Sure! Here's a **short and practical crash course on** pytest — enough to get you productive quickly.

## ✅ What is pytest?

pytest is a Python testing framework that's:

* Simple to write
* Powerful for real-world projects
* Widely used in open-source and production code

## 🛠️ 1. ****Installation****

bash

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pip install pytest

## 📄 2. ****Write a test****

Create a file like test\_math.py:

python

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def add(x, y):

return x + y

def test\_add():

assert add(2, 3) == 5

✅ Tests:

* Are functions that start with test\_
* Use assert — no need for unittest.TestCase

## ▶️ 3. ****Run the tests****

In the terminal:

bash

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pytest

It finds all files named test\_\*.py or \*\_test.py, and runs all test\_ functions.

## 🔄 4. ****Parametrize tests****

Test many inputs/outputs easily:

python

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import pytest

@pytest.mark.parametrize("x, y, expected", [

(1, 2, 3),

(3, 5, 8),

(10, -2, 8),

])

def test\_add(x, y, expected):

assert x + y == expected

## 🧪 5. ****Fixtures for setup****

python

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import pytest

@pytest.fixture

def sample\_list():

return [1, 2, 3]

def test\_sum(sample\_list):

assert sum(sample\_list) == 6

Fixtures are reusable setups for your tests.

## ⚠️ 6. ****Testing exceptions****

python

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def divide(x, y):

return x / y

def test\_zero\_division():

with pytest.raises(ZeroDivisionError):

divide(1, 0)

## 📁 7. ****Directory layout****

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my\_project/

├── src/

│ └── my\_code.py

└── tests/

└── test\_my\_code.py

Make sure to include \_\_init\_\_.py or use PYTHONPATH to resolve imports.

## 🔧 8. ****Useful commands****

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pytest -v # Verbose output

pytest tests/test\_utils.py # Run specific file

pytest -k "add or sum" # Run tests matching keywords

pytest -x # Stop after first failure

## 🧰 9. ****Advanced tools****

* coverage → See what code your tests cover:

bash

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pip install pytest-cov

pytest --cov=src/

* tox / nox → Test across environments

## 🚀 10. ****When you're ready for more****

* pytest documentation
* Plugins: pytest-mock, pytest-django, pytest-xdist, etc.

Would you like a 5-min project to practice, or a cheat sheet PDF for later use?