



## Test Cases: Assertions

### Assertions

The `unittest.TestCase` base class defines methods for performing assertions. These methods are used to compare and inspect objects in different ways.

#### Examples:

- `assertTrue`
- `assertFalse`
- `assertNone`
- `assertEqual`
- [Complete Documentation](#)

Tests use one or more of these assertion methods to test assumptions.

```
1 import unittest
2 class Test(unittest.TestCase):
3     def test_common_assertion_methods(self):
4         ''' A non-exhaustive demonstration of many of the common
5             The unittest.TestCase class provides methods for di
6             ...
7             # Compare any two objects using the assertEquals method.
8             # A method version of the == operator.
9             self.assertEqual('hey', 'hey')
10            # With a message
11            # All assert* methods allow a message to be provided.
12            # The message is displayed in the test runner if the as
13            # The message argument is omitted in the remaining exam
14            self.assertEqual(1, 1, 'there has been a disturbance in
15            # Compare any two objects using the assertNotEqual meth
16            # A method version of the != operator.
17            self.assertNotEqual('hey', 'sup')
18            # Check the 'truthiness' of an object using assertTrue.
19            self.assertTrue('hey' == 'hey')
20            # Check the 'truthiness' of an object using assertFalse.
```

< Back

Start check ↻



```
19     self.assertTrue('hey' == 'hey')
20     # Check the 'truthiness' of an object using assertFalse
21     self.assertFalse('hey' == 'sup')
22     # Check the identity of an object using assertIs.
23     # A method version of the 'is' operator.
24     greeting_a = 'hey'
25     greeting_b = greeting_a
26     # Do both name bindings reference the same object in memory?
27     # Yes. Same str object.
28     self.assertIs(greeting_a, greeting_b)
29     # Check the identity of an object using assertIsNot.
30     greeting_a = 'hey'
31     greeting_b = 'sup'
32     # Do both name bindings reference the same object in memory?
33     # No, since they're two different str objects.
34     self.assertIsNot(greeting_a, greeting_b)
35     # Check if an expression evaluates to None using the assertIsNone method.
36     # Hardcoded None
37     self.assertIsNone(None)
38     # Expression
39     self.assertIsNone(1 == 2 or None)
40     # Since 1 does not equal 2, None is returned.
41     # Check if an expression evaluates to something other than None using assertIsNotNone.
42     self.assertIsNotNone(1 == 2)
43     # Check if an object exists inside a collection using assertTrue.
44     self.assertIn(3, [1,2,3,4,5,6])
45     # Check if an object does not exist inside a collection using assertNotIn.
46     self.assertNotIn(7, [1,2,3,4,5,6])
47     # Check if an object is a specific instance of a class using isinstance.
48     self.assertIsInstance('hey', str)
49     self.assertIsInstance(12345, int)
50     # Example with a user defined class:
51     class Hey: ...
52     self.assertIsInstance(Hey(), Hey)
53     # Check if an object is not a specific instance of a class using assertNot isinstance.
54     self.assertNot isinstance(Hey(), int)
```

< Back

Start check ↻

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```
52     self.assertIsInstance(Hey(), Hey)
53     # Check if an object is not a specific instance of a class
54     self.assertNotIsInstance('hey', int)
55     self.assertNotIsInstance(12345, str)
56     # Example with a user defined class:
57     class Hey: ...
58     self.assertNotIsInstance(Hey(), str)
59     # Check if a callable raises a specific exception using
60     # This assert is a bit different from the others in that
61     # 'int' is the callable that will be run.
62     # Arguments to the right of the callable are passed to
63     # This is similar to:
64     # int('not a number')
65     # Which raises a ValueError
66     self.assertRaises(ValueError, int, 'not a number')
67 if __name__ == '__main__':
68     unittest.main()
```

#### Instructions

1. Arrange the `test_assertion.py` file to match the code above.
2. Run `test_assertion.py` in the IDEs terminal pane.

```
1 python3 cloudacademy/test_assertion.py
```

```
-----
Ran 1 test in 0.001s
OK
```

★ Proceed to the next step ★

< Back

Start check ↻