

Exception

12/07/2015

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try-catch

```
1     try{  
2         your_original_code ();  
3     }  
4     catch (Exception e){  
5         listen_to_complaint ();  
6     }
```

- when your_original_code “ohohoh”,
listen_to_complaint **part will handle it**

try-catch

```
1      try{
2          line_1 ;
3          line_2 ;
4          line_3 ;
5      }
6      catch (Exception e){
7          line_4 ;
8          line_5 ;
9      }
```

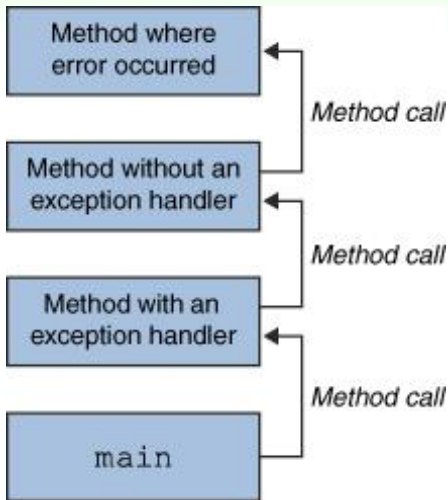
- when **exception** happens at line_1: [1], 4, 5
- when **exception** happens at line_2: 1, [2], 4, 5
- when **exception** happens at line_3: 1, 2, [3], 4, 5
- when **exception** happens at line_1 and line_4: [1], [4], ?

try-throw-catch

```
1   try{
2       line_1;
3       line_2;
4       Exception e = new Exception("ohohohohohoh");
5       throw e;
6       //or throw new Exception("ohohohohohoh");
7       line_3;
8   }
9   catch(Exception e){
10      line_4;
11      line_5;
12  }
```

- if no other exception happens: 1, 2, 4, 5

Exceptions in Method Calls (from Java Tutorial)



try-throw-catch-catch

```
1 //class NullPointerException extends Exception
2 try{
3     line_1;
4     throw new Exception("ohohohohohoh");
5     line_2;
6 }
7 catch(NullPointerException n){
8     line_3;
9     line_4;
10 }
11 catch(Exception e){
12     line_5;
13 }
```

- if NPE happens at line 1: [1], 3, 4
- if Exception happens at line 1: [1], 5
- if no exception happens at line 1: 1, 5
- if exception happens at line 2?

try-throw-catch-catch

```
1      try{
2          line_1;
3          throw new Exception("ohohohohohoh");
4          line_2;
5      }
6      catch(Exception e){
7          line_5;
8      }
9      catch(NullPointerException n){
10         line_3;
11         line_4;
12     }
```

- if NPE happens at line 1: [1], 5
- if Exception happens at line 1: [1], 5
- “need to catch more specific exceptions first” (hahaha if not)

Exception Class Hierachy

```
1 public class java.lang.Throwable ;
2 public class java.lang.Exception
3     extends Throwable ;
4 public class java.lang.Error
5     extends Throwable ;
6 public class java.lang.RuntimeException
7     extends Exception ;
8 public class java.lang.NullPointerException
9     extends RuntimeException ;
10 public class java.lang.ClassNotFoundException
11     extends Exception ;
12 public abstract class java.lang.VirtualMachineError
13     extends Error ;
```


try-throw-catch-finally

```
1  try {
2      line_1 ;
3      throw new RuntimeException("ohohohohohoh");
4      line_2 ;
5  }
6  catch (NullPointerException e){
7      line_3 ;
8  }
9  catch (RuntimeException e){
10     line_4 ;
11 }
12 finally {
13     line_5 ;
14 }
```

- if NPE happens at line 1: [1], 3, 5
- if RTE happens at line 1: [1], 4, 5

What is the difference between the `finally` block and just putting lines afterwards?

try-throw-catch-finally

```
1  try{
2      line_1;
3      throw new Exception("ohohohohohoh");
4      line_2;
5  }
6  catch (NullPointerException e){
7      line_3;
8  }
9  catch (RuntimeException e){
10     line_4;
11 }
12 finally{
13     line_5;
14 }
15 line_6;
```

- if NPE happens at line 1: [1], 3, 5, 6
- if nothing at line 1: 1, 5, caller-exception-handlers