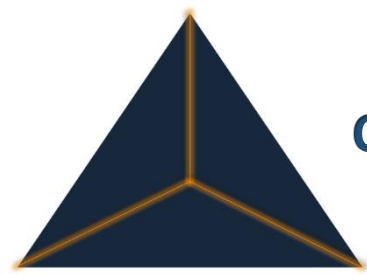


What is Pytest Framework?

- ▶ **Pytest is a popular Python testing framework that helps tester write and execute tests for their Python code.**
- ▶ **It provides a simple and concise syntax for writing test cases and makes it easy to organize, run, and analyze tests.**
- ▶ **Pytest is known for its powerful features and flexibility, making it a preferred choice for many Python developers.**

In simple words, Pytest is a tool that allows Tester to write and run tests to check if their Python code is working as expected. It provides a way to define test cases, run them automatically, and generate reports with the results. Pytest also includes many built-in features for writing complex test scenarios, such as parameterized tests, fixtures for setup and plugins for extending its functionality.

Pytest is a popular testing framework for Python that provides a concise and expressive way to write tests. Here are some key notes on Pytest:



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Python Framework Notes

1. Installation:

Pytest can be installed using pip, the Python package manager, by running the command **pip install pytest**.

2. Test Functions:

In Pytest, test functions are written using the **test_** prefix. For example, a test function for a function called **add** would be named **test_add**.

3. Assertions:

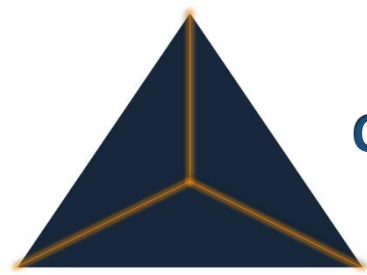
Pytest uses assertions to check if the expected outcome of a test matches the actual outcome. Common assertions include **assert** for equality, **assert not** for inequality, and **assert raises** for checking exceptions.

4. Test Discovery:

Pytest automatically discovers and runs all test functions in files with the naming convention **test_*.py** or ***_test.py** in the current directory and its subdirectories.

5. Test Execution:

Tests can be executed using the **pytest** command followed by the name of the file or directory containing the tests. Pytest also provides various options for customizing the test execution, such as running only specific tests or marking tests with tags.



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6. Fixtures:

Pytest allows the use of fixtures, which are functions that provide reusable test data or setup/teardown logic. Fixtures are defined using the **@pytest.fixture** decorator and can be used in test functions by including them as arguments.

Test Configuration: Pytest supports configuration through a **pytest.ini** file, where settings such as test directories, test file naming conventions, and plugins can be specified.

7. Plugins:

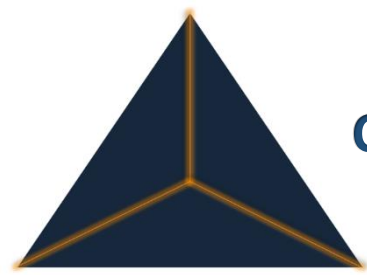
Pytest has a large ecosystem of plugins that extend its functionality, such as plugins for test coverage, test parallelization, and test reporting.

8. Test Parameterization:

Pytest allows tests to be parameterized, meaning that a single test function can be executed with different input values. Parameterization is done using the **@pytest.mark.parametrize** decorator.

9. Test Marking:

Pytest allows tests to be marked with tags, which can be used for filtering or running specific subsets of tests. Marking is done using the **@pytest.mark** decorator.



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10. Test Reporting:

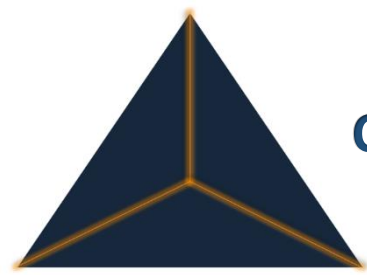
Pytest provides built-in test reporting in various formats, such as plain text, XML, JSON, and HTML. Custom reporting can also be implemented using plugins.

11. Integration with Other Tools:

Pytest can be easily integrated with other tools in the Python ecosystem, such as continuous integration (CI) systems like Jenkins or Travis CI, code review tools like GitHub, and test management tools like TestRail.

12. Extensibility:

1. Pytest is highly extensible and allows for custom plugins, custom test discovery, and custom test execution logic, making it a flexible framework for testing different types of applications.



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13. Community and Documentation:

Pytest has a large and active community of users and contributors, and extensive documentation is available on the official Pytest website (<https://docs.pytest.org/en/latest/>). The Pytest community also provides support through forums, mailing lists, and social media platforms.

Overall, Pytest is a powerful and flexible testing framework that provides a modern and intuitive way to write and execute tests in Python. Its rich feature set, extensive documentation, and active community make it a popular choice for testing Python applications. So, it is highly recommended for Python developers to learn and use Pytest for efficient and effective testing of their code.