

Selenium Page Object Model (POM) – Complete Framework Guide

POM + TestNG + Maven + Extent Reports + Data Driven + Retry

1. What is Page Object Model (POM)?

Page Object Model is a design pattern in Selenium where each web page of the application is represented by a separate Java class. The class contains locators and methods (actions) related to that page, while test classes focus only on validations.

2. Benefits of POM

- 1 Better maintainability
- 2 Reusability of code
- 3 Clean separation of concerns
- 4 Industry-standard framework design
- 5 Easy integration with TestNG, Maven, and Reports

3. Industry Standard Framework Structure

src/test/java → base, pages, tests, utils, listeners, retry

src/test/resources → config.properties, test data

pom.xml → dependencies

testng.xml → suite configuration

4. BaseTest Responsibilities

- Browser setup and teardown
- Reading configuration values
- Common setup using @BeforeMethod and @AfterMethod

5. Page Class Best Practices

- 1 One page equals one Java class
- 2 Locators should be private
- 3 No assertions in page classes
- 4 Methods should represent business actions

6. Test Class Responsibilities

- Call page methods
- Perform assertions
- Control test execution flow

7. Data Driven Testing

Data-driven testing is implemented using TestNG DataProvider. Test data can be read from Excel, CSV, or JSON files to run the same test with multiple sets of data.

8. Retry Analyzer

RetryAnalyzer helps re-run failed tests automatically to handle flaky failures. It is implemented using TestNG IRetryAnalyzer.

9. Extent Reports Integration

Extent Reports provides rich HTML reports with step logs, pass/fail status, screenshots, and execution summary. It is integrated using TestNG listeners.

10. Interview Key Points

- 1 Why POM? – Maintainability and reusability
- 2 Where do assertions go? – Test classes
- 3 Can POM be used with TestNG? – Yes
- 4 What reports have you used? – Extent / Allure

This document represents a real-world Selenium automation framework used in companies. It can be extended with API testing, CI/CD, and cloud execution.