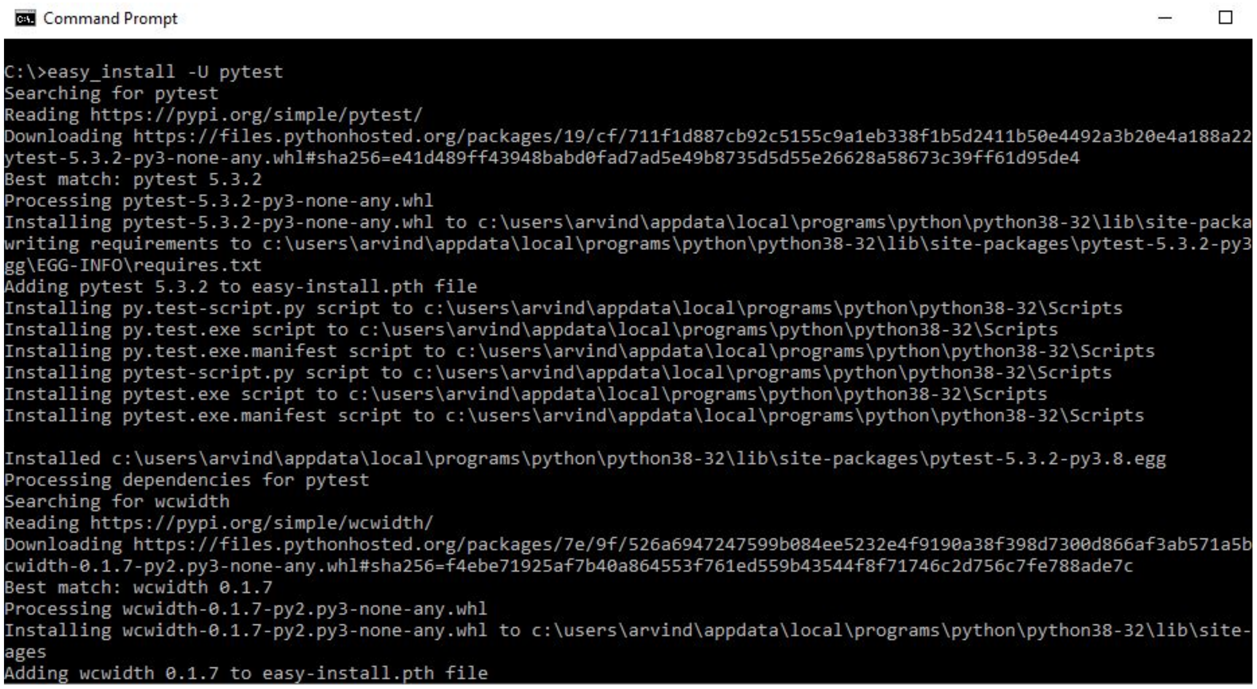
PYTHON

Pytest unit testing

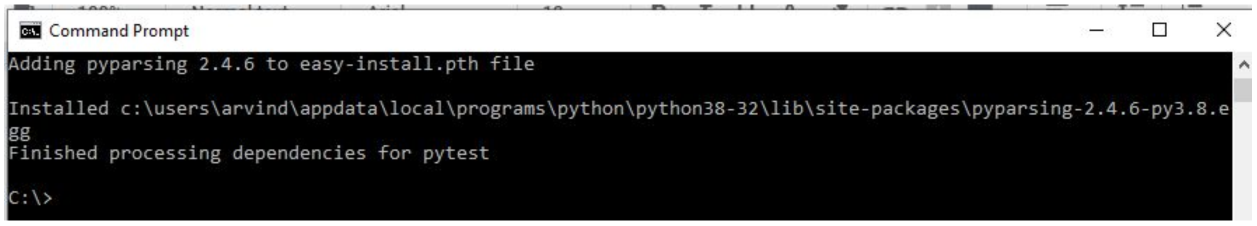
Objective:

Create test cases using pytest

Install Pytest

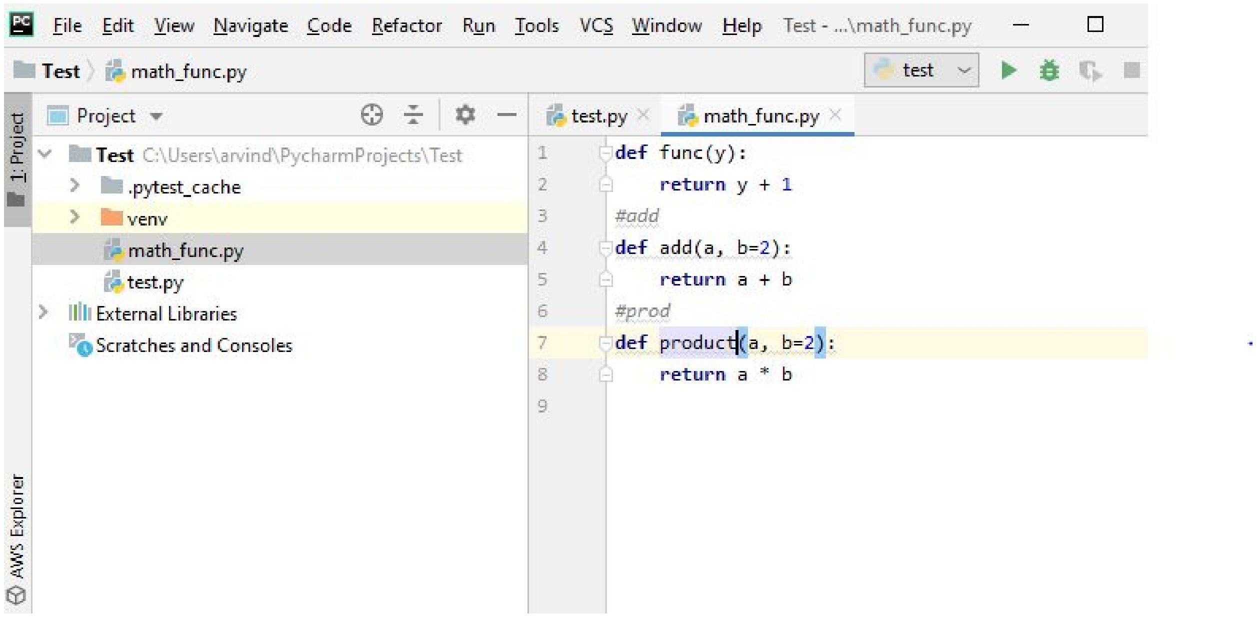


```
C:\>easy_install -U pytest
Searching for pytest
Reading https://pypi.org/simple/pytest/
Downloading https://files.pythonhosted.org/packages/19/cf/711f1d887cb92c5155c9a1eb338f1b5d2411b50e4492a3b20e4a188a22
ytest-5.3.2-py3-none-any.whl#sha256=e41d489ff43948babd0fad7ad5e49b8735d5d55e26628a58673c39ff61d95de4
Best match: pytest 5.3.2
Processing pytest-5.3.2-py3-none-any.whl
Installing pytest-5.3.2-py3-none-any.whl to c:\users\arvind\appdata\local\programs\python\python38-32\lib\site-packa
writing requirements to c:\users\arvind\appdata\local\programs\python\python38-32\lib\site-packages\pytest-5.3.2-py3
gg\EGG-INFO\requires.txt
Adding pytest 5.3.2 to easy-install.pth file
Installing py.test-script.py script to c:\users\arvind\appdata\local\programs\python\python38-32\Scripts
Installing py.test.exe script to c:\users\arvind\appdata\local\programs\python\python38-32\Scripts
Installing py.test.exe.manifest script to c:\users\arvind\appdata\local\programs\python\python38-32\Scripts
Installing pytest-script.py script to c:\users\arvind\appdata\local\programs\python\python38-32\Scripts
Installing pytest.exe script to c:\users\arvind\appdata\local\programs\python\python38-32\Scripts
Installing pytest.exe.manifest script to c:\users\arvind\appdata\local\programs\python\python38-32\Scripts

Installed c:\users\arvind\appdata\local\programs\python\python38-32\lib\site-packages\pytest-5.3.2-py3.8.egg
Processing dependencies for pytest
Searching for wcwidth
Reading https://pypi.org/simple/wcwidth/
Downloading https://files.pythonhosted.org/packages/7e/9f/526a6947247599b084ee5232e4f9190a38f398d7300d866af3ab571a5b
cwidth-0.1.7-py2.py3-none-any.whl#sha256=f4ebe71925af7b40a864553f761ed559b43544f8f71746c2d756c7fe788ade7c
Best match: wcwidth 0.1.7
Processing wcwidth-0.1.7-py2.py3-none-any.whl
Installing wcwidth-0.1.7-py2.py3-none-any.whl to c:\users\arvind\appdata\local\programs\python\python38-32\lib\site-
ages
Adding wcwidth 0.1.7 to easy-install.pth file
```

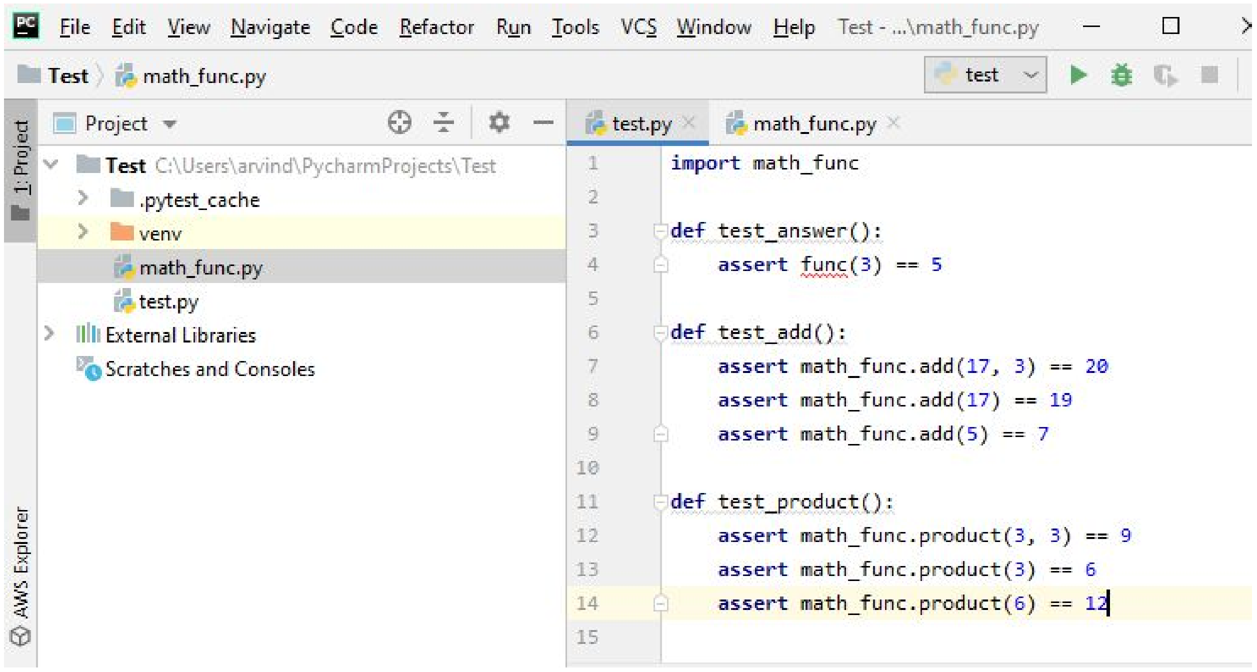


```
Adding pyparsing 2.4.6 to easy-install.pth file

Installed c:\users\arvind\appdata\local\programs\python\python38-32\lib\site-packages\pyparsing-2.4.6-py3.8.e
gg
Finished processing dependencies for pytest

C:\>
```

Create two python files “math_func” file and test file “test.py”

