

E-COMMERCE UI AUTOMATION (NOPCOMMERCE)

Capstone Project



Presented By Group 7

INTRODUCTION

A team of software tester with an academic foundation in Computer Science Engineering have designed a UI , API and manual automation framework which does the following:

- Test case design and execution
- API testing using Postman
- UI automation using Selenium with Python
- Framework development using Pytest and Robot Framework

Our Team

PYTEST

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Key Takeaways / Learnings from the Program

- Gained knowledge of manual and automation testing by designing and executing real-time test cases.
- Developed end-to-end automation using Selenium with Python (Pytest/Robot Framework).
- Built and executed automation frameworks while improving test reliability and reusability.
- Enhanced debugging, analytical, and scripting skills to ensure application quality.
- Strengthened communication and teamwork significantly.

Problem Statement

- The nopCommerce demo website is an e-commerce web application where users can register, log in, search products, add items to the cart and place orders.
- Manual testing of these workflows is repetitive, time-consuming and prone to errors, especially with frequent application updates.
- Automation Solution Used:
 - Selenium WebDriver with Python
 - Pytest Framework
 - Robot Framework

Project Overview

	Project	Type	Tools & Technologies	Outcome
1	Python Selenium Automation	Web Automation	Python, Selenium, Pytest, ChromeDriver	Automated Login, search, and checkout workflows
2	Robot Framework	Keyword-Driven Testing	Robot Framework, Python, Selenium Library, Requests Library	Built reusable keyword-driven test suites for web & API testing
3	Pytest Automation Framework	Web Testing Framework	Pythan, Pytest, Selenium	Built reusable scripts with automated HTML reporting
4	Rest API Automation	Manual Testing	Flask, Pytest, Postman, Robot Framework	Built and tested a complete food ordering REST API system by using Flask

Objective

To automate end-to-end testing of an e-commerce web application using Selenium with both Pytest and Robot Framework to build scalable and reusable automation frameworks.

Key Activities

- Designed automation using Pytest and Robot Framework
- Automated end-to-end e-commerce scenarios (Registration, Login, Search, Cart, Logout)
- Implemented Page Object Model (POM) with reusable components
- Performed data-driven testing with external data
- Used fixtures, parameterization, and assertions for reliable testing.
- Captured screenshots for failed test cases and generated HTML reports
- Enabled command-line execution for CLI-ready automation

Tools & Technologies

Python, Selenium WebDriver, Pytest, Robot Framework, SeleniumLibrary,
HTML Reports

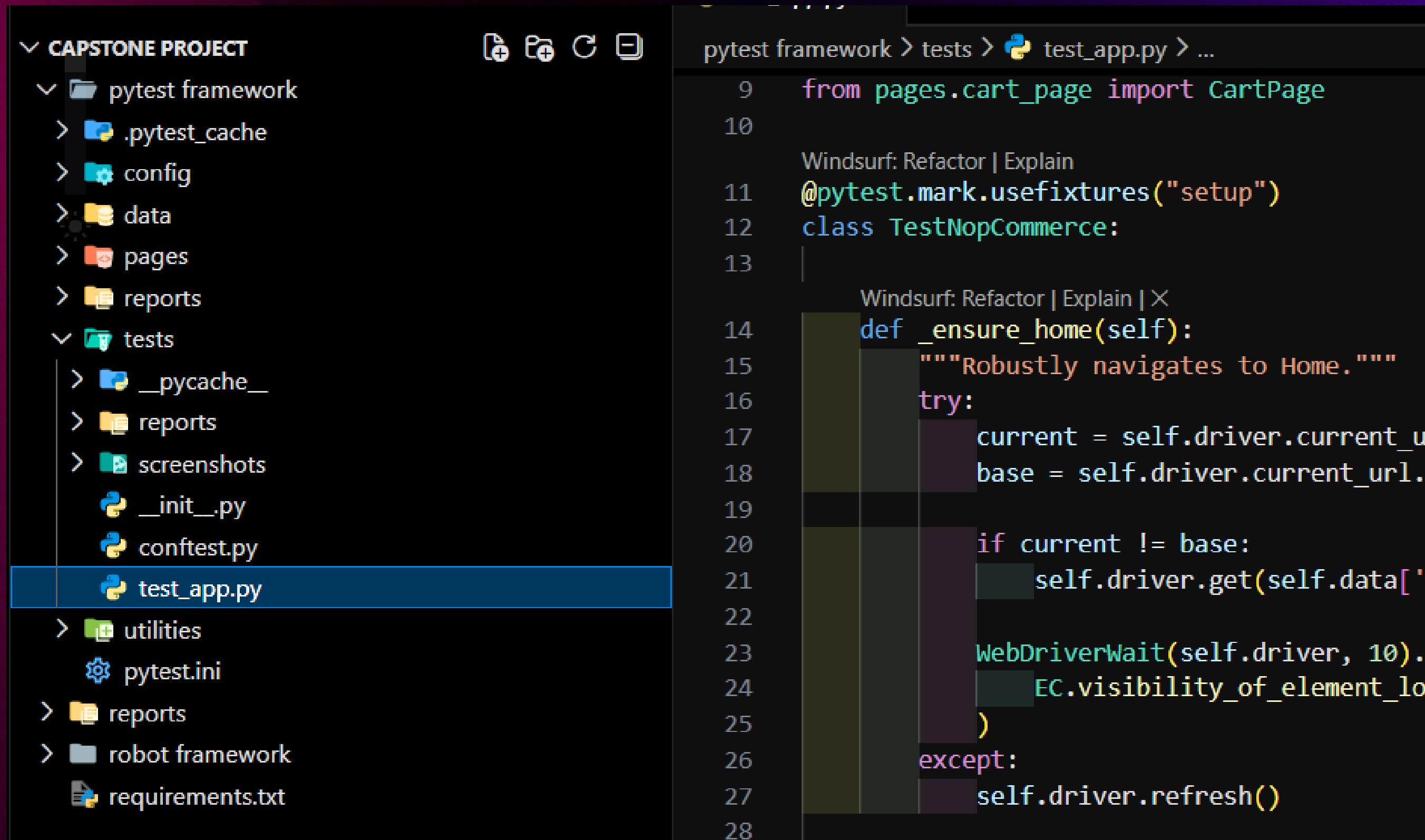
Application Under Test:

<https://demo.nopcommerce.com/>
NopCommerce Store

Outcome

- Complete automation of the entire web-app without human intervention
- Built two industry-standard automation frameworks
- Generated structured HTML reports with screenshot evidence
- Improved test efficiency, maintainability, and reliability

Pytest framework: file structure



The image shows a code editor interface with two panes. The left pane displays the file structure of a 'CAPSTONE PROJECT'. The 'tests' directory contains several files: __init__.py, conftest.py, and test_app.py, which is currently selected and highlighted with a blue background. Other files in the project include .pytest_cache, config, data, pages, reports, and utilities. The right pane shows the content of test_app.py. The code defines a class TestNopCommerce with a method _ensure_home. This method uses a try block to navigate to the home page and check if the current URL matches the base URL. If they don't match, it performs a refresh operation.

```
from pages.cart_page import CartPage
@pytest.mark.usefixtures("setup")
class TestNopCommerce:
    def _ensure_home(self):
        """Robustly navigates to Home."""
        try:
            current = self.driver.current_url
            base = self.driver.current_url.
            if current != base:
                self.driver.get(self.data['base_url'])
                WebDriverWait(self.driver, 10).
                    EC.visibility_of_element_located
            )
        except:
            self.driver.refresh()
```

