

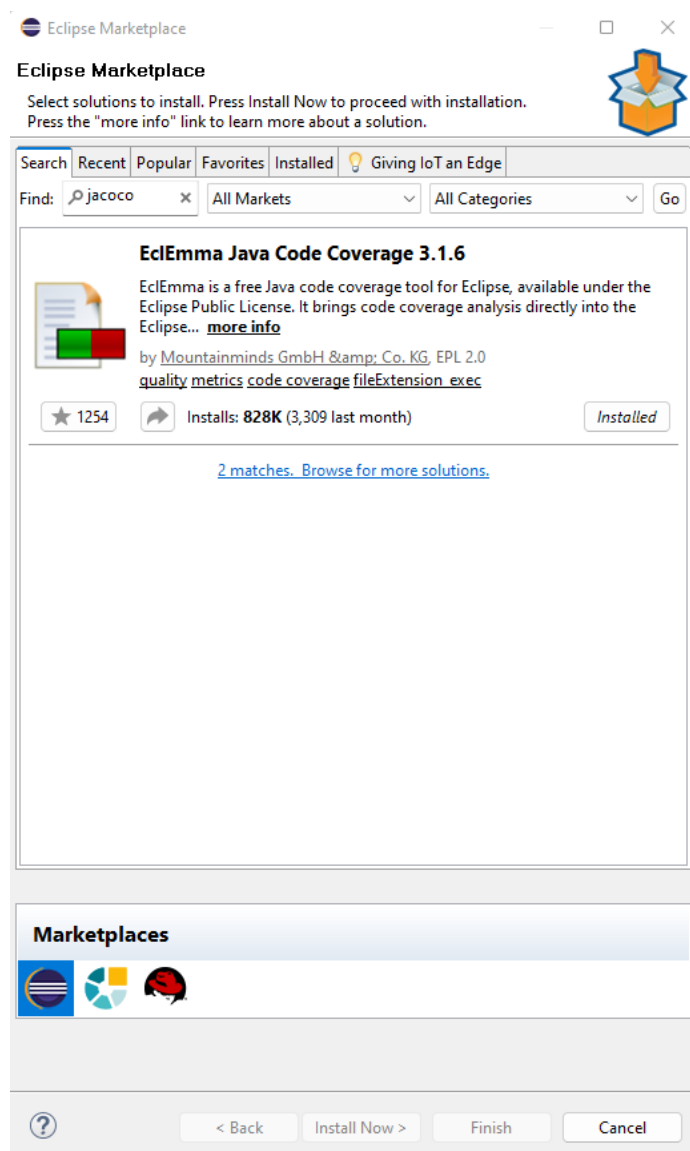
Jacoco (Java Code Coverage)

Code coverage is a software metric used to measure how many lines of our code are executed during automated tests.

Jacoco is an open-source project, which can be used to check production code for test code coverage. It creates reports and integrates well with IDEs like the Eclipse IDE. Integration is also available for other IDEs and continuous integration environments. So, there are also Gradle, SonarQube and Jenkins plugins to make these code coverage checks outside the IDE and therefore globally available to the development team.

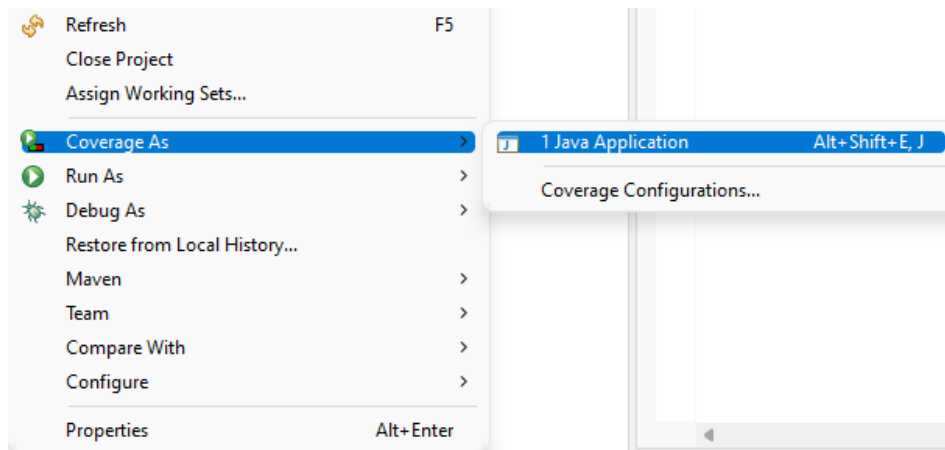
Installation for the Eclipse IDE:

You can install Jacoco in the Eclipse IDE via the Eclipse Marketplace from Help Eclipse Marketplace and search for EclEmma



