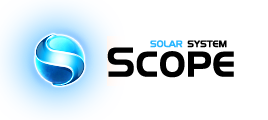
5/31/2024



**QA Project**

VERSION 1.1

Solar System Scope

Software Test Plan

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# 1 Introduction

The Test Plan has been created to communicate the test approach to team members. It includes the objectives, scope, schedule, risks, and approach. This document will clearly identify what the test deliverables will be and what is deemed in and out of scope.

## Objectives

**Solar System Scope** calculations are based on orbital parameters published by NASA, it is a unique planet maps are based on NASA elevation and imagery data. Colors and shades of the textures are tuned according to true-color photos made by Messenger, Viking, Cassini and new horizon spacecrafts, and the Hubble Space Telescope.

### Goals

• Verify the functionality of all features

* Verify the non-functionality of all features
* Verify changes and updates functionality and non-functionality

## Team Members

|  |  |
| --- | --- |
| **Resource Name** | **Role** |
| Majd Bader | Tester |
| Ehab Khalil | Tester |
| Ali Fares | Tester |

# Scope

The testing scope includes all functional and non-functional requirements of the **Solar System Scope** website. This encompasses:

## In-scope:

* Functional testing
  + Unit tests
  + Component tests
  + Sanity tests
  + Regression tests
  + Integration tests
  + API
  + User interface
  + End-To-End
* Non-functional
  + Performance
    - Load
    - Stress
    - Volume
  + Security
  + Upgrade & Installation
  + Recovery
  + Localization & Globalization
  + Usability
  + Compatibility

## Out-of-scope:

## The following items are considered out-of-scope for testing in this project:

* Testing the feature of creating an option to interact and observe planets using a telescope according to the website's data, it involves unique platform requirements and integration challenges that are not within the current project's focus.

# Assumptions / Risks

## Assumptions

* The development team will deliver builds according to the agreed-upon schedule.
* Required test environments and tools will be accessible and ready for use. As we will specify what tools in the upcoming sections.

## Risks

The project has identified the following risks along with their potential impact and mitigation strategies:

***#1*** ***Risk:*** Key team member planning a 4-week absence for marriage.

***Impact (Severity):*** Medium-Low.

***Trigger:*** Potential decrease in productivity.

***Mitigation Plan:*** One of our key team members is scheduled to take a 4-week leave for their wedding. While planned, this absence may temporarily reduce productivity for tasks assigned to him. To minimize this risk, we will plan additional hours among other team members in advance to cover the workload during his absence. By redistributing responsibilities and ensuring full coverage, we aim to maintain productivity levels and minimize any impact on project timelines.

# Test Approach

The project adopts an agile approach using scrum, with iterations conducted every two weeks to deliver and test identified requirements. This iterative process ensures continuous improvement of the website's functionalities to meet the highest standards of quality.

### 4.1 Methodologies and Techniques

To evaluate the website's functionalities, the following testing methodologies and techniques will be used:

* Manual Functional Testing
* Manual non-Functional Testing
* Automated functional testing
* Black-Box
  + State transition
* Experiencebased

# Test Environment

#### 5.1 Browsers - Testing will be conducted on the following commonly used web browsers:

* Safari
* Google Chrome
* Microsoft Edge
* Opera
* Firefox

#### 5.2 Devices - Testing will cover a range of devices to ensure compatibility across various platforms:

**Desktops:**

* Windows: Desktops with Windows operating system
* Linux: Desktops with Linux operating system
* macOS: iMacs from Apple

**Laptops:**

* Windows: Laptops with Windows operating system
* Linux: Laptops with Linux operating system
* macOS: MacBooks from Apple

**Tablets:**

* Android: Android tablets
* iOS: iPads (iOS tablets)

**Smartphones:**

* Android: Android phones
* iOS: iPhones

# Milestones / Deliverables

## Test Schedule

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Task Name** | **Start** | **Finish** | **Effort** | **Comments** |
| Test Planning | 31.05.24 | 16.07.24 | 46 d |  |
| Review Requirements documents | 01.06.24 | 04.06.24 | 3 d |  |
| Staff and train new test resources | 04.06.24 | 08.06.24 | 4 d | 2 Testers should be hired |
| Functional testing – Iteration 1 | 08.06.24 | 10.06.24 | 2 d | 3 Test cases should be covered |
| Functional testing – Iteration 2 | 10.06.24 | 12.06.24 | 2 d | 4 Test cases should be covered |
| Functional testing – Iteration 3 | 12.06.24 | 15.06.24 | 3 d | 2 Test cases should be covered |
| Non-functional testing – Iteration 1 | 15.06.24 | 18.06.24 | 3 d | 1 Test case should be covered |
| System testing | 18.06.24 | 23.06.24 | 5 d |  |
| Confirmation testing | 23.06.24 | 28.06.24 | 5 d | Updating version and adding features |
| Regression testing | 28.06.24 | 02.07.24 | 4 d | Full system testing after updating version and adding features |
| User acceptance testing  (alpha testing) | 02.07.24 | 05.07.24 | 3 d | 30 Users would be invited |
| Resolution of final defects and final testing after bugs fixing | 05.07.24 | 10.07.24 | 5 d |  |
| Deploy to Staging environment | 10.07.24 | 14.07.24 | 4 d |  |
| Release to Production | 14.07.24 | 16.07.24 | 2 d | Weekends and holidays are included |

## Deliverables

|  |  |  |
| --- | --- | --- |
| **Deliverable** | **For** | **Date / Milestone** |
| Test Plan | Project Manager; QA Director; Test Team | 20.06.24 |
| Traceability Matrix | Project Manager;  QA Director | 30.07.24 |
| Test Results | Project Manager | 31.07.24 |
| Test Status report | QA Manager,  QA Director | 11.08.24 |

**7. Entry Criteria**

**Development Completion**

The beginning if testing, when we ensure that the core functionalities of the Solar System Scope website have been fully developed and have undergone thorough component testing. This includes:

* **Core Features:** All essential website features, such as user registration, login, profile management, content creation, and search functionality, should be implemented and functional.
* **Component Testing:** Individual components, such as input fields, buttons, menus, and data handling mechanisms, should have been tested to ensure they function as intended and integrate seamlessly.

