**Salesforce Test Automation Framework - Design and Structure**

**1. Overview**

This test automation framework is designed to validate Salesforce functionalities using **Selenium WebDriver, Cucumber BDD, and JUnit**. It follows a **Page Object Model (POM)** approach to enhance maintainability and scalability.

**2. Project Structure**

sales-force-automation/

│── .idea/

│── src/

│ ├── main/

│ │ ├── java/com/salesforce/

│ │ │ ├── pages/ # Page Object Model classes

│ │ │ ├── utils/ # Utility classes (if applicable)

│ │ │ ├── DriverInstance.java # WebDriver instance management

│ ├── test/

│ │ ├── java/com/salesforce/

│ │ │ ├── features/ # Cucumber feature files

│ │ │ ├── runner/ # TestRunner.java - entry point for execution

│ │ │ ├── steps/ # Step Definitions for feature files

│ │ ├── resources/ # Additional resources (if applicable)

│── target/ # Compiled output after test execution

│── pom.xml # Maven dependencies and build configuration

│── config.properties # Configuration properties

│── .gitignore # Git ignore rules

**3. Key Components**

**A. Test Runner (TestRunner.java)**

* Uses **JUnit and Cucumber** to execute test cases.
* Configures **feature file path, step definitions, and reporting plugins**.

**B. Feature Files (salesforce.feature)**

* Written in **Gherkin** syntax to define test scenarios.
* Contains **Background, Scenarios, and Scenario Outlines** for login, search, account creation, contact creation, and logout functionalities.

**C. Step Definitions (steps/)**

* Maps **Gherkin steps to Java methods**.
* Implements Selenium WebDriver actions for interacting with the Salesforce UI.

**D. Page Object Model (pages/)**

* Implements **POM Design Pattern** to separate test logic from UI interactions.
* Defines WebElements and actions for **LoginPage, HomePage, SideNav, AccountPage, etc.**.

**E. Configuration (config.properties)**

* Stores **Salesforce URL and other configurations**.

**F. Dependencies (pom.xml)**

* Uses **Maven** for dependency management.
* Includes libraries for **Selenium, Cucumber, WebDriverManager, and JUnit**.

**4. Test Execution & Reports**

**Running Tests**

Execute tests using:

mvn test

**Reports Location**

1. **HTML Report:** target/cucumber-reports.html
2. **JSON Report:** target/cucumber-reports/Cucumber.json
3. **JUnit XML Report:** target/cucumber-reports/Cucumber.xml
4. **Surefire Reports:** target/surefire-reports

**5. Future Enhancements**

* Implement **Logging (SLF4J/Log4J)** for better debugging.
* Add **Data-Driven Testing** using Excel or CSV.
* Integrate with **CI/CD Pipelines (Jenkins, GitHub Actions)** for automated execution.