JUnit 5 What’s new?

http://junit.org/junit5/

13th Dec 2017
Ingo Mohr

JUnit 5

- New major version of JUnit since 2006
- Released in Sep 2017, latest release 5.0.2 Nov 12th
- Available in Eclipse Oxygen 1.a
- Supports Java 8
- Composed out of several components in 3 sub-projects

JUnit 5

=

JUnit Platform + JUnit Jupiter + JUnit Vintage

JUnit Platform

- Foundation of launching test frameworks on the JVM
- Provides TestEngine API for developing a testing framework
- Provides Console Launcher to…
  - Launch Platform from Console
  - Build plugins for Gradle and Maven
- JUnit 4 based Runner to run any TestEngine

JUnit Jupiter

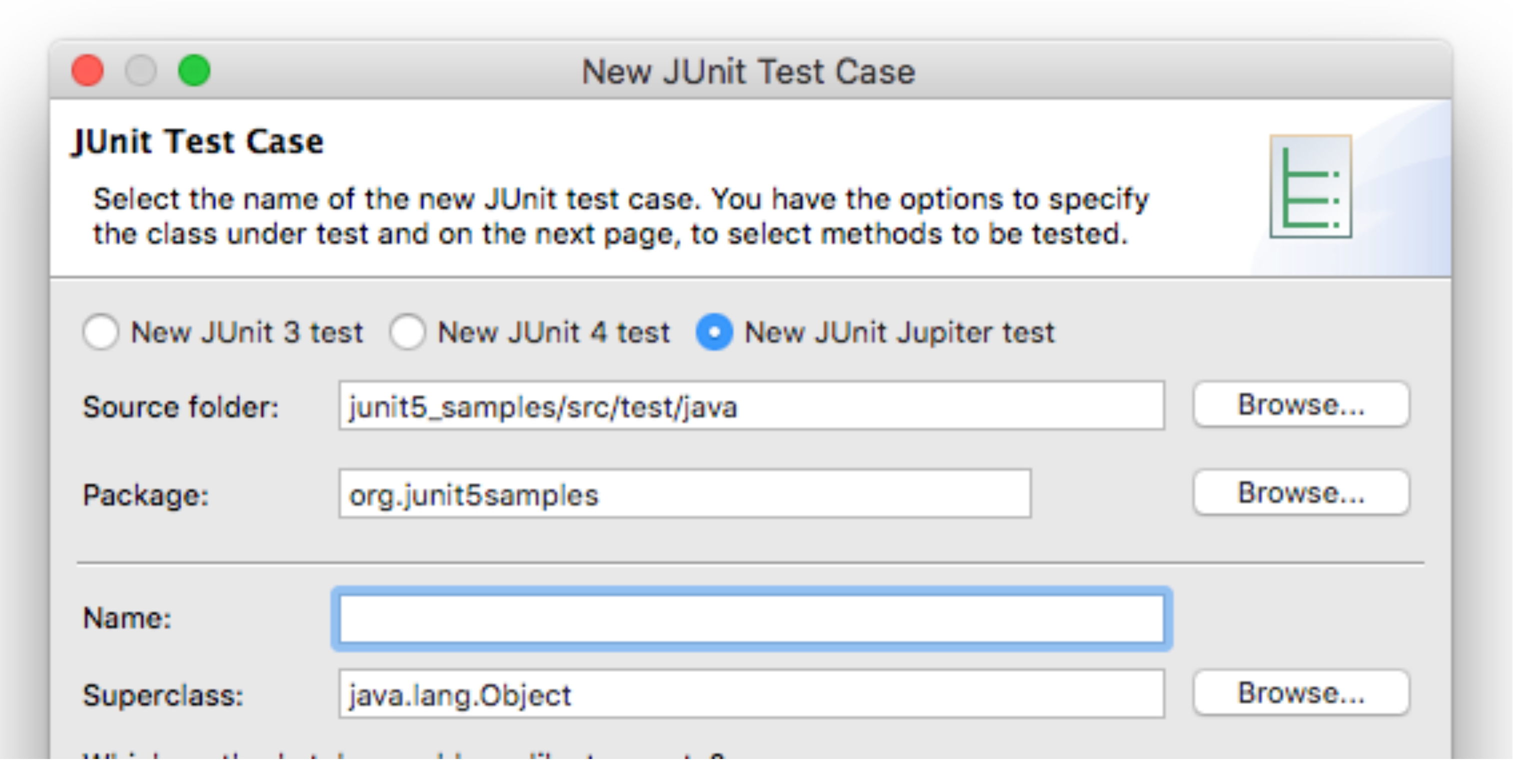
- Jupiter: 5th star from the sun
- For writing tests and extensions in JUnit 5
- Combination of …
  - Programming Model
  - Extension Model

JUnit Vintage

- TestEngine for running JUnit 3 and JUnit 4 based tests on the platform

New Wizard

- You can select what JUnit version you want to use for your test



New JUnit Test Case

JUnit Test Case

Select the name of the new JUnit test case. You have the options to specify the class under test and on the next page, to select methods to be tested.

