TEST APPROACH FOR OpenWeatherMap website

(NAB's assignment)

VERSION

Version	Date	Author	Comments/Changes
1.0	March 06, 2022	Huy Huynh	• Creation

1. INTRODUCTION

1.1 Purpose

The purpose of this document is to articulate the testing approach for the OpenWeatherMap website.

This test approach document: Defines the scope of testing at a high level

- Describes the testing approach at a high level and the types of testing conducted.
- Summarizes the resource requirements needed to undertake the testing
- Describes the test deliverables that will be produced
- Defines the testing processes and procedures followed.
- Defines each deliverable/milestone and responsibility through a RASCI matrix.

1.2 Intended Audience

This document is intended primarily for the **NAB's Quality Engineering** and **Candidate**.

2. HIGH-LEVEL PLAN AND SCOPE

Discovery phase	06 Mar – 06 March
Development phase	07 Mar – 07 March
Release	07 Mar – 07 March

2.1 The scope of work

Existing website in scope include:

https://openweathermap.org/weathermap

Verify the User Interface of OpenWeatherMap website

Verify the Functional testing and Non-Functional testing

Testing scope will cover the test for assumption by QC. QC needs to create relevant test cases to evaluate the "Search weather in your city" function

3. DELIVERY APPROACH

This assignment will use an Agile Scrum Framework to deliver a minimal viable project (MVP) identified under Project Objectives and Deliverables. The development phase, being a UAT testing phase, is completed where the NAB's Quality Engineering will have the opportunity to validate that the end of solution requirements have been met. The project's conclusion will be once all agreed assumptions have been delivered and all testing has been completed and signed off by the NAB's Quality Engineering.

Regression testing will be utilized throughout the life cycle of delivery.

Manual test cases were created against the Acceptance Criteria for the candidate's assumptions and reviewed by NAB's Quality Engineering.

4. PHASES AND CYCLES OF TESTING

4.1 Testing Types

The testing process for this project is based on an agile approach in which all testing phases are considered and planned for at each sprint. To help keep release items on point, the candidate will provide the assumption, then send the document in Github to the NAB's Quality Engineering for review and provide sign-off on what has been delivered to ensure it lines up with the theme of the release.

4.1.1 System Testing

- A candidate will perform system Testing, carried out in the https://openweathermap.org/weathermap
- Each function is tested in context to the candidate's assumption. Exploratory testing to find out unexpected issues.
- Testing coverage was executed alongside the candidate's assumption
- Test Summary Report (TSR) has been submitted by the candidate upon completion before adding it into Github.

This is the testing of the deployed applications or systems in isolation from each other. The main objectives of System Testing include

- Early recognition of bugs within the application
- Early verification that the detailed design has been implemented
- Early validation that the software satisfies the business requirements.

4.1.3 Exploratory Testing

A candidate will perform exploratory testing where test cases are not created in advance. The team may note down what to test before test execution to find unexpected issues.

Environment: https://openweathermap.org/weathermap

4.1.4 System Integration Testing

- Integration testing is performed by testers when multiple components are combined and tested together. It also includes testing 3rd party systems (Search the temperature, Chatbot, etc.)
- Conducted in https://openweathermap.org/weathermap
- Regression on previous functionality will be conducted by the candidate.

4.1.5 User Acceptance Testing

- A separate UAT phase is scheduled to go ahead once all functionality is delivered
- As there is no additional scope, the UAT phase will focus on additional comprehensive regression by the NAB's Quality Engineering on https://openweathermap.org/weathermap
- Will validate all business requirements have been met. Stories are ready to go to Production.
- It aims to show that all business requirements are implemented with the intended completeness and correctness and gain user confidence and ultimately their acceptance of the new system.

4.1.6 Regression Testing

- Testing will be assessed for the need to complete any regression testing to ensure previously delivered and passed test results have not been impacted by the functionality completed.
- Environment: https://openweathermap.org/weathermap
- Regression testing will ensure the continuity of business functions and the overall stability of previously delivered.
- Used to determine whether new problems are the result of changes

4.1.7 Performance Testing

- Validate the fundamental features of the software
- Measure the speed, accuracy, and stability of software
- Performance testing allow you to keep your users happy
- Identify discrepancies and resolve issues
- Improve optimization and load capability
- Methodology: Jmeter tool

- Scenarios: A candidate needs to define the exact scenarios with the NAB's Quality Engineering (about 4 Scenarios). For example, scenario #1: Total number of users accessing the site and doing the search weather.

4.1.8 Security Testing

We will use the Open Source Tool Burp Suite Professional for security testing. Burp Suite Professional can help test for OWASP Top 10 vulnerabilities and the latest hacking techniques:

1. Intercept everything your browser sees
2. Manage recon data
3. Expose hidden attack surface
4. Test for clickjacking attacks
5. Work with WebSockets
6. Facilitate deeper manual testing
7. Automated scanning for vulnerabilities
8. Deep-dive message analysis
9. Remediate bugs effectively
10. Simplify scan reporting

Environment: https://openweathermap.org/weathermap

Methodology: Use the Burp Suite tool for execution and export the report

4.1.9 Accessibility Testing

- Validate and fix HTML, CSS, and JS issues.
- Screen reader and Tab index required for Accessibility will be included.

Environment: https://openweathermap.org/weathermap

Methodology: WCAG 2.1 (Level AA verified by AChecker tool).

4.1.10 Other testing methods OUT OF SCOPE:

- Unit Testing
- A/B Testing
- Multivariate Testing

5. TEST DELIVERABLES

The following deliverables will be produced from testing undertaken on this project.

