

Automation Test Plan

Product Name: Open Weather



OpenWeather

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Table of Contents

- Table of Contents.....2
- Objective.....3
- Project Overview.....3
- Assumptions.....3
- Return on Investment (ROI).....3
- Automation Plan.....4**
 - Scope of Automation Testing.....4
 - In Scope.....4
 - Out of Scope.....4
 - Test Automation Tools.....4
 - Test Data.....4
- Automation Design.....5**
 - Test Strategy.....5
 - Test Framework.....6
 - Test Scripts.....6
 - Test Environment Configuration.....7
- Automation Execution.....7**
 - Test Execution Schedule.....7
 - Test Deliverables.....7
 - Continuous Integration.....8
 - Defect Management.....8
- Test Automation Reporting.....8**
 - Test Execution Reports.....8
 - Test Coverage Reports.....9
 - Automation Maintenance.....9
 - Entry and Exit Criteria.....9
 - Requirement Analysis:.....9
 - Test Planning:.....9
 - Test Designing.....10
 - Test Execution.....10
 - Test Closure.....10
 - Suspension and Resumption Criteria.....10
 - Risk and Mitigations.....11
 - Approvals.....11

Objective

The objective of this Automated Test Plan is to ensure the effective testing of OpenWeatherMap.org's functionalities in an automated manner. The plan outlines the scope, schedule, and execution details for automated testing.

Project Overview

OpenWeatherMap.org is a web-based platform providing users with real-time weather information and personalized services. The automated testing approach aims to validate the functionality outlined in the FRS and ensure a high level of software quality.

Assumptions

The application is deployed in the testing environment.
Test data is available for various scenarios, including valid and invalid inputs.
The test environment mirrors the production environment in terms of configurations.

Return on Investment (ROI)

The implementation of automated testing will result in increased test coverage, faster feedback cycles, and reduced manual testing efforts. ROI will be measured in terms of reduced defect count, increased release frequency, and improved overall software quality.

Automation Plan

Scope of Automation Testing

The automation scope includes test scenarios related to the following:

In Scope

- Homepage search feature and weather display section
- User Registration
- User login

Out of Scope

- The initial segment of the homepage is the only area that will undergo automation. The remaining sections will be subject to manual testing due to impracticality.

Test Automation Tools

The following tools are selected for their compatibility with the application's technology stack:

- Carina Framework
- TestNG
- Selenium
- Appium
- Selenium Grid
- Docker
- Jenkins

Test Data

A comprehensive set of test data, including positive and negative test cases, will be prepared to validate different scenarios. (Link will be provided soon)

Automation Design

Test Strategy

Gian (QA manager) has communicated with 'OpenWeather' and has understood that we need to perform Functional Testing of all the functionalities mentioned in the Scope section.

As part of Functional Testing, we will follow the below approach for Testing:

Step#1 – Creation of Test Scenarios and Test Cases for the different features in scope.

We will apply several Test Design techniques while creating Test Cases

- Equivalence Class Partition
- Boundary Value Analysis
- Decision Table Testing
- State Transition Testing
- Use Case Testing

We also use our expertise in creating Test Cases by applying the below:

- Error Guessing
- Exploratory Testing

We prioritize the Test Cases using P0, P1, etc.

Step#2 – Our Testing process, when we get the website for Testing:

- Firstly, we will perform Smoke Testing to check whether the different and important functionalities of the application are working.
- We reject the build, if the Smoke Testing fails and will wait for the stable build before performing in-depth testing of the web application functionalities.
- Once we receive a stable build, that passes Smoke Testing, we perform in-depth testing using the Test Cases created.
- Multiple Test Resources will be testing the same website on Multiple Supported Environments simultaneously.
- We then report the bugs in the bug tracking tool and send dev. Management of the defect found on that day in a status end-of-the-day email.

As part of the Testing, we will perform the following types of Testing:

- Smoke Testing and Sanity Testing
- Regression Testing and Retesting
- Functionality Testing

We repeat Test Cycles until we get the quality product.