Project 1: Pytest Framework

Objective :

Performed UI automation testing on an e-commerce web application using Selenium with Python and Pytest to design, execute, and report automated test cases following industry-standard practices

Key Objective :

- Built a Page Object Model (POM) based framework with reusable page classes and modular test structure.
- Automated end-to-end test scenarios covering login, product search, add to cart, cart update, and logout.
- Configured test data externally using CSV files and managed environment settings via config.ini
- Generated HTML test execution reports using pytest-html with pass / fail details

Pytest Execution Workflow



Test Execution Console

```
Wipro_pre_Skilling
Edit Selection View Go Run ...
← → ⌂ 8
U test_05_logout_session.py test_04_update_cart.py test_app.py U X test_03_add_to_cart.py test_02_product_search.py capstone_project_nopcommerce\...
capstone Project > Capstone Project > pytest framework > tests > test_app.py > TestNopCommerce > _ensure_home
1 import pytest
2 import time
3 from selenium.webdriver.common import By
4 from selenium.webdriver.support.ui import WebDriverWait
5 from selenium.webdriver.support import expected_conditions as EC
6 from selenium.common.exceptions import TimeoutException, NoSuchElementException, StaleElementReferenceException
7 from pages.home_page import HomePage
8 from pages.login_page import LoginPage
9 from pages.cart_page import CartPage
10
11 Windsurf: Refactor | Explain
12 @pytest.mark.usefixtures("setup")
13 class TestNopCommerce:
14     Windsurf: Refactor | Explain | X
15     def _ensure_home(self):
16         """Robustly navigates to Home."""
17         try:
18             current = self.driver.current_url.split('?')[0].rstrip('/')
19
20             PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL TEST RESULTS PORTS
21
22 ===== test session starts =====
23 :cachedir: .pytest_cache
24 metadata: {'Python': '3.12.6', 'Platform': 'Windows-10-10.0.19045-SP0', 'Packages': {'pytest': '9.0.2', 'pluggy': '1.6.0'}, 'Plugins': {'html': '4.2.0', 'metadata': '3.1.1', 'xdist': '3.8.0'}}
25 rootdir: C:\Users\aditya\Desktop\Wipro_pre_Skilling\Capstone Project\Capstone Project\pytest framework
26 configfile: pytest.ini
27 plugins: html-4.2.0, metadata-3.1.1, xdist-3.8.0
28 collected 50 items
29
30 tests/test_app.py::TestNopCommerce::test_01_nav_reg[C:\Users\aditya\Desktop\Wipro_pre_Skilling\Capstone Project\Capstone Project\pytest framework\data\test_data.csv] PASSED [ 2%]
31 tests/test_app.py::TestNopCommerce::test_02_reg_user[C:\Users\aditya\Desktop\Wipro_pre_Skilling\Capstone Project\Capstone Project\pytest framework\data\test_data.csv] PASSED [ 4%]
32 tests/test_app.py::TestNopCommerce::test_03_search_1[C:\Users\aditya\Desktop\Wipro_pre_Skilling\Capstone Project\Capstone Project\pytest framework\data\test_data.csv] FAILED [ 6%]
33 tests/test_app.py::TestNopCommerce::test_04_search_2[C:\Users\aditya\Desktop\Wipro_pre_Skilling\Capstone Project\Capstone Project\pytest framework\data\test_data.csv] PASSED [ 8%]
34 tests/test_app.py::TestNopCommerce::test_05_search_3[C:\Users\aditya\Desktop\Wipro_pre_Skilling\Capstone Project\Capstone Project\pytest framework\data\test_data.csv] PASSED [ 10%]
```

Web Browser Output

report.html

Report generated on 20-Feb-2026 at 11:55:38 by [pytest-html v4.1.1](#)

Environment

Python	3.12.10
Platform	Windows-11-10.0.26100-SP0
Packages	<ul style="list-style-type: none">• pytest: 8.1.1• pluggy: 1.6.0
Plugins	<ul style="list-style-type: none">• html: 4.1.1• metadata: 3.1.1

Summary

50 tests took 00:13:21.

(Un)check the boxes to filter the results.

0 Failed, 50 Passed, 0 Skipped, 0 Expected failures, 0 Unexpected passes, 0 Errors, 0 Reruns

[Show all details](#) / [Hide all details](#)

Result 	Test	Duration	Links
Passed	tests/test_app.py::TestNopCommerce::test_01_nav_reg[C:\Users\Lenovo\PycharmProjects\Wipro-Training-2026\Capstone Project\pytest framework\data\test_data.csv]	00:00:17	
Passed	tests/test_app.py::TestNopCommerce::test_02_reg_user[C:\Users\Lenovo\PycharmProjects\Wipro-Training-2026\Capstone Project\pytest framework\data\test_data.csv]	00:00:19	
Passed	tests/test_app.py::TestNopCommerce::test_03_search_1[C:\Users\Lenovo\PycharmProjects\Wipro-Training-2026\Capstone Project\pytest framework\data\test_data.csv]	00:00:10	
Passed	tests/test_app.py::TestNopCommerce::test_04_search_2[C:\Users\Lenovo\PycharmProjects\Wipro-Training-2026\Capstone Project\pytest framework\data\test_data.csv]	00:00:10	
Passed	tests/test_app.py::TestNopCommerce::test_05_search_3[C:\Users\Lenovo\PycharmProjects\Wipro-Training-2026\Capstone Project\pytest framework\data\test_data.csv]	00:00:12	
Passed	tests/test_app.py::TestNopCommerce::test_06_verify_apple[C:\Users\Lenovo\PycharmProjects\Wipro-Training-2026\Capstone Project\pytest framework\data\test_data.csv]	00:00:44	
Passed	tests/test_app.py::TestNopCommerce::test_07_nav_computers[C:\Users\Lenovo\PycharmProjects\Wipro-Training-2026\Capstone Project\pytest framework\data\test_data.csv]	00:00:32	

Page Object Model

The Page Object Model (POM) is a test automation design pattern that represents each webpage as a separate class, storing UI elements and actions in one place. It separates test logic from locators, making tests reusable, readable, and easy to maintain when the UI changes.

PAGE OBJECT MODEL (POM)

