Open Weather Map

Test Plan – v1.0

Date: 15/08/2021

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **APPROVALS** | | | | |
|  | Roles | NAME | DATE | \*SIGNATURE |
| Prepared by | QA Team | Tri Trieu | 15/08/2021 | Tri Trieu |
| Updated by | QA Team |  |  |  |
| Reviewed by |  |  |  |  |
|  |  |  |  |
| Approved by |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

Document Distribution:

This document is available in the Confluence

Confluence Location:

Modification History

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Version No. | Date | Changes made | Author | Reviewer |
| 1.0 | 15/08/2021 | Test Plan Created | Tri Trieu |  |
| 1.0 | 15/08/2021 | Review Test plan |  | Tri Trieu |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

Table of Contents

[1 Introduction 4](#_Toc80000287)

[2 Objectives 4](#_Toc80000288)

[3 Project Scope 4](#_Toc80000289)

[3.1 In Scope 4](#_Toc80000290)

[3.2 Out of Scope 4](#_Toc80000291)

[4 Release Milestones 5](#_Toc80000292)

[5 Risk Management 5](#_Toc80000293)

[6 Test Strategies 6](#_Toc80000294)

[6.1 Test Design Engineering Techniques 6](#_Toc80000295)

[6.2 Test Approach and Procedure 6](#_Toc80000296)

[6.3 Test Execution Mechanism 7](#_Toc80000297)

[6.4 Suspension & Resumption Criteria 7](#_Toc80000298)

[6.4.1 Suspension Criteria 7](#_Toc80000299)

[6.4.2 Resumption Criteria 7](#_Toc80000300)

[6.5 Types of Testing 7](#_Toc80000301)

[6.5.1 Sanity Testing 7](#_Toc80000302)

[6.5.2 System Testing 7](#_Toc80000303)

[6.5.3 Cross Browser Testing 8](#_Toc80000304)

[6.5.4 Performance Testing 8](#_Toc80000305)

[6.5.4.1 Load Test 8](#_Toc80000306)

[6.5.4.2 Stress Test 9](#_Toc80000307)

[6.6 Test Responsibilities 9](#_Toc80000308)

[7 Entry and Exit Criteria 10](#_Toc80000309)

[8 Test Environment 10](#_Toc80000310)

[9 Test Coverage & Management 10](#_Toc80000311)

[9.1 Test coverage 10](#_Toc80000312)

[9.2 Test case 10](#_Toc80000313)

[10 Defect Management 10](#_Toc80000314)

[10.1 Defect Tracking Tool 10](#_Toc80000315)

[10.2 Defect Priority 10](#_Toc80000316)

[10.3 Defect Status 11](#_Toc80000317)

[11 Test Deliverables 11](#_Toc80000318)

# Introduction

This document is an overview, defining the Testing strategy & describes the test activities performed on ‘Open Weather Map’ project.

The document will also address the testing standards & techniques to be applied in the entire testing phase.

# Objectives

The objectives of Test Plan are to provide a high-level description of the test activities to be performed on ‘Open Weather Map’. The Test plan aims at addressing the following details

* + Testing strategies & methodologies
  + Entry and exit criteria
  + Risks & Assumptions
  + Test Environment
  + Test case & Defect Management
  + Deliverables of testing

# Project Scope

## In Scope

The Testing Scope includes

* + Search weather in your city
  + Cross Browser Testing
    - Desktop: Windows-10
    - Browser: Chrome, Firefox
    - Device: Computer
    - OS: Window 10

*Note: The testing will be done on latest available browser version.*

* + Performance testing: Load Test and Stress Test are required
  + System Testing, Functional Test, Regression Test, Sanity Test

## Out of Scope

* + Testing Device: Mobile is out of scope.
  + Browser Compatibility Testing: All scenarios will not be tested in all the browsers.
  + Testing legacy application is out of scope.
  + Security, Accessibility
  + Integration Testing

# Release Milestones

|  |  |  |
| --- | --- | --- |
| Project Milestones | Dates | Environment |
|  |  |  |
|  |  |  |
|  |  |  |
|  |  |  |

# Risk Management

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **SL No** | **Process Step** | **Description** | **Risk Level** | **Mitigation strategy** | **Responsibility** |
| 1 | Requirements | Don’t have requirements | Medium |  |  |
| 2 | Tool | Tool for performance test is not ready | Medium |  |  |
| 3 | Resource | Do not have enough human resources for testing or skill test | High |  |  |
|  |  |  |  |  |  |

# Test Strategies

## Test Design Engineering Techniques

Following are the testing techniques which would be followed.

