

Experiment 1

Aim: Unit Testing with pytest: Write and execute unit tests for Python functions using the pytest framework, covering different test cases and assertions.

Installing Pytest:

```
D:\SE Lab\Test>pip install pytest
WARNING: Ignoring invalid distribution -tremlit (c:\users\rawat\appdata\local\programs\python\python310\lib\site-packages)
WARNING: Retrying (Retry(total=4, connect=None, read=None, redirect=None, status=None)) after connection broken by 'NewConnectionError('<pip._vendor.urllib3.connection.HTTPSConnection object at 0x000001F9D8805270>: Failed to establish a new connection: [Errno 11001] getaddrinfo failed')': /simple/pytest/
Collecting pytest
  Downloading pytest-8.3.2-py3-none-any.whl.metadata (7.5 kB)
Collecting iniconfig (from pytest)
  Downloading iniconfig-2.0.0-py3-none-any.whl.metadata (2.6 kB)
Requirement already satisfied: packaging in c:\users\rawat\appdata\local\programs\python\python310\lib\site-packages (from pytest) (23.1)
Collecting pluggy<2,>=1.5 (from pytest)
  Downloading pluggy-1.5.0-py3-none-any.whl.metadata (4.8 kB)
Requirement already satisfied: exceptiongroup>=1.0.0rc8 in c:\users\rawat\appdata\roaming\python\python310\site-packages (from pytest) (1.1.3)
Requirement already satisfied: tomli>=1 in c:\users\rawat\appdata\local\programs\python\python310\lib\site-packages (from pytest) (2.0.1)
Requirement already satisfied: colorama in c:\users\rawat\appdata\local\programs\python\python310\lib\site-packages (from pytest) (0.4.6)
Downloading pytest-8.3.2-py3-none-any.whl (341 kB)
----- 341.8/341.8 kB 69.1 kB/s eta 0:00:00
Downloading pluggy-1.5.0-py3-none-any.whl (20 kB)
Downloading iniconfig-2.0.0-py3-none-any.whl (5.9 kB)
WARNING: Ignoring invalid distribution -tremlit (c:\users\rawat\appdata\local\programs\python\python310\lib\site-packages)
Installing collected packages: pluggy, iniconfig, pytest
Successfully installed iniconfig-2.0.0 pluggy-1.5.0 pytest-8.3.2

[notice] A new release of pip is available: 24.1.2 -> 24.2
[notice] To update, run: python.exe -m pip install --upgrade pip
```

Fig 1: Installing Pytest in Command Prompt

Running Pytest:

```
D:\SE Lab\Test>set PYTHONPATH=D:\SE Lab\Source Code

D:\SE Lab\Test>pytest
===== test session starts =====
platform win32 -- Python 3.10.4, pytest-8.3.2, pluggy-1.5.0
rootdir: D:\SE Lab\Test
collected 2 items

test_calculator.py .. [100%]

===== 2 passed in 0.05s =====
```

Fig 2: Running Pytest Command Prompt