Test Plan

Project Title: Automation-Exercise-E-commerce Automation site
Website: https://automationexercise.com/

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1 Introduction

1.1 Purpose

The purpose of this test plan is to define the testing strategy for both manual and automated tests. It aims to verify the functionality of key features such as login, product browsing, cart management, checkout process, API responses, and the contact form. This plan also helps ensure that the website is reliable, user-friendly, and ready for real-world use.

1.2 Project Overview

Automation Exercise is a demo e-commerce website designed for testing practice. It includes features like user registration and login, product listing, shopping cart, checkout, and contact form. The site also provides APIs for testing backend functionality. This project uses Selenium for UI automation, TestNG for test management, and Allure for reporting.

2 Scope

2.1 In-SCope.

This test plan covers manual and automated testing activities for the Automation Exercise e-commerce website. The following areas are included in scope:

- Manual testing of core UI features: login, registration, product browsing, cart, checkout, and contact form.
- API testing using Postman and Newman: validating endpoints, response codes, payloads, and error handling.
- Exploratory testing to discover hidden bugs and automation candidates.
- Automation testing using Selenium and Page Object Model (POM) for selected UI features.
- Database testing using MySQL queries to verify data integrity.
- Performance testing setup using JMeter for basic load and stress scenarios.
- Integration with Jira for defect tracking and test case management.
- CI/CD pipeline setup using Jenkins for continuous testing execution.
- Collaboration tools: Git/GitHub for version control and code reviews.
- BDD implementation using Cucumber and Gherkin feature files.

Interfaces between UI, API, and database will be tested to ensure smooth workflow and data consistency across the system.

2.2 Out-of-Scope

The following items are excluded from the current testing scope:

- *Real payment gateway integration and testing with live transactions.*
- *Multi-language and localization testing.*
- *Accessibility testing for users with disabilities.*
- *Mobile device testing and cross-platform compatibility.*
- *Advanced security and penetration testing.*
- *Full-scale performance benchmarking under high traffic conditions.*

These features are excluded due to limited time, resources, and the academic nature of the project. The focus remains on building a functional and scalable automated testing framework.

3 Testing Strategy

3.1 Test OBJECTIves

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The objective of this testing project is to validate the core functionalities of the Automation Exercise e-commerce website using manual and API testing approaches. The goal is to ensure that the system behaves as expected and meets user requirements.

Defined Tasks and Responsibilities:

- Demiana Danyal Adly is responsible for designing and executing all API test cases, as well as preparing the full test plan document.
- Hossam Mohsen Yousef and Ibrahim Mohamed Aboalanin are responsible for performing manual testing of the website's UI features, including registration, login, product browsing, cart, and checkout.
- Automation testing and test data preparation are currently under planning and will be assigned in the next sprint.
- All team members will collaborate using Jira to log defects, manage test cases, and track sprint progress.

The following assumptions are made for this project and test plan:

- The website under test (Automation Exercise) is stable and accessible during all testing phases.
- All team members have access to required tools: Postman, Jira, GitHub, and the test environment.
- Manual testing will be performed by Hossam Mohsen Yousef and Ibrahim Mohamed Aboalanin.
- API testing has been completed by Demiana Danyal Adly .
- Automation testing and test data preparation are currently under planning and will be assigned in future sprints.
- Jira will be used for defect tracking, test case management, and sprint progress.
- BDD will be applied using Cucumber and Gherkin syntax.
- No real payment gateway or external vendor integration is involved.
- The project follows Agile Scrum methodology with sprint-based execution.
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3.2 Data Approach

The test data used in this project will be created and maintained specifically for the QA

environment. The goal is to ensure that all test scenarios can be executed without affecting any real or production data.

Key points of the data approach include:

- *Test data will be manually created to simulate real user behavior, such as valid and invalid login credentials, product selections, and checkout flows.*
- *Separate datasets will be used for functional testing (e.g., form validation, cart updates) and user acceptance testing (e.g., end-to-end purchase flow).*
- *Dummy data will be used for sensitive fields like email addresses, phone numbers, and payment details.*
- *Test data will be reset or cleaned between test cycles to ensure consistency and avoid false results.*
- *For API testing, sample payloads will be prepared and validated using Postman collections.*
- *If database testing is required, SQL queries will be used to verify that test data is correctly stored and retrieved.*
- *All test data will be documented and stored in a shared location accessible to the team.*

3.3 Level of Testing

Test Type	Description	Responsible Parties
Manual testing	Testing the e-commerce site manually to check all features such as login, cart, checkout, and contact form for any bugs or UI issues.	Ibrahim Mohamed Aboalanin Hossam Mohsen Yousef
API testing	Validating backend endpoint using postman	Demiana Danyal Adly Masaod
Automation testing	Automating selected UI resr cases using Selenium	Amany Alaa
Test Data preparation	Creating dummy data for functional, API , and automation testing , maintaining clean test cycles	Amany alaa

3.4 Unit Testing

The following features will be tested separately to ensure each part of the system works correctly:

> - Login and registration
> - Adding products to cart
> - Submitting the contact form
> - API functions for users and products
> - Planned automation for inventory and checkout

Participants:

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Tester's Name	Department/ Area	Role
Demiana Danyal Adly.	API testing.	Test Designer &Executor
Ibrahim Mohamed Aboalanin.	Manual testing.	UI Test Executor
Hossam Mohsen Yousef.	Manual testing Automation .	UI Test Executor
Amany Alaa	Automation Testing	Tester
Yousef Alaa	DataBase Testing	Tester
Tabarak Hussein	API Testing	Tester

3.5 Functional Testing

The following core functionalities of the Automation Exercise website will be tested to ensure they work as expected:

- *User registration and login*
- *Product browsing and filtering*
- *Adding products to cart*
- *Checkout process and order confirmation*
- *Contact form submission*
- *API endpoints for user and product data*
- *Error handling and validation messages*
- *Navigation between pages and links*

Participants:

Tester's Name	Department/ Area	Role
Demiana Danyal Adly.	API testing.	Test Designer &Executor
Ibrahim Mohamed Aboalanin.	Manual testing.	UI Test Executor
Hossam Mohsen Yousef.	Manual testing.	UI Test Executor

3.6 User Acceptance Testing

The following features will be tested during the User Acceptance Testing phase to ensure they meet business requirements and provide a smooth user experience:

- User registration and login flow
- Browsing products and filtering by category
- Adding items to the cart and updating quantities
- Completing the checkout process and receiving confirmation
- Submitting the contact form and receiving feedback
- Navigating between pages and verifying link functionality
- Displaying validation messages and handling errors gracefully
- Ensuring responsiveness and usability across different screen sizes

Participants:

Tester's Name	Department/ Area	Role
Demiana DanyalAdly	API Testing	UAT Designer & Executor
Hossam Mohsen Yousef	Manual Testing	UAT Executor (UI validation)
Ibrahim Mohamed Aboalanin	Manual Testing	UAT Executor (UI validation)

3.7 Regression Testing

Regression testing will be performed to ensure that new changes or fixes do not negatively affect existing functionalities. The following features will be re-tested after updates or deployments:

- *User registration and login*
- *Product browsing and filtering*
- *Cart operations and quantity updates*
- *Checkout and order confirmation*
- *Contact form submission*
- *API endpoints for user and product data*
- *Navigation and page transitions*
- *Validation messages and error handling*

These features represent core user flows and will be prioritized during regression cycles to maintain system stability.

Participants:

Tester's Name	Department/ Area	Role
Demiana Danyal Adly	API Testing	Regression Test Executor
Hossam Mohsen Yousef	Manual Testing	UI Regression Tester
Ibrahim Mohamed Aboalanin	Manual Testing	UI Regression Tester

4 Execution Strategy

4.1 Entry Criteria

- *The entry criteria refer to the desirable conditions required before starting test execution. These criteria help ensure that the testing process begins smoothly and effectively. If any of the criteria are not met, the test team will assess the risk, suggest mitigation actions, and provide recommendations.*

Entry Criteria	Test Team	Technical Team	Notes
Test environment(s) is available	✔	✔	
Test data is available		✔	
Code has been merged successfully		✔	
Development has completed unit testing		✔	
Test scripts are completed, reviewed and approved by the Project Team		✔	

4.2 Exit criteria

The exit criteria are the desirable conditions that must be met in order to consider the testing phase complete and proceed with implementation or delivery. These criteria ensure that the system is stable, tested, and ready for release. If any of the criteria are not fully met, the test team will assess the risk, suggest mitigation actions, and provide recommendations.

Exit Criteria	Test Team	Technical Team	Notes

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100% Test Scripts executed			

90% pass rate of Test Scripts	✔		
No open Critical and High severity defects	✔	✔	
All remaining defects are either cancelled or documented as Change Requests for a future release	✔	✔	
All expected and actual results are captured and documented with the test script	✔		
All test metrics collected based on reports from daily and Weekly Status reports	✔		
All defects logged in Ðefect Tracker/Spreadsheet	✔		
Test environment cleanup completed and a new back up of the environment		✔	

4.3 Validation and Defect Management

Test Case Validation

All test cases and test scenarios will be validated based on the following criteria:
- Each test case must have clearly defined steps, expected results, and actual results.
- Testers are expected to execute all test scripts across the defined test cycles (Functional, Regression, UAT).
- Validation will be considered successful when the actual result matches the expected result without deviation.
- Any deviation or unexpected behavior will be logged as a defect.

Defect Management

Defects identified during testing will be managed as follows:
- All defects will be logged in a centralized Defect Tracker or Spreadsheet.
- Testers are responsible for:
- Logging the defect with clear steps to reproduce
- Retesting the defect once fixed
- Closing the defect after successful verification
- Defects will be reviewed and prioritized by severity and impact.

Severity	Impact
1 (Critical)	▪ *Functionality is blocked and no testing can proceed* ▪ *Application/program/feature is unusable in the current state*
2 (High)	▪ *Functionality is not usable and there is no workaround but testing can proceed*
3 (Medium)	▪ *Functionality issues but there is workaround for achieving the desired functionality*
4 (Low)	▪ *Unclear error message or cosmetic error which has minimum impact on product use.*

5 Environment Requirements

5.1 Test Environments

The testing will be conducted in a controlled QA environment that simulates the production setup of the Automation Exercise website. The environment should include:

- A stable version of the website hosted on a test server
- Access to all required modules (registration, login, product pages, cart, checkout, contact form)

- API endpoints available for testing with tools like Postman

- Browsers used for testing: Google Chrome, Microsoft Edge

- Devices: Desktop and Laptop (Windows)

Security Requirements
- Testers must use secure login credentials provided for testing only
- No real user data will be used; only dummy/test data

- Access to the test environment will be limited to the project team

- All test data will be cleared after testing is complete

6 Significantly Impacted Division/College/Department

Business Area	Business Manager	Tester(s)

7 Dependencies

The following dependencies may affect the testing schedule and execution:

- *Availability of the test environment and server access*
- *Completion of development and successful code deployment*
- *Availability of test data for all scenarios*
- *Timely delivery of test scripts and review feedback*
- *Team members' availability during the testing period*
- *Any delays in fixing critical or high-severity defects*