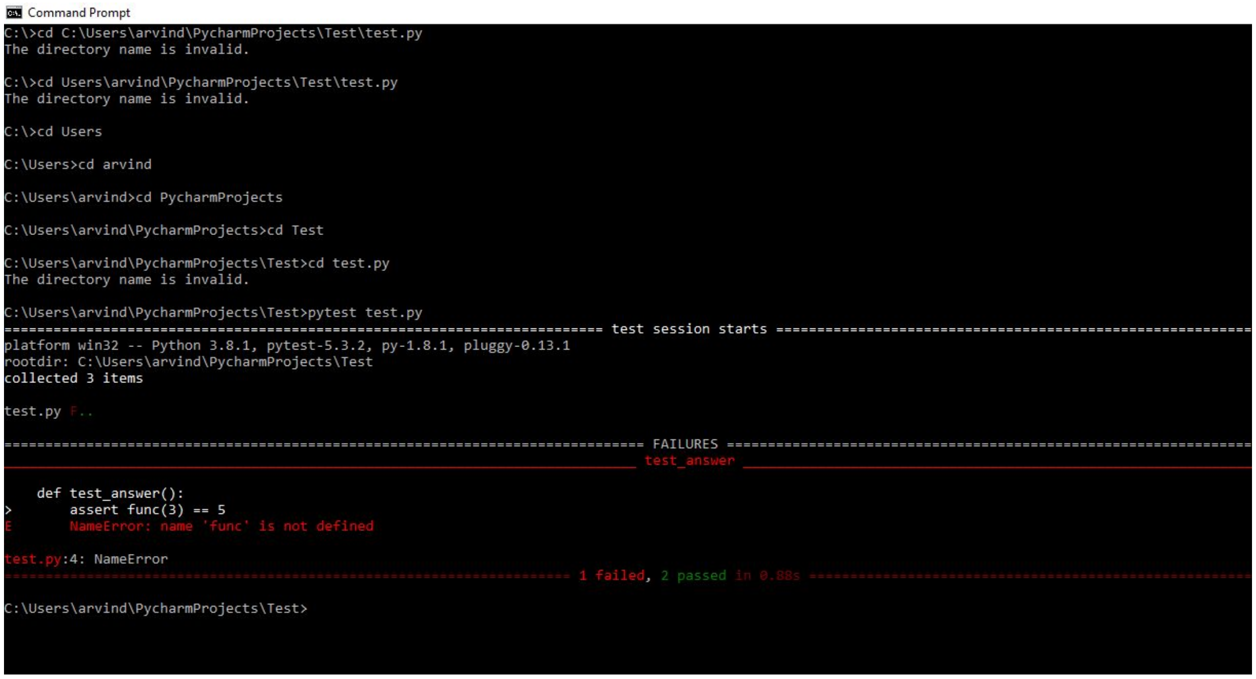


```python
def func(y):
    return y + 1
#add
def add(a, b=2):
    return a + b
#prod
def product(a, b=2):
    return a * b
```



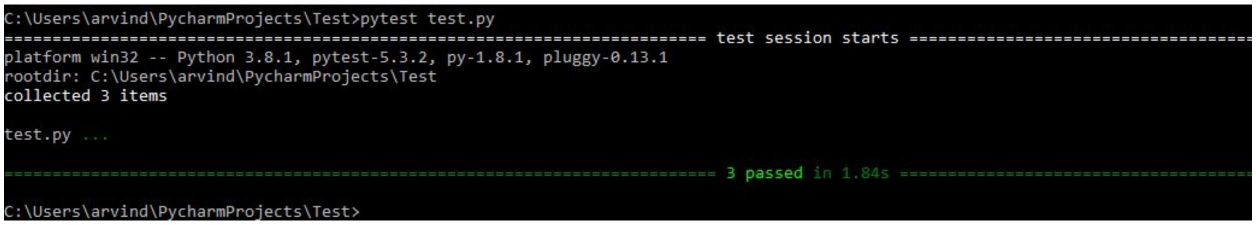
```python
import math_func

def test_answer():
    assert func(3) == 5

def test_add():
    assert math_func.add(17, 3) == 20
    assert math_func.add(17) == 19
    assert math_func.add(5) == 7

def test_product():
    assert math_func.product(3, 3) == 9
    assert math_func.product(3) == 6
    assert math_func.product(6) == 12
```

Execute the functions and verify output



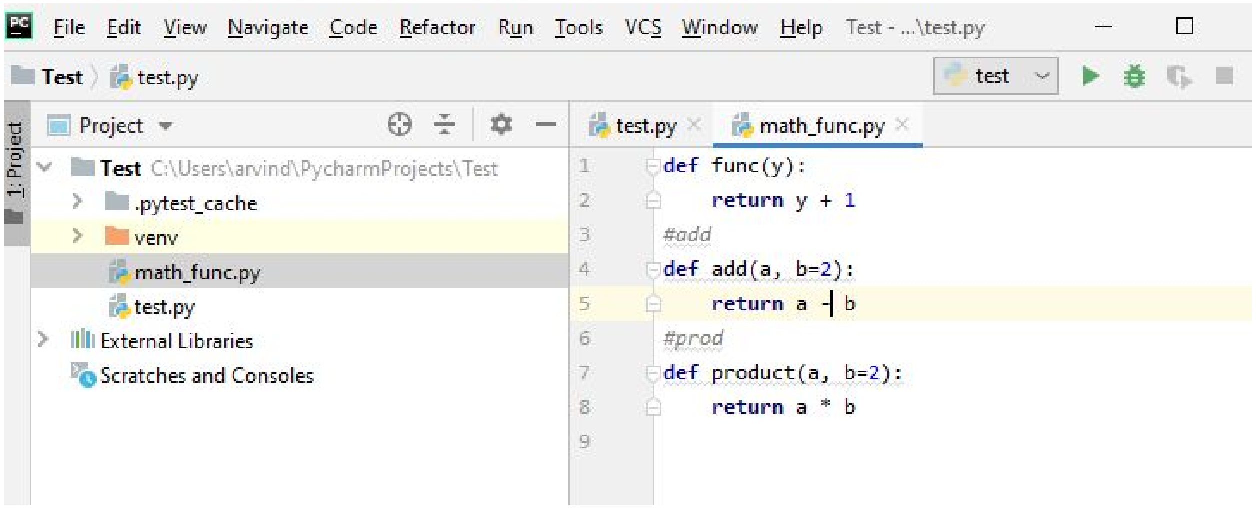
```
Command Prompt
C:\>cd C:\Users\arvind\PycharmProjects\Test\test.py
The directory name is invalid.

C:\>cd Users\arvind\PycharmProjects\Test\test.py
The directory name is invalid.

C:\>cd Users

C:\Users>cd arvind

C:\Users\arvind>cd PycharmProjects

C:\Users\arvind\PycharmProjects>cd Test

C:\Users\arvind\PycharmProjects\Test>cd test.py
The directory name is invalid.

C:\Users\arvind\PycharmProjects\Test>pytest test.py
======================================================================== test session starts =========================================================
platform win32 -- Python 3.8.1, pytest-5.3.2, py-1.8.1, pluggy-0.13.1
rootdir: C:\Users\arvind\PycharmProjects\Test
collected 3 items

test.py F..

============================================================================= FAILURES ===============================================================
____________________________________________________________________________ test_answer _____________________________________________________________

    def test_answer():
>       assert func(3) == 5
E       NameError: name 'func' is not defined

test.py:4: NameError
===================================================================== 1 failed, 2 passed in 0.88s ====================================================

C:\Users\arvind\PycharmProjects\Test>
```

From the output, 1 test failed as
func(3) was not defined in test.py file and
The func(3) did not return 5.
Hence, define the func(3) in test.py file and change the correct value in the program and execute it again.

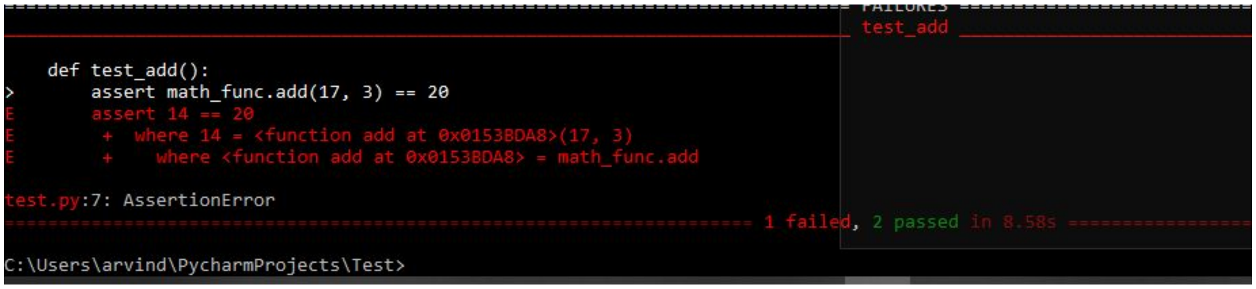


```
C:\Users\arvind\PycharmProjects\Test>pytest test.py
========================================================================= test session starts ====================================
platform win32 -- Python 3.8.1, pytest-5.3.2, py-1.8.1, pluggy-0.13.1
rootdir: C:\Users\arvind\PycharmProjects\Test
collected 3 items

test.py ...

========================================================================== 3 passed in 1.84s =====================================

C:\Users\arvind\PycharmProjects\Test>
```

Make modifications to the add function(change a+b to a-b and verify output, must f\display error message.



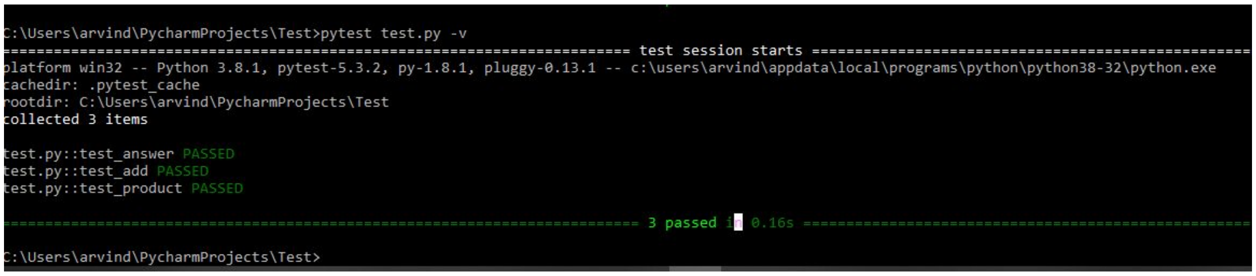
```
def func(y):
    return y + 1
#add
def add(a, b=2):
    return a - b
#prod
def product(a, b=2):
    return a * b
```



```
test_add

    def test_add():
>       assert math_func.add(17, 3) == 20
E       assert 14 == 20
E        +  where 14 = <function add at 0x0153BDA8>(17, 3)
E        +    where <function add at 0x0153BDA8> = math_func.add

test.py:7: AssertionError
==================================================================== 1 failed, 2 passed in 8.58s ================

C:\Users\arvind\PycharmProjects\Test>
```

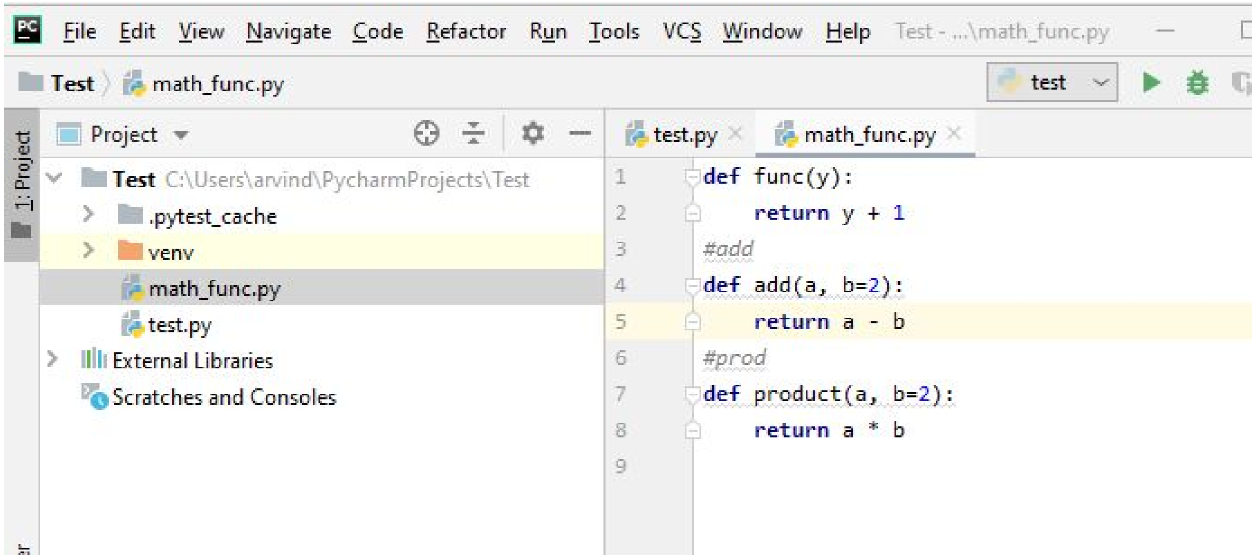
USING OPTIONS WITH PYTEST

Use the -v option while executing the functions in order to get the detailed test results.

