

# Testing Python Applications with nose

*"nose extends unittest to make testing easier"*

<https://nose.readthedocs.org/en/latest/>

## Installing nose

```
sudo easy_install nose
```

## Running tests with nose

```
nosetests
nosetests -v
nosetests --with-doctest
```

## Which tests does nose detect automatically?

All tests identified by nose have 'test' or 'Test' at a word boundary or following a - or \_ and lives in a module that also matches that expression will be run as a test.

The test finder examines Python files and directories that match this pattern. Packages in the current directory are always examined.

## Selecting which tests to run

```
nosetests only_test_this.py
nosetests test.module
nosetests another.test:TestCase.test_method
nosetests a.test:TestCase
nosetests /path/to/test/file.py:test_function
```

## Running nose from Python

(e.g. in a setup script)

```
import nose
nose.main()
```

## Writing a nose configuration file

Create .noserc in your home directory containing:

```
[nosetests]
verbosity=3
with-doctest=1
```

## Calculating Test Coverage

```
sudo easy_install coverage
nosetests --with-coverage
nosetests --with-coverage --cover-html
cd cover
firefox index.html
```

## Assertions in nose.tools

<code>assert_almost_equal</code>	<code>assert_is_none</code>	<code>assert_not_in</code>
<code>assert_almost_equals</code>	<code>assert_is_not</code>	<code>assert_not_is_instance</code>
<code>assert_dict_contains_subset</code>	<code>assert_is_not_none</code>	<code>assert_not_regexp_matches</code>
<code>assert_dict_equal</code>	<code>assert_items_equal</code>	<code>assert_raises</code>
<code>assert_equal</code>	<code>assert_less</code>	<code>assert_raises_regexp</code>
<code>assert_equals</code>	<code>assert_less_equal</code>	<code>assert_regexp_matches</code>
<code>assert_false</code>	<code>assert_list_equal</code>	<code>assert_sequence_equal</code>
<code>assert_greater</code>	<code>assert_multi_line_equal</code>	<code>assert_set_equal</code>
<code>assert_greater_equal</code>	<code>assert_not_almost_equal</code>	<code>assert_true</code>
<code>assert_in</code>	<code>assert_not_almost_equals</code>	<code>assert_tuple_equal</code>
<code>assert_is</code>	<code>assert_not_equal</code>	
<code>assert_is_instance</code>	<code>assert_not_equals</code>	

## Assertions in unittest.TestCase

<code>assertAlmostEqual</code>	<code>assertIsNone</code>	<code>assertNotIn</code>
<code>assertAlmostEquals</code>	<code>assertIsNot</code>	<code>assertNotIsInstance</code>
<code>assertDictContainsSubset</code>	<code>assertIsNotNone</code>	<code>assertNotRegexpMatches</code>
<code>assertDictEqual</code>	<code>assertItemsEqual</code>	<code>assertRaises</code>
<code>assertEqual</code>	<code>assertLess</code>	<code>assertRaisesRegexp</code>
<code>assertEquals</code>	<code>assertLessEqual</code>	<code>assertRegexpMatches</code>
<code>assertFalse</code>	<code>assertListEqual</code>	<code>assertSequenceEqual</code>
<code>assertGreater</code>	<code>assertMultiLineEqual</code>	<code>assertSetEqual</code>
<code>assertGreaterEqual</code>	<code>assertNotAlmostEqual</code>	<code>assertTrue</code>
<code>assertIn</code>	<code>assertNotAlmostEquals</code>	<code>assertTupleEqual</code>
<code>assertIs</code>	<code>assertNotEqual</code>	
<code>assertIsInstance</code>	<code>assertNotEquals</code>	