TUTORIAL 4

4.Analyze a project and list modules that are best suited for automation testing. Objective:

To guide students in analyzing a real-world software system and identifying which parts of the application would benefit the most from automation testing. The goal is to improve testing efficiency, coverage, and accuracy.

Project Used (Sample):

Online Shopping Web Application
Features include:

- User login/registration

- Product search and filters

- Shopping cart and checkout

- Order history

- Admin product management

Tools Required:

- Browser (Chrome/Firefox)

- Local Server (XAMPP/WAMP for PHP, Flask for Python)

- Spreadsheet (Excel or Google Sheets)

- Pen & Paper or Document editor for observations

- Optional: Selenium IDE/WebDriver (for future testing)

Step 1: Understand the Application

● Launch the project on localhost.

● Explore all features as an end user.

● Navigate through each page and list its functionality.

Example:

Page Name	Functionality
Login Page	User login with email and password allows users to securely access their account by entering a valid email and matching password, which the system verifies before granting access.
Registration Page	New user signup lets individuals create an account by providing necessary details like email and password, enabling them to access the system's features securely.
Home Page	Displays all products available in the system, allowing users to browse through the complete catalog.
Product Details	Shows detailed product information with an option to add the item to the shopping cart.
Cart Page	Allows users to view, edit quantities, or remove products from their shopping cart.
Checkout	Collects user address details and simulates payment processing to complete the order.
Order History	Displays a list of the user's past orders with details like date, items, and status.
Admin Panel	Allows admins to add, edit, or delete products and view all customer orders.

Step 2: Identify All Functional Modules

Based on your navigation, note down key functional modules and what they do.

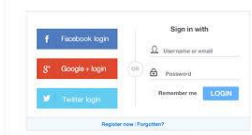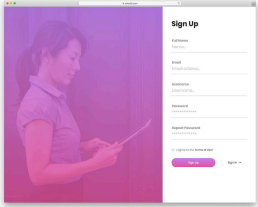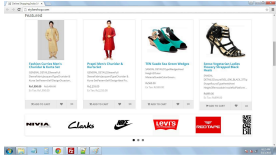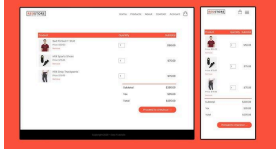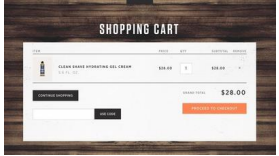| Module	Description
User Login	Authenticates user credentials to ensure secure access to the system. Protects user accounts and prevents unauthorized entry.
User Registration	Validates and stores new user data securely, ensuring accuracy and consistency. Helps create a reliable foundation for user authentication and profile management.
Product Search	Allows users to filter products by name or category for easy navigation. Improves search efficiency and helps users quickly find desired items.
Add to Cart	Allows adding products along with specified quantities to the system. Ensures accurate inventory tracking and easy order management.
Checkout	Captures user address details and confirms orders for processing. Ensures accurate delivery information and smooth order management.
Order Summary	Displays a list of items that the user has ordered. Helps users review their purchases and track order details easily.
Admin Product CRUD	Allows creating, reading, updating, and deleting products in the system. Enables efficient product management and keeps inventory up to date.

Step 3: Analyze Each Module for Automation Suitability

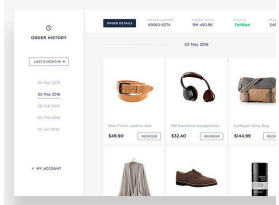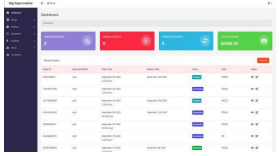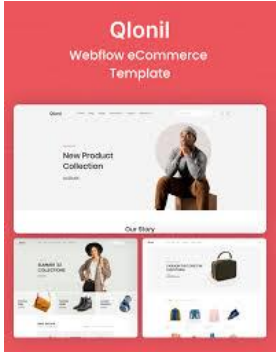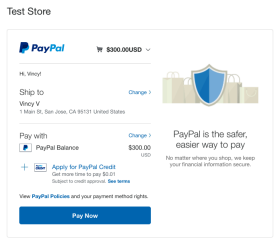Check each module using these criteria:

- **Frequency of Use** – Is the feature used frequently or repeatedly?

- **Input Handling** – Does it involve forms, data entry, or validation checks?

- **Predictability** – Are the outcomes consistent and reliable?

- **Automation Limitations** – Avoid features requiring CAPTCHA, third-party tools, or image uploads, as they are difficult to automate.

Step 4: Create an Automation Suitability Table

Sr	Module	Description	Testable	Reason	Screen Short
1	Login	Login form with input validations.	✅ Yes	Feature is repetitive and produces predictable results.	
2	Registration	Form for email and password login with input validation.	✅ Yes	Form-based and suitable for field testing.	
3	Product Search	Search feature for keywords or categories.	✅ Yes	Result matching and filters are easy to automate.	
4	Add to Cart	Add, remove, or update product quantities.	✅ Yes	Data-driven actions, ideal for repeatable tests.	
5	Checkout	Enter address details and view order summary.	✅ Yes	End-to-end flow check using static inputs.	

Sr	Module	Description	Testable	Reason	Screen Short
6	Order History	Shows a list of the user's previous orders.	✅ Yes	Display checks using predefined test data.	
7	Admin Product CRUD	Admin can add, edit, or delete products.	✅ Yes	Form testing with database change validation.	
8	Theme Layout	Color, font, responsiveness	❌ No	Requires human eyes, not logic-based	
9	CAPTCHA (if present)	Image verification	❌ No	Needs manual check	
10	Payment Gateway	Simulated or real payment	❌ No	Sensitive, 3rd party, sandbox required	

Step 5: Justify Your Choices

I chose this module for automation because it involves repetitive, rule-based tasks that are time-consuming and prone to human error. Automating it ensures faster execution, consistency in results, and frees up testers to focus on more complex scenarios that require human judgment.

Example:

"The Search Module is well-suited for automation because it is frequently used and follows predictable input-output behavior. Common scenarios like keyword search, filter application, and result validation can be automated reliably, ensuring consistent test coverage."

Conclusion:

"After evaluating the online shopping application, we identified modules such as Login, Registration, and Product Search as strong candidates for automation due to their frequent use and predictable behavior. Automating these areas helps minimize manual effort, improves accuracy, and significantly speeds up regression testing."