



# JAVA BOOTCAMP

# TEST DRIVEN DEVELOPMENT

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# TOPICS

- Test driven development
- Testing frameworks
- JUnit

# TEST-DRIVEN DEVELOPMENT

## WHAT IS TDD?

*TDD* is a method of developing software that involves a very quick cycle. It stresses simplicity of design as well as speed of implementation.

# TEST-DRIVEN DEVELOPMENT

## THE BASIC STEPS

1. Write a test
2. Run tests
3. Write implementation code
4. Run tests
5. Refactor

# TEST-DRIVEN DEVELOPMENT

## APPROACHING TESTING

TDD is not as focused as you may think on the tests themselves. It's more about having the confidence to reorganize our code knowing that all the previously completed features are working properly.

# TEST-DRIVEN DEVELOPMENT

## DOCUMENTATION

Tests provide an excellent record of what the application should do as well as what it actually does. Some advantages to using tests as documentation is that they are:

- Comprehensive
- Consistently up-to-date
- Accessible



# TESTING FRAMEWORKS

- Junit
- TestNG
- Jtest
- Arquillian
- JMock
- Mockito
- Cucumber

**JUNIT**

# **JUNIT**

## **ASSERTIONS**

JUnit provides overloaded assertion methods for all primitive types and objects. Parameters are listed as expected value followed by actual value. Optionally, the first parameter may be a String that displays a failure message.

# JUNIT

## ASSERTIONS

```
import org.junit.Assert;

@Test
public void testAssertEquals() {
    String expected = "Hello World";
    String actual = MyClass.getGreeting();
    Assert.assertEquals("failure - strings are not equal", expected, actual);
}
```

# JUNIT

## TEST RUNNERS

JUnit provides console-based tools to define the suite of test to be run. However, Eclipse comes with a native graphical test runner built in.

# JUNIT

## CONTINUOUS TESTING

We can receive immediate feedback on JUnit test results within Eclipse. Tests are run automatically after each change. Infinitest is an open source plugin for Eclipse that provides this functionality.

**RECAP**

# RECAP

- What is TDD?
- Basic steps of TDD
- Using testing tools
- Know some testing frameworks
- Using Junit