

17-625 API Design: Homework #4 – Consuming APIs

Jared Harvey (AndrewID: jaredhar, GitHub ID: jaharvey2000)

Part 1: GitHub Repository

Since this assignment builds on the repository for Assignment 3, my repository for this assignment is the same as the previous one: https://github.com/jaharvey2000/Jaredhar_17625_Assignment3

Part 2: Test Results

Only two unit tests were required for this assignment: one using a mocked API client and one using the live server developed in Assignment 3. I chose to add one additional unit test for each type of client; thus, my tests are shown below:

Client API Type	Test Case	Inputs	Expected Outputs
Mocked Client	testMockGetBooks	An array of three book ISBNs; two are valid ISBNs and one is an invalid ISBN.	An array of three book titles. For the one invalid ISBN, the title should be the <i>None</i> type in Python.
Mocked Client	testMockNoBooks	An empty array.	An empty array.
Live Server	testGetBooks	An array of three book ISBNs; two are valid ISBNs and one is an invalid ISBN.	An array of three book titles. For the one invalid ISBN, the title should be the <i>None</i> type in Python.
Live Server	testNoBooks	An empty array.	An empty array.

Tests were executed twice: once with the live server running and once without. The following screenshot shows the output of *test.py* when the server is **not** running. Note that the two live server tests fail because a server connection can't be established. However, **both mocked client tests succeed**.

```
Jaredhar_17625_Assignment3 → (main) python .\client\test.py -v
testGetBooks (__main__.TestClient) ... FAIL
testNoBooks (__main__.TestClient) ... ok
testMockGetBooks (__main__.TestMockClient) ... ok
testMockNoBooks (__main__.TestMockClient) ... ok

=====
FAIL: testGetBooks (__main__.TestClient)
=====
Traceback (most recent call last):
  File "C:\Users\Jared\Documents\CMU Projects\Jaredhar_17625_Assignment3\client\test.py", line 69, in testGetBooks
    self.assertEqual(expected, titles)
AssertionError: Lists differ: ['Book Title 1', None, 'Book Title 2'] != [None, None, None]

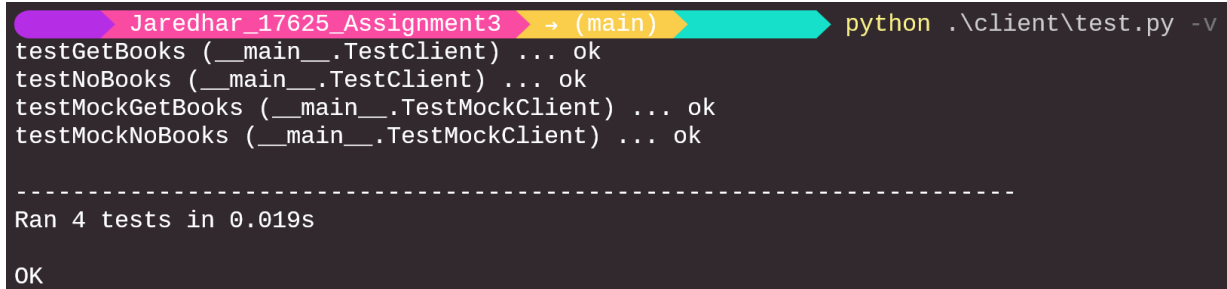
First differing element 0:
'Book Title 1'
None

- ['Book Title 1', None, 'Book Title 2']
+ [None, None, None]

-----
Ran 4 tests in 4.110s

FAILED (failures=1)
```

The same tests were then run with the live server running. In this case, the live server tests are able to make a connection and thus succeed. The below screenshot shows all four tests passing.



A screenshot of a terminal window with a dark background. At the top, a status bar shows 'Jaredhar_17625_Assignment3' in a pink box, followed by a yellow arrow pointing to '(main)', and a cyan arrow pointing to 'python .\client\test.py -v'. The terminal output shows four test results, each on a new line: 'testGetBooks (__main__.TestClient) ... ok', 'testNoBooks (__main__.TestClient) ... ok', 'testMockGetBooks (__main__.TestMockClient) ... ok', and 'testMockNoBooks (__main__.TestMockClient) ... ok'. Below these, a dashed line separates the test results from the summary 'Ran 4 tests in 0.019s'. At the bottom left, the text 'OK' is displayed.

```
Jaredhar_17625_Assignment3 → (main) → python .\client\test.py -v
testGetBooks (__main__.TestClient) ... ok
testNoBooks (__main__.TestClient) ... ok
testMockGetBooks (__main__.TestMockClient) ... ok
testMockNoBooks (__main__.TestMockClient) ... ok

-----
Ran 4 tests in 0.019s

OK
```