Testing Flask Applications

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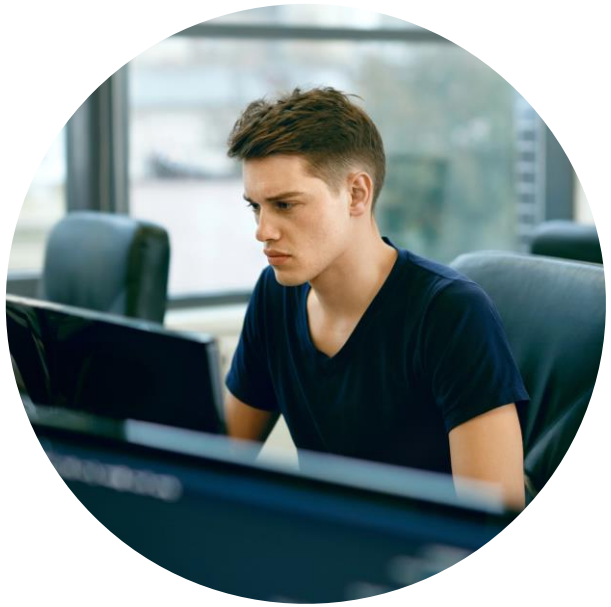
MACHINE LEARNING ENGINEER

“Something that is untested is broken”

Untested Code



Hard to Maintai n

Paranoid Develope r

Overview

Testing

What it is?

Why testing is important?

Setup testing skeleton for Flask app

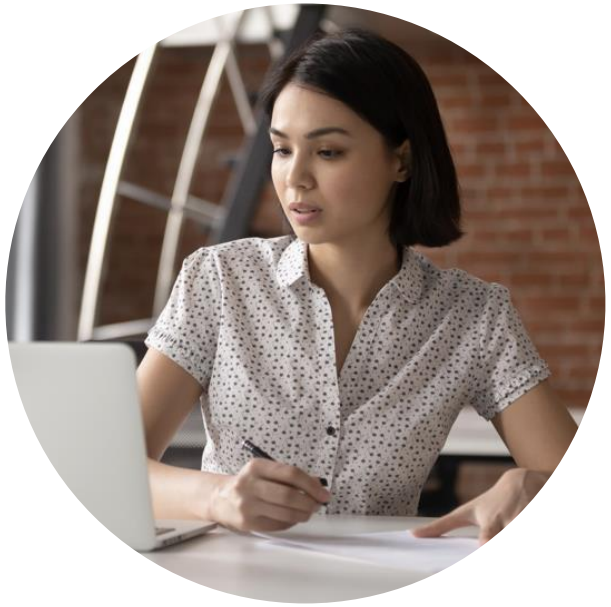
Implement Unit testing for Bookli

Testing in the Context of Flask

What Is Testing?

Software testing is a process of executing a program or application with the intent of finding the software bugs.

Process of **validating** and **verifying** that a software works as expected and can be implemented with the same characteristic.



Why Testing?

Indicate Solid Software practices

Core Value for Developers

Without it maintenance becomes difficult

No-one want to make changes to avoid breakage

Ensure the code quality

Broken Windows Theory

Visible signs of violence encourages more crime

Long functions get harder to maintain

Requires more attention for error-free execution

Tests are the medicine

Types of Testing

Unit Testing

Very Low level, testing individual components and cheap to automate

Integration Testing

Verify that modules/services work together but more expensive to run

Flask expose Werkzeug test
Client to implement testing

Testing Frameworks for Flask

Unittest

Built-in unit test framework based on xUnit framework

Pytest

Third-party module to write unit tests for python applications

Demo

Setup testing for Flask

Install pytest module

Setup directory for testing

Write basic unit tests for sample app

Implement Unit Testing for BookLi

Pytest Fixtures

Functions that have re-usable bits of code

Allow you greater flexibility than Setup/Teardown

Have different scopes like function, class, module or session

It executes prior to the test cases

We'll implement temporary database and test_client

Test_request_context

It's an alternative to test_client

A test_request_context() method

Used in combination with "with" statement

You can access the request, g and session objects

Test_request_context.py

```
import flask

app = flask.Flask(__name__)

with app.test_request_context('/?name=Abdul'):
    assert flask.request.path == '/'
    assert flask.request.args['name'] == 'Abdul'
```

Demo

Let’s setup testing for our BookLi application!