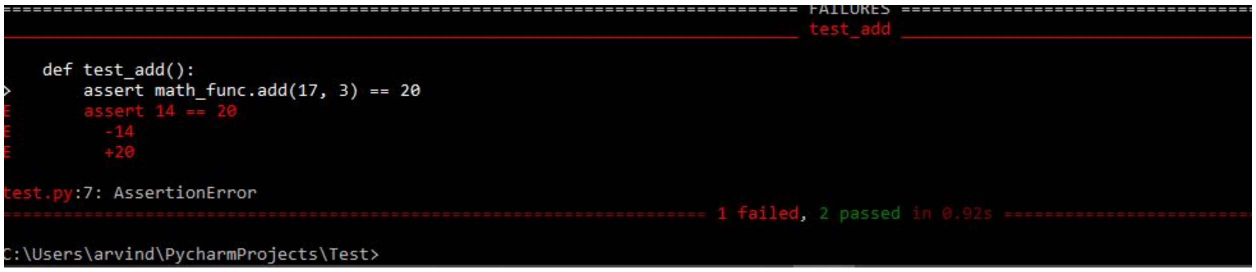


```
C:\Users\arvind\PycharmProjects\Test>pytest test.py -v
======================================================================= test session starts =======================================================
platform win32 -- Python 3.8.1, pytest-5.3.2, py-1.8.1, pluggy-0.13.1 -- c:\users\arvind\appdata\local\programs\python\python38-32\python.exe
cachedir: .pytest_cache
rootdir: C:\Users\arvind\PycharmProjects\Test
collected 3 items

test.py::test_answer PASSED
test.py::test_add PASSED
test.py::test_product PASSED

========================================================================= 3 passed in 0.16s =========================================================

C:\Users\arvind\PycharmProjects\Test>
```

Modify the code again to view detailed output with errors

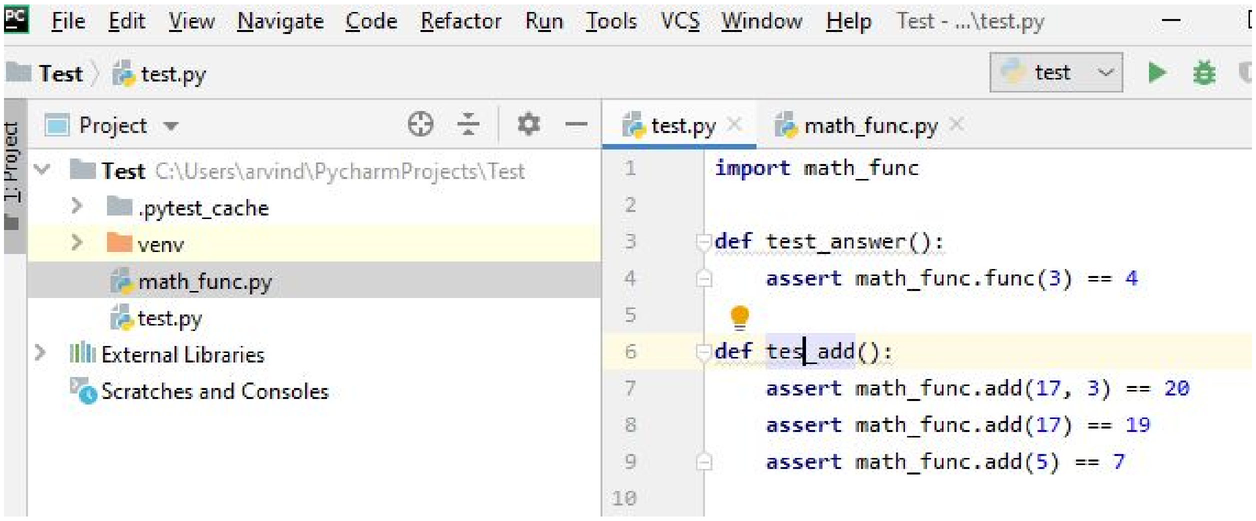


```
def func(y):
    return y + 1
#add
def add(a, b=2):
    return a - b
#prod
def product(a, b=2):
    return a * b
```

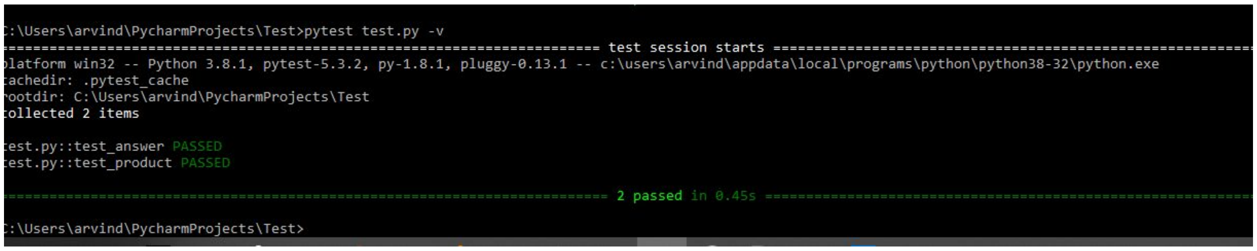


```
================================================================================ FAILURES ===================================
                                                                                 test_add

    def test_add():
>       assert math_func.add(17, 3) == 20
E       assert 14 == 20
E         -14
E         +20

test.py:7: AssertionError
======================================================================= 1 failed, 2 passed in 0.92s =======================

C:\Users\arvind\PycharmProjects\Test>
```

Modify the name of the add function in test.py file by removing t prefix in add function from def test.add to def tes.py and execute the add function will not run. The add function should be prefixed with test.

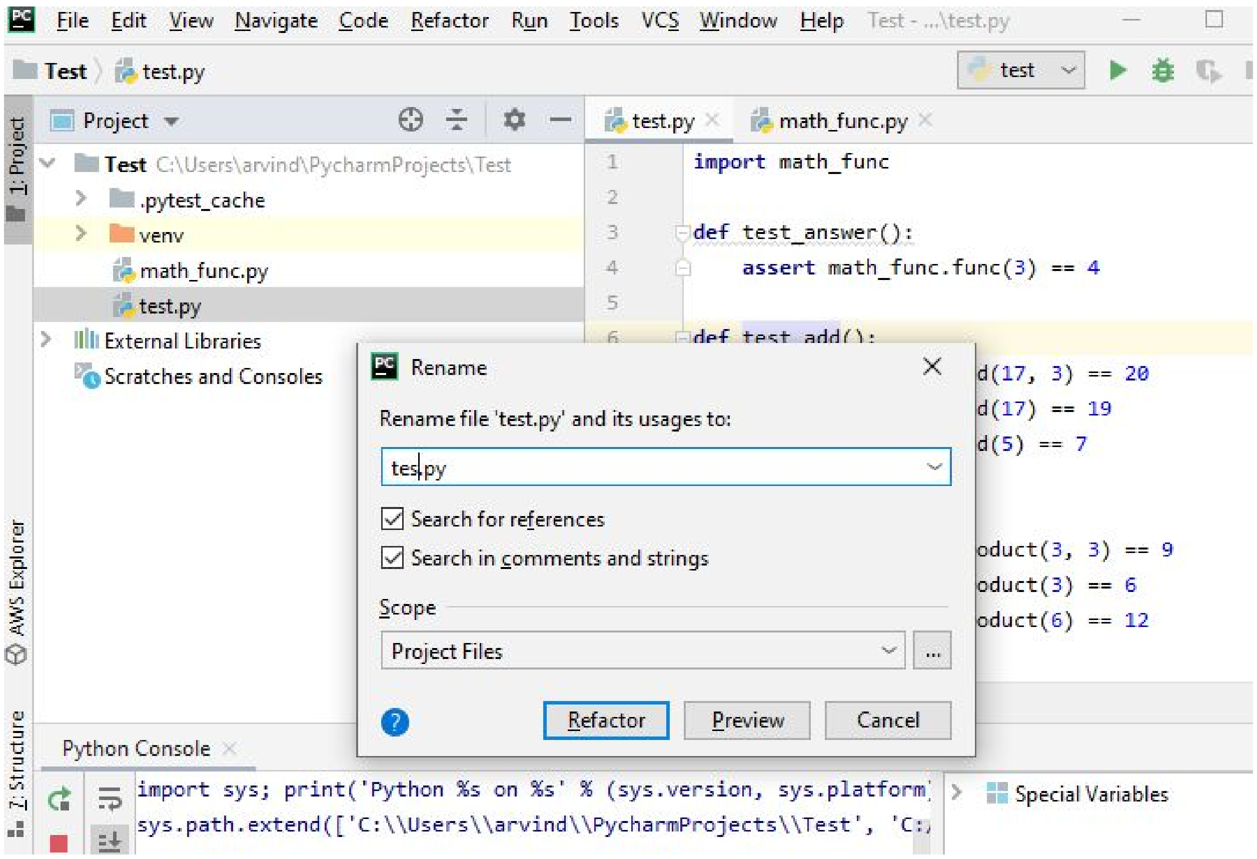

File Edit View Navigate Code Refactor Run Tools VCS Window Help Test - ...\test.py
Test 〉 test.py
test
Project
Test C:\Users\arvind\PycharmProjects\Test
.pytest_cache
venv
math_func.py
test.py
External Libraries
Scratches and Consoles
test.py
math_func.py

```python
import math_func

def test_answer():
    assert math_func.func(3) == 4

def tes_add():
    assert math_func.add(17, 3) == 20
    assert math_func.add(17) == 19
    assert math_func.add(5) == 7
```



```
:\Users\arvind\PycharmProjects\Test>pytest test.py -v
========================================================================= test session starts ==========================================================================
latform win32 -- Python 3.8.1, pytest-5.3.2, py-1.8.1, pluggy-0.13.1 -- c:\users\arvind\appdata\local\programs\python\python38-32\python.exe
achedir: .pytest_cache
ootdir: C:\Users\arvind\PycharmProjects\Test
ollected 2 items

est.py::test_answer PASSED
est.py::test_product PASSED

========================================================================== 2 passed in 0.45s ===========================================================================

:\Users\arvind\PycharmProjects\Test>
```

Change the name of the test.py file to tes.py file and execute the program.



```
import math_func

def test_answer():
    assert math_func.func(3) == 4

def test_add():
```

Rename

Rename file 'test.py' and its usages to:

tes.py

☑ Search for references

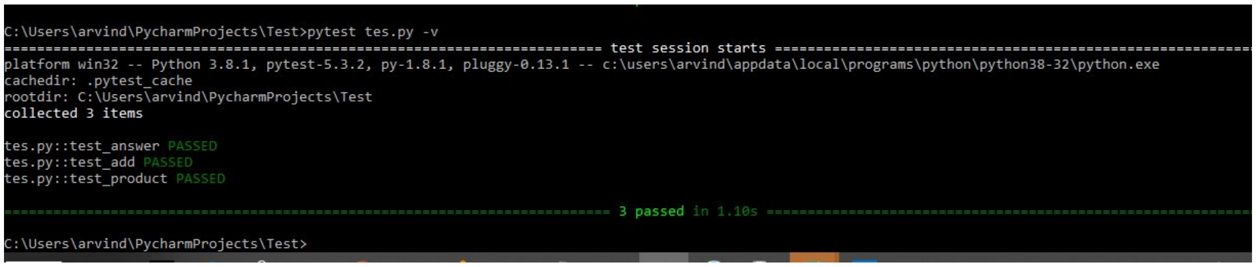
☑ Search in comments and strings

Scope

Project Files

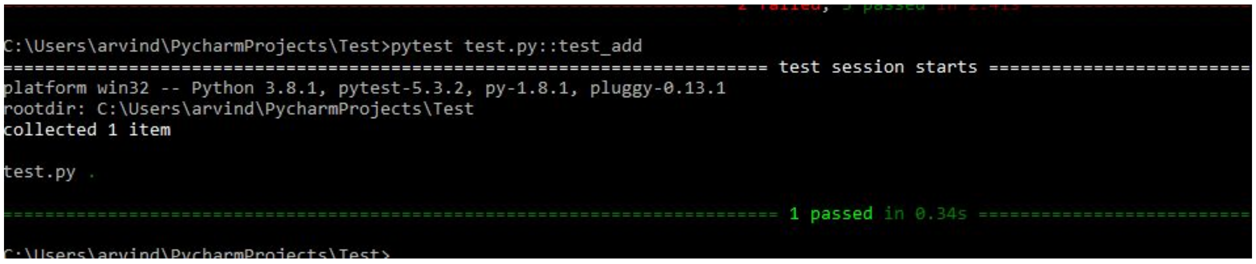
Refactor Preview Cancel

```
import sys; print('Python %s on %s' % (sys.version, sys.platform)
sys.path.extend(['C:\\Users\\arvind\\PycharmProjects\\Test', 'C:
```