The design pattern that separates page representation from test logic



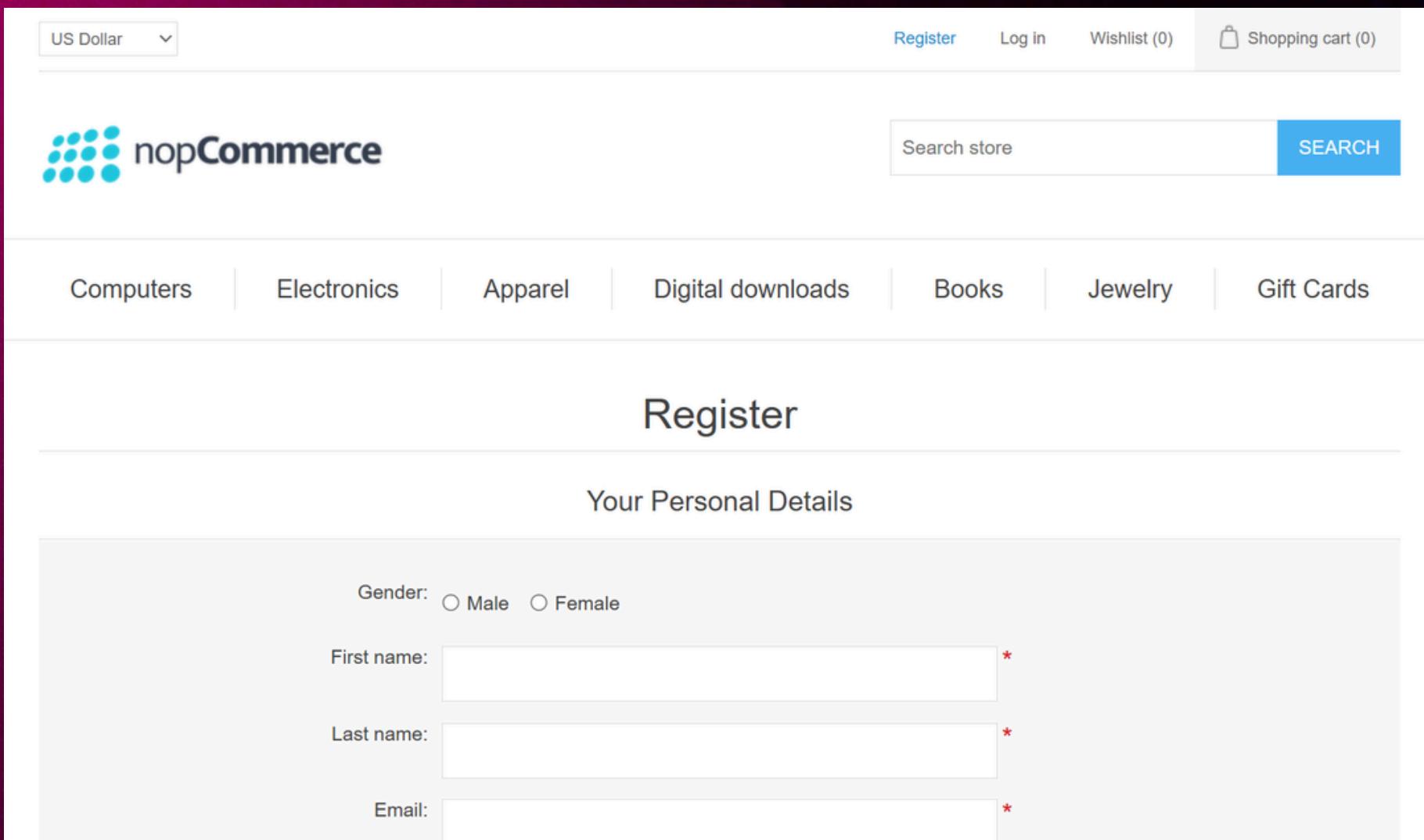
1 Separation of Concerns Test logic stays in test files; page interactions encapsulated in page classes

2 Reusability Same page methods reused across multiple tests without code duplication

3 Maintainability Locator changes made in one place — the page class — rather than in every test

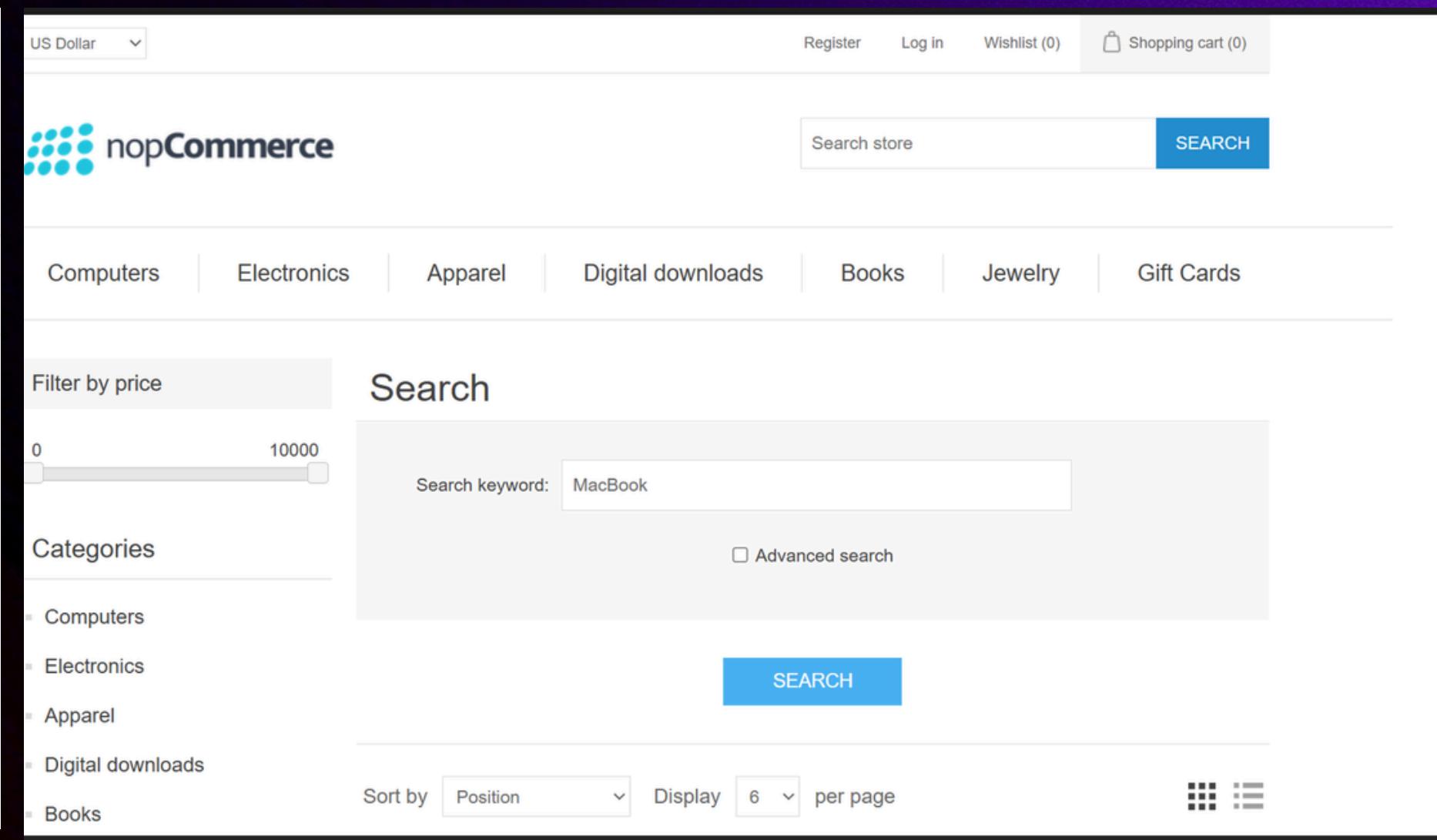
4 Readability Tests read like user stories: `login_page.enter_credentials()` is self-documenting

User Registration



The screenshot shows the User Registration page of a nopCommerce website. At the top, there is a navigation bar with links for "Register", "Log in", "Wishlist (0)", and "Shopping cart (0)". Below the navigation is the nopCommerce logo and a search bar labeled "Search store" with a blue "SEARCH" button. A horizontal menu bar includes categories: Computers, Electronics, Apparel, Digital downloads, Books, Jewelry, and Gift Cards. The main content area is titled "Register" and contains a form for "Your Personal Details". The form fields include "Gender" (radio buttons for Male and Female), "First name" (text input field with a red asterisk indicating required), "Last name" (text input field with a red asterisk), and "Email" (text input field with a red asterisk). There is also a note below the email field stating "Please enter a valid email address".

