Tests

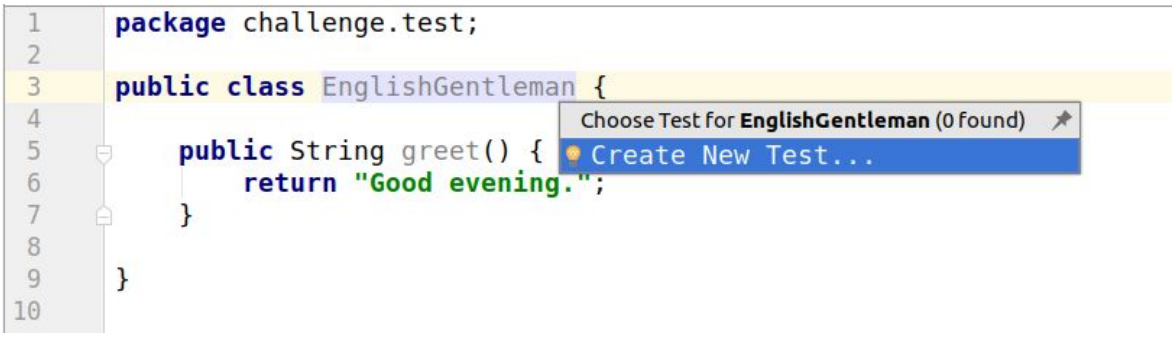
Programming - memo

Writing automated tests **ensures** code **quality** and releases us from the drag of having to do manual testing.

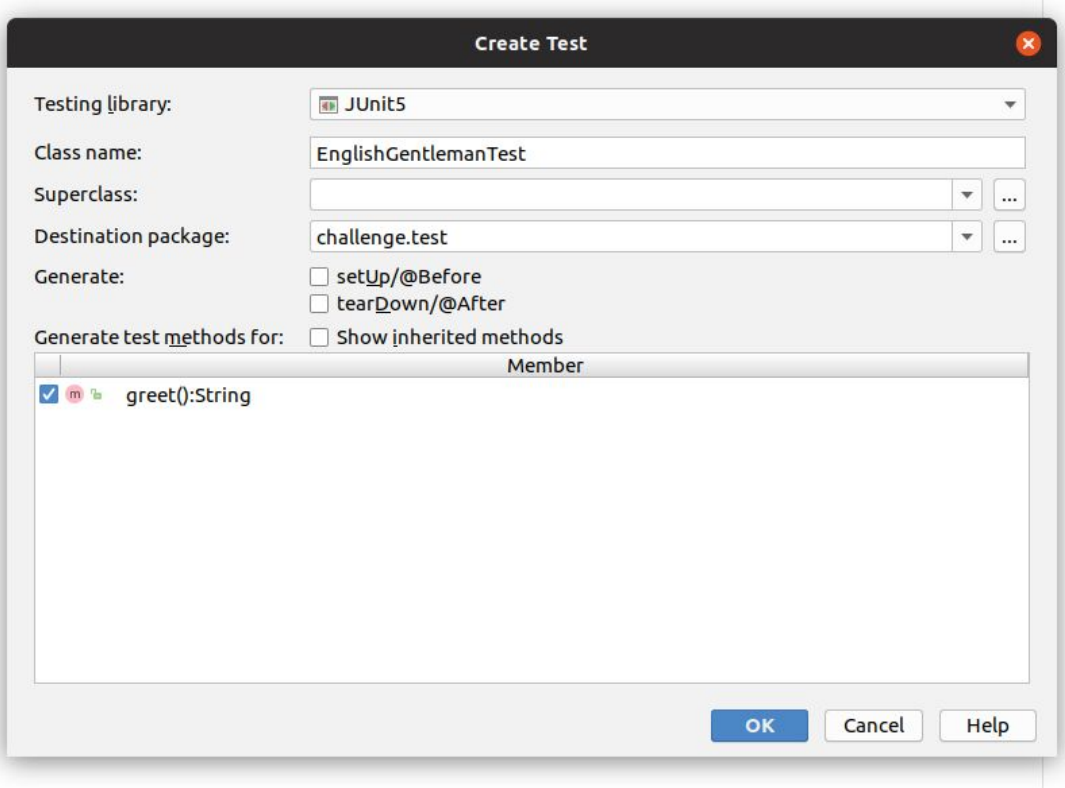
Enabling tests

Enabling tests with Intellij is very easy. We just need to follow a set of steps:

- Click on the name of the class that we want to test
- Use the create test shortcut (Ctrl+Shift+T) and choose create new test

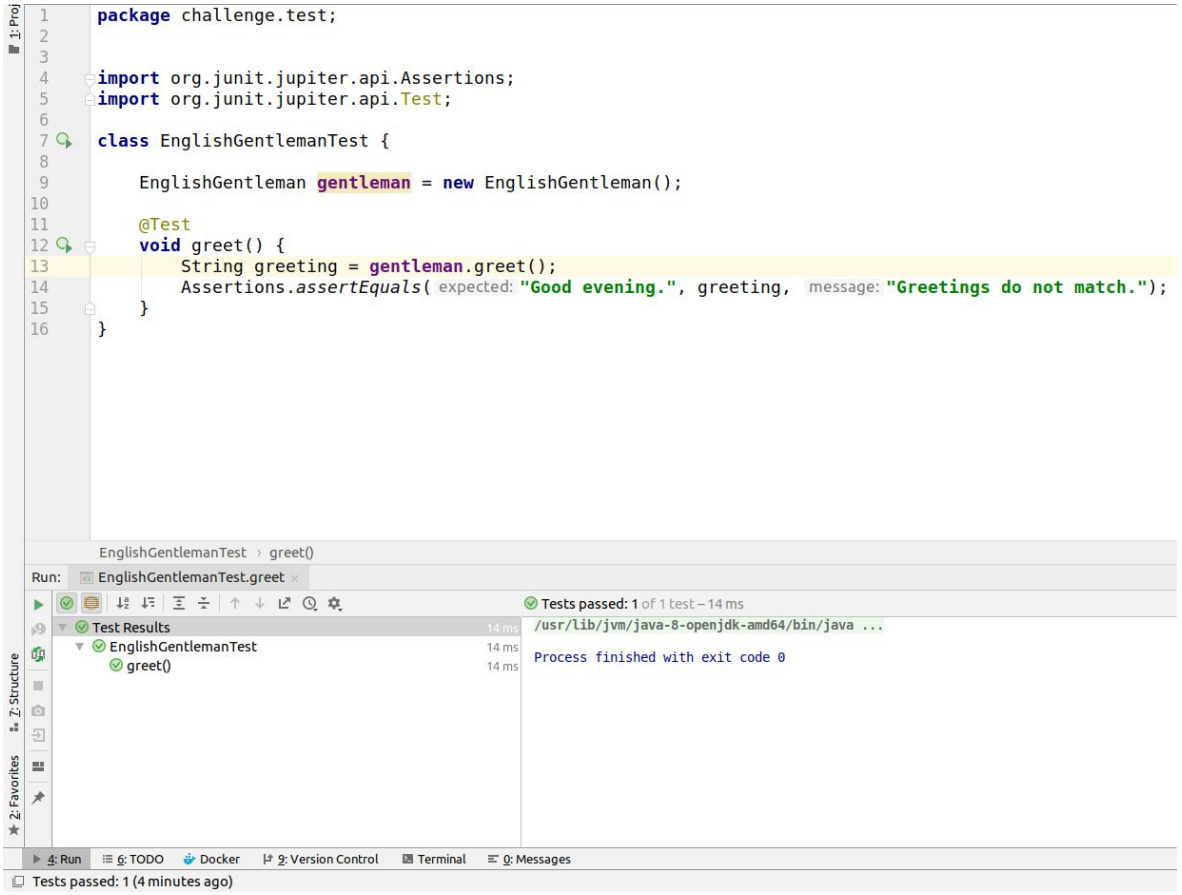


- Select the testing library JUnit5
- If the library is not found, a yellow light bulb will notify us and show a *fix* button
- Click on fix and wait for a while
- Activate the checkbox *download to* so that the test library is downloaded inside your current project
- Make sure the class name of the test class is exactly the same as the class you want to test, followed by the *Test* word
- Optionally, you can check the methods that you want to test so they are generated automatically



- Click on *ok* and create the test
- The test class is created in the same package as the class you want to test. Some dependencies might be broken. If so, just delete those lines with errors.
- In the project window, click on your project and go to *File>Project Structure*

- Click on *Libraries*. If *JUnit5* is not yet present there, click on the *plus* symbol to add a new project library and choose *Java*.
- Find the file in the *lib* folder where you chose to download it and choose *junit-jupiter-api-5.3.1.jar*. The version number may vary.
- Click on ok. The library is now connected to our project and we can create as many tests as we want.
- Write *@Test* over the test method and import the test library from *junit jupiter*.



Writing tests

In order to know which tests are recommended to be done, think about the **desirable cases** (usually only one) and the **undesirable cases** (usually from one to three, but it depends on the problem).

Available questions

These are the most useful test methods so that we can ensure that the outputs of our classes behave exactly how we wanted:

- assertTrue(actual, message)
- assertFalse(actual, message)
- assertEquals(expected, actual, message)
- assertNotEquals(expected, actual, message)
- assertNull(actual, message)
- assertNotNull(actual, message)