Java SE 17 Unit Testing with JUnit

Understanding JUnit

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Version Check

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This course was created by using:

- Java SE 17
- Junit 5.8.2

What is JUnit?

The most widely used unit testing library for Java

- Write test code to verify production code
- Test libraries provide tools to verify results from the code under test

The library that spread unit testing as a developer practice

> “Never in the field of software development have so many owed so much to so few lines of code.”

Martin Fowler regarding JUnit

Outcomes

Create and run JUnit tests

Apply a wide range of assertions made available by Junit to verify code

Control the execution of tests

- Lifecyle of tests
- Conditional and repeating test execution

Improve test result reports

Understand some of the advantages of writing and having unit tests

Won't cover test-driven or test-first development – another course covers

Prerequisites

Just know a little Java!

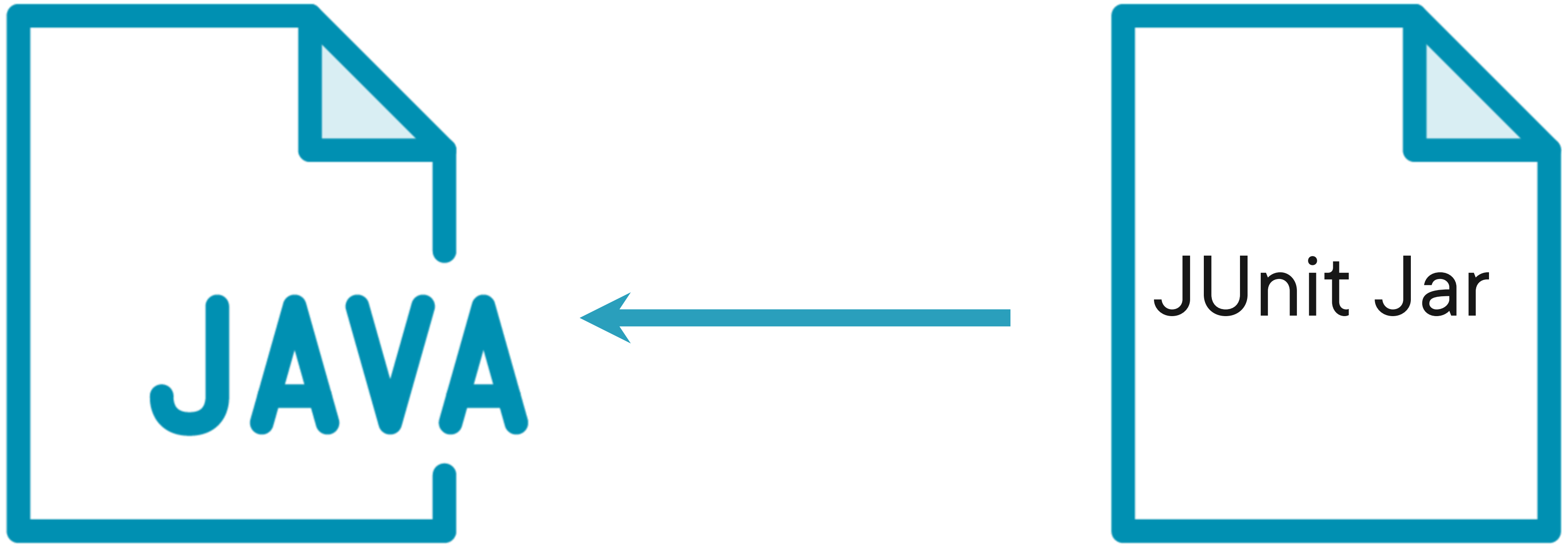
Up Next:
Understanding the JUnit Library

Understanding the JUnit Library

Java project dependency

Java archive (jar) file(s)

Need to be on classpath



```java
public class DurationParserTest {

   @Test
   public void translateWeeksToDays() {
      assertEquals(7, DurationParser.parseDays("1 week"));
   }

   @Test
   public void returnZeroIfUnitNotRecognized() {
      assertEquals(0, DurationParser.parseDays("2 blarghs"));
   }
. . .
```

Unit Tests are Contained in Java Class Files

- **Classes containing tests are part of the project, but normally kept separate from production classes**
- **A single unit test class may contain multiple tests, one method for each test**

JUnit5 was released in 2017

It is a complete rewrite

Takes advantage of Java 8 features

- Primarily lambda expression support

Composed of multiple jar files

- Jupiter (writing tests)
- Platform (running tests and tool integration)
- Vintage (older JUnit test support)

Up Next:
Following Along

Following Along

Requirements

JDK SE 17 or higher

Maven 3.8 or higher

An IDE – using IntelliJ for demonstration

A Git client

- Alternatively, use zip archive of code

Up Next:
Installing and Running JUnit