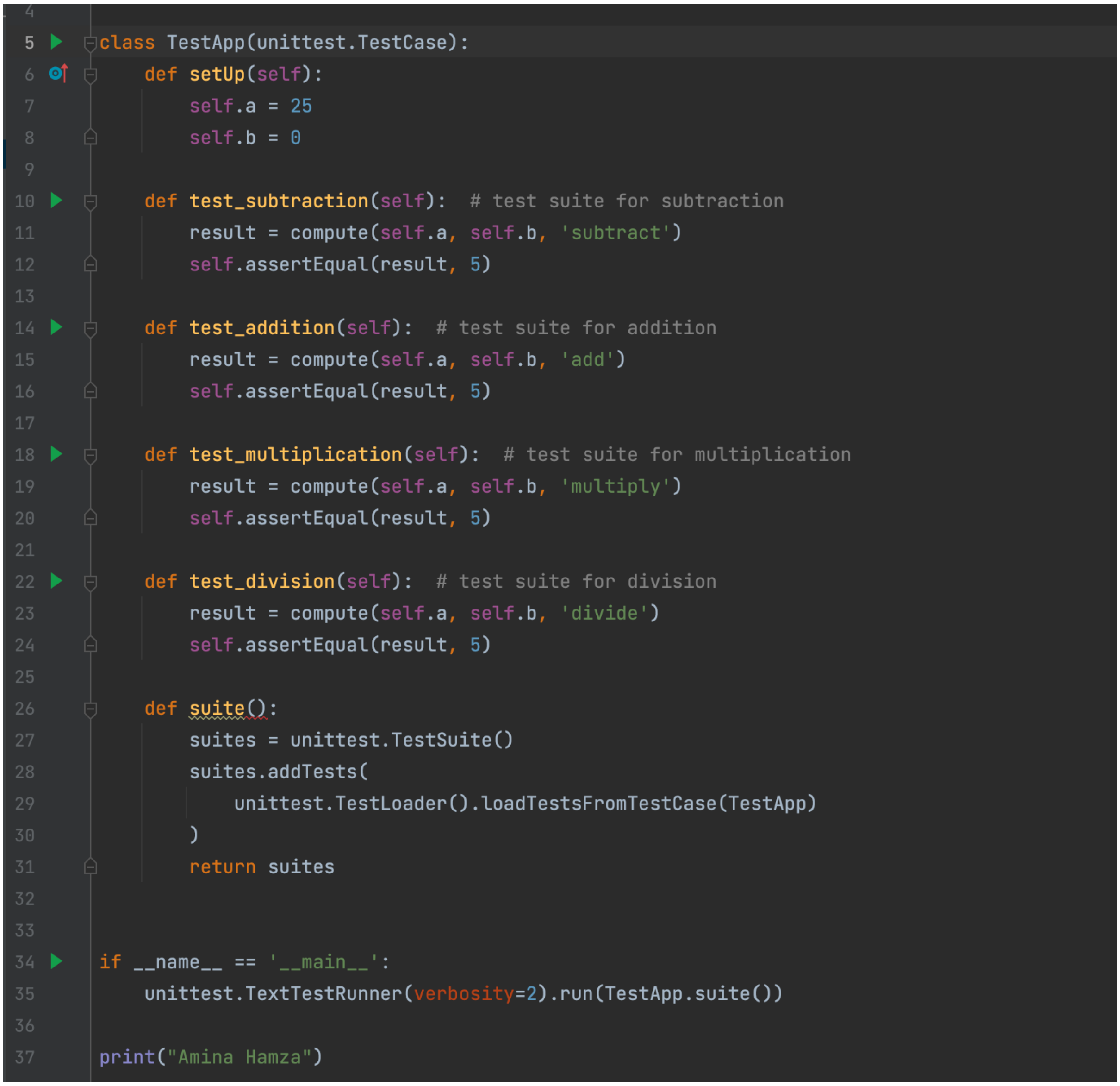
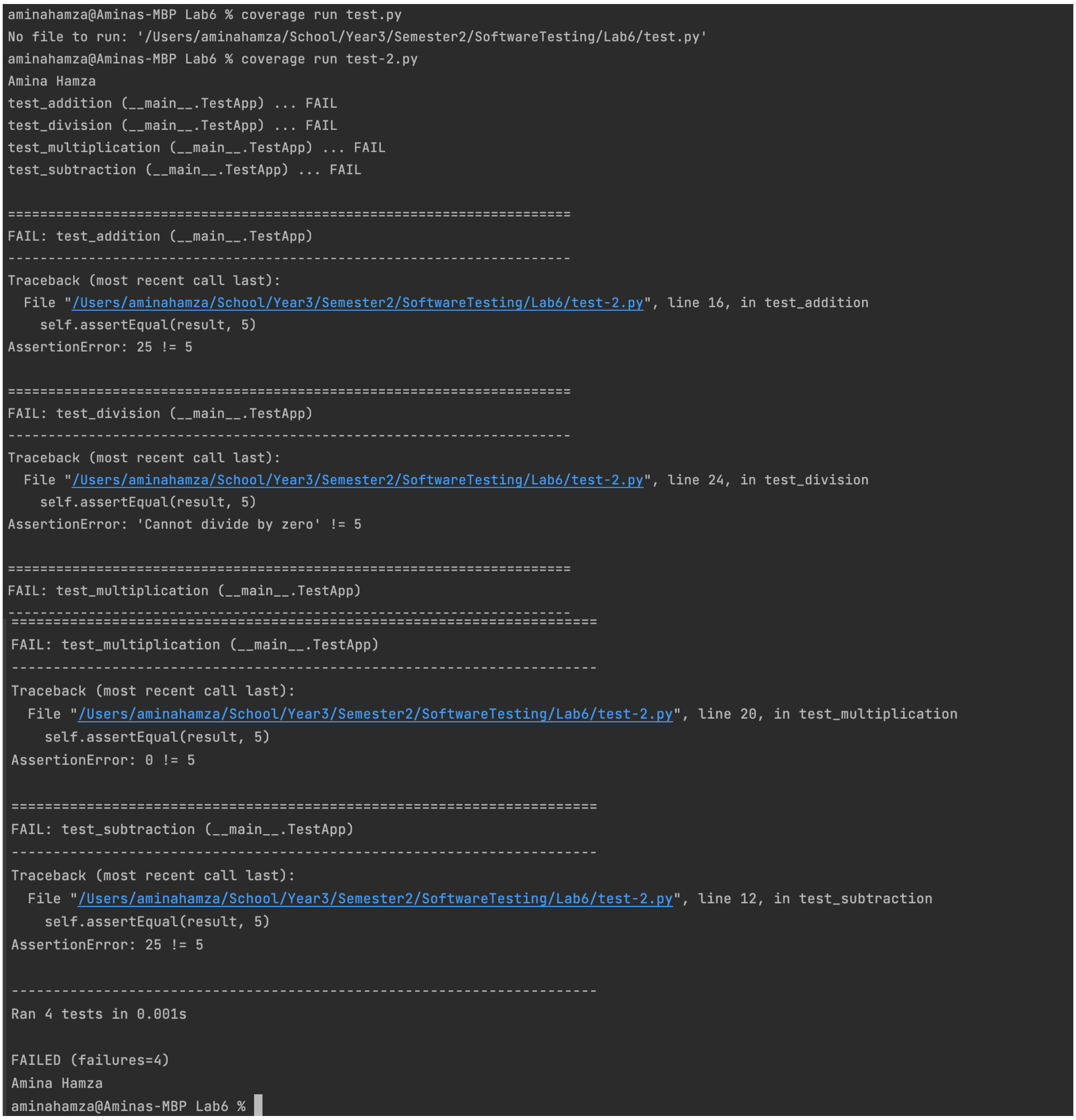
Lab 6

Amina Hamza



```
class TestApp(unittest.TestCase):
    def setUp(self):
        self.a = 25
        self.b = 0

    def test_subtraction(self):  # test suite for subtraction
        result = compute(self.a, self.b, 'subtract')
        self.assertEqual(result, 5)

    def test_addition(self):  # test suite for addition
        result = compute(self.a, self.b, 'add')
        self.assertEqual(result, 5)

    def test_multiplication(self):  # test suite for multiplication
        result = compute(self.a, self.b, 'multiply')
        self.assertEqual(result, 5)

    def test_division(self):  # test suite for division
        result = compute(self.a, self.b, 'divide')
        self.assertEqual(result, 5)

    def suite():
        suites = unittest.TestSuite()
        suites.addTests(
            unittest.TestLoader().loadTestsFromTestCase(TestApp)
        )
        return suites


if __name__ == '__main__':
    unittest.TextTestRunner(verbosity=2).run(TestApp.suite())

print("Amina Hamza")
```

Figure 1 Showing additional function.



```
aminahamza@Aminas-MBP Lab6 % coverage run test.py
No file to run: '/Users/aminahamza/School/Year3/Semester2/SoftwareTesting/Lab6/test.py'
aminahamza@Aminas-MBP Lab6 % coverage run test-2.py
Amina Hamza
test_addition (__main__.TestApp) ... FAIL
test_division (__main__.TestApp) ... FAIL
test_multiplication (__main__.TestApp) ... FAIL
test_subtraction (__main__.TestApp) ... FAIL

======================================================================
FAIL: test_addition (__main__.TestApp)
----------------------------------------------------------------------
Traceback (most recent call last):
  File "/Users/aminahamza/School/Year3/Semester2/SoftwareTesting/Lab6/test-2.py", line 16, in test_addition
    self.assertEqual(result, 5)
AssertionError: 25 != 5

======================================================================
FAIL: test_division (__main__.TestApp)
----------------------------------------------------------------------
Traceback (most recent call last):
  File "/Users/aminahamza/School/Year3/Semester2/SoftwareTesting/Lab6/test-2.py", line 24, in test_division
    self.assertEqual(result, 5)
AssertionError: 'Cannot divide by zero' != 5

======================================================================
FAIL: test_multiplication (__main__.TestApp)
----------------------------------------------------------------------
======================================================================
FAIL: test_multiplication (__main__.TestApp)
----------------------------------------------------------------------
Traceback (most recent call last):
  File "/Users/aminahamza/School/Year3/Semester2/SoftwareTesting/Lab6/test-2.py", line 20, in test_multiplication
    self.assertEqual(result, 5)
AssertionError: 0 != 5

======================================================================
FAIL: test_subtraction (__main__.TestApp)
----------------------------------------------------------------------
Traceback (most recent call last):
  File "/Users/aminahamza/School/Year3/Semester2/SoftwareTesting/Lab6/test-2.py", line 12, in test_subtraction
    self.assertEqual(result, 5)
AssertionError: 25 != 5

----------------------------------------------------------------------
Ran 4 tests in 0.001s

FAILED (failures=4)
Amina Hamza
aminahamza@Aminas-MBP Lab6 %
```

Figure 2 shows the test coverage.

Task 3.

In the first script, we are testing for addition, but this test fails because we assert the result to be equal, which is not the case.

In test_division, the test fails because we are dividing by a negative number, which produces an error value.

In test_multiplication, we multiply the value and compare the result with 5, which fails too. Since the two figures are not the same.

A total of four tests were run, out of which all four failed.