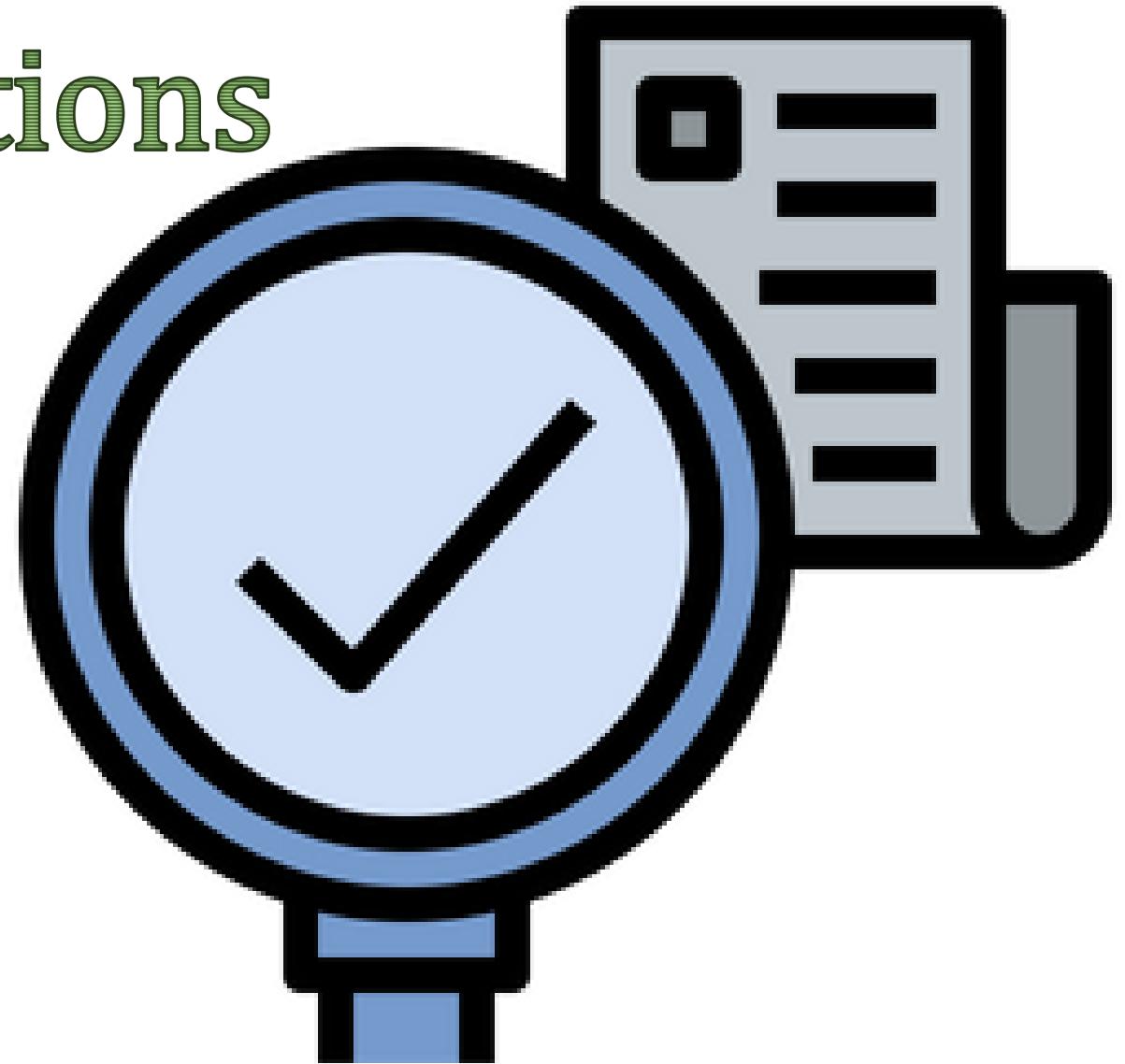


Checking Exceptions



Checked vs. Unchecked Exceptions

- All exceptions are processed at run-time
 - no **run-time** difference between checked and unchecked exceptions
- Checked exceptions provide extra security at **compile time**
- The compiler checks:

If a method *might* throw a checked exception, then either:

- The throw is in a try block that has a catch for that exception,
- The method reports that it *might* throw the exception with "throws"

Throws Syntax

```
modifiers returnType method_name (parameters) throws {  
    body  
}
```

- *throws* - comma separated list of Exception Types that might be thrown by this method
- If you invoke a method that might throw a checked exception, The compiler checks that either:
 - The method is invoked inside a try/catch block that catches that exception,
 - Or you report that your method might throw the exception in your throws list

Defining Checked vs. Unchecked

- Exceptions which extend RunTimeException are **not** checked
- Exceptions which do **not** extend RunTimeException are checked

Class FileNotFoundException

- [java.lang.Object](#)
 - [java.lang.Throwable](#)
 - [java.lang.Exception](#)
 - [java.io.IOException](#)
 - [java.io.FileNotFoundException](#)

checked

Class NullPointerException

- [java.lang.Object](#)
 - [java.lang.Throwable](#)
 - [java.lang.Exception](#)
 - [java.lang.RuntimeException](#)
 - [java.lang.NullPointerException](#)

unchecked

Checked Exception Responsibility

If you:

- throw a checked exception,
- or invoke a method which throws a checked exception

You must either

- Surround the throw in a try/catch block
 - Take responsibility for that checked exception and catch it

Or

- Indicate that you might throw that exception in your "throws"
 - Delegate catching the exception to all your callers

Java Library : Checked exceptions

- The Java library class methods may throw checked exceptions
- The documentation does not always highlight this

- E.g. `Scanner sc = new Scanner(new File("quotes.txt"));`
- In `Scanner(File source)` documentation:

Throws:

`FileNotFoundException` - if source is not found

checked Exception