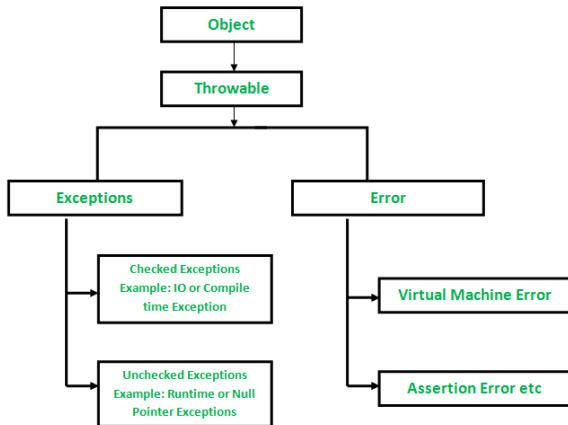San Agustin National University of Arequipa

2020-08-01

Content

Exception - Definition

- An exception is an abnormal situation that can occur when we run a certain program. Exceptions are a way of trying to ensure that if a source code does not run as intended initially, the programmer is able to control that situation and say how the program should respond.

Hierarchy of exceptions

Examples - Basics

```java
1   package Examples;
2   /*
3    * Note: This is a example in java with Eclipse IDE.
4    * Author: Jael Emerson Huarca Pallani
5    * version: 1.0
6    * Date: 2020-08-1
7    */
8   public class ExampleBasic {
9
10      // this is the main method prints a message the output on the screen.
11      public static void main(String[] args) {
12          //
13          int num1= 8, num2= 0;
14
15          int result = num1/num2;
16          //printing result
17          System.out.print(result);
18      }
19
20  }
```

Problems @ Javadoc Declaration Console ✕

```
<terminated> ExampleBasic [Java Application] C:\Program Files\Java\jdk-14.0.1\bin\javaw.exe (5 ago. 2020 19:28:38 – 19:28:38)
Exception in thread "main" java.lang.ArithmeticException: / by zero
        at Examples.ExampleBasic.main(ExampleBasic.java:15)
```

Examples - Basics1

```java
1  package Examples;
2
3  import java.util.Scanner;
4
5  public class ExampleBasic1 {
6
7      public static void main(String[] args) {
8          @SuppressWarnings("resource")
9      Scanner Sc = new Scanner(System.in);
10         int Num;
11          System.out.print("Ingrese un número:");
12          Num = Sc.nextInt();
13      }
14
15  }
```

```
Problems  @ Javadoc  Declaration  Console ⊠
<terminated> ExampleBasic1 [Java Application] C:\Program Files\Java\jdk-14.0.1\bin\javaw.exe
Ingrese un número: Hello
Exception in thread "main" java.util.InputMismatchException
        at java.base/java.util.Scanner.throwFor(Scanner.java:939)
        at java.base/java.util.Scanner.next(Scanner.java:1594)
        at java.base/java.util.Scanner.nextInt(Scanner.java:2258)
        at java.base/java.util.Scanner.nextInt(Scanner.java:2212)
        at Examples.ExampleBasic1.main(ExampleBasic1.java:12)
```

Example - Advanced

```java
1  package Examples;
2
3⊕ import java.io.BufferedReader;
10
11 public class ExampleAdvanced {
12
13⊖    @SuppressWarnings("resource")
14     public void LeerArchivo() throws FileNotFoundException, IOException {
15         File archivo = new File("C:\\Prueba\\texto1.txt");
16         FileReader fr = new FileReader(archivo);
17
18         BufferedReader bf = new BufferedReader(fr);
19         String linea;
20
21         while((linea = bf.readLine())!= null) {
22             System.out.println(linea);
23         }
24     }
25⊖    public void Leer2() {
26         try {
27             LeerArchivo();
28
29         } catch(FileNotFoundException ex) {
30             JOptionPane.showMessageDialog(null,"No se ha encontrado el archivo buscado.");
31
32         } catch(IOException e) {
33             JOptionPane.showMessageDialog(null,"Ha ocurrido una excepción.");
34         }
35         System.out.println("el programa a finalizado");
36     }
37⊖    public static void main(String []args) {
38         ExampleAdvanced prueba = new ExampleAdvanced();
39         prueba.Leer2();
40     }
41 }
```

References - Web pages

- https://www.oracle.com/java/technologies/javase/javase-jdk8-downloads.html
- https://www.eclipse.org/downloads/packages/release/2020-06/r/eclipse-ide-enterprise-java-developers
- https://www.youtube.com/watch?v=jYnHBbqHE3A
- https://elvex.ugr.es/decsai/java/
- https://www.youtube.com/watch?v=mCmu7Ps55Dc
- https://www.unirioja.es/cu/jearansa/0910/archivos/EIPR_Tema05.pdf

Thanks!