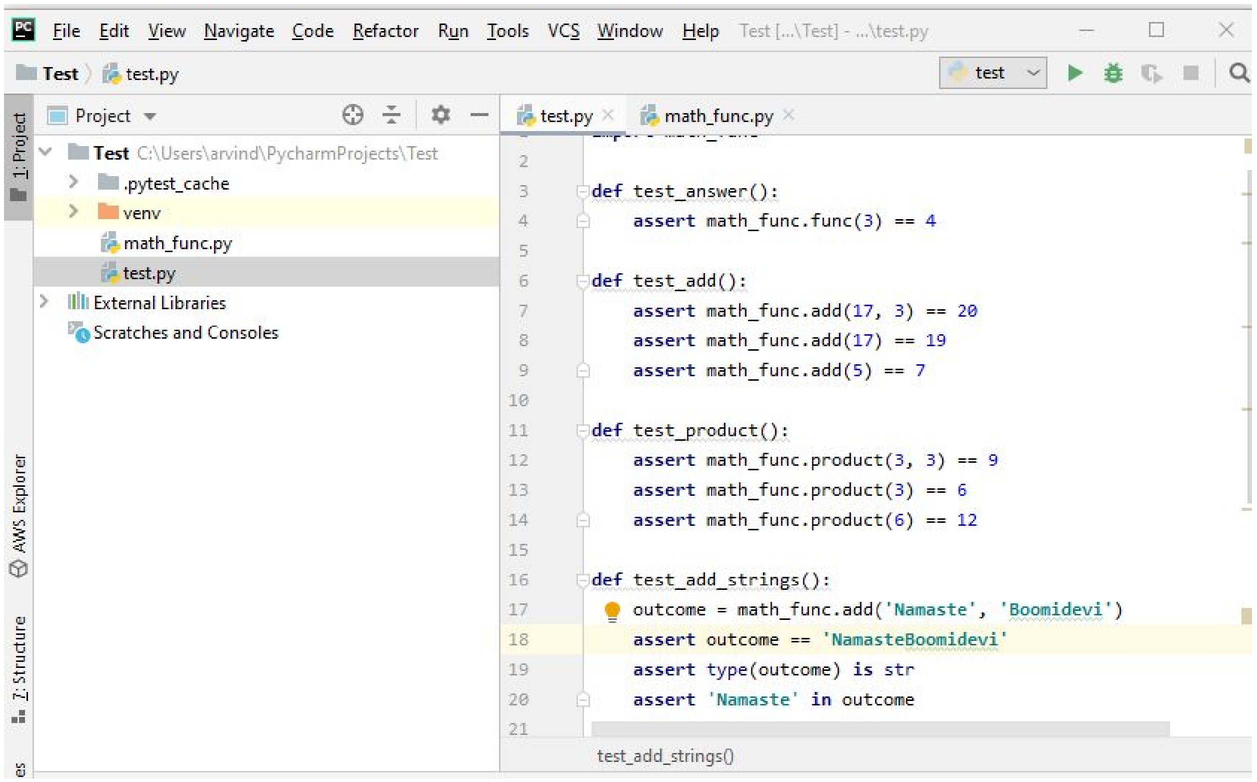
```
C:\Users\arvind\PycharmProjects\Test>pytest tes.py -v
========================================================================== test session starts ==========================================================================
platform win32 -- Python 3.8.1, pytest-5.3.2, py-1.8.1, pluggy-0.13.1 -- c:\users\arvind\appdata\local\programs\python\python38-32\python.exe
cachedir: .pytest_cache
rootdir: C:\Users\arvind\PycharmProjects\Test
collected 3 items

tes.py::test_answer PASSED
tes.py::test_add PASSED
tes.py::test_product PASSED

=========================================================================== 3 passed in 1.10s ===========================================================================

C:\Users\arvind\PycharmProjects\Test>
```

Execute only test_add function in test.py file and verify output

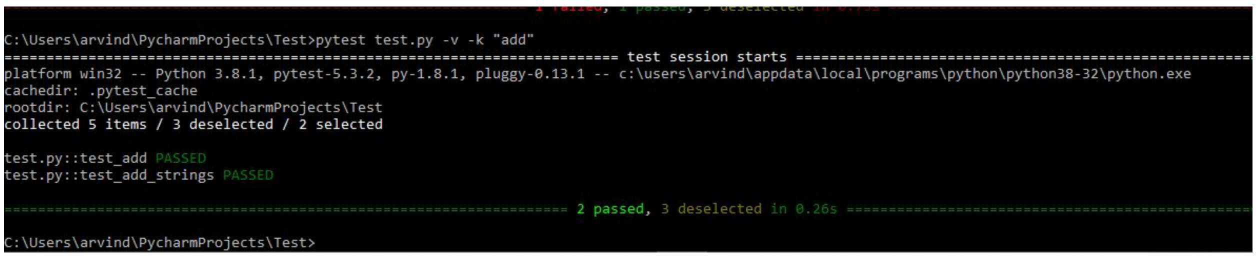


```
C:\Users\arvind\PycharmProjects\Test>pytest test.py::test_add
========================================================================= test session starts ==========================
platform win32 -- Python 3.8.1, pytest-5.3.2, py-1.8.1, pluggy-0.13.1
rootdir: C:\Users\arvind\PycharmProjects\Test
collected 1 item

test.py .

========================================================================== 1 passed in 0.34s ==========================

C:\Users\arvind\PycharmProjects\Test>
```

Execute only the functions that contain the “add” keyword using option -k

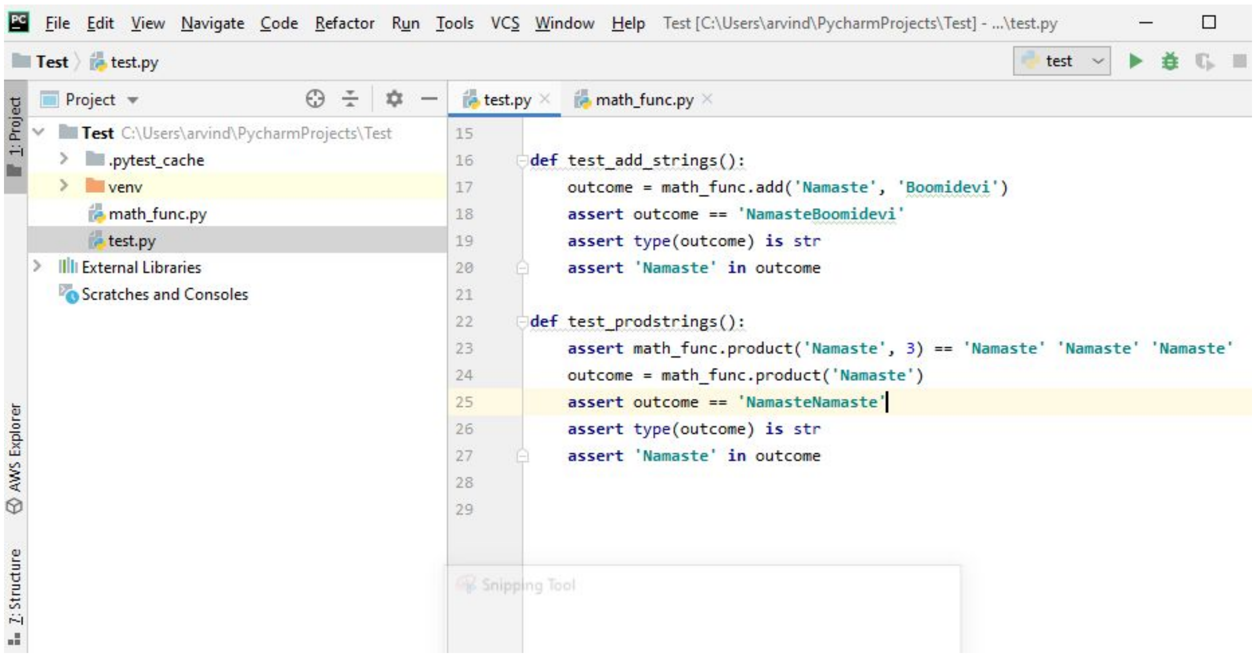


```python

def test_answer():
    assert math_func.func(3) == 4

def test_add():
    assert math_func.add(17, 3) == 20
    assert math_func.add(17) == 19
    assert math_func.add(5) == 7

def test_product():
    assert math_func.product(3, 3) == 9
    assert math_func.product(3) == 6
    assert math_func.product(6) == 12

def test_add_strings():
    outcome = math_func.add('Namaste', 'Boomidevi')
    assert outcome == 'NamasteBoomidevi'
    assert type(outcome) is str
    assert 'Namaste' in outcome

```

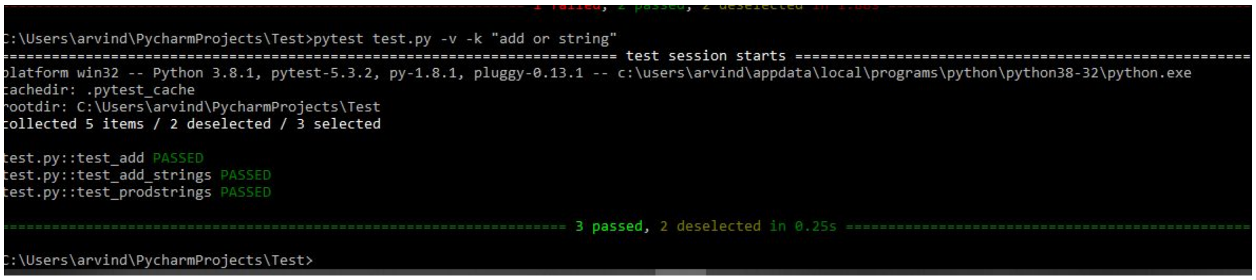


```
C:\Users\arvind\PycharmProjects\Test>pytest test.py -v -k "add"
========================================================================= test session starts ==========================================================
platform win32 -- Python 3.8.1, pytest-5.3.2, py-1.8.1, pluggy-0.13.1 -- c:\users\arvind\appdata\local\programs\python\python38-32\python.exe
cachedir: .pytest_cache
rootdir: C:\Users\arvind\PycharmProjects\Test
collected 5 items / 3 deselected / 2 selected

test.py::test_add PASSED
test.py::test_add_strings PASSED

=================================================================== 2 passed, 3 deselected in 0.26s ===================================================

C:\Users\arvind\PycharmProjects\Test>
```

Execute only the functions that contain the “add” or “string” keyword using option -k

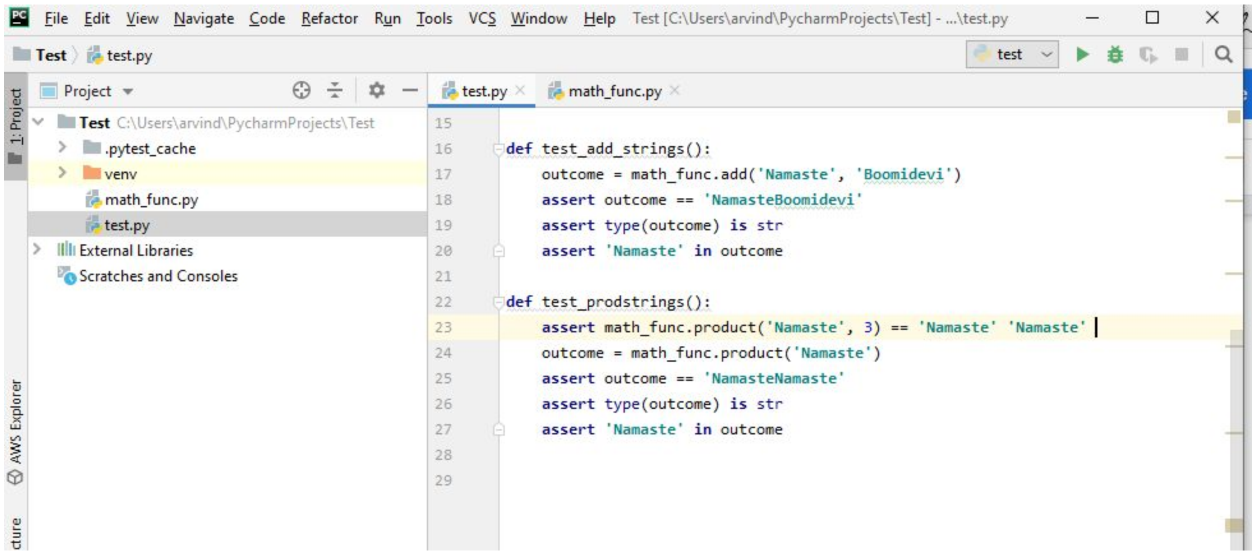


```python
def test_add_strings():
    outcome = math_func.add('Namaste', 'Boomidevi')
    assert outcome == 'NamasteBoomidevi'
    assert type(outcome) is str
    assert 'Namaste' in outcome

def test_prodstrings():
    assert math_func.product('Namaste', 3) == 'Namaste' 'Namaste' 'Namaste'
    outcome = math_func.product('Namaste')
    assert outcome == 'NamasteNamaste'
    assert type(outcome) is str
    assert 'Namaste' in outcome
```

