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Project Code: B43_SDET_017_End-to-End Tester

Project Name: Practice Software testing

Test Plan Practice Software testing

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➢ Introduction

The purpose of this test plan is to outline the strategy and approach for performing end-to-end testing of the Practice Software Testing website. The testing will be automated using Selenium with the Cucumber framework, integrated with TestNG or JUnit for test execution, and Extent Reports for advanced reporting. The plan aims to ensure the reliability, consistency, and quality of the web application by validating both functional and non-functional requirements.

➢ Objectives

- Automate the testing of core functionalities and UI components.
- Validate cross-browser compatibility and responsiveness.
- Perform dynamic element validation, including dropdowns, popups, and models.
- Generate detailed reports on test execution and results.
- Identify and document bugs effectively.
- Provide comprehensive test documentation, including test cases, scenarios, bug reports, and summary reports.

➢ Scope

- Selenium for browser automation.
- Cucumber for behavior-driven development (BDD) and Page Object Model (POM).
- TestNG or JUnit for test execution and management.
- Extent Reports for advanced reporting.
- Tools like XMind for mind mapping.

➢ Testable Features

- Navigation and page consistency.
- UI components (buttons, images, forms).
- Dynamic elements (dropdowns, popups, modals).
- Cross-browser compatibility.
- Core functionalities as per project requirements.

➢ Testing Approach

- Implement the Page Object Model (POM) for maintainability.
- Write Cucumber feature files to define test scenarios.
- Implement step definitions using Selenium WebDriver.
- Utilize TestNG or JUnit for managing test execution.
- Generate execution logs and reports using Extent Reports.
- Perform cross-browser testing using Selenium Grid or cloud platforms.

➢ Role/Responsibility

- **Test Planning:**
    - Create a detailed test plan, including objectives, scope, testing approach, and schedule.
    - Identify testable features and document test scenarios and cases.
- **Automation Script Development:**
    - Develop and maintain automation scripts using Selenium with the Cucumber framework.
    - Implement BDD scenarios and write feature files.
    - Integrate the scripts with TestNG or JUnit for test execution and management.
    - Use the Page Object Model (POM) for structured code.
- **Test Execution and Reporting:**
    - Execute automated test cases on multiple browsers for cross-browser validation.
    - Generate advanced reports using Extent Reports, including logs and screenshots.
    - Log bugs and issues with detailed descriptions and evidence.

- Perform regression testing after bug fixes.

- **Test Documentation:**
  - Prepare comprehensive documentation, including test cases, bug reports, summary reports, and a mind map of testing areas.
  - Maintain accurate records of test execution, issues identified, and resolutions.
- **Communication and Collaboration:**
  - Communicate with developers to clarify requirements and report issues.
  - Present test results and reports to stakeholders.
- **Maintenance and Updates:**
  - Regularly update test scripts as the application evolves.
  - Ensure compatibility with updated versions of libraries and tools.

➢ Test Schedule

- Test Planning: 18/03/2025
- Test Cases and Scenarios: 19/03/2025
- Test Script Development: 21/03/2025
- Test Execution: 22/03/2025
- Bug Reporting and Fixes: Ongoing
- Report Generation and Analysis: 22/03/2025

➢ Test Deliverables

- Test Plan document
- Feature files for BDD scenarios
- Step definition scripts
- TestNG/JUnit test scripts
- Extent Reports with execution metrics and screenshots

- Mind map for testing areas
- Bug reports and logs
- Summary report with test metrics and outcomes

➢ Entry and Exit Criteria

- **Entry Criteria:**
  - Test environment setup completed.
  - Test cases and scenarios prepared.
  - Test data is available.
  - Dependencies installed and configured.
- **Exit Criteria:**
  - All test cases executed.
  - All critical and major bugs resolved.
  - Summary report generated and reviewed.
  - Test coverage validated.

➢ Tools

- **Selenium WebDriver:** Browser automation
- **Cucumber:** BDD framework
- **TestNG or JUnit:** Test execution and management
- **Extent Reports:** Reporting
- **IDE:** Eclipse
- **Mind Mapping Tool:** XMind
- **Google Doc**
- **Google Sheet**

➢ Risks & Mitigation

- **Browser Incompatibility:** Perform cross-browser testing to identify issues.
- **Dynamic Elements Failure:** Implement robust wait strategies (like explicit and fluent waits).

- **Reporting Inaccuracies:** Regularly verify logs and reports.
- **Dependency Issues:** Update and maintain dependencies via Maven.

➢ Approvals

The test plan is approved by:

- **Shiva Kumar MG** (Head of Testing)