Step#3 – We will follow the below best practices to make our Testing better:

- Context-Driven Testing – We will be performing Testing as per the context of the given application.
- Shift Left Testing – We will start testing from the beginning stages of the development, instead of waiting for the stable build.
- Exploratory Testing – Using our expertise we will perform Exploratory Testing, apart from the normal execution of the Test cases.
- End-to-End Flow Testing – We will test the end-to-end scenario which involves multiple functionalities to simulate the end-user flows.

Test Framework

The test automation framework will be the Carina Framework, chosen for its scalability, maintainability, and ease of configuration..

Test Scripts

Test scripts will be developed to cover the functional requirements outlined in the FRS. Test cases will be modular, reusable, and well-documented.

Test Environment Configuration

The test environment will be configured to simulate real-world scenarios, ensuring the reliability of the automated tests.

- Windows 10 - Chrome, Firefox
- Android Mobile OS - Chrome, Mobile App
- iPhone OS - Safari, Mobile App

Automation Execution

Test Execution Schedule

Automated tests will be executed [insert frequency], focusing on major releases, new feature implementations, and critical bug fixes.

Task	Time Duration
Creating Tes Plan	11-10 2023- In Progress
Test Case Creation	Start date to end date
Test Case Execution	Start date to end date
Summary Reports Submission	Date

Test Deliverables

The following are to be delivered to the client:

Deliverables	Description	Target Completion Date
Test Plan	Details on the scope of the project, test strategy, test schedule, resource requirements, test deliverables.	Date
Functional Test Cases	Test Cases created created for the scope defined	Date
Defect Reports	Detailed description of the defects identified along with screenshots and steps to reproduce on a daily basis.	na
Summary Reports	Summary Reports - Bugs by Bug# Bugs by Functional Area Bugs by Priority	

Continuous Integration

Automated tests will be integrated into the continuous integration pipeline to facilitate quick feedback and early detection of issues.

Defect Management

Defects identified during automated testing will be documented in Jira(Needs to be set up). The severity and priority of defects will be assessed and communicated promptly to the development team.

Test Automation Reporting

Test Execution Reports

Detailed test execution reports, including pass/fail status, logs, and screenshots, will be generated and shared after each test cycle.

Test Coverage Reports

Coverage reports will be generated to track the percentage of functional requirements covered by automated tests.

Automation Maintenance

Regular maintenance will be performed to update test scripts in response to changes in application features, ensuring ongoing relevance and accuracy.

Entry and Exit Criteria

The below are the entry and exit criteria for every phase of Software Testing Life Cycle:

Requirement Analysis:

Entry Criteria:

- Once the testing team receives the Requirements Documents or details about the Project.

Exit Criteria:

- List of Requirements are explored and understood by the Testing team
- Doubts are cleared

Test Planning:

Entry Criteria:

- Testable Requirements derived from the given Requirements Documents or Project Details.
- Doubts are cleared.

Exit Criteria

- Test Plan document is signed-off by the Client.

Test Designing

Entry Criteria:

- Test Plan Document is signed off by the Client

Exit Criteria:

- Test Scenarios and Test Cases Documents are signed off by the Client.

Test Execution

Entry Criteria

- Test Scenarios and Test Cases Documents are signed-off by the Client
- The application is ready for Testing

Exit Criteria:

- Test Case Reports, Defect Reports are ready

Test Closure

Entry Criteria:

- Test Case Reports, Defect Reports are ready.

Exit Criteria:

- Test Summary Reports.

Suspension and Resumption Criteria

Based on the Client's decision, we will suspend and resume the Project.
We will ramp up and ramp down the resources as per Client needs.

Risk and Mitigations

The following is the list of risks possible and the ways to mitigate them:

Risk: Non-availability of a Resource

Mitigation: Backup Resource Planning

Risk: The build URL is not working

Mitigation: Resources will work on other tasks.

Risk: Less time for Testing

Mitigations: Ramp up the resources based on the client's need dynamically.

Approvals

The team will send different types of documents for Client Approval like below:

- Test Plan
- Test Scenarios
- Test Cases
- Reports

Testing will only continue to the next steps once these approvals are done.