

# JUnit Testing

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<b>Duration</b>	1 to 3 days
<b>Overview</b>	This course will allow you to use JUnit to write repeatable tests. JUnit is a unit testing framework for the Java programming language and has been important in the development of test-driven development. JUnit is traditionally written with a green "J" and a red "U".
<b>Participants</b>	This course is for users, developers, and technical staff at all levels.
<b>Objectives</b>	Upon successful completion of this course, you will be able to: <ul style="list-style-type: none"><li>• Use JUnit in an Eclipse, RAD or similar environment.</li><li>• Use best practices for testing.</li><li>• Use Test Driven Development.</li><li>• Use JUnit to debug your Java code.</li></ul>
<b>Prerequisites</b>	Requires knowledge of Java Programming and experience using Eclipse.
<b>Format:</b>	Lecture with extensive hands-on workshops to reinforce the lecture material.
<b>Topic Outline</b>	<b>JUnit Testing</b> Testing Approach Typical Testing Stages Summary of Testing  <b>Testing Steps</b> JUnit Setup in Eclipse/ RAD Create an Interface with Three Methods Generate Java programs with empty methods Create Test Program @Test fail Method Run JUnit Add Tests “assert” test methods @Before @Before / @BeforeClass @After / @AfterClass Test Floating Point with Deltas JUnit Annotations / Order JUnit Rules for Test Class JUnit Terminology  <b>Testing in SDLC: TDD</b>  <b>Test Runners</b> Test Case Test Suite JUnitCore façade - Runner AllTests.java – JUnit Test Suite

# JUnit Testing *(continued)*

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## Topic Outline

### More JUnit Testing

- assertSame versus assertEquals
- @Ignore – Good Practice
- Testing for Expected Exceptions - old and new approaches
- @Test(expected=
- @Test (other options)

### Parameterized Tests

- @RunWith
- @Parameters
- Limitations in JUnit 4
- No Test Suites for Parameterized Tests

### Theories

- Theories Testing
- Imports for Theories
- Parameterized Tests
- Theories Tests
- Theories Output
- @Theory
- @DataPoint

### JUnit Best Practices

#### JUnit 5

- Additional annotations
- Different meanings from JUnit 4
- Jupiter
- Platform
- Vintage