

(My Doubts' clearance) → exception handling

①

Throwable class

Exception class

Error class

- serious problems
- error cannot be caught in catch block
- e.g. running out of memory, system crash

IOException class

FileNotFoundException

RuntimeException class

IllegalArgumentException

ArithmeticException

IndexOutOfBoundsException class

NumberFormatException

ArrayIndexOutOfBoundsException

There are many other exception classes.
I've shown only few.

②

finally{} cannot exist without try block

③

```
try {
```

```
    --- non-problematic lines
```

```
    }  
    finally {  
        return x;
```

← problematic statement

even though there was ~~an~~ exception caused
statement in try, there is return
statement in finally which will
execute

④

Overriding in case of with throws

- i) constructors of parent & child classes
- ii) methods in parent & child classes

i) Constructor

```
class Parent {
```

```
    Parent() throws FileNotFoundException {
```

```
    }
```

```
class Child extends Parent
```

```
    {  
        Child() throws IOException {
```

```
        }  
    }
```

ii)

methods

```
class Superclass {
```

```
    void foo() throws IOException {
```

```
    }
```

```
class Subclass extends Superclass {
```

① Override

```
    void foo() throws FileNotFoundException {
```

```
    }
```


⑤ throw with unchecked exception

- ① with try-catch ② without try-catch

① throw - unchecked exception - with try-catch

```
try {  
    if (y == 0) {  
        throw new ArithmeticException("div. by 0");  
    }  
}  
  
catch (ArithmeticException e) {  
    System.out.println(e.getMessage());  
}
```

② throw - unchecked exception - w/o try-catch

Without try-catch

```
if (y == 0)  
    throw new ArithmeticException("div. by 0");
```

(to print this message, try-catch is required)

⑥ throw with checked exception

① without try-catch

```
p.s.v.m(String[] args) throws IOException {  
    throw new IOException("I/O error");  
}
```

② with try-catch

```
p.s.v.main(String[] args)
```

```
{  
    try {  
        throw new IOException("I/O error");  
    }  
    catch (IOException e) {  
        System.out.println(e.getMessage());  
    }  
}
```


⑦

* Custom class exception as checked exception
for checked exception,

→ Custom class extends Exception class or its subclasses except RuntimeException

```
public class MyCheckedException extends Exception {  
    public MyCheckedException() {  
        super();  
    }  
    public MyCheckedException(String message) {  
        super(message);  
    }  
}
```

```
public class Test {
```

```
    p.s.v.m(String[] args)
```

```
    {
```

```
        try {
```

```
            throw new MyCheckedException("this is checked  
            excp");
```

```
        catch (MyCheckedException e)
```

```
        {
```

```
            System.out.println(e.getMessage());
```

```
        }
```

```
    }
```

```
}
```

this can be

written w/o try-catch also

⑧

custom class exception as unchecked exception

→ for unchecked exception,

custom class extends RuntimeException class

or one of its subclasses

Syntax same as above