Search Product



The screenshot shows the Search Product page of a nopCommerce website. At the top, there is a navigation bar with links for "Register", "Log in", "Wishlist (0)", and "Shopping cart (0)". Below the navigation is the nopCommerce logo and a search bar labeled "Search store" with a blue "SEARCH" button. A horizontal menu bar includes categories: Computers, Electronics, Apparel, Digital downloads, Books, Jewelry, and Gift Cards. On the left side, there is a "Filter by price" section with a slider from 0 to 10000. Below it is a "Categories" section listing: Computers, Electronics, Apparel, Digital downloads, and Books. On the right side, there is a "Search" section with a "Search keyword" input field containing "MacBook", a "Advanced search" checkbox, and a blue "SEARCH" button. At the bottom, there are options to "Sort by Position" and "Display 6 per page", along with a grid and list view switcher.

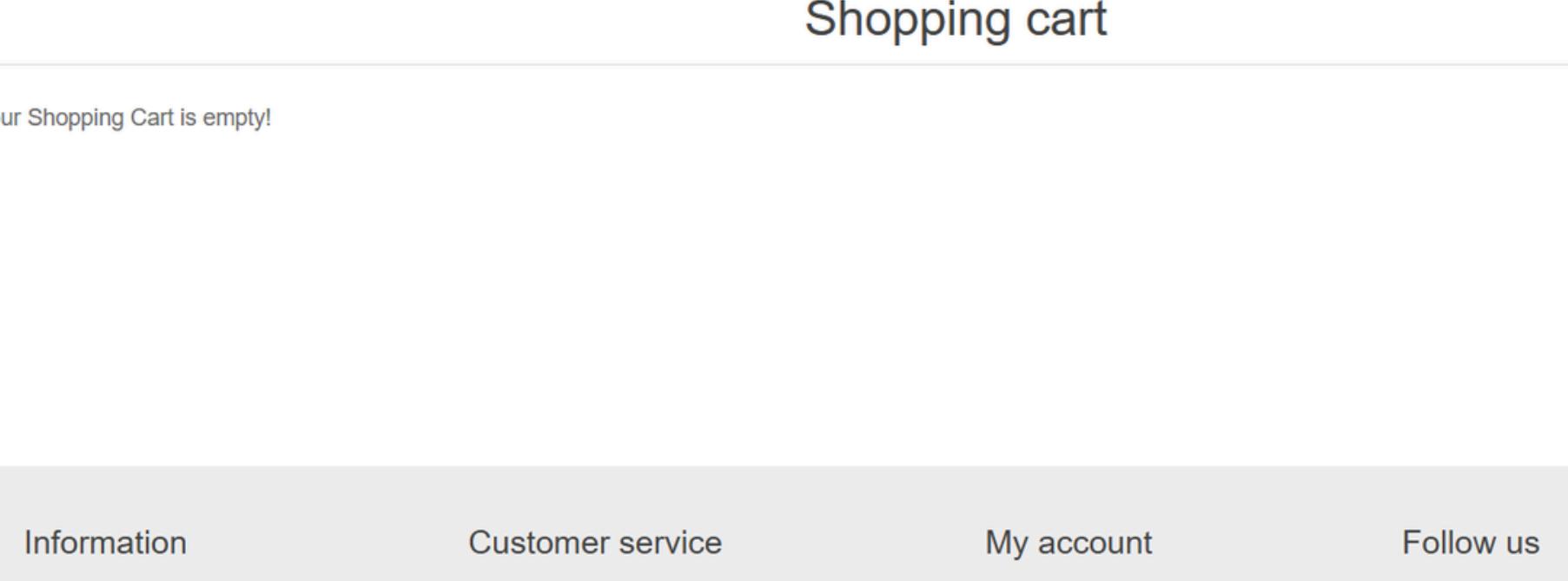
Registers a user with valid/invalid inputs and verifies successful login, then searches for a product and validates its search results and product details.

Add to Cart



A screenshot of a nopCommerce website showing a product page for an Apple MacBook Pro. The page includes a large image of the laptop, its specifications (Retina display, force-sensing trackpad, quad-core Intel processors), and a price of \$1,800.00. A blue 'ADD TO CART' button is visible at the bottom left.

Remove Items



A screenshot of a nopCommerce website showing an empty shopping cart. The page displays a message stating 'Your Shopping Cart is empty!'.

Navigates to a product page, adds the item to the cart and verifies its name, quantity, and price, then updates the quantity, checks the total price, removes the item, and confirms the cart is empty.

User Logout & Session Validation



Search store

SEARCH

Computers

Electronics

Apparel

Digital downloads

Books

Jewelry

Gift Cards



iPhone 16

An upgraded A18 chip that supports Apple Intelligence, a dual-lens camera system that takes great photos, a Camera Control button for quick camera access, and a customizable Action button.

[Learn More](#)

CLICKS LOGOUT FROM THE ACCOUNT MENU AND VERIFIES THE SESSION IS TERMINATED BY ASSERTING THE USER IS REDIRECTED TO THE HOMEPAGE WITHOUT ANY AUTHENTICATED ACCESS.

Project 2: Robot Framework

Objective:

Performed end-to-end UI automation testing on an e-commerce web application using Selenium with Robot Framework, implementing a keyword-driven and reusable test architecture.

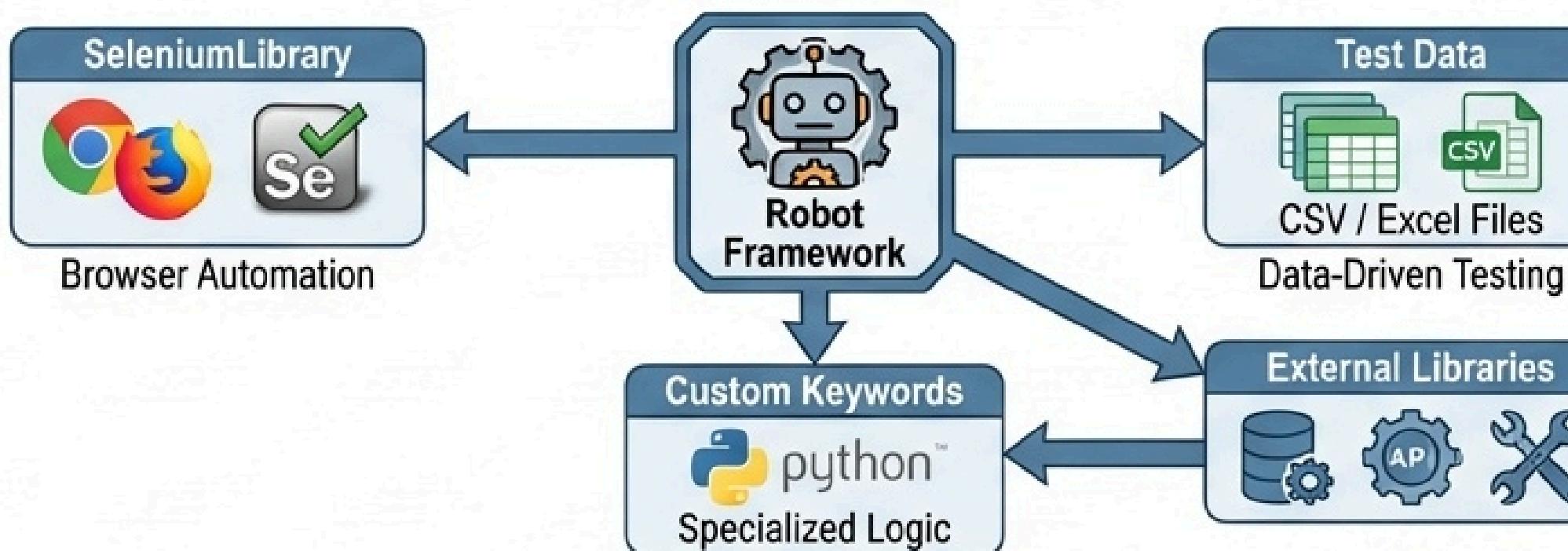
Key Objective:

