Exception (OHOHOH)

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```
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

A More Complicated Example

```java
for ( int  i = 0; i < 2; i++){
    try {
        System.out.println("try");
        if (i > 0) throw new Exception();
    }
    catch (Exception e){
        System.out.println("catch");
        return; //continue? break?
    }
    finally {
        System.out.println("finally");
    }

    System.out.println("afterwards");
}
```

Putting It All Together (from Java Tutorial)

```java
public void WriteList(){
  PrintWriter out = null;

  try {
    System.out.println("try");
    out = new PrintWriter(
              new FileWriter("output.txt");
              );
    for(i=0;i<10;i++)
      out.println(vector.elementAt(i));
  }
  catch (ArrayIndexOutOfBoundsException e){
    System.out.println(e);
  }
  catch (IOException e){
    System.out.println("IO_Exception:" + e);
  }
  finally{
    if (out != null)
      out.close();
  }
```

```
1    public double divide(int a, int b)
2      throws DivisionByZeroException
3    {
4      if (b == 0)
5        throw new DivisionByZeroException("...");
6    }
7
8    try{
9      divide(m, n);
10   }
11   catch(DivisionByZeroException e){
12   }
```

NPE, JVMERr, ...

- "warn" the component user that an exception may be thrown
- compiler helps check if someone handles it (hahaha if not)
- what gets checked? everything other than RuntimeException and Error

```
1    public double divide(int a, int b)
2      throws DivisionByZeroException, LalalaException
3    {
4      if (b == 0)
5        throw new DivisionByZeroException("...");
6    }
7
8    public void caller() throws LalalaException{
9      try{
10       divide(m, n);
11     }
12     catch(DivisionByZeroException e){
13     }
14   }
```

- if the exception needs checking: caller needs to handle it (catch) or "warn" people (throws)

throw new NullPointerException("");