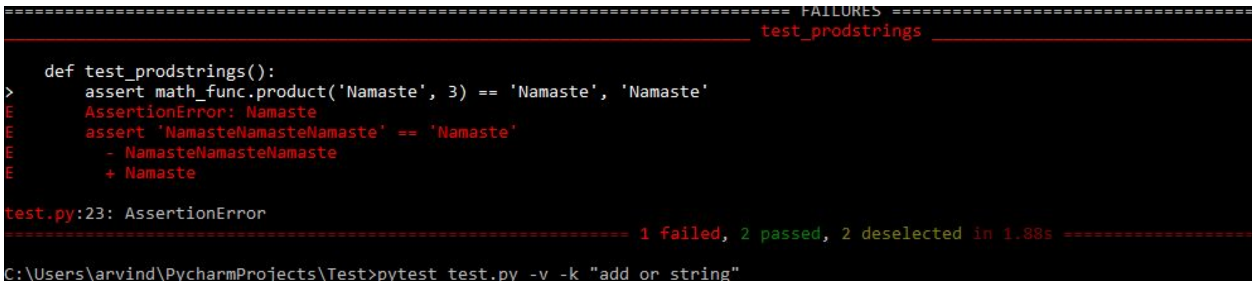


```
:\Users\arvind\PycharmProjects\Test>pytest test.py -v -k "add or string"
===================================================================== test session starts ======================================================================
platform win32 -- Python 3.8.1, pytest-5.3.2, py-1.8.1, pluggy-0.13.1 -- c:\users\arvind\appdata\local\programs\python\python38-32\python.exe
achedir: .pytest_cache
ootdir: C:\Users\arvind\PycharmProjects\Test
ollected 5 items / 2 deselected / 3 selected

est.py::test_add PASSED
est.py::test_add_strings PASSED
est.py::test_prodstrings PASSED

=================================================================== 3 passed, 2 deselected in 0.25s ===================================================================

:\Users\arvind\PycharmProjects\Test>
```

Modify the prodstring function execute test.py file the output must contain error message

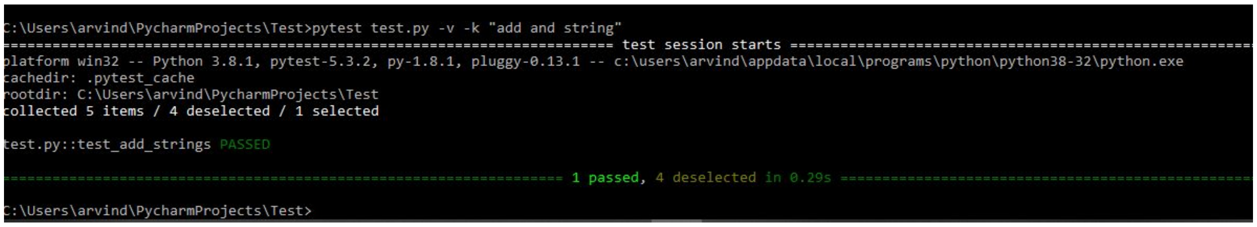

File Edit View Navigate Code Refactor Run Tools VCS Window Help Test [C:\Users\arvind\PycharmProjects\Test] - ...\test.py
Test > test.py
test
Project
Test C:\Users\arvind\PycharmProjects\Test
.pytest_cache
venv
math_func.py
test.py
External Libraries
Scratches and Consoles
test.py
math_func.py
1: Project
AWS Explorer
cture

```python
def test_add_strings():
    outcome = math_func.add('Namaste', 'Boomidevi')
    assert outcome == 'NamasteBoomidevi'
    assert type(outcome) is str
    assert 'Namaste' in outcome

def test_prodstrings():
    assert math_func.product('Namaste', 3) == 'Namaste' 'Namaste' 
    outcome = math_func.product('Namaste')
    assert outcome == 'NamasteNamaste'
    assert type(outcome) is str
    assert 'Namaste' in outcome
```



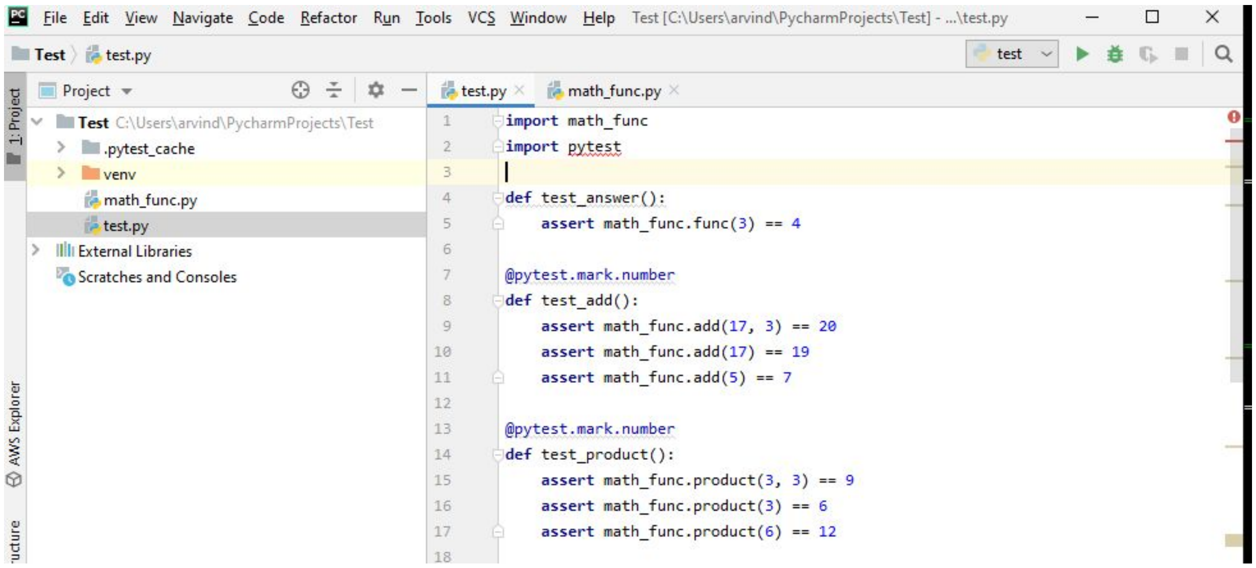
```
=============================================================================== FAILURES ====================================
                                                                           test_prodstrings
    def test_prodstrings():
>       assert math_func.product('Namaste', 3) == 'Namaste', 'Namaste'
E       AssertionError: Namaste
E       assert 'NamasteNamasteNamaste' == 'Namaste'
E         - NamasteNamasteNamaste
E         + Namaste

test.py:23: AssertionError
=============================================================== 1 failed, 2 passed, 2 deselected in 1.88s ==================

C:\Users\arvind\PycharmProjects\Test>pytest test.py -v -k "add or string"
```

Execute only the functions in test.py file with -k option containing the word "add" and "string". Must display only 1 function as there is only i function that satisfies both conditions.

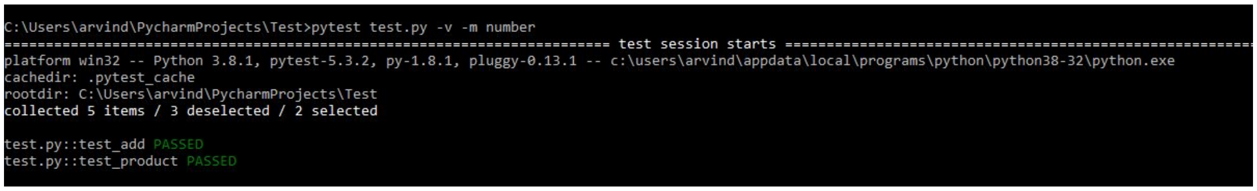


```
C:\Users\arvind\PycharmProjects\Test>pytest test.py -v -k "add and string"
==================================================================== test session starts ===========================================================
platform win32 -- Python 3.8.1, pytest-5.3.2, py-1.8.1, pluggy-0.13.1 -- c:\users\arvind\appdata\local\programs\python\python38-32\python.exe
cachedir: .pytest_cache
rootdir: C:\Users\arvind\PycharmProjects\Test
collected 5 items / 4 deselected / 1 selected

test.py::test_add_strings PASSED

=================================================================== 1 passed, 4 deselected in 0.29s ================================================

C:\Users\arvind\PycharmProjects\Test>
```

#Execute only the functions in test.py file with -m option number
#mark the number functions and string function in test.py file with the following code before using option "m"
# @pytest.mark.number
# @pytest.mark.strings

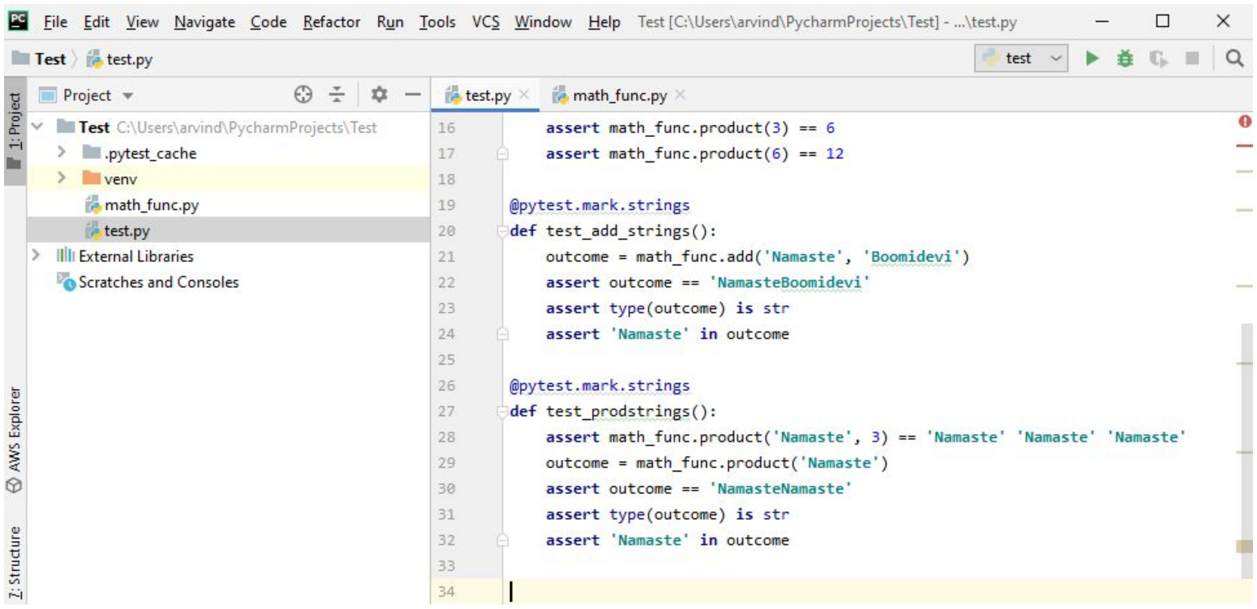


```python
import math_func
import pytest


def test_answer():
    assert math_func.func(3) == 4

@pytest.mark.number
def test_add():
    assert math_func.add(17, 3) == 20
    assert math_func.add(17) == 19
    assert math_func.add(5) == 7

@pytest.mark.number
def test_product():
    assert math_func.product(3, 3) == 9
    assert math_func.product(3) == 6
    assert math_func.product(6) == 12
```



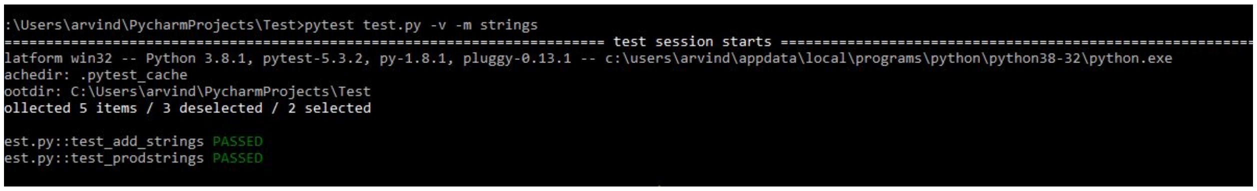
```
C:\Users\arvind\PycharmProjects\Test>pytest test.py -v -m number
========================================================================== test session starts ==========================================================================
platform win32 -- Python 3.8.1, pytest-5.3.2, py-1.8.1, pluggy-0.13.1 -- c:\users\arvind\appdata\local\programs\python\python38-32\python.exe
cachedir: .pytest_cache
rootdir: C:\Users\arvind\PycharmProjects\Test
collected 5 items / 3 deselected / 2 selected

test.py::test_add PASSED
test.py::test_product PASSED
```

#Mark the number functions and string function in test.py file with the following code before using option "m"
@pytest.mark.strings
#Execute only the functions in test.py file with -m option strings
Output will display string functions only



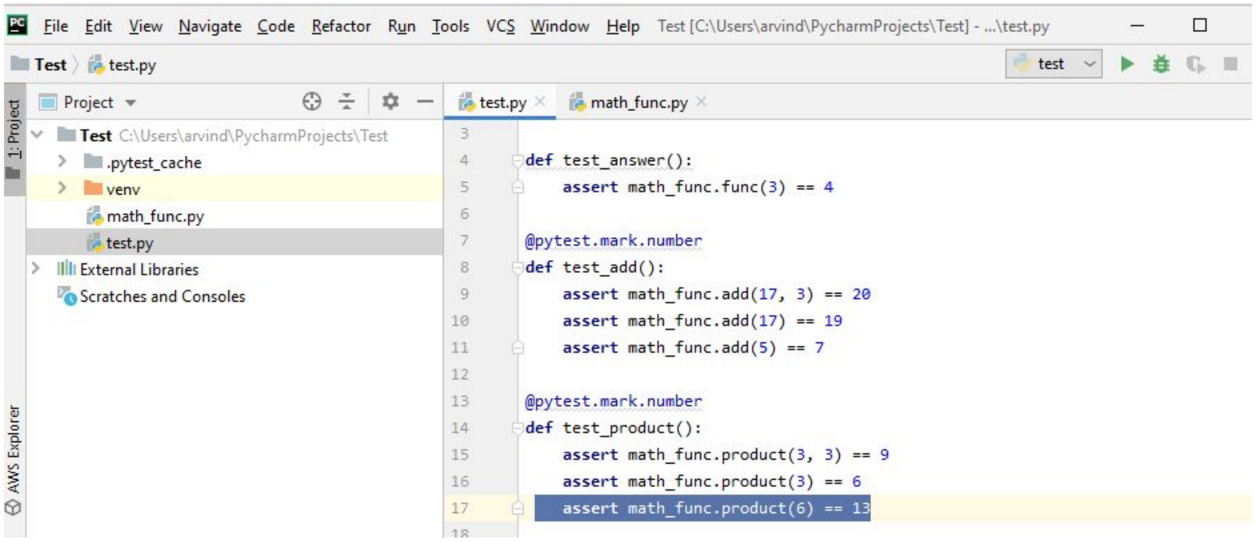
File Edit View Navigate Code Refactor Run Tools VCS Window Help Test [C:\Users\arvind\PycharmProjects\Test] - ...\test.py
Test
test.py
test
Project
Test C:\Users\arvind\PycharmProjects\Test
.pytest_cache
venv
math_func.py
test.py
External Libraries
Scratches and Consoles
1: Project
AWS Explorer
7: Structure
test.py
math_func.py

```
    assert math_func.product(3) == 6
    assert math_func.product(6) == 12

@pytest.mark.strings
def test_add_strings():
    outcome = math_func.add('Namaste', 'Boomidevi')
    assert outcome == 'NamasteBoomidevi'
    assert type(outcome) is str
    assert 'Namaste' in outcome

@pytest.mark.strings
def test_prodstrings():
    assert math_func.product('Namaste', 3) == 'Namaste' 'Namaste' 'Namaste'
    outcome = math_func.product('Namaste')
    assert outcome == 'NamasteNamaste'
    assert type(outcome) is str
    assert 'Namaste' in outcome

```

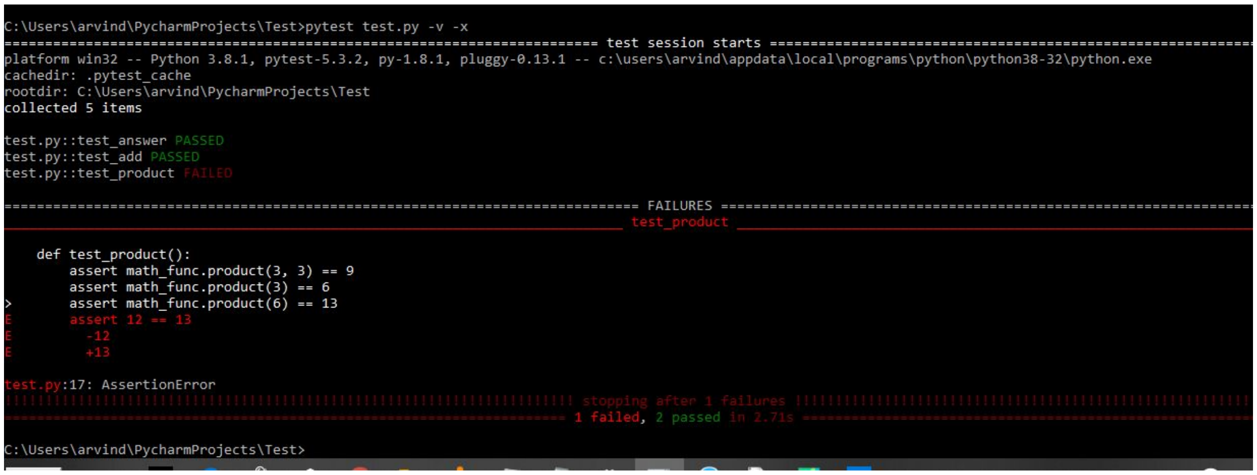


```
:\Users\arvind\PycharmProjects\Test>pytest test.py -v -m strings
========================================================================== test session starts ==========================================================================
latform win32 -- Python 3.8.1, pytest-5.3.2, py-1.8.1, pluggy-0.13.1 -- c:\users\arvind\appdata\local\programs\python\python38-32\python.exe
achedir: .pytest_cache
ootdir: C:\Users\arvind\PycharmProjects\Test
ollected 5 items / 3 deselected / 2 selected

est.py::test_add_strings PASSED
est.py::test_prodstrings PASSED
```

#Execute test.py file with -x option, add some failure assert statement to the function in test.py file
#the program will exit when it encounters first failure at test_product function

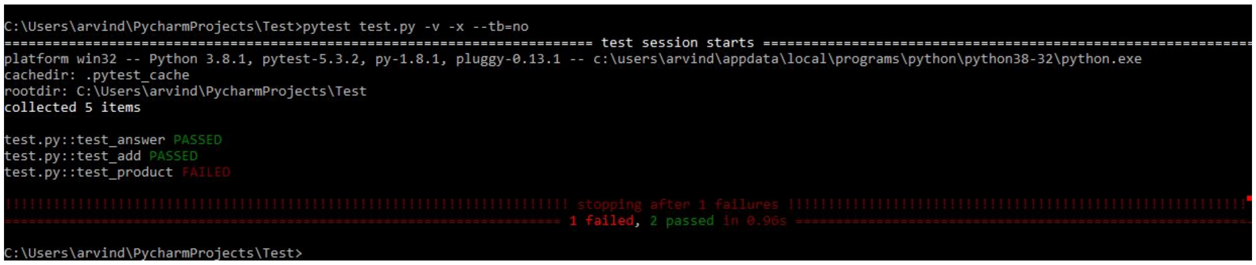

File Edit View Navigate Code Refactor Run Tools VCS Window Help Test [C:\Users\arvind\PycharmProjects\Test] - ...\test.py
Test
test.py
test
1: Project
AWS Explorer
Project
Test C:\Users\arvind\PycharmProjects\Test
.pytest_cache
venv
math_func.py
test.py
External Libraries
Scratches and Consoles
test.py
math_func.py

```python

def test_answer():
    assert math_func.func(3) == 4

@pytest.mark.number
def test_add():
    assert math_func.add(17, 3) == 20
    assert math_func.add(17) == 19
    assert math_func.add(5) == 7

@pytest.mark.number
def test_product():
    assert math_func.product(3, 3) == 9
    assert math_func.product(3) == 6
    assert math_func.product(6) == 13
```



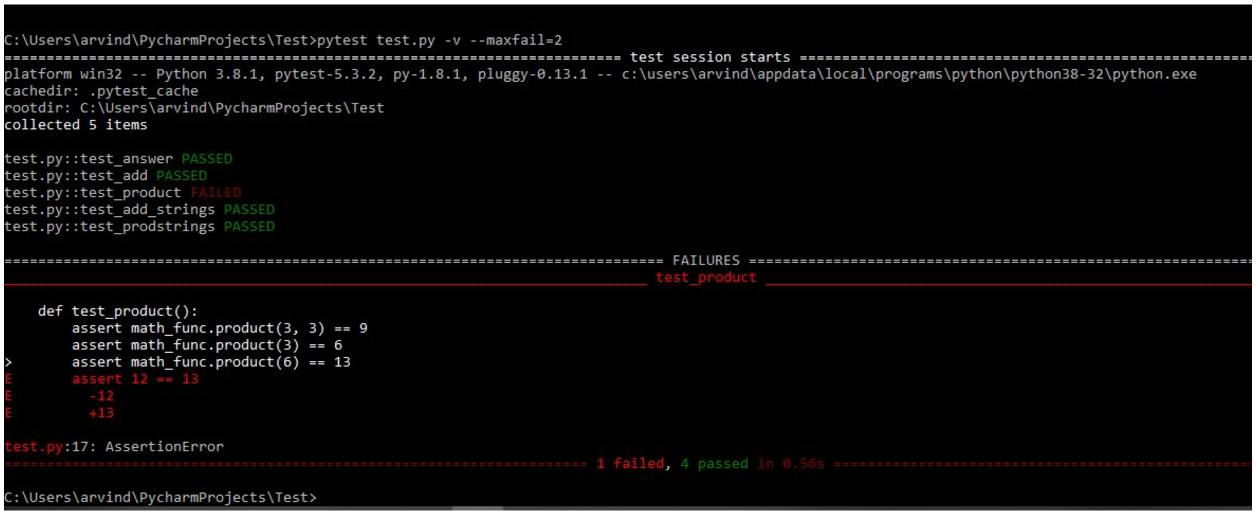
```
C:\Users\arvind\PycharmProjects\Test>pytest test.py -v -x
========================================================================= test session starts ==========================================================================
platform win32 -- Python 3.8.1, pytest-5.3.2, py-1.8.1, pluggy-0.13.1 -- c:\users\arvind\appdata\local\programs\python\python38-32\python.exe
cachedir: .pytest_cache
rootdir: C:\Users\arvind\PycharmProjects\Test
collected 5 items

test.py::test_answer PASSED
test.py::test_add PASSED
test.py::test_product FAILED

=============================================================================== FAILURES ===============================================================================
_____________________________________________________________________________ test_product _____________________________________________________________________________

    def test_product():
        assert math_func.product(3, 3) == 9
        assert math_func.product(3) == 6
>       assert math_func.product(6) == 13
E       assert 12 == 13
E         -12
E         +13

test.py:17: AssertionError
!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!! stopping after 1 failures !!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
===================================================================== 1 failed, 2 passed in 2.71s ======================================================================

C:\Users\arvind\PycharmProjects\Test>
```

#Execute test.py file with -tb=no option without the error option without stack trace
#the program will exit when it encounters first failure



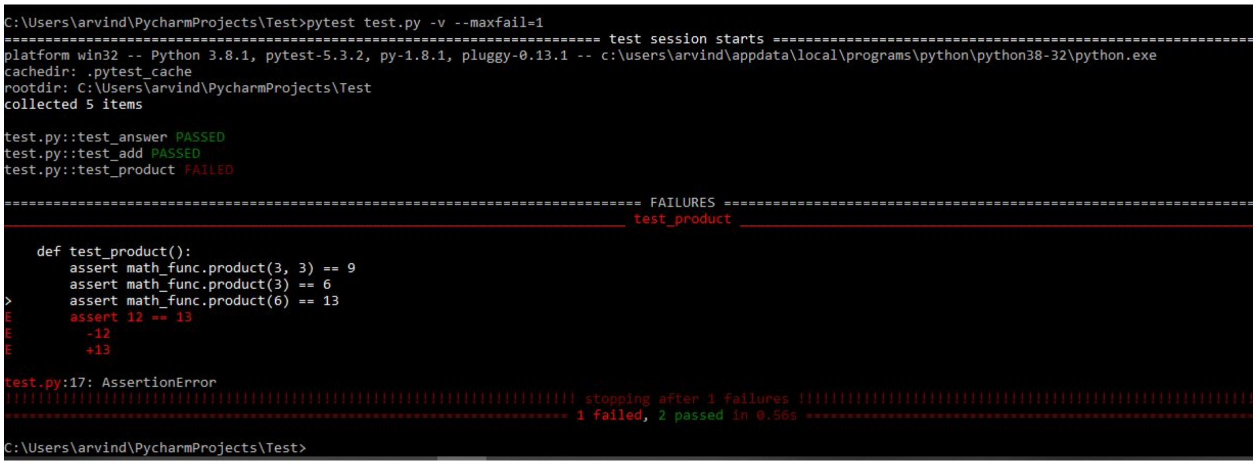
```
C:\Users\arvind\PycharmProjects\Test>pytest test.py -v -x --tb=no
========================================================================= test session starts ==========================================================================
platform win32 -- Python 3.8.1, pytest-5.3.2, py-1.8.1, pluggy-0.13.1 -- c:\users\arvind\appdata\local\programs\python\python38-32\python.exe
cachedir: .pytest_cache
rootdir: C:\Users\arvind\PycharmProjects\Test
collected 5 items

test.py::test_answer PASSED
test.py::test_add PASSED
test.py::test_product FAILED

!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!! stopping after 1 failures !!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!
===================================================================== 1 failed, 2 passed in 0.96s ======================================================================

C:\Users\arvind\PycharmProjects\Test>
```

#Execute test.py file with --maxfile=2 option
#all the four functions were executed because only maxfailof two functions were expected but only one program failed.



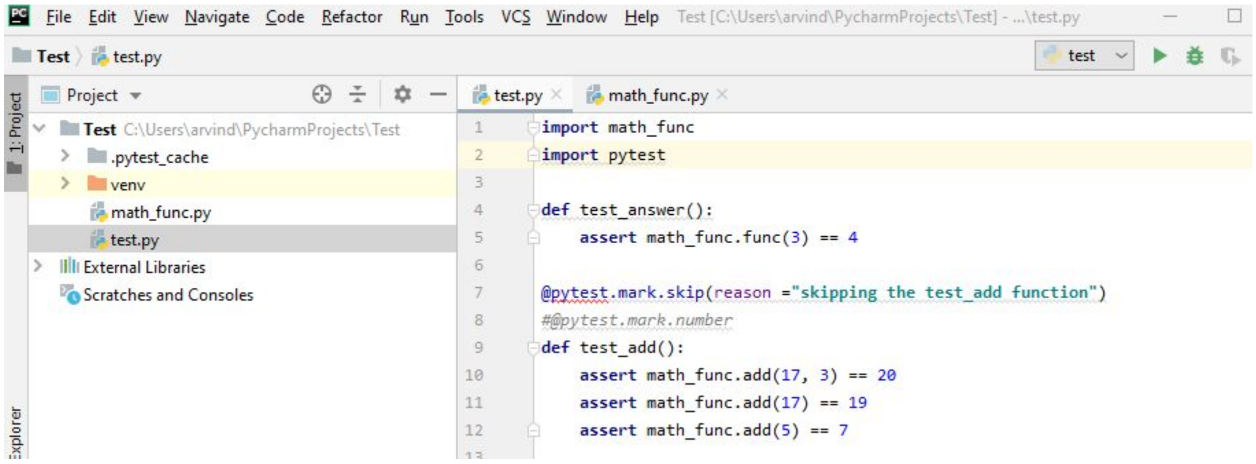
```
C:\Users\arvind\PycharmProjects\Test>pytest test.py -v --maxfail=2
============================= test session starts =============================
platform win32 -- Python 3.8.1, pytest-5.3.2, py-1.8.1, pluggy-0.13.1 -- c:\users\arvind\appdata\local\programs\python\python38-32\python.exe
cachedir: .pytest_cache
rootdir: C:\Users\arvind\PycharmProjects\Test
collected 5 items

test.py::test_answer PASSED
test.py::test_add PASSED
test.py::test_product FAILED
test.py::test_add_strings PASSED
test.py::test_prodstrings PASSED

================================== FAILURES ===================================
________________________________ test_product _________________________________

    def test_product():
        assert math_func.product(3, 3) == 9
        assert math_func.product(3) == 6
>       assert math_func.product(6) == 13
E       assert 12 == 13
E         -12
E         +13

test.py:17: AssertionError
========================= 1 failed, 4 passed in 0.56s =========================

C:\Users\arvind\PycharmProjects\Test>
```

#Execute test.py file with --maxfile=1 option
#the program exits after the first failure as maxfail=1

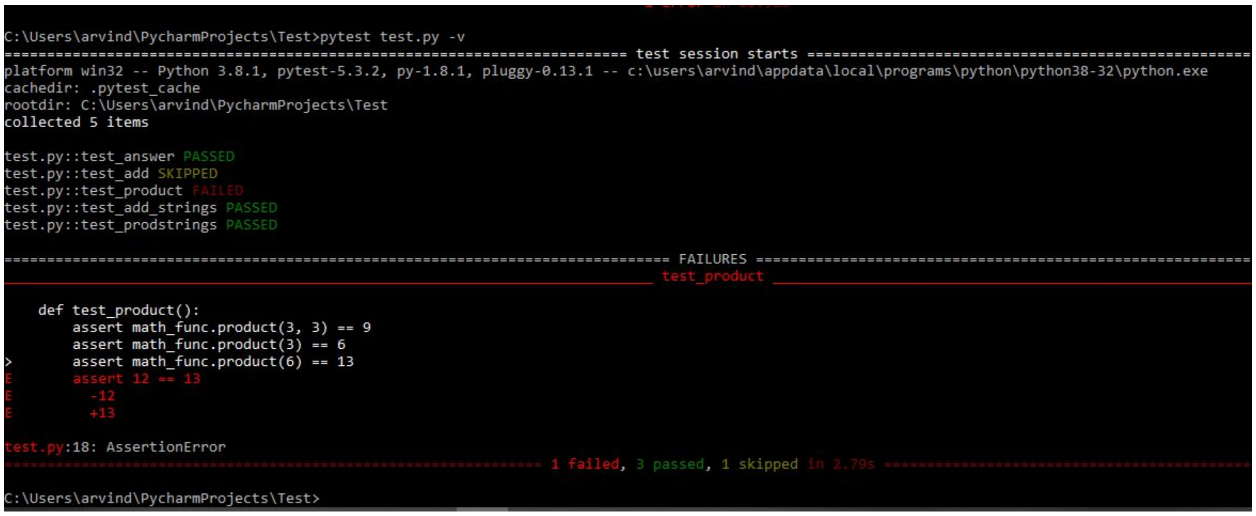


```
C:\Users\arvind\PycharmProjects\Test>pytest test.py -v --maxfail=1
============================= test session starts =============================
platform win32 -- Python 3.8.1, pytest-5.3.2, py-1.8.1, pluggy-0.13.1 -- c:\users\arvind\appdata\local\programs\python\python38-32\python.exe
cachedir: .pytest_cache
rootdir: C:\Users\arvind\PycharmProjects\Test
collected 5 items

test.py::test_answer PASSED
test.py::test_add PASSED
test.py::test_product FAILED

================================== FAILURES ===================================
________________________________ test_product _________________________________

    def test_product():
        assert math_func.product(3, 3) == 9
        assert math_func.product(3) == 6
>       assert math_func.product(6) == 13
E       assert 12 == 13
E         -12
E         +13

test.py:17: AssertionError
!!!!!!!!!!!!!!!!!!!!!!!!!!! stopping after 1 failures !!!!!!!!!!!!!!!!!!!!!!!!!!!
========================= 1 failed, 2 passed in 0.56s =========================

C:\Users\arvind\PycharmProjects\Test>
```

#Execute test.py file with skip option in order to skip a function in test.py file
#add the following code to the test file
@pytest.mark.skip(reason="skipping the test_add function")
pytest -v

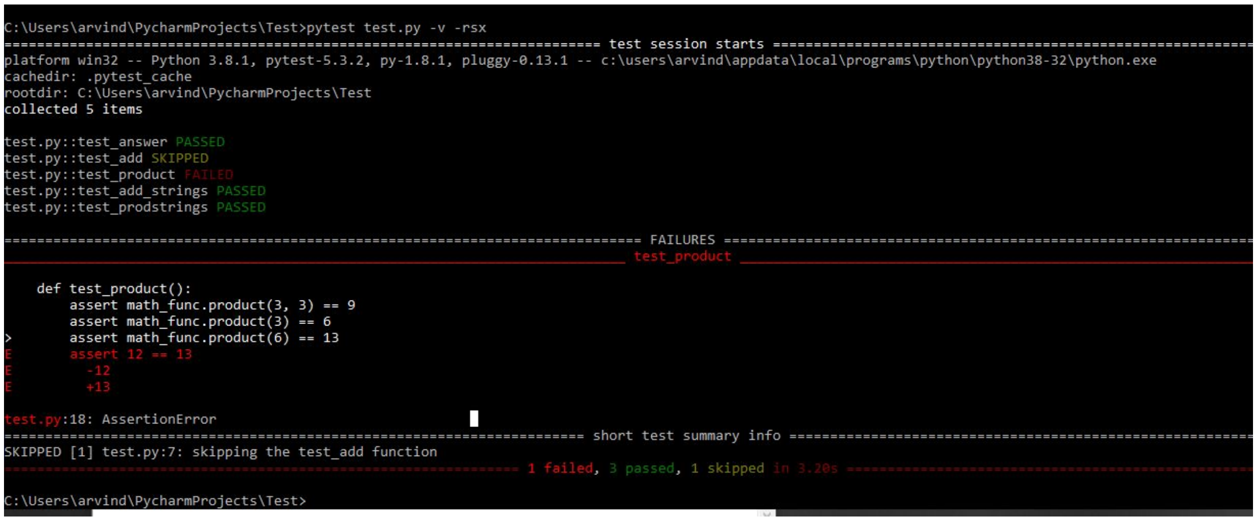

File Edit View Navigate Code Refactor Run Tools VCS Window Help Test [C:\Users\arvind\PycharmProjects\Test] - ...\test.py
Test test.py
Project
Test C:\Users\arvind\PycharmProjects\Test
.pytest_cache
venv
math_func.py
test.py
External Libraries
Scratches and Consoles
test.py
math_func.py

```python
import math_func
import pytest

def test_answer():
    assert math_func.func(3) == 4

@pytest.mark.skip(reason ="skipping the test_add function")
#@pytest.mark.number
def test_add():
    assert math_func.add(17, 3) == 20
    assert math_func.add(17) == 19
    assert math_func.add(5) == 7
```



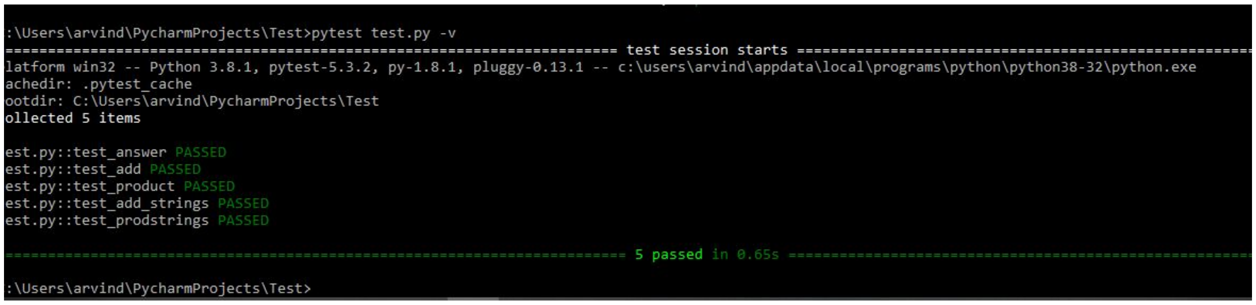
```
C:\Users\arvind\PycharmProjects\Test>pytest test.py -v
=========================================================================== test session starts ====================================================
platform win32 -- Python 3.8.1, pytest-5.3.2, py-1.8.1, pluggy-0.13.1 -- c:\users\arvind\appdata\local\programs\python\python38-32\python.exe
cachedir: .pytest_cache
rootdir: C:\Users\arvind\PycharmProjects\Test
collected 5 items

test.py::test_answer PASSED
test.py::test_add SKIPPED
test.py::test_product FAILED
test.py::test_add_strings PASSED
test.py::test_prodstrings PASSED

============================================================================== FAILURES ============================================================
____________________________________________________________________________ test_product __________________________________________________________

    def test_product():
        assert math_func.product(3, 3) == 9
        assert math_func.product(3) == 6
>       assert math_func.product(6) == 13
E       assert 12 == 13
E         -12
E         +13

test.py:18: AssertionError
================================================================ 1 failed, 3 passed, 1 skipped in 2.79s ============================================

C:\Users\arvind\PycharmProjects\Test>
```

#Execute test.py file with ‘rsx’ option in order to get the details of skipped function
#do not remove the code for skipped