- Implement keyword-driven automation
- Automate end-to-end e-commerce scenarios
- Use SeleniumLibrary for UI interaction
- Enable data-driven testing
- Generate reports and capture failure screenshots
- Support command-line execution for CLI

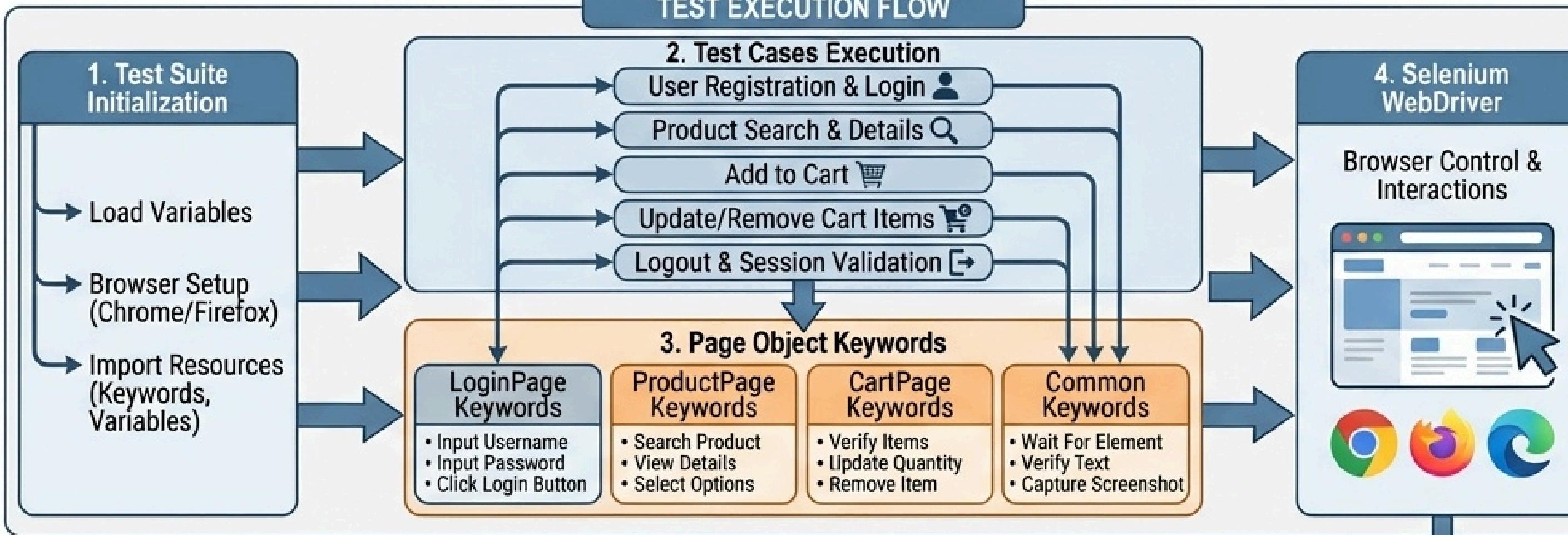


Robot Framework Workflow Diagram for E-Commerce UI Automation

FRAMEWORK ARCHITECTURE



TEST EXECUTION FLOW



TEST REPORTS & LOGS

HTML Reports

XML Output

Log Files

CI/CD Integration
(Jenkins/GitLab)

Test Execution Console

```
<> robot framework\report.html    R shop.robot x  Python run_all_robot.py    <> tests\report.html    Python test_app.py    <> reports\report.html    test_data_user    :  
1  *** Settings ***  
2  Documentation    Runs 25 Test Cases in a single browser session per CSV file.  
3  Resource          ..../resources/common.resource  
4  Library           BuiltIn  
5  
6  Suite Setup       Setup Everything    ${CSV_PATH}  
7  Suite Teardown    Finalize Execution  
8  Test Teardown     Log Test Result  
9  
10 *** Variables ***  
11 ${CSV_PATH}        ${CURDIR}/../../pytest framework/data/test_data.csv  
12  
13 ▷ *** Test Cases ***  
14 ▷ TC_01 Register Navigation  
15   Ensure Home
```

Terminal Local x Command Prompt x

```
robot is not recognized as an internal or external command,  
operable program or batch file.
```

```
C:\Users\User\Downloads\Capstone Project\Capstone Project\robot framework\tests>python -m robot shop.robot  
=====  
Shop :: Runs 25 Test Cases in a single browser session per CSV file.  
=====  
TC_01 Register Navigation | PASS |  
-  
TC_02 Register User | PASS |
```

Web Browser Output

Shop Report

Generated
20260220 14:57:21 UTC+05:30
2 hours 28 minutes ago

Summary

Status:	1 test failed
Documentation:	Runs 25 Test Cases in a single browser session per CSV file.
Start Time:	20260220 14:55:20.957
End Time:	20260220 14:57:20.990
Elapsed Time:	00:02:00.033
Log File:	log.html

Statistics

Total Statistics		Total	Pass	Fail	Skip	Elapsed	Pass / Fail / Skip
All Tests		25	24	1	0	00:01:51	<div style="width: 96%; background-color: #28a745; height: 10px;"></div>
Statistics by Tag							
No Tags							<div style="width: 100%; background-color: #28a745; height: 10px;"></div>
Statistics by Suite		Total	Pass	Fail	Skip	Elapsed	Pass / Fail / Skip
Shop		25	24	1	0	00:02:00	<div style="width: 96%; background-color: #28a745; height: 10px;"></div>

