CatSharing App

**Test Strategy**

**Revision History**

| Date | Version | Author | Description |
| --- | --- | --- | --- |
| 10-17-2023 | 1 | Sofia Moura | - |

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# Scope

Catsharing" App is a free application that any user, worldwide, can download and use to share photos of their cats and connect with other users who are also sharing cat photos in the App.

This document will illustrate all of our testing efforts throughout this project, so that we can better plan and execute our testing approach through the development stages.

This document will need to be reviewed by all the involved teams in in the development and testing phases:

* Quality Assurance (QA) Team
* Development Team
* Product Owner
* Scrum Master

The final approval of our testing strategy will be given by the Scrum Master, Product Owner, and other stakeholders within the company (directors/managers).

# Test Approach

Starting with our testing process, it will involve six major phases, which we will call our software testing life cycle. These six phases are:

**Phase 1 - Requirement Analysis:** This phase has been completed. Our QA team studied the product requirements from a testing point of view, and identified testable requirements. During this phase the already:

* + Identified types of tests to be performed
  + Defined testing priorities
  + Built our Requirement Traceability Matrix
  + Determined test environments

**Entry Criteria:** Product requirements are defined

**Exit Criteria:** Requirement Traceability Matrix is built

**Phase 2 - Test Planning:** Current phase we are at. This phase will involve our test strategy document where we select areas around what testing tool to use, effort estimation,and roles within the team.

**Entry Criteria**: Requirement Traceability Matrix is built

**Exit Criteria:** Test Strategy document is completed

**Phase 3 - Test Case Development:** This phase will involve the creation, verification and rework around the test cases. Create and review all the test cases.

**Entry Criteria**: Test Strategy document is completed

**Exit Criteria:** All test cases were created and reviewed, and the test data is prepared.

**Phase 4 - Test Environment setup:** This phase will happen in parallel with phase 3