Test Plan

Introduction

This test plan outlines the strategy for validating the user stories related to the login functionality of the Soar application. The objective is to ensure the system meets the provided requirements, focusing on functional, security, and performance aspects.

Scope

- Test the login process for a registered user on a new device.
- Validate logout functionality from all other devices upon a successful login.
- Verify OTP functionality and SMS notification.
- Ensure security measures are in place.

Test Objectives

1. Verify successful login from a new device.
2. Validate input fields for phone number, password, and OTP.
3. Test SMS notifications for successful login.
4. Ensure previous sessions on other devices are invalidated.

In-Scope Testing

- Functional Testing: Validate the login flow.
- Security Testing: Test OTP validation and account session management.
- Usability Testing: Check ease of use and UI interactions.
- Performance Testing: Validate system behavior under load.

Out-of-Scope

- Third-party SMS gateway testing.
- Non-login-related functionality.

Test Environment

- Browsers: Chrome, Firefox
- Devices: Desktop, Mobile, Tablet.
- Test Data: Valid and invalid credentials, edge case inputs.

Tools

- Selenium WebDriver (Automation Testing).
- Locust (Performance Testing).

- Postman (API Testing).

Test Execution Schedule

Phase	Start Date	End Date	Remarks
Test Design	Day 1	Day 2	Create test cases and test plan.
Test Environment	Day 2	Day 3	Setup test environment.
Test Execution	Day 3	Day 5	Execute test cases.
Reporting & Closure	Day 5	Day 6	Generate test reports.

Risk-Based Testing (RBT)

High-Risk Areas

1. OTP Validation:
   - Risk: OTP bypass or brute force.
   - Mitigation: Limit OTP attempts; validate input sanitization.
2. Session Management:
   - Risk: Failure to log out from other devices.
   - Mitigation: Test session invalidation mechanisms.
3. Security:
   - Risk: Unauthorized login or session hijacking.
   - Mitigation: Validate CSRF tokens and secure session cookies.

Medium-Risk Areas

1. SMS Notification:
   - Risk: Delayed or failed SMS delivery.
   - Mitigation: Simulate SMS gateway errors during testing.
2. Input Validation:
   - Risk: Inconsistent validation for phone number or password.
   - Mitigation: Test input edge cases and invalid data handling.

Low-Risk Areas

1. UI/UX:
   - Risk: Minor layout or accessibility issues.
   - Mitigation: Perform usability testing.

Test Cases for Each User Story

User Story: Registered User Login from a New Device

Acceptance Test Cases

Test Case ID	Scenario	Steps	Expected Result
TC001	Validate Login UI	Navigate to the login page. Verify the presence of phone number, password, and login button.	All elements are present and functional.
TC002	Validate Successful Login	Enter valid phone number and password, click next, enter valid OTP, and click login.	User is logged in successfully; notified via SMS.
TC003	Validate Logout from Other Devices	Login from a new device and verify previous device sessions are logged out.	All other sessions are invalidated.
TC004	Validate OTP Notification	Submit valid credentials and verify OTP is sent to the registered phone number.	OTP is received via SMS.

Edge Test Cases

Test Case ID	Scenario	Steps	Expected Result
TC005	Invalid Phone Number	Enter an invalid phone number format and attempt login.	Error message is displayed.
TC006	Invalid OTP	Enter an incorrect OTP during login.	Error message is displayed, and login is blocked.
TC007	Exceeded OTP Attempts	Submit invalid OTP multiple times (4 times).	Account is locked temporarily.
TC008	Validate Session Persistence	Log in from Device A, log in from Device B, and validate Device A is logged out.	Device A session is invalidated.

Test Runs

1. Functional Test Run:

   ○ Objective: Validate core functionality.

- ○ Environment: Local, Staging.
- ○ Test Types: Acceptance and edge test cases.

2. Security Test Run:

   - ○ Objective: Validate vulnerabilities.
   - ○ Environment: Staging.
   - ○ Test Types: Session management, OTP security.

3. Performance Test Run:

   - ○ Objective: Evaluate performance under load.
   - ○ Environment: Staging.
   - ○ Test Types: Load and stress tests for /client_register and /client_login.

4. Regression Test Run:

   - ○ Objective: Ensure no new bugs are introduced.
   - ○ Environment: Staging.
   - ○ Test Types: BDD scripts to validate login and registration.