○ New JUnit 3 test ○ New JUnit 4 test ● New JUnit Jupiter test

Source folder: junit5_samples/src/test/java

Package: org.junit5samples

Name:

Superclass: java.lang.Object

Basic Stuff

- `@BeforeAll`, `@AfterAll`
- `@BeforeEach`, `@AfterEach`
- `public` access modifier not required anymore
- Message in assert methods is now 3rd parameter
- `@Disabled` for disabled tests

Examples: https://github.com/ingomohr/junit5samples

Exceptions

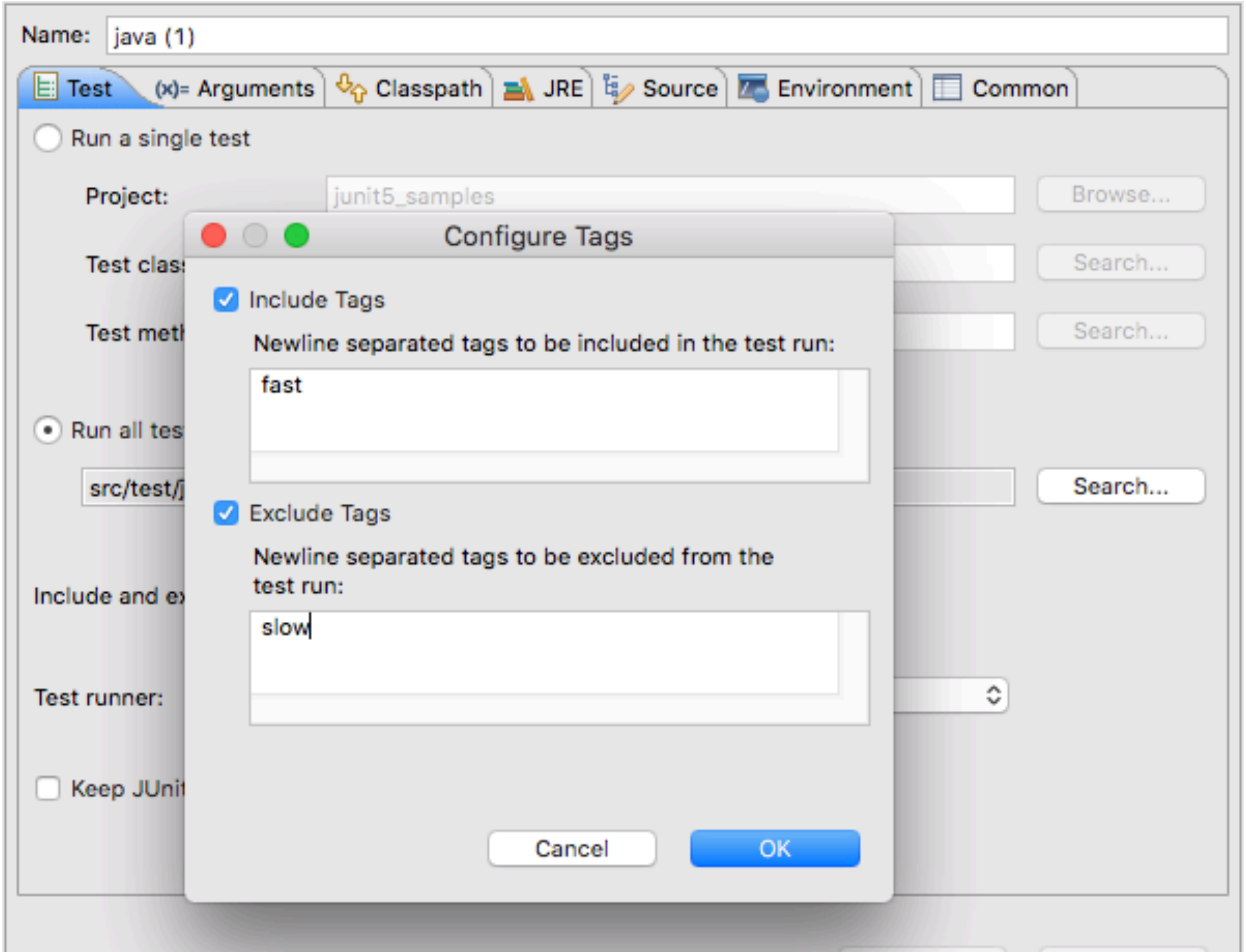
- `assertThrows`(Class<T>, Executable) : T
- You can continue working on the `Throwable` object

AssertAll

- Perform a group of checks and notify about all failures

Tags

- Annotate `@Tag`s for filtered execution



Name: java (1)

○ Run a single test

Project: junit5_samples

Test clas

Test meth

● Run all tes

src/test/j

Include and ex

Test runner:

□ Keep JUnit

Configure Tags

☑ Include Tags

Newline separated tags to be included in the test run:

fast

☑ Exclude Tags

Newline separated tags to be excluded from the test run:

slow

Parameterized Tests

- Use `@ParameterizedTest` and …
  - `@ValueSource` for values
  - `@EnumSource` for enum values
  - `@MethodSource` for simple or complex values provided by Streams
  - `@Csv(File)Source` for comma-separated values
  - `@ArgumentsSource` for arguments provider

Display Name

- Use `@DisplayName` to specify a name to be shown in the result tree
- Can be combined w/ parameterized tests

Dynamic Tests

- New in Jupiter to create and run tests at runtime
- Use `@TestFactory`
- `@Before/AfterEach` are executed for each `@TestFactory`, but not for each test
- Currently Experimental Feature

Nested Tests

- For better grouping of tests
- Use `@Nested` for inner tests

Dependency Injection

- Both test constructors and methods may now have parameters
- This enables DI for constructors and parameters
- 3 built-in `ParameterResolver`s
  - `TestInfoParameterResolver` for info on the test
  - `RepetitionInfoParameterResolver` for repetition info
  - `TestReporterParameterResolver` to publish additional info
- Write your own with `@ExtendWith`

Repeated Tests

- Use `@RepeatedTest` for test repetition
- Can be combined w/ `@DisplayName`

Integration

- Maven
  - `junit-platform-surefire-provider` by JUnit5 team
- Gradle
  - By JUnit5 team
  - Allows to run any test support by a `TestEngine`
- **Tycho (not yet)**

Migration

- Rules and Runners not supported natively
- Still: Not expected to have to change all existing code
  - Rule “ExpectedException” still works
- Add `junit-vintage-engine` to test runtime path

Thank you