**Test Documentation**

To streamline and guide the testing process, comprehensive test documentation should be available. This documentation should include:

* **Test Plan:** A detailed test plan outlining the overall testing strategy, objectives, scope, and schedule.
* **Test Cases:** Clearly defined test cases for each feature or functionality, specifying the test steps, expected results, and actual outcomes.
* **Traceability:** A mechanism to link test cases back to specific requirements, ensuring that all requirements are adequately covered by the testing effort.

**Stable Test Environment**

To ensure consistent and reliable testing results, a stable test environment should be established:

* **Tester Involvement:** Testers should be actively involved in the testing process, providing feedback and identifying potential issues therefore we decided to hire a group of three testers to be involved in our testing process.
* **Hardware Availability:** Ensure that all needed hardware materials are existing including:

1. Computers
2. Tablets
3. Smartphones
4. Different operating systems (Windows, Linux, Android, iOS).

* **Software Environment:** Ensure that a stable and consistent software environment is existing including:

1. Web browsers
2. Testing tools

**8. Exit Criteria**

Once testing is complete, the following criteria should be met before considering the testing phase as successful:

**Test Coverage**

A significant portion of the defined test cases should be executed, indicating thorough coverage of the website's functionalities***. A target of at least 80% test case coverage is recommended.***

**Defect Resolution**

* **Critical Bugs:** All critical bugs, which severely impact core functionalities, should be addressed and resolved. The acceptable number of unresolved critical bugs should be minimal, ***ideally no more than 7***. Additionally, all high-priority bugs, which significantly affect user experience, should be addressed.
* **Medium-Severity Bugs:** Medium-severity bugs, should be addressed or mitigated with workarounds.
* **Low-Severity Bugs:** Low-severity bugs, which do not directly impact user experience or core functionality, can be deferred to later stages, ***but any major issues should be identified and addressed.***

**Feature Coverage**

* **Critical Features:** All critical and core website features should be thoroughly tested to ensure they function as intended and meet user expectations. This includes features such as:

1. **User registration and log-in**
2. **Search** **option** **validity**
3. **Appearance and clarity**

* **Secondary Features:** Secondary features, which enhance user experience but are not essential for core functionality, should be tested to ensure they work as expected such as:

1. **Shopping store activity**

* **Non-Critical Features:** Non-critical features, which do not directly impact user experience or core functionality, can be tested to a lesser extent such as:

1. **Paper planets feature**

***but any major issues should be identified and addressed.***

**Additional Considerations**

* **Performance Testing:** Basic performance testing should be conducted to ensure the website can handle expected user load and traffic without significant slowdowns or errors.
* **Security Testing:** A preliminary security assessment should be conducted to identify any potential security vulnerabilities.

By meeting this entry and exit criteria, you can ensure that the Solay System Scope website has undergone a comprehensive and rigorous testing process, increasing the likelihood of a successful launch and a positive user experience.

**9. Defect Management**

We will use JIRA to track, prioritize, and resolve issues found during testing. This tool facilitates effective collaboration and communication among team members. Additionally, Selenium will be employed for automating our testing process, ensuring efficient and consistent execution of tests.

**10. Reporting**

A comprehensive test report will be generated upon completion of testing. The report will encompass:

* Summary of the test plan and objectives
* Detailed description of executed test cases
* Consolidated test results, including pass/fail rates and defect summaries
* Identification of any outstanding defects or issues
* Recommendations for improvement

**11. Change Management**

Any changes to the website's requirements or functionalities during the testing process will be documented and integrated into the test plan as follows:

1. **Update to Version 1.1**: Updating the website to version 1.1 will be managed under this change management process. This update will include enhancements and bug fixes based on user feedback and testing results, ensuring a smoother and more user-friendly experience.

**12. Change Log**

**10.1 Version Changes**

The following changes were made in the current version of the Solay System Scope test plan:

**10.1.1 Version 1.0 (Initial Draft):**

* Creation of the initial draft of the test plan document.
* Definition of objectives, scope, schedule, risks, and approach.
* Focus on assumptions and risk identification.
* Description of the testing approach, methods, and techniques.
* Details of the test environment, including browsers and additional devices.
* Outline of milestones, deliveries, and defect management.
* Addition of a conclusion summarizing the test plan's purpose.

**10.1.2 Version 1.1 (Revised):**

* Updates to objectives and goals to clarify testing priorities.
* Changes in assumptions and risks based on feedback from various stakeholders.
* Adjustment of the testing approach including the addition of supplementary testing techniques.
* Expansion of test environment details including additional browsers and devices.

**13. Conclusion**

This comprehensive test plan aims to ensure that the Solar System Scope website meets the highest quality standards and delivers an exceptional user experience. By adhering to this plan, the testing team will systematically identify, document, and address any defects or issues, ultimately contributing to a successful website launch.