Exception: A n unwanted event that disturbs normal flow of program.

Ex: file not found exception.

Two types:

Checked and unchecked

Checked Exception:

Exception which are checked by compiler for smooth execution of program at runtime.

Example1:

File not found exception:

When we try to access that file, that is not available in the system.

**import** java.io.FileNotFoundException;

**import** java.io.FileReader;

**public** **class** FileNotFound {

**public** **static** **void** main(String[] args) **throws** FileNotFoundException

{

FileReader file = **new** FileReader("exampe.txt");

}

}

Example2: InterruptedException

The [java.lang.InterruptedException](https://docs.oracle.com/javase/9/docs/api/java/lang/InterruptedException.html" \t "_blank) thrown when a thread is waiting, sleeping or otherwise occupied, and the thread is interrupted, either before or during the activity. Occasionally a method may wish to test whether the current thread has been interrupted and if so, to immediately throw this exception.

**class** ChildThread **extends** Thread {

**public** **void** run() {

**try** {

Thread.*sleep*(1000);

} **catch** (InterruptedException e) {

System.***err***.println("InterruptedException caught!");

e.printStackTrace();

}

}

}

**public** **class** InterruptedException {

**public** **static** **void** main(String[] args) **throws** InterruptedException {

ChildThread childThread = **new** ChildThread();

childThread.start();

childThread.interrupt();

}

}

Example3: IO Exception

occur whenever an input or output operation is failed or interpreted. For example, if you are trying to read in a file that does not exist, Java would throw an I/O exception

import java.io.\*;  
Class Demo  
{  
  public static void main(String[] args) {  
   F‎ileInputStream fs=new FileInputStream("abc.txt");  
    while(fs.read()==-1)  
     system.out.println(fs);  
  }  
}

Example4: Class not found exception

classNotFoundException in Java occurs when JVM (Java Virtual Machine) tries to load a particular class and doesn't found the requested class in the classpath you specified

public class Example {

public static void main(String args[]) {

try

{

Class.forName("NoClassExist");

}

catch (ClassNotFoundException ex)

{

ex.printStackTrace();

}

}

}

Unchecked exception:

Exception which are not checked by compiler whether programmer handling or not:

Example1:

Arithmetic exception:

The arithmetic exception is a type of unusual outcome or unchecked error of the code, which is thrown or raised whenever a wrong mathematical or arithmetic operation appears in the code during run time.

**public** **class** Arithematic {

**public** **static** **void** main(String[] args)

{

**int** a=10,b=0;

**int** c= a/b;

System.***out***.println("Value : "+c);

}

}

Example2: Null pointer exception

NullPointerException is a runtime exception and it is thrown when the application try to use an object reference which has a null value.

**public** **class** NullPointer {

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

Object o = **null**;

o.toString();

}

}

Example3: Array index out of bounce

Whenever you used an –ve value or, the value greater than or equal to the size of the array, then the **ArrayIndexOutOfBoundsException** is thrown.

**import** java.util.Arrays;

**import** java.util.Scanner;

**public** **class** AOBExample {

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

**int** arr[]= {1,2,3,4};

System.***out***.println(Arrays.*toString*(arr));

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

System.***out***.println("Enter the index to add the element :");

**int** element = sc.nextInt();

System.***out***.println("Element in the given index: "+arr[element]);

}

}

Example4: Number formate exception

The NumberFormatException is thrown when we try to convert a string into a numeric value

**public** **class** NumberFormateEx {

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

**int** a = Integer.*parseInt*(**null**); //throws Exception as //the input string is of illegal format for parsing as it is null.

}

}

Example5: String index bounce of exception

 A string is kind of an ensemble of characters. **String object**has **a range of [0, length of the string].** When someone tries to access the characters with limits exceeding the range of actual string value, this exception occurs.

**public** **class** StringOBException {

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

String str = "helloo";

System.***out***.println("Length of String : " + str.length());

System.***out***.println("Length of substring: " + str.substring(7));

}

}