* + Equivalence Partitioning
  + Boundary Value Analysis
  + Experience-based Test Technique

## Test Approach and Procedure

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Test Level** | **Test Types** | **Strategy / Methods** | **Source for Test Case Identification** | **Techniques for Identification of test cases** |
| System Testing | Functional testing | Black box testing | Defined Test Cases | Functional, Boundary value analysis, Equivalence partitioning, Experience-based Test Technique |
| Regression testing | Black box testing | Test Cases | Specify the functional areas to regress and the level of regression needed (Impacted Areas). |
| Cross Browser Testing | Black box testing | Regression Test cases | Desktop Browsers – Latest available version  **Windows 10**  Browser: Chrome, Firefox, |
| Performance Testing | Load Test |  | User Stories | Using JMeter tool to implement the test script |
| Performance Testing | Stress Test |  | User Stories | Using JMeter tool to implement the test script |

The test approach follows below steps

**System Test:**

* Test case design is design using black box technique and is written in Test Specification.xlsx file
* If there are any defects found, it will be reported in Defect Tracker.xlsx which is the defect management file. Once defects are resolved, verification of defects will be carried out to make sure the defects are working as expected.

**Performance Test:**

Using JMeter tool to record the test scenarios

## Test Execution Mechanism

* Test task for verification will be picked when all the development task is completed and build is deployed to QA.
* QA task will be closed once testing is completed and all the related defects not satisfying the acceptance criteria will be raised for the fixes.
* The Blocker and Critical defects blocking the testing will be fixed within the sprint and rest of the defects will be moved to backlog.
* For Performance Test, execute the test scenarios via command line

## Suspension & Resumption Criteria

## Suspension Criteria

## Resumption Criteria

## Types of Testing

## Sanity Testing

|  |  |
| --- | --- |
| Objective | The objective of Sanity testing is to verify the "stability" of the system in to proceed with system testing. |
| Technique | Mark few major Test case(s) as required for Sanity which will state the stability of the build. |
| Reference Documents | User Stories |
| Scenarios / Strategies | * Frequently-used functionality that introduces high risk conditions. * Feature which is Business critical. |
| Completion Criteria: | All planned tests have been executed.  All identified defects have been addressed. |

## System Testing

|  |  |
| --- | --- |
| Testing Type | **Functional Testing** |
| Objective | The purpose of functional testing is to reveal defects related to the products /component’s functionality. It aims to assist in ensuring that the item under test conformances to its functional requirements that’s been provided on User stories. |
| Technique | Develop test cases for functional requirement and use valid and invalid data, to verify the following:  The expected results occur when valid data is used.  The appropriate alert or warning messages is displayed when invalid data is used.  Testing Techniques to be followed:   * Equivalence Partitioning, * Boundary Value Analysis, * Error Guessing * Exploratory Testing |
| Reference Documents | User Stories |
| Completion Criteria: | All planned tests have been executed.  All identified defects have been addressed. |

|  |  |
| --- | --- |
| Testing Type | **Regression Testing** |
| Objective | It seeks to uncover new errors / regressions, in existing functionality after changes have been made to the feature/module, such as functional enhancements, patches or configuration changes. |
| Reference Documents | User Stories & Designed Test Cases |
| Scenarios / Strategies | * Test cases maintained for regression cycle for the user story should be executed. * The impact of changes made should not be affected to other dependencies. |
| Completion Criteria: | All the test cases should be passed. |

## Cross Browser Testing

|  |  |
| --- | --- |
| Testing Type | **Browser Compatibility Testing** |
| Objective | Verify that the application function is proper on the required hardware and software configurations |
| Technique |  |
| Reference Documents | User Stories |
| Scenarios / Strategies | * Test in virtual browsers using browser based services. * All are functional Test cases needs to be passed * UI rendering in application should be similar among the browsers. |
| Completion Criteria: | All the test cases should be passed in different browsers across different platforms |

## Performance Testing

## Load Test

|  |  |
| --- | --- |
| Testing Type | **Non-functional Test** |
| Objective | Understand how system behaves under an expected workload |
| Technique | Using JMeter to write Test Script |
| Reference Documents |  |
| Scenarios / Strategies |  |
| Completion Criteria: | Determine how many users that system can actually handles, identify the bottleneck, measures how system handle heavy load volumes |

## Stress Test

|  |  |
| --- | --- |
| Testing Type | **Non-functional Test** |
| Objective | Checks the limit of system under extreme loads |
| Technique | Using JMeter to write Test Script |
| Reference Documents |  |
| Scenarios / Strategies |  |
| Completion Criteria: | Looks for memory leaks, data issue, security issues |

## Test Responsibilities

Following details will explain different responsibilities in various stages of testing

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Role** | **System Testing** | **Cross Browser** | **User Acceptance Testing** | **Performance Testing** |
| Task | Functional, Regression and Integration testing | Cross browser testing | UAT Testing | Load Test/Stress Test |
| Performed By | Test Team | Test Team | Customer / Product Owner | Test Team |
| Supported By | Project Team | Test Team | Project Team | Project Team |

# Entry and Exit Criteria

| **Test Level** | **Entry criteria** | **Exit Criteria** |
| --- | --- | --- |
| System Testing | Development of user story is completed and deployed in QA for testing.  Test case design is completed for the developed user story. | All test cases are executed and test results are documented.  All the user story acceptance criteria are met.  All Blocker, Critical & Major defects found are fixed and verified. Rest of the open defects will be moved to product backlog |

# Test Environment

|  |  |  |
| --- | --- | --- |
| **No.** | **Platform/OS/Browser** | **Remark** |
| 1 | OS: Window |  |
| 2 | Browser: Chrome/Firefox | Latest version |

# Test Coverage & Management

## Test coverage

## Test case

# Defect Management

## Defect Tracking Tool

Microsoft Excel

## Defect Priority

|  |  |
| --- | --- |
| **Priority** | **Definition** |
| Critical | Defect causes total loss or failure of business, unrecoverable data loss or corruption.  Prevents functionality from being used and the bug blocks significant level of testing/testing cannot proceed. |
| High | Defect causes partial failure or severely impaired functionality of business-critical functionality.  A defect where the customer or end user experience is impacted but the system/application is still usable and testing can proceed to some extent. |
| Medium | Defect causes failure of non-critical aspects of the system, or there is a work around. A defect where a customer or end user experience is not directly impacted. Where the service support could be impacted to the point of failure. |
| Low | Defect causes partial failure of non-critical aspects of the system. An acceptable work around exists or the failure can be tolerated.  A defect where the service support functions could be slightly impacted but continue operating. |

## Defect Status

|  |  |  |  |
| --- | --- | --- | --- |
| Status | Description | Next Status | State transition |
| New | Defect is logged and has been pushed to backlog or moved to current sprint | In Progress | In Progress |
| In Progress | Defect is picked for fixing | Deployed, Closed | Resolved 🡺 Deployed.  Not a defect, Not in Scope, Duplicate 🡺 Closed. |
| Deployed | Defect is fixed in local/demo environment | To Test | Deployed |
| To Test | Defect is ready for testing and deployed in QA environment | Closed | Verified 🡺 Closed |
| Closed | Approved by the verifier. |  | Can be reopened if defects exist in different environment or had any impact on regression cycle. |

# Test Deliverables

|  |  |  |  |
| --- | --- | --- | --- |
| **No** | **Document** | **Type** | **Assigned To** |
| 1 | Test Plan | MS Word | Test Lead |
| 2 | Test Cases Specification | MS Excel | Whole Test Team |
| 3 | Test Report | MS Excel | Test Lead |
| 4 | Bug Report | MS Excel | Whole Test Team |
| 5 | Performance Test Plan | MS Word | Test Lead |
| 6 | Performance Test Scenario | MS Excel | Whole Test Team |
| 7 | Performance Test Scripts | JMeter | Whole Test Team |