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Jacoco for unit test coverage with SonarQube tutorial

Posted on February 28, 2016 by Arulkumaran Kumaraswamipillai

This tutorial extends SonarQube with Maven Tutorial – Code Quality for Java developers to use **Jacoco** for tracking unit test coverage. **Jacoco** is the default code coverage tool that gets shipped with SonarQube. SonarQube can also be configured to use Cobertura as the code coverage tool.

This assumes that **Java 8** and **Maven 3** are set up. The SonarQube is setup and running on port 9000.

Step 1: The pom.xml file needs to include the following two lines under properties tag.

```
1
2  <sonar.core.codeCoveragePlugin>jacoco</sonar.core
3  <sonar.dynamicAnalysis>reuseReports</sonar.dynami
4
```

The revised **pom.xml** with **sonar** & **jacoco** will look like:

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```xml
1
2   <project xmlns="http://maven.apache.org/POM/4.0.(
3       xsi:schemaLocation="http://maven.apache.org/
4       <modelVersion>4.0.0</modelVersion>
5
6       <groupId>com.homeassigment</groupId>
7       <artifactId>homeassign-1-test</artifactId>
8       <version>1.0-SNAPSHOT</version>
9       <packaging>jar</packaging>
10
11      <name>homeassign-1-test</name>
12      <url>http://maven.apache.org</url>
13
14      <properties>
15          <project.build.sourceEncoding>UTF-8</pro
16          <sonar.host.url>http://localhost:9000</so
17          <logback.version>1.0.0</logback.version>
18          <slf4j.version>1.6.4</slf4j.version>
19
20          <sonar.core.codeCoveragePlugin>jacoco</so
21          <sonar.dynamicAnalysis>reuseReports</son
22      </properties>
23
24      <build>
25          <pluginManagement>
26              <plugins>
27                  <plugin>
28                      <groupId>org.codehaus.sonar<
29                      <artifactId>sonar-maven-plug
30                      <version>5.3</version>
31                  </plugin>
32              </plugins>
33          </pluginManagement>
34      </build>
35
36      <dependencies>
37          <dependency>
38              <groupId>junit</groupId>
39              <artifactId>junit</artifactId>
40              <version>4.11</version>
41              <scope>test</scope>
42          </dependency>
43
44
45          <!-- Logging -->
46
47          <dependency>
48              <groupId>ch.qos.logback</groupId>
49              <artifactId>logback-classic</artifac
50              <version>${logback.version}</version
51          </dependency>
52          <dependency>
53              <groupId>org.slf4j</groupId>
54              <artifactId>slf4j-api</artifactId>
55              <version>${slf4j.version}</version>
56          </dependency>
57          <dependency>
58              <groupId>org.slf4j</groupId>
59              <artifactId>log4j-over-slf4j</artifa
60              <version>${slf4j.version}</version>
61          </dependency>
62          <dependency>
63              <groupId>org.slf4j</groupId>
64              <artifactId>jcl-over-slf4j</artifact
65              <version>${slf4j.version}</version>
66          </dependency>
```

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```
67
68        </dependencies>
69  </project>
70
71
```

coding tests

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⊞ Designing your class

⊞ Java Data Structures

⊞ Passing the unit tests

⊞ What is wrong with th

⊞ Writing Code Home A

⊞ Written Test Core Jav

⊞ Written Test JEE (1)

Step 2: On the command-line execute the following **mvn** command

```
1
2   :homeassign-1-test arulk$ mvn clean org.jacoco:ja
3
```

To get coverage per test, use the profile "**coverage-per-test**"

```
1
2   mvn clean org.jacoco:jacoco-maven-plugin:prepare-
3
```
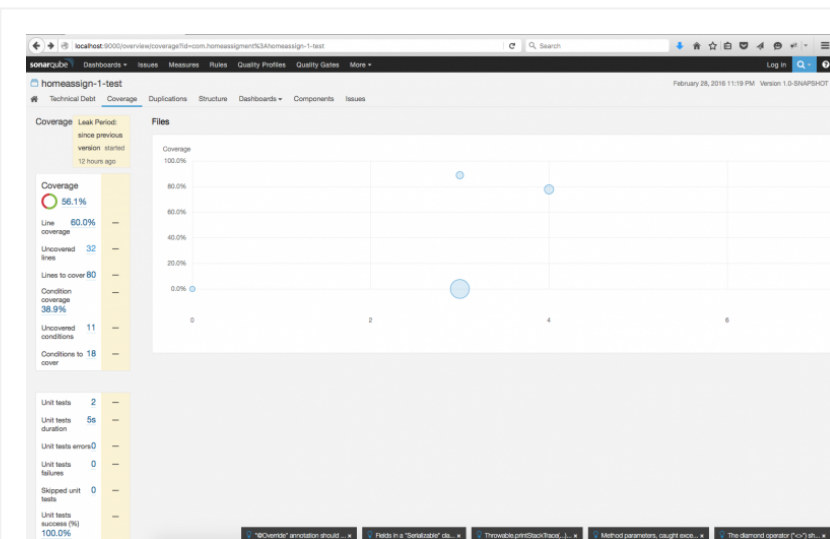
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Step 3: On the command-line execute the following **mvn** command

```
1
2   :homeassign-1-test arulk$  mvn clean test sonar:s
3
```

Step 4: Go to sonar web at http://localhost:9000, and click on the "coverage" tab to get the metrics on the code coverage as shown below.

Jacoco for unit test coverage with SonarQube

You can drill into code level to see where the coverage needs to be enhanced.

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