The exact responsibilities for all test deliverables are described in the table below

5.1 Key

R = Responsible “Owns and is responsible for delivering the deliverable”

A = Approve “Must provide approval”

S = Support “Provides resources to support the deliverable”

C = Consulted “Has information or capability that can assist the deliverable and must be consulted”

I = Informed “Must be Notified of results, however needs to be consulted”

N/A = Not Applicable “This deliverable is not applicable for this project”

Milestone/Deliverable		**Description**	**NAB's Quality Engineering**	**Candidate**	**Accountability**
Test Management	Manage the Project Testing	Provide a resource to manage the delivery of testing including test artifacts and bug management	A	R	Candidate
Test Approach	Document the Test Approach	Document the Test Approach for	A	R	Candidate

		this assignment			
Test case creation	Create test case	Create test case for search weather feature	A	R	Candidate
Test Data setup	Manage and create test data	Identify, create and manage any data required for project testing for all manual testing tasks	A	R	Candidate
Test case review	Review the test case	Review test cases compiling from candidate	A	R	Candidate, NAB's Quality Engineering
Test execution	Execute testing	Execute the testing according to the plan.	A	R	Candidate

SIT & UAT plan	System integration testing and user acceptance test plan	Identify and document all SIT & User Acceptance testing Walkthrough on test deliverables for SIT & UAT and testing process	A	R	Candidate, NAB's Quality Engineering
SIT & User Acceptance test execution and status reporting	- Monitor and Coordinate SIT & User Acceptance Tests as per the Plan. - Triage bugs raised.	Execute the testing according to the plan. Provide execution status reporting.	R	A	Candidate
Regression test execution	Execute regression testing	Execute regression test for implemented stories	A	R	Candidate

Test Summary Report	Document Test Summary Report	Completed and approved Project Test Summary report for the testing phase	A	R	Candidate

6. TEST PLAN

Test Plans will be provided for the following phases of testing

6.1 Traceability Strategy

Traceability will be provided as follows:

1. Test cases will be created and mapped to each user story to show test coverage of each acceptance criteria
2. Bugs will be created and linked to test cases against a user story
3. Stories added to backlog linked back to Epics

6.2 Test Scripts

Each test case will be created and executed in an Excel file. Each test case will be traced back to the acceptance criteria of a user story or bug by linking the issues together.

6.3 Test Summary Reports

A final Test Summary Report will be produced upon completion of SIT & UAT.

7. TEST PROCESSES AND PROCEDURES

This section outlines any processes and procedures specific to the test management on this project.

7.1 Defect Management

When bugs are raised during the testing phase, they will be managed by the following process:

The bug is assigned to the NAB's Quality Engineering for review, prioritization, and assignment if necessary, otherwise the bug can be directly assigned to the relevant person for fixing.

If priority is classified as a P3 or P4, it may be added to the backlog and re-prioritized for a later sprint.

7.2 Defect Priorities

Priority	**Definition**	**Resolution**
Critical	• All testing activities cannot progress. • The major impact to testing and project schedules. • Major disruption to testing activities. • Moderate impact on testing and project schedules.	• Fix immediately. • Emergency patch required. • Fix as soon as possible.
High	• Major impact on testing and project schedules. • Significant disruption to testing activities. • Moderate impact on testing and project schedules.	• Fix as soon as possible. • Scheduled patch required. •

Medium	• Testing activities can continue in several areas. • Minimal impact on testing schedule. • No impact to project schedule.	• Fix within the next release. • Fix by next complete build.
Low	• Testing activities can continue. • No disruption to the testing schedule.	• Fix when convenient

7.3 Defect Severity

Severity	**Definition**	**Resolution**
Critical	• This defect indicates complete shut-down of the process. Nothing can proceed further	• Fix immediately. • Emergency patch required. • Fix as soon as possible.
High	• It is a highly severe defect and collapses the system. However, certain parts of the system remain functional	• Fix as soon as possible.
Medium	• It causes undesirable behavior, but the system is still functional	• Fix within the next release.

Low	• It won't cause any major break-down of the system	• Fix when convenient

8. TEST SCOPE BROWSERS/DEVICES

ID	Browsers/Devices	Versions
1	Chrome	Latest version
2	Mac: Safari	Latest version
3	Ipad Pro 12.9 inch	iOS 14
4	iPhone 11	iOS 14
5	Samsung Galaxy Tab S7	Android 11
6	Samsung Galaxy S10+	Android 11

9. FEATURES LIST

“Search weather” feature

10. TEST SCHEDULE

Assuming we use two days for testing instead of using Sprint:

- The 1st day:
    - Analyze the requirement
    - Analyze the “Search weather” feature
    - Create the Test Approach
    - Design the assumption (User Story)
- The 2nd day:
    - Design the Test case
    - Design the Bug Report
    - Design the test automation script for UI Automation as basic level
    - Create the Pull Request into Github and send the result

11. RESOURCES/ROLES & RESPONSIBILITIES

Candidate:

- Propose the solutions to solve the problem (if any)
- Analyze the feature
- Create and update test cases (if any)
- Do sprint Test approach and Test report

12. TOOLS

- Test approach on Microsoft Word
- Test case on Microsoft Excel
- Jmeter tool
- AcheckerBurp
- Suite tool
- Github

13. RISK AND ISSUE MANAGEMENT

Security and performance testing are conducted in Production. If a major security/performance flaw is found, timelines may be impacted.

Have less information because all information (Acceptance Criteria of User Story) is based on the candidate’s assumption. Some points may be a misunderstanding between NAB’s Quality Engineering.