

SauceDemo Test Automation Framework

This is a **Python-based test automation framework** built using:

- Selenium WebDriver
- Pytest
- HTML Reports
- Page Object Model (POM)
- Logging
- Git & GitHub
- Jenkins (CI/CD)

Project Structure

```
TestAutomationSauceDemo/  
|  
├─ Pages/                # Page Object Model classes  
├─ tests/                # All test cases organized in modules  
├─ Reports/              # HTML reports & screenshots  
├─ Utilities/            # Reusable utilities like logger  
├─ conftest.py           # Pytest fixtures and setup  
├─ requirements.txt      # Dependencies  
├─ .gitignore            # Ignored files and folders  
└─ README.md             # Project documentation
```

Technologies Used

- Language: Python 3.13.2
 - Test Framework: Pytest
 - Browser Automation: Selenium
 - Report Generation: pytest-html
 - Logging: Python's `logging` module
 - CI/CD: Jenkins
 - Version Control: Git & GitHub
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How to Run the Tests

1. Clone the Repository

```
git clone https://github.com/nijesh22/Selenium-Pytest-Automation-Framework-Code.git
cd TestAutomationSauceDemo
```

2. Install Requirements

```
pip install -r requirements.txt
```

3. Run Test Cases

```
pytest -s --browser=chrome --url=https://www.saucedemo.com --headless --html=Reports/report.html --self-contained-html
```

Replace `chrome` with `firefox` or `edge` as needed.

Test Design Pattern

- Uses Page Object Model (POM) to keep test scripts clean and maintainable.
 - Test classes are grouped by features:
 - Login Page
 - Cart Page
 - Checkout Flow
 - Product Listing
 - Negative & Edge Cases
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Reports

After test execution, a full HTML report is generated at:

```
Reports/report.html
```

Failed tests include screenshots automatically captured and embedded into the report.

Logging

Log files are saved as `automation.log` with details about each test step.

Log Levels:

Level	Purpose
DEBUG	Detailed info for debugging
INFO	General test steps & flow
WARNING	Unexpected behavior, not fatal
ERROR	Something went wrong
CRITICAL	Major failure in system

Git & GitHub

- All code is tracked using Git.
- Hosted on GitHub.
- `.gitignore` excludes:

```
__pycache__/  
*.log  
.idea/  
.pytest_cache/  
Reports/
```

Jenkins Integration

Jenkins job automatically runs the tests on each push to GitHub.

Jenkins Setup:

- Source Code Management: Git
- Repository URL: `https://github.com/nijesh22/Selenium-Pytest-Automation-Framework-Code`
- Build Trigger: GitHub webhook or manual
- Build Step:

```
pytest -s --browser=chrome --url=https://www.saucedemo.com --headless --html=Reports/report.html --self-contained-html
```

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Notes

- Make sure ChromeDriver, GeckoDriver, or EdgeDriver is automatically managed by `webdriver_manager`.
 - Tests are isolated using Pytest fixtures.
 - HTML reports and screenshots help with test analysis and CI/CD feedback.
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Future Enhancements

- Add API tests (using `requests` or `RestAssured`)
 - Add mobile testing with Appium
 - Upload reports to cloud storage or email alerts
 - Add data-driven testing
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