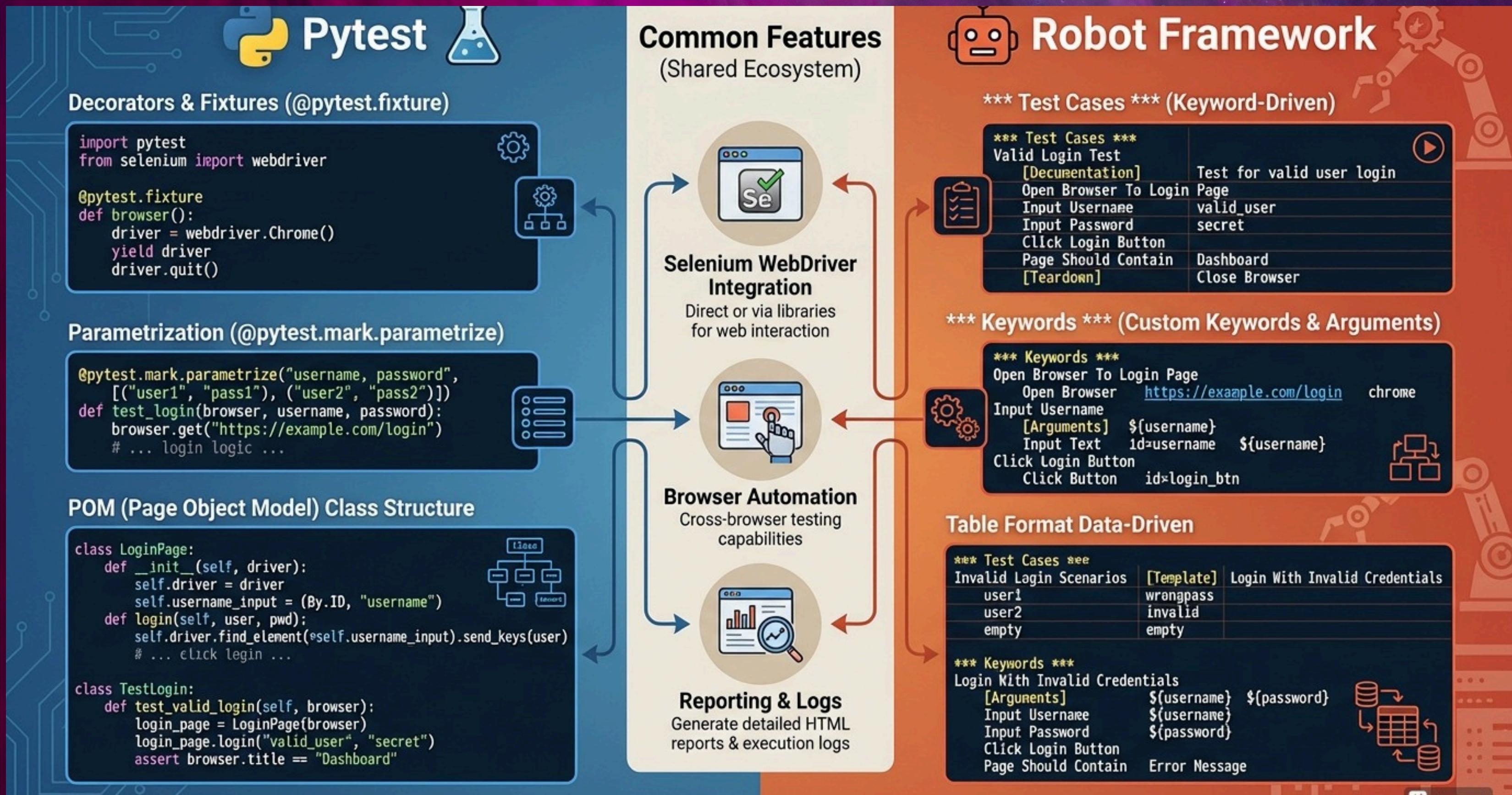
Details

All	Tags	Suites	Search
Status:	25 tests total, 24 passed, 1 failed, 0 skipped		
Total Time:	00:01:50.613		

Name	Documentation	Tags	Status	Message	Elapsed	Start / End
Shop.TC_02 Register User			FAIL	Registration did not navigate to result page: First name is required.	00:01:08.360	20260220 14:55:32.415 20260220 14:56:40.775
Shop.TC_01 Register Navigation			PASS		00:00:02.488	20260220 14:55:29.926 20260220 14:55:32.414
Shop.TC_03 Search Query 1			PASS		00:00:01.578	20260220 14:56:40.775

The application blocked registration because the First Name field was empty / not accepted, so it never reached the success page.

Comparision between Pytest and robot framework





FOODIE APP

Features & REST API Requirement List



Flask



Pytest



Robot Framework



Postman

Problem Statement

“How can a food ordering platform ensure reliable, scalable, and fully tested REST APIs that handle restaurant management, order processing, and customer interactions without defects in production?”



Untested Endpoints

REST APIs lack automated verification, leading to undetected bugs reaching production environments.



Manual Testing Gaps

Relying purely on manual Postman checks is time-consuming and prone to human error.



No Regression Coverage

Without automated test suites, every code change risks breaking existing functionality.



Data Integrity Issues

Missing validation on request/response bodies causes inconsistent data and failed integrations.

Project 3: Foodie App

Objective :

To design a Flask-based Foodie App REST API and implement automated testing using Pytest and Robot Framework to ensure reliability, accuracy, and scalable API validation.

Key Objectives :

- Implement RESTful endpoints using Flask.
- Build API Automation Framework Using Pytest.
- Implement Keyword-Driven Testing Using Robot Framework.
- Ensure End-to-End Workflow Testing.



API Testing Approach



3-Layer Verification



Manual Testing

POSTMAN

- ✓ Validate individual request & response payloads
- ✓ Verify HTTP status codes correctness
- ✓ Exploratory testing of positive & negative scenarios



Ad-hoc Checks



Pytest Automation

PYTHON + REQUESTS

- ✓ Programmatic validation using `requests` library
- ✓ Deep validation of response body & JSON schema
- ✓ Advanced usage of fixtures and parameterization



Component Integration



Robot Framework

AUTOMATION SUITE

- ✓ High-level testing via `RequestsLibrary`
- ✓ Keyword-driven & data-driven test cases
- ✓ Managed test lifecycle with Setup & Teardown



End-to-End Flows

Pytest Execution Console

The screenshot shows a PyCharm interface. On the left, a code editor window titled 'test_app.py' contains Python test code. On the right, a terminal window titled 'Command Prompt' shows the command 'python -m pytest test_app.py' being run, followed by the pytest output indicating 18 passed tests in 7.42 seconds.

```
test_app.py
import ...

LOG_FILE = "test_app_results.txt"
BASE_URL = "http://127.0.0.1:5000/api/v1"

# Initialize log file
with open(LOG_FILE, "w") as f:
    f.write("TEST APP EXECUTION LOG\n=====\n")

def log_to_file(test_name, status):
    with open(LOG_FILE, "a") as f:
        f.write(f"{test_name}: {status}\n")

Terminal Local × Command Prompt × Command Prompt ×
env456) C:\Users\Lenovo\PycharmProjects\Wipro-Training-2026\FoodieApp>python -m pytest test_app.py
===== test session starts =====
platform win32 -- Python 3.10.11, pytest-9.0.2, pluggy-1.6.0
rootdir: C:\Users\Lenovo\PycharmProjects\Wipro-Training-2026\FoodieApp
plugins: xdist-3.8.0
collected 18 items

test_app.py ......

===== 18 passed in 7.42s =====

env456) C:\Users\Lenovo\PycharmProjects\Wipro-Training-2026\FoodieApp>
```

Web Browser Output

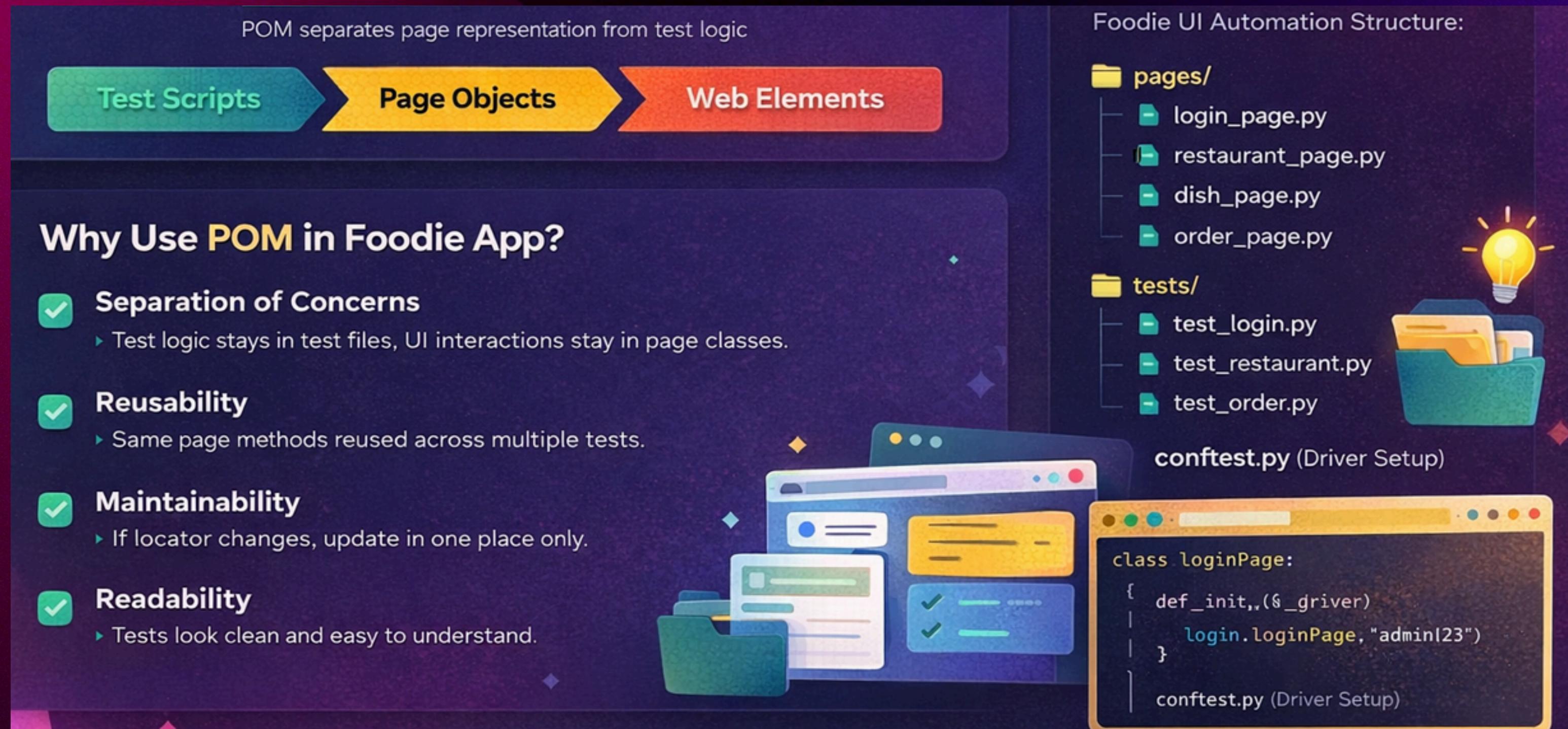
The screenshot shows a 'Restaurant Tests Report' page generated by pytest. The page includes a summary table with basic test metadata and three detailed statistics tables for 'All Tests', 'No Tags', and 'Restaurant Tests'. Below these is a 'Details' section with search filters for Suite, Test, and Include.

Restaurant Tests Report						
Generated: 20260220 19:17:53 UTC+05:30 7 seconds ago						
Summary						
Status:	All tests passed					
Start Time:	20260220 19:17:44.361					
End Time:	20260220 19:17:53.256					
Elapsed Time:	00:00:08.895					
Log File:	log.html					
Statistics						
Total Statistics						
All Tests	Total	Pass	Fail	Skip	Elapsed	Pass / Fail / Skip
	18	18	0	0	00:00:06	<div style="width: 100%; background-color: #2e7131; height: 10px;"></div>
Statistics by Tag						
No Tags	Total	Pass	Fail	Skip	Elapsed	Pass / Fail / Skip
Statistics by Suite						
Restaurant Tests	Total	Pass	Fail	Skip	Elapsed	Pass / Fail / Skip
	18	18	0	0	00:00:09	<div style="width: 100%; background-color: #2e7131; height: 10px;"></div>
Details						
All Tags Suites Search						
Suite:	<input type="text"/>					
Test:	<input type="text"/>					
Include:	<input type="text"/>					

- Displays automated test execution in the console alongside generated browser-based reports, demonstrating real-time results and structured test outcome summaries

Page Object Model

The Page Object Model (POM) is a design pattern in test automation that represents each web page as a separate class.



Restaurant Module

Restaurant Management :

- Register Restaurant: (Registers a new restaurant with details like name category, location, contact, images).
- Update Restaurant: (Modifies existing restaurant details).
- Disable Restaurant: (Marks a restaurant as disabled).
- View Restaurant Profile: (Retrieves details of a specific restaurant).

1	Register Restaurant	POST	/api/v1/restaurants	201 Created, 400 Bad Request, 409 Conflict
2	Update Restaurant Details	PUT	/api/v1/restaurants/{restaurant_id}	200 OK, 404 Not Found
3	Disable Restaurant	PUT	/api/v1/restaurants/{restaurant_id}/disable	200 OK, 404 Not Found
4	View Restaurant Profile	GET	/api/v1/restaurants/{restaurant_id}	200 OK, 404 Not Found

Dish Module

Dish Module :

- Add Dish: (Adds a new dish with name, type, price, available time, image).
- Update Dish: (Modifies existing dish details).
- Enable/Disable Dish: (Changes a dish's availability status).
- Delete Dish: (Removes a dish from the system).

#	Requirement	Method	URI	Status Codes
5	Add Dish	POST	/api/v1/restaurants/{restaurant_id}/dishes	201 Created, 400 Bad Request
6	Update Dish	PUT	/api/v1/dishes/{dish_id}	200 OK, 404 Not Found
7	Enable / Disable Dish	PUT	/api/v1/dishes/{dish_id}/status	200 OK, 404 Not Found
8	Delete Dish	DELETE	/api/v1/dishes/{dish_id}	200 OK, 404 Not Found

Postman Collection - Restaurant & Dish Module

The screenshot shows the Postman interface for the 'Foodie App API Automation / Restaurant Module / Register' collection. The request method is POST, and the URL is <http://127.0.0.1:5000/api/v1/restaurants>. The Body tab is selected, showing a raw JSON payload:

```
1 {
2   "name": "Food Hub",
3   "category": "Veg",
4   "location": "Delhi",
5   "images": ["img1.jpg"],
6   "contact": "9999999999"
7 }
```

The response status is 201 CREATED, with a response time of 114 ms and a response size of 351 B. The response body is empty.

The screenshot shows the Postman interface for the 'Foodie App API Automation / Dish Module / Add dish' collection. The request method is POST, and the URL is <http://127.0.0.1:5000/api/v1/restaurants/1/dishes>. The Body tab is selected, showing a raw JSON payload:

```
1 {
2   "name": "Pizza",
3   "type": "Veg",
4   "price": 250,
5   "available_time": "10AM-10PM",
6   "image": "pizza.jpg"
7 }
```

The response status is 201 CREATED, with a response time of 7 ms and a response size of 335 B. The response body is empty.

Postman collection demonstrating successful Restaurant and Dish module API testing with CRUD operations.

Admin Module

Administrator Actions :

- Approve Restaurant: (Approves a restaurant).
- Disable Restaurant (Admin): (Disables a restaurant by admin).
- View Customer Feedback: (Retrieves a list of all customer feedback).
- View Order Status: (Retrieves a list of all orders).

Requirement	Method	URI	Status Codes
Approve Restaurant	PUT	/api/v1/admin/restaurants/{restaurant_id}/approve	200 OK, 404 Not Found
Disable Restaurant	PUT	/api/v1/admin/restaurants/{restaurant_id}/disable	200 OK, 404 Not Found
View Customer Feedback	GET	/api/v1/admin/feedback	200 OK
View Order Status	GET	/api/v1/admin/orders	200 OK

User Module

User Interaction:

- User Registration: (Registers a new user with name, email, password).
- Search Restaurants: (Filters restaurants by name, location, dish, or rating).
- Place Order: (Creates a new order for a user, restaurant, and selected dishes).
- Give Rating: (Submits a rating and comment for a specific order).

Requirement	Method	URI	Status Codes
User Registration	POST	/api/v1/users/register	201 Created, 409 Conflict
Search Restaurants	GET	/api/v1/restaurants/search?name=&location=&dish=	200 OK
Place Order	POST	/api/v1/orders	201 Created, 400 Bad Request
Give Rating	POST	/api/v1/ratings	201 Created, 400 Bad Request

Postman Collection – Admin & User Module

The image displays two side-by-side Postman collection interfaces. The left interface shows the 'Admin Module / Approve restaurant' collection with a PUT request to approve a restaurant. The right interface shows the 'User Module / Register' collection with a POST request to register a new user.

Left: Admin Module / Approve restaurant

- Request:** PUT http://127.0.0.1:5000/api/v1/admin/restaurants/1/approve
- Headers:** Authorization, Headers (7)
- Body:** Raw JSON (empty)
- Response:** 200 OK ({"message": "Restaurant approved"})

Right: User Module / Register

- Request:** POST http://127.0.0.1:5000/api/v1/users/register
- Headers:** Authorization, Headers (8)
- Body:** Raw JSON ({"name": "Harsh", "email": "harsh@test.com", "password": "123456"})
- Response:** 201 CREATED ({"email": "harsh@test.com", "id": 1, "name": "Harsh", "password": "123456"})

Postman collection demonstrating Admin approval and User registration APIs with successful 200 OK and 201 Created responses.

Order Module

Order Viewing :

- View Orders by Restaurant: (Retrieves orders associated with a specific restaurant).
- View Orders by User: (Retrieves orders placed by a specific user).

Requirement	Method	URI	Status Codes
View Orders by Restaurant	GET	/api/v1/restaurants/{restaurant_id}/orders	200 OK
View Orders by User	GET	/api/v1/users/{user_id}/orders	200 OK

Postman Collection – Order Module

The screenshot shows the Postman application interface. On the left, the sidebar displays a collection structure under 'Foodie App API Automation'. The 'Order Module' section contains a POST request for 'Place order'. The main workspace shows the 'Place order' endpoint details:

- Method:** POST
- URL:** http://127.0.0.1:5000/api/v1/orders
- Headers:** (8)
- Body:** (Raw JSON)

```
1 {
2   "user_id": 1,
3   "restaurant_id": 1,
4   "dishes": []
5 }
```

The response section shows a successful 201 CREATED status with the following JSON data:

```
1 {
2   "dishes": [],
3   "id": 1,
4   "restaurant_id": 1,
5   "status": "placed",
6   "user_id": 1
7 }
```

Summary

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API Endpoints

5

Modules

3

Test Frameworks

4

HTTP Methods

- **Restaurant** registration, update, disable & profile management
- **Admin controls** approve, disable restaurants & view feedback
- **Order tracking** by restaurant or user
- **Dish CRUD** with enable/disable toggling
- **Customer** registration, search, order placement & ratings
- **Full test coverage** Manual (Postman), Pytest & Robot Framework

Challenges Faced During the Project

- **Timeout & Synchronization Issues**
- **CAPTCHA Handling Issues**
- **Cross-Browser Compatibility Issues**
- **Internet Speed & Network Dependency**
- **System Performance & Resource Issues**

MANUAL VS. AUTOMATION TESTING



Manual TESTING

POSTMAN

- Execution: Human-led
- Validate individual request & response payloads
- Reliability: Error Prone to error detection (Fatigue)
- Ideal For: Exploratory, UI/UX Linting (Short-term)

Human-Centric Checks



AUTOMATION TESTING

POSTMAN

- Execution: Tool-led (Scripts)
- Speed: Slower Consistent
- Keyword-driven vs. High a data-driven test cases
- Higher For Regression, Load

Efficient CI/CD Integration

Conclusion

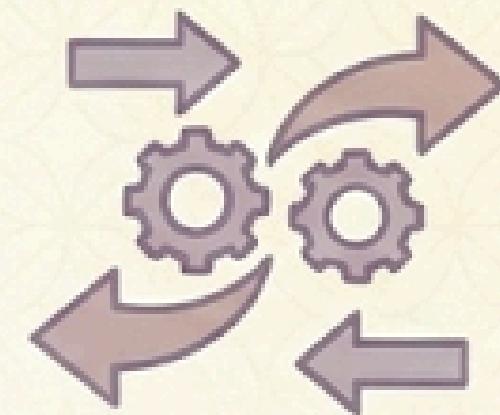
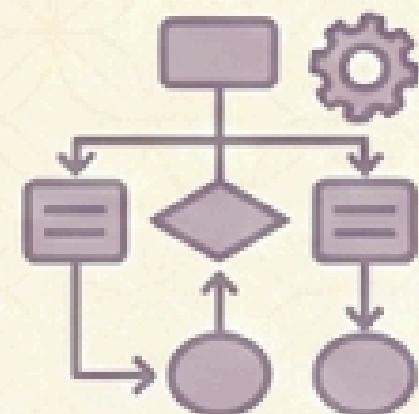
- Successfully architected and implemented modular, data-driven UI automation frameworks using Pytest and Robot Framework with Selenium.
- Engineered robust end-to-end UI test suites covering critical e-commerce workflows, including registration, product search, and cart management.
- Developed a functional REST API backend for a custom application using Flask, gaining hands-on understanding of server-side routing and HTTP status codes.
- Validated full-stack data integrity by executing comprehensive API tests using Python's requests library and Postman for standard HTTP methods.
- Overcame complex web automation challenges by implementing explicit waits, handling dynamic elements, and writing resilient locators.

- Integrated automated screenshot capture and detailed logging mechanisms within the test frameworks to ensure clear traceability and rapid defect isolation.
- Transitioned from static to dynamic test execution by integrating CSV data parsing, allowing for scalable, multi-scenario test coverage.
- Applied Object-Oriented Programming principles to implement the Page Object Model (POM) design pattern, significantly improving code maintainability.
- Bridged the gap between frontend user interactions and backend system architecture, demonstrating a comprehensive understanding of software quality assurance.
- Synthesized comprehensive QA methodologies into practical, production-ready capabilities, preparing for real-world automation testing roles.

A Heartfelt Thank You to Our Mentor & Guide



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~ Thank you Ma'am

Thank You!

