Department: BCA
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Subject: JAVA (5th sem.)
Topic: Exception Handling (try-catch block)

Common Scenarios of Java Exceptions:

There are given some scenarios where unchecked exceptions may occur. They are as follows:

1) A scenario where ArithmeticException occurs:

If we divide any number by zero, there occurs an ArithmeticException.

Example:

```
int a=100/0;// ArithmeticException.
```

2) A scenario where NullPointerException occurs:

If we have a null value in any variable, performing any operation on the variable throws a NullPointerException.

Example:

```
String s=null;
System.out.println(s.length());//NullPointerException
```

3) A scenario where NumberFormatException occurs

The wrong formatting of any value may occur NumberFormatException. Suppose I have a String variable that has characters, converting this variable into digit will occur NumberFormatException.

Example:

```
String s="abc";

int i=Integer.parseInt(s);//NumberFormatException
```

4) A scenario where ArrayIndexOutOfBoundsException occurs

If you are inserting any value in the wrong index, it would result in ArrayIndexOutOfBoundsException as shown below:

Example:

int a[]=**new int**[5];
a[10]=50; //ArrayIndexOutOfBoundsException

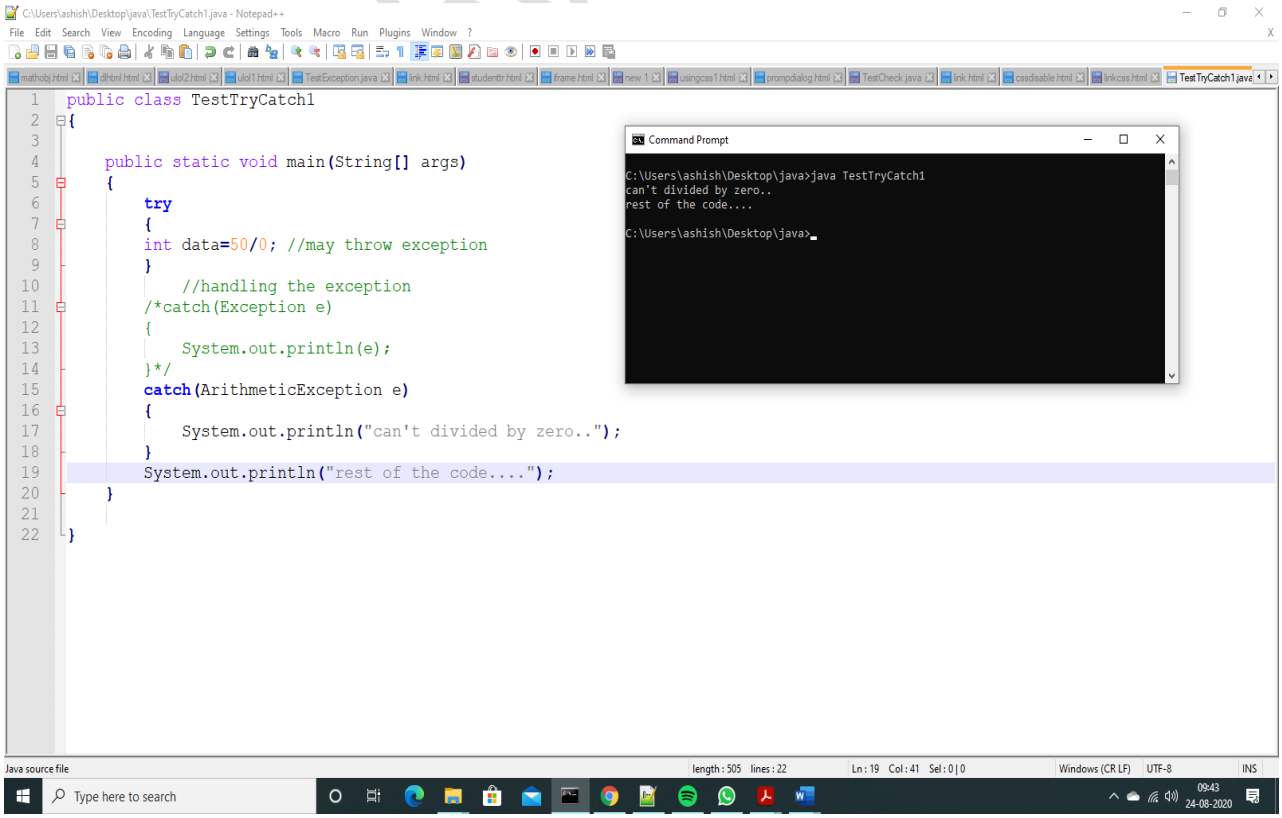
Java try-catch block:

- Java **try** block is used to enclose the code that might throw an exception. It must be used within the method.
- If an exception occurs at the particular statement of try block, the rest of the block code will not execute. So, it is recommended not to keeping the code in try block that will not throw an exception.
- Java try block must be followed by either catch or finally block.

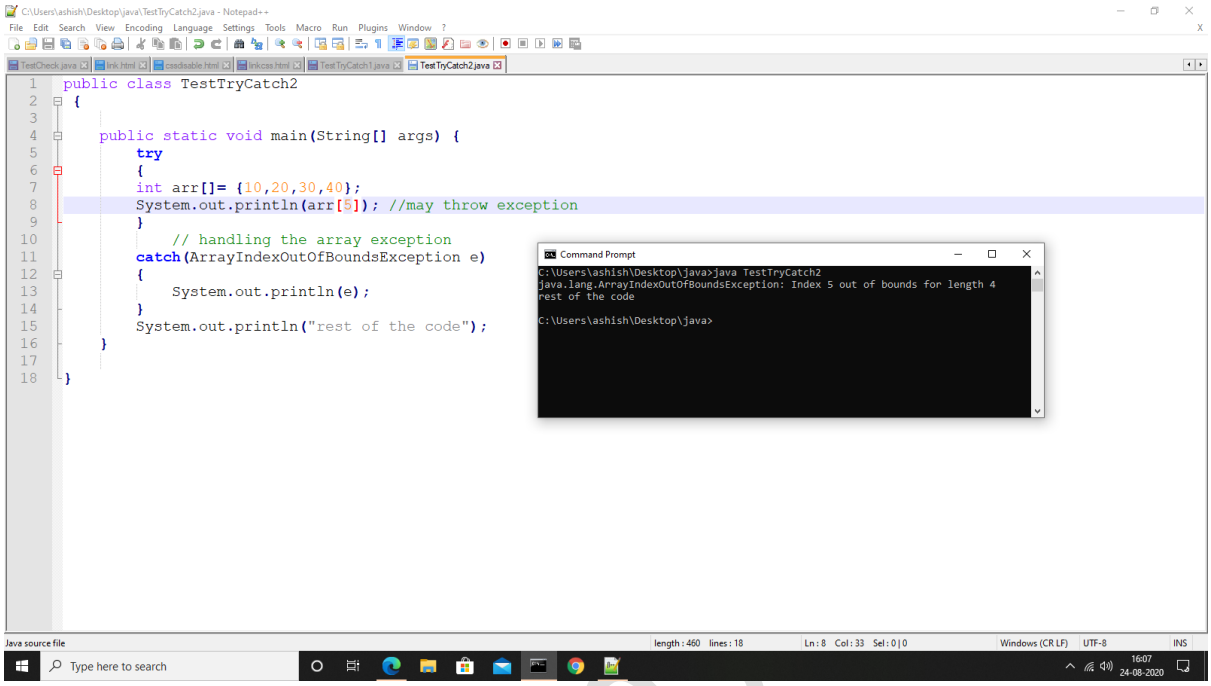
Syntax of try-catch block:

Try
{
//code that may throw an exception
}
catch(Exception_class_Name ref)
{}

Example:



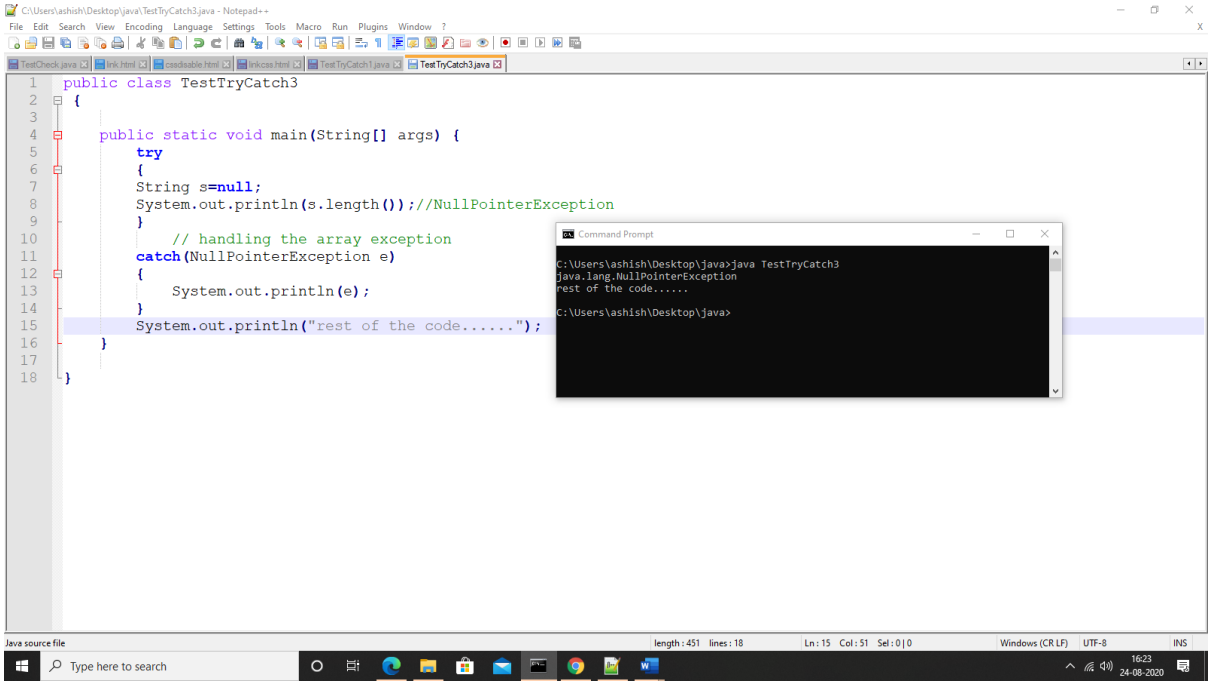
Example:



```
public class TestTryCatch2
{

    public static void main(String[] args) {
        try
        {
        int arr[]= {10,20,30,40};
        System.out.println(arr[5]); //may throw exception
        }
            // handling the array exception
        catch(ArrayIndexOutOfBoundsException e)
        {
            System.out.println(e);
        }
        System.out.println("rest of the code");
    }

}
```

```
Command Prompt
C:\Users\ashish\Desktop\java>java TestTryCatch2
java.lang.ArrayIndexOutOfBoundsException: Index 5 out of bounds for length 4
rest of the code

C:\Users\ashish\Desktop\java>
```

Example:



```
public class TestTryCatch3
{

    public static void main(String[] args) {
        try
        {
        String s=null;
        System.out.println(s.length());//NullPointerException
        }
            // handling the array exception
        catch(NullPointerException e)
        {
            System.out.println(e);
        }
        System.out.println("rest of the code.....");
    }

}
```

```
Command Prompt
C:\Users\ashish\Desktop\java>java TestTryCatch3
java.lang.NullPointerException
rest of the code.....

C:\Users\ashish\Desktop\java>
```

Example: