

Overview of Code Coverage and NYC

What is Code Coverage Analysis?

- Code coverage tools analyze the execution of your production code as you run your unit tests to see what parts of the production code were executed.
- Code coverage tools produce a report at the end of the execution of your unit tests specifying the coverage of the tests.
- The coverage report can tell you if you have any holes in your tests where parts of the production code are not being tested.
- Your goal should be to have 100% code coverage of all your production code by your unit tests (barring simple getter/setter functions).

Types of Code Coverage Analysis

- **Line** - With this type of analysis the coverage report specifies which executable lines of the production code were executed.
- **Statement** - This type of coverage goes a step beyond line coverage to verify that every individual statement is covered (even multiple statements on the same line).
- **Branch** - Branch testing reports on the percentage of each branch point that has been executed at least once.
- **Modified Condition/Decision** - This is an advance form of branch coverage which verifies that all entry and exit points in a program has been invoked at least once and with all possible condition criteria combinations.

Istanbul (nyc)

- Code coverage plugin for Javascript both in NodeJS and the browser.
- Provides Line, Statement, and Branch coverage
- Can generate reports to the console or in HTML.
- Easy to install via “npm install nyc” and works well with Mocha.
- Webstorm integrates Istanbul code coverage results into the IDE.