

Course Name: A Level (2nd Sem)

Topic :Exception Examples

Subject: JAVA

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Exception Examples:

ArrayIndexOutOfBoundsException example:

```
class Example {  
    public static void main(String args[])  
    {  
        int arr[] = {1,2,3,4,5};  
        System.out.println(arr[7]);  
    }  
}
```

Note: array has only 5 elements but we are trying to display the value of 8th element. It will throw **ArrayIndexOutOfBoundsException**.

StringIndexOutOfBoundsException example:

```
class StringIndexOutOfBounds {  
    public static void main(String[] args) {  
        String str = "Corona";  
        System.out.println(charAt(12));  
    }  
}
```

Note: String has only 6 characters but we are trying to access the character at 12th position. It will throw **StringIndexOutOfBoundsException**.

NullPointerException example:

```
class NPE{  
  
    public static void main(String[] args)  
    {  
        String s = null;  
        System.out.println( s.length() ); // 's' is un-initialized and is null  
    }  
}
```

Note: String s is null and we try to access length of an object which has not been initialized yet. It simply means that object reference variable is not pointing anywhere and refers to nothing or '**null**'.

Java Exception Keywords

1. try
2. catch
3. finally
4. throw
5. throws

try block

The try block contains set of statements where an exception can occur. A try block is always followed by a catch block, which handles the exception that occurs in associated try block. A try block must be followed by catch blocks or finally block or both.

Syntax of try block

```
try{  
    //statements that may cause an exception  
}
```

catch block

A catch block is where we handle the exceptions, this block must follow the try block. A single try block can have several catch blocks associated with it. we can catch different exceptions in different catch blocks. When an exception occurs in try block, the corresponding catch block that handles that particular exception executes.

Syntax of try catch in java

```
try  
{  
    //statements that may cause an exception  
}  
catch (exception(type) e(object))  
{  
    //error handling code  
}
```

Example: try catch block

If an exception occurs in try block then the control of execution is passed to the corresponding catch block.

```
class TryCatch1 {  
  
    public static void main(String[] args) {  
        try  
        {  
            int a=20/0;        // exception prone code  
        }  
  
        catch(ArithmeticException e)  
        {  
            System.out.println(e);  
        }  
        System.out.println("this portion will be always printed");  
    }  
}
```

Explanation:In this example the code which can throw exception has to be put in try block and the related exception must be caught in catch block. Here we can easily see that the exception will be ArithmeticException. "e" is the reference of ArithmeticException class and will print the type of exception that occurred.

No other specific exception should be put in catch block.

Exercise:

1. Can we write only try block without any catch block?
2. Explain try-catch block with example.