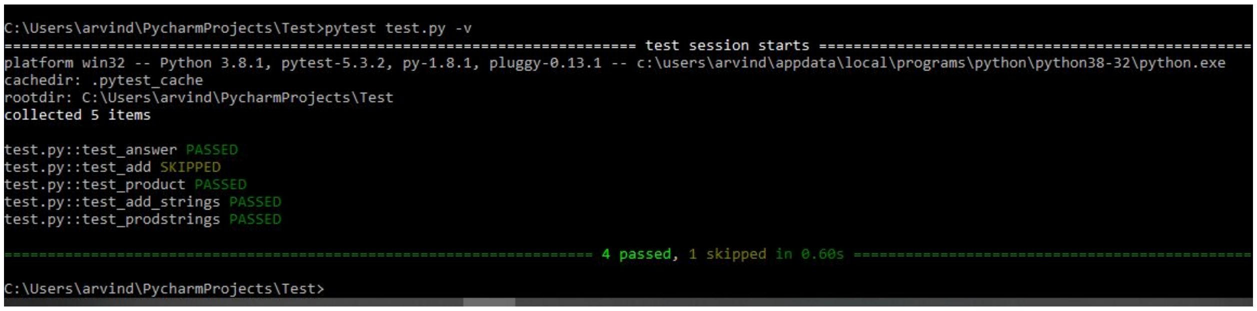
```
C:\Users\arvind\PycharmProjects\Test>pytest test.py -v -rsx
======================================================================= test session starts =======================================================================
platform win32 -- Python 3.8.1, pytest-5.3.2, py-1.8.1, pluggy-0.13.1 -- c:\users\arvind\appdata\local\programs\python\python38-32\python.exe
cachedir: .pytest_cache
rootdir: C:\Users\arvind\PycharmProjects\Test
collected 5 items

test.py::test_answer PASSED
test.py::test_add SKIPPED
test.py::test_product FAILED
test.py::test_add_strings PASSED
test.py::test_prodstrings PASSED

============================================================================ FAILURES ============================================================================
__________________________________________________________________________ test_product __________________________________________________________________________

    def test_product():
        assert math_func.product(3, 3) == 9
        assert math_func.product(3) == 6
>       assert math_func.product(6) == 13
E       assert 12 == 13
E         -12
E         +13

test.py:18: AssertionError
===================================================================== short test summary info =====================================================================
SKIPPED [1] test.py:7: skipping the test_add function
=============================================================== 1 failed, 3 passed, 1 skipped in 3.20s ===============================================================

C:\Users\arvind\PycharmProjects\Test>
```

#Execute test.py file with skipif opti < version will execute all functions



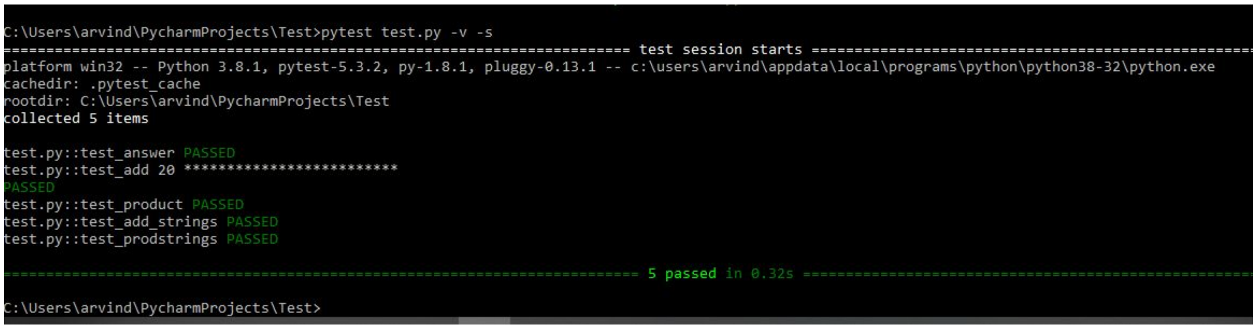
```
:\Users\arvind\PycharmProjects\Test>pytest test.py -v
======================================================================= test session starts =======================================================================
latform win32 -- Python 3.8.1, pytest-5.3.2, py-1.8.1, pluggy-0.13.1 -- c:\users\arvind\appdata\local\programs\python\python38-32\python.exe
achedir: .pytest_cache
ootdir: C:\Users\arvind\PycharmProjects\Test
ollected 5 items

est.py::test_answer PASSED
est.py::test_add PASSED
est.py::test_product PASSED
est.py::test_add_strings PASSED
est.py::test_prodstrings PASSED

========================================================================== 5 passed in 0.65s ==========================================================================

:\Users\arvind\PycharmProjects\Test>
```

#Execute test.py file with skipif option using > version symbol, will skip add function



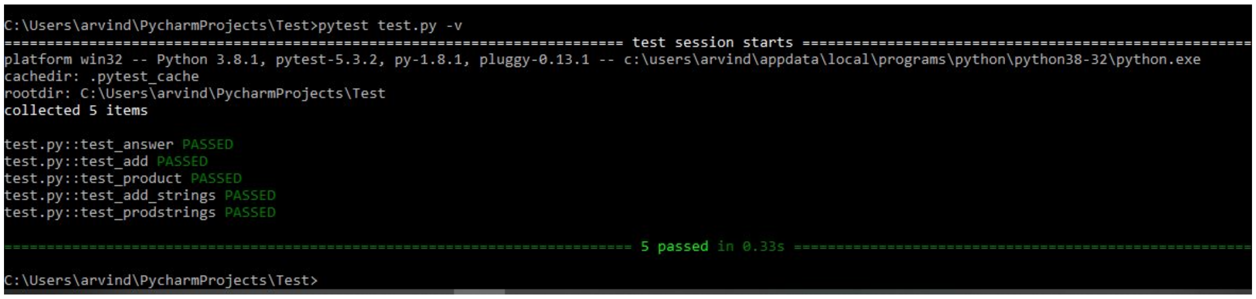
```
C:\Users\arvind\PycharmProjects\Test>pytest test.py -v
======================================================================= test session starts =======================================================================
platform win32 -- Python 3.8.1, pytest-5.3.2, py-1.8.1, pluggy-0.13.1 -- c:\users\arvind\appdata\local\programs\python\python38-32\python.exe
cachedir: .pytest_cache
rootdir: C:\Users\arvind\PycharmProjects\Test
collected 5 items

test.py::test_answer PASSED
test.py::test_add SKIPPED
test.py::test_product PASSED
test.py::test_add_strings PASSED
test.py::test_prodstrings PASSED

===================================================================== 4 passed, 1 skipped in 0.60s =====================================================================

C:\Users\arvind\PycharmProjects\Test>
```

#Execute test.py file using -s option to view the print statement in add function



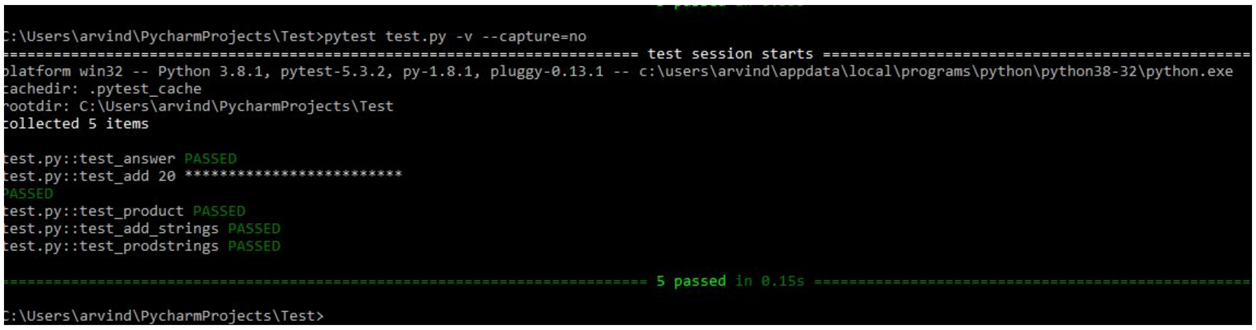
```
C:\Users\arvind\PycharmProjects\Test>pytest test.py -v -s
========================================================================= test session starts ====================================================
platform win32 -- Python 3.8.1, pytest-5.3.2, py-1.8.1, pluggy-0.13.1 -- c:\users\arvind\appdata\local\programs\python\python38-32\python.exe
cachedir: .pytest_cache
rootdir: C:\Users\arvind\PycharmProjects\Test
collected 5 items

test.py::test_answer PASSED
test.py::test_add 20 *************************
PASSED
test.py::test_product PASSED
test.py::test_add_strings PASSED
test.py::test_prodstrings PASSED

========================================================================== 5 passed in 0.32s ====================================================

C:\Users\arvind\PycharmProjects\Test>
```

Execute the previous example without the=s option the print statement will not be displayed



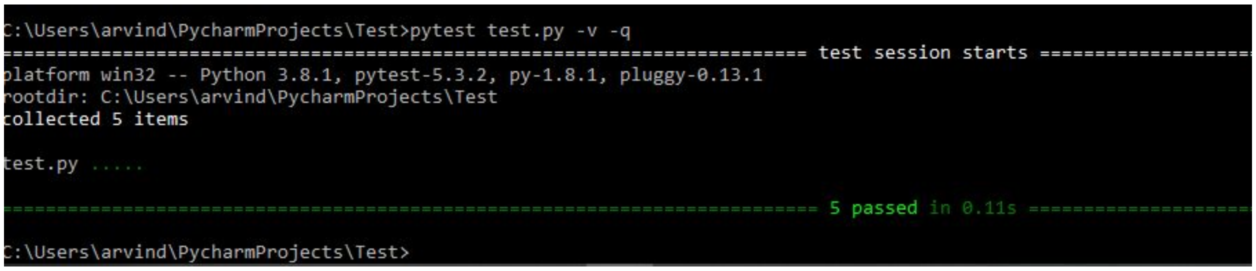
```
C:\Users\arvind\PycharmProjects\Test>pytest test.py -v
========================================================================= test session starts ====================================================
platform win32 -- Python 3.8.1, pytest-5.3.2, py-1.8.1, pluggy-0.13.1 -- c:\users\arvind\appdata\local\programs\python\python38-32\python.exe
cachedir: .pytest_cache
rootdir: C:\Users\arvind\PycharmProjects\Test
collected 5 items

test.py::test_answer PASSED
test.py::test_add PASSED
test.py::test_product PASSED
test.py::test_add_strings PASSED
test.py::test_prodstrings PASSED

========================================================================== 5 passed in 0.33s ====================================================

C:\Users\arvind\PycharmProjects\Test>
```

#Execute test.py file using --capture=no option instead of -s to view the print statement in add function



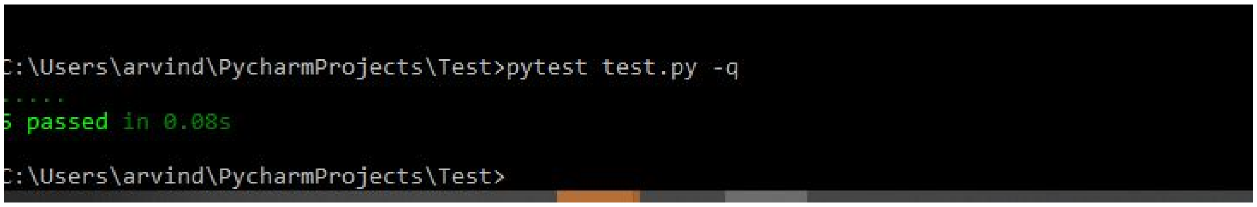
```
:\Users\arvind\PycharmProjects\Test>pytest test.py -v --capture=no
========================================================================= test session starts ==================================================
latform win32 -- Python 3.8.1, pytest-5.3.2, py-1.8.1, pluggy-0.13.1 -- c:\users\arvind\appdata\local\programs\python\python38-32\python.exe
achedir: .pytest_cache
ootdir: C:\Users\arvind\PycharmProjects\Test
ollected 5 items

est.py::test_answer PASSED
est.py::test_add 20 *************************
ASSED
est.py::test_product PASSED
est.py::test_add_strings PASSED
est.py::test_prodstrings PASSED

========================================================================== 5 passed in 0.15s ==================================================

:\Users\arvind\PycharmProjects\Test>
```

#Execute test.py file using -q option to display only the important information about the executed programs
pytest test.py -v -q



```
C:\Users\arvind\PycharmProjects\Test>pytest test.py -v -q
========================================================================= test session starts ====================
platform win32 -- Python 3.8.1, pytest-5.3.2, py-1.8.1, pluggy-0.13.1
rootdir: C:\Users\arvind\PycharmProjects\Test
collected 5 items

test.py .....

========================================================================== 5 passed in 0.11s ====================

C:\Users\arvind\PycharmProjects\Test>
```

#Execute test.py file using -q (quiet mode option to display only the programs that passed without the -v verbose option



```
C:\Users\arvind\PycharmProjects\Test>pytest test.py -q
.....
5 passed in 0.08s

C:\Users\arvind\PycharmProjects\Test>
```