**Software Testing and Quality Analysis of Joda-Time.**

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**Abstract**

“The standard date and time classes prior to Java SE 8 are poor. By tackling this problem head-on, Joda-Time has become the de facto standard date and time library for Java. The design allows for multiple calendar systems, while still providing a simple API” [2]. In this project we plan to test the modules in Joda-Time using software testing and quality assurance techniques and study the relationship between code coverage and effectiveness of test suite.

**SUT Information:**

Line of code: 15155.

Programming Language: Java.

**Goals:**

1. Conduct software inspectionon org.joda.time(module 1) and org.joda.time.tz(module 2) module within Joda-Time SUT.
2. To perform unit test.
3. To check coverage.
4. To perform mutation testing.
5. Use SonarQube for QA.
6. Use sureFire plugin for reporting the test status.
7. Test the system as a whole.
8. To study a relationship between code coverage and effectiveness of test suite.\*
9. Analyze Joda-Time-I18N and understand differences in design and implementation between Joda-Time-I18N and Joda-Time.

**Tools:**

1. Unit testing using Junit.
2. Emma for structural coverage.
3. SureFire for test report.
4. SonarQube for QA metric analysis.
5. PIT for mutation testing.

**Roles and Responsibilities:**

1. perform code inspection as a team.
2. Rakesh will be responsible for configuring and executing mutation test using PIT.
3. Yashmin will be responsible for configuring emma and code coverage.
4. Each member will be responsible for test plan and updating it.
5. Both will be responsible for system testing.

**References and Links:**

1. <http://www.joda.org/joda-time/>
2. <https://github.com/JodaOrg/joda-time>