

```
# Implementation taken from the function at line 462 on CalculatorApp.py
def test_work(self):
    # Calculating the amount of work done in Joule with 30N applied
    # force and 40m of displacement
    # The result should be 1200
    # input1 = applied force
    # input2 = displacement
    input1 = int(30)
    input2 = int(40)
    work_formula = input1 * input2
    self.assertEqual(work_formula, 1200, "Should be 1200")
```

Figure 1: Example unit test for checking the correctness for work calculation in physics. All the other unit tests for checking this correctness attribute follows the same template.

```
C:\Users\efeo\PycharmProjects\PracticalStudentCalculator\venv\Scripts\python.exe "C:/Program Files/JetBrains/PyCharm
Testing started at 19:46 ...
Launching unittests with arguments python -m unittest test.TestSum in C:\Users\efeo\PycharmProjects\PracticalStudent

Ran 4 tests in 0.004s

OK

Process finished with exit code 0
```

Figure 2: Runtime of example correctness unit tests from all the 4 categories available on the program.

```
74 # Runtime performance test on the syllabic verse calculator for Turkish
75 # I have selected this one specifically because I came up with the
76 # algorithm myself and based on running this algorithm multiple times
77 # I have concluded that the average runtime is around ~2.3 seconds
78 def test_performance(self):
79     test_code = syllabic_verse_algorithm("Merhaba benim adım Efe")
80     total_time = timeit.timeit('syllabic_verse_algorithm("Merhaba")', globals=globals())
81     self.assertEqual(total_time < 5.0, True)
82
--
TestSum
```

Run: CalculatorApp × Python tests for test.TestSum.test_performance ×

Tests passed: 1 of 1 test – 2 sec 324 ms

Test Results 2 sec 324 ms

Testing started at 20:03 ...

Launching unittests with arguments python -m unittest test.TestSum.test_performance in C:\Users\efeo\PycharmProjects

Process finished with exit code 0

Ran 1 test in 2.324s

OK

Figure 3: Runtime performance test for the syllabic verse calculation algorithm

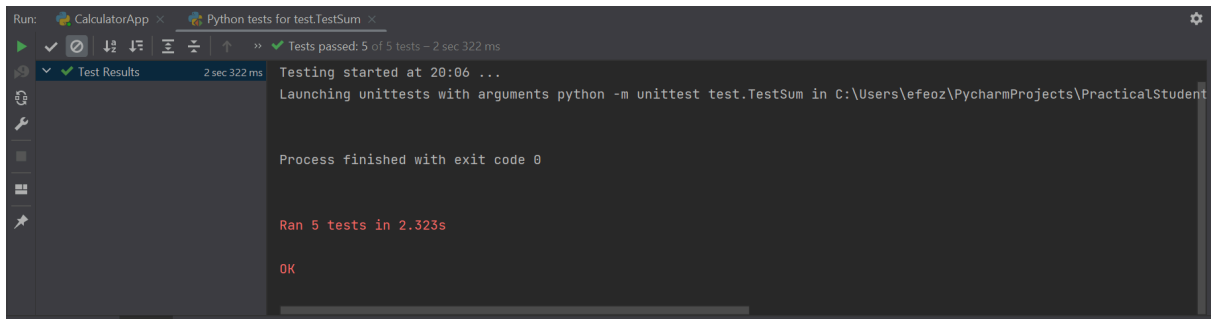


Figure 4: Total runtime of all the example unit tests provided in test.py