Selenium OrangeHRM Automation Framework

1. Introduction

Software testing is an important phase in the Software Development Life Cycle (SDLC).
Manual testing requires more time and effort and may result in human errors.
Automation testing reduces manual effort by executing test cases automatically.

This project automates the OrangeHRM web application using Selenium WebDriver with Java.
The framework performs login, dashboard verification, admin navigation and logout.
The project follows Page Object Model design pattern and uses Maven and TestNG.

2. Objectives

• Automate web application testing
• Reduce manual testing effort
• Validate OrangeHRM functionalities automatically
• Implement Page Object Model framework
• Gain practical experience in Selenium
• Use GitHub for version control

3. Scope of the Project

The project automates core functionalities of OrangeHRM including:
• Login Module
• Dashboard Verification
• Admin Navigation
• Logout Module

The framework can be extended to automate more modules in future.

4. Technologies Used

Programming Language: Java
Automation Tool: Selenium WebDriver
Testing Framework: TestNG
Build Tool: Maven
Browser: Google Chrome

Version Control: Git & GitHub
IDE: Visual Studio Code

5. System Architecture

The project follows Page Object Model (POM) architecture:

• BaseClass – Browser setup and configuration
• LoginPage – Login functionality
• DashboardPage – Dashboard validation
• AdminPage – Admin module navigation
• LogoutPage – Logout functionality
• HRMTest – Executes complete test flow

6. Working of the Project

1. Maven reads pom.xml and downloads dependencies.
2. TestNG starts execution.
3. Chrome browser launches automatically.
4. OrangeHRM website opens.
5. Username and password are entered.
6. Login button is clicked.
7. Dashboard is verified.
8. Admin module is accessed.
9. Logout is performed.
10. Browser closes automatically.

7. Advantages

• Saves time
• Reduces human errors
• Faster execution
• Reusable framework
• Easy maintenance

8. Future Enhancements

• Data-driven testing
• Multi-browser testing
• Reporting integration
• CI/CD pipeline integration

9. Conclusion

The Selenium OrangeHRM Automation Framework successfully automates basic functionalities of the OrangeHRM web application. The project demonstrates automation testing concepts using Selenium WebDriver, Java, Maven and TestNG. It provides practical knowledge of automation framework development.

10. GitHub Repository

https://github.com/NIKHIL4656/selenium-orangehrm-project