Using Jacoco in the Eclipse IDE

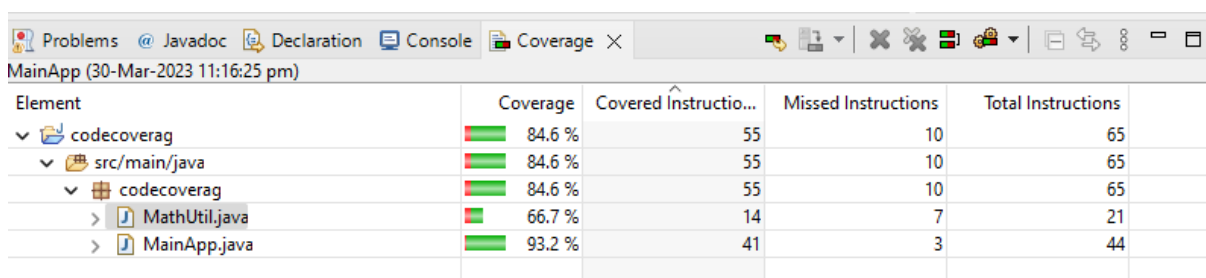
With EclEmma installed the context menu of a project also contains a Coverage As entry.



And besides the debug button in the main toolbar will also be another button for running java code with code coverage analysis.

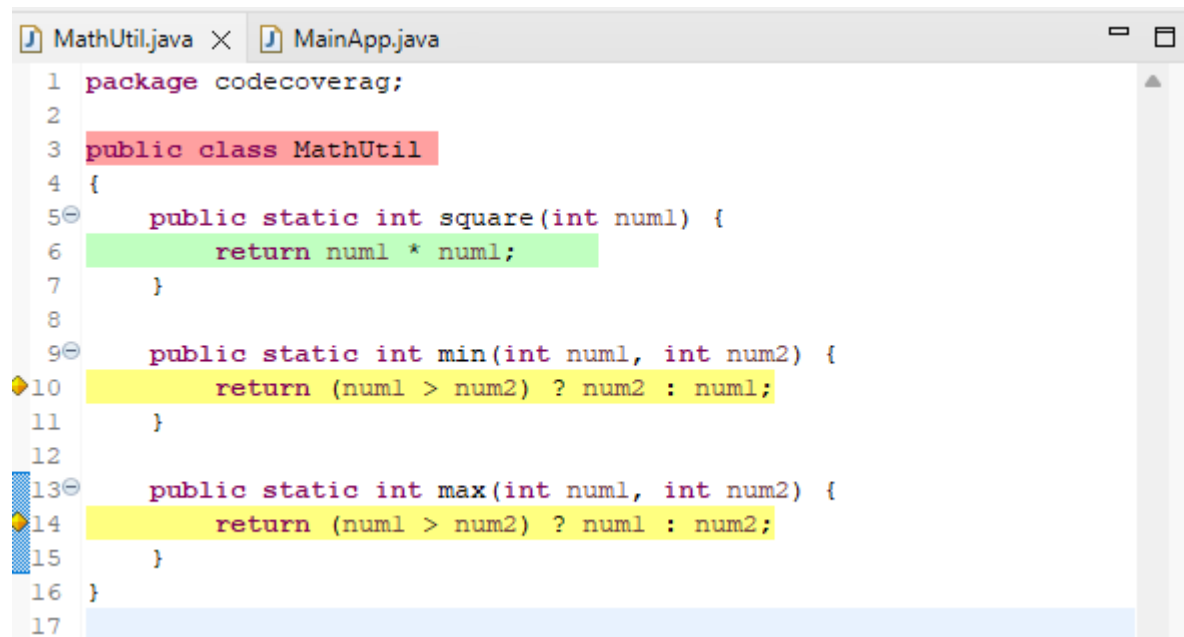


Once a program is run with code coverage a Coverage View will show up in the Eclipse IDE.



Element	Coverage	Covered Instructio...	Missed Instructions	Total Instructions
codecoverag	84.6 %	55	10	65
src/main/java	84.6 %	55	10	65
codecoverag	84.6 %	55	10	65
MathUtil.java	66.7 %	14	7	21
MainApp.java	93.2 %	41	3	44

Line coverage and branch coverage of the active coverage session is also directly displayed in the Java source editors. This works for Java source files contained in the project as well as source code attached to binary libraries



Source lines containing executable code get the following colour code:

- green for fully covered lines,
- yellow for partly covered lines (some instructions or branches missed) and
- red for lines that have not been executed at all.

In addition, coloured diamonds are shown at the left for lines containing decision branches. The colours for the diamonds have a similar semantic than the line highlighting colours:

- green for fully covered branches,
- yellow for partly covered branches and
- red when no branches in the particular line have been executed.

These default colours can be modified in the Preferences dialog (see next section). The source annotations automatically disappear when you start editing a source file or delete the coverage session.

References:

<https://www.eclEmma.org/userdoc/index.html>