Test Plan

# Document Control

## Document Detail

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| --- | --- |
| Title: | Test Plan For Soar |
| Version: | V0.1 |
| Date: | 4th January 2025 |
| Author: | Hafsa Shaikh |
| Contributors: |  |

## Change Control

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| --- | --- | --- | --- |
| Issue Date | Version | Details | Author |
| 4th January 2025 | V0.1 | First draft for review | Hafsa Shaikh |
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# Introduction

## General information

The document helps to clarify the testing activities, roles and responsibilities, processes, and practices to be used by the QA team in the end-to-end testing of the features. This document shall be completed and used by the test team to guide how testing will be managed for the features. The QA Team Lead, Product Owners, Project Manager, Development Leads, etc., shall review and approve the final version of the Test Plan document.

## Purpose

This Test Plan document for the end-to-end testing of the features supports the following objectives:

* Identify all the features to be tested.
* Recommendation and description of the testing strategies to be employed.
* Identify required resources and provide a test effort estimate
* List the test project deliverable elements.

The results of test execution will be sent to the team as reports. All found bugs will be tracked using the JIRA.

## Scope

1. Registered User Login from a New Device
2. Individual Investor - Upgrade to Premium
3. Approvals Notifications | SMS
4. Departments Approval
5. Corporate Investor - Commercial Registration Verification

## Features To Be Tested

All the test cases related to user stories/features will be listed in this document.

# Approach/Strategy

## Testing Types

1. **Exploratory Testing**: Manually explore all the systems to identify any unexpected behaviors or issues.
2. **Functional Testing**: Write detailed test cases to cover all major functionalities, integrations, and edge cases.
3. **Security Testing**: Make sure that the application and its endpoints are resilient against security vulnerabilities.
4. **Performance Testing**: Evaluate system behavior under normal and extreme conditions.
5. **Integration Testing**: Validate the seamless interaction between the application and third-party system without any crashing or exposing sensitive data.
6. **Cross-browser Testing**: Perform testing across different browsers (Chrome, Firefox, Edge) to ensure compatibility.
7. **Responsive Testing**: Validate the functionalities on various devices (desktop, tablet, mobile) to ensure it is responsive.

## Automation Test Approach

1. **Test Scripts**: Develop automated test scripts for all major UI functionalities, ensuring that each element is interacted with as it would be by an end-user.
2. **Behavior-Driven Testing**: Use data from BDD feature files to test various input scenarios.
3. **Frameworks**: The UI automation framework is built using the Page Object Model(POM) Design Pattern, where we have used Selenium WebDriver to automate browsers, TestNG JAVA test framework, and Cucumber for BDD.

## Pass/Fail Criteria

Each Test Item will be assigned a Pass or Fail state depending on two criteria:

* Total number and severity/urgency of Bugs in an Open & Unresolved state.
* The level of successfully executed test requirements.

The combination of both criteria will be used to recognize whether the Test Item can be declared Test Complete.

### Urgency Cases

It defines how important the bug/defect is and how early it should be addressed according to business impact.

* **High**: Has a damaging effect on the brand, image, or reputation of the company if it impacts customer data integrity/security. Suppose the user experience is completely broken or is unreasonable for the customer.
* **Medium**: Only parts of the UX are impaired, but core functionality is not affected.
* **Low**: Minor UX impact, all functionality works but might need reasonable additional effort.

### Severity Cases

Defined by the extent of damage done by the bug or the extent of damage that may occur because of the bug/defect.

* **High**: Core functions that most of the users are using are not working at all, such as broken login or signup.
* **Medium**: Essential functionalities that likely a large portion of users are using are not working at all or working with degraded performance, such as reset password, and push notifications.
* **Low**: Minor functionalities that few users are likely using are not working at all or are working with degraded performance, such as changing avatar, changing setting, etc.

### Priority Matrix

The combination of urgency and severity for each defect/request according to the below

table. Usually, the business sets the urgency, and the technology sets the severity.

|  |  |  |
| --- | --- | --- |
| **Priority** | **Urgency** | **Severity** |
| **P0** | High | High |
| **P1** | High | Medium |
| Medium | High |
| **P2** | High | Low |
| Medium | Medium |
| Low | High |
| **P3** | Medium | Low |
| Low | Medium |
| **P4** | Low | Low |

## Suspension Criteria & Resumption Requirements

Testing of Features To Be Tested will be suspended if:

**Case 1:**

**Suspension Criteria:** A Severity 1 issue is logged and requires fixing before further testing can take place (a Blocking Issue)

**Resumption Requirement:** The issue will need to be fixed before the Test Item is returned to the Test Team for testing.

**Case 2:**

**Suspension Criteria:** Significant differences exist between the observed behavior of the Test Item and that shown in the Test Scenario, Test Case, or as expected from the previous build of the application.

**Resumption requirement:** The development, QA, and PO team must conclude on resolving the issue and agree on a definition of the expected behavior.

**Case 3:**

**Suspension Criteria:** A Test Item sent for testing fails more than 20% of total test cases.

**Resumption Requirement:** The Test Item must be fixed and demonstrated to pass with <20% failure rate.

## Entry/Exit Criteria

### Test Phase Entry Criteria

Before Features To Be Tested are made available for the QA Team to test, it is expected that:

* All test tools are available, and test infrastructure is available for use during testing.
* All Features To Be Tested are development complete.
* Sanity and Unit tests have been completed successfully to demonstrate readiness for the test.

### Test Phase Exit Criteria

For the Features To Be Tested to exit testing, the following conditions will have to be met:

* The *Test Summary Report* will be completed.
* All planned testing activities have been completed to the agreed levels.
* All high-priority bugs have been fixed, retested, and passed.
* No defects must be left in an Open/Unresolved status

# Risks and Contingencies

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Risk** | **Mitigation Strategy** | **Impact** |
| 1 | Delays in delivering completed  Features To Be Tested from Development would impact test timescales and final Release quality. | * PO & Scrum Master must monitor code merge progress * Technical Delivery and Chapter Leads should raise any risk that may occur during the release * QA and Development Engineers should raise any blockers faced during the Sprint or Release | High |
| 2 | Delays in the turnaround time for fixing critical bugs, which would require re-testing, could have an impact on the release dates. | Strong management of bug resolution would be required from Development team to ensure bugs are fixed and available for re-testing in the scheduled time. | High |
| 3 | The QA, Development or PO teams require any guidance from one or the other and they are not available.  This would delay project activities. | The QA, Development and PO teams to ensure they are available at critical points or contactable during the project activities. | Medium |
| 4 | Features To Be Tested will not be testable. | The QA Team will record untested features and request the PO to assess business risk in support of the release of untested features. | Low |
| 5 | Unexpected change/upgrade in dependencies are encountered that require revision of Test Scenarios and related Test Cases. | Information about dependencies is updated and communicated promptly to allow timely revision of Test Scenarios and Test Cases | Low |

# Test Tools

1. **Functional Testing**: Selenium, Postman
2. **Load/Stress Testing**: REST Assured, JMeter
3. **Bug Tracking**: Jira, Bugzilla, Excel
4. **Reporting**: ExtentReports, Allure

# Test Deliverables

The following artifacts will be produced during the testing phase:

1. Test Plan
2. Test Cases
3. Bug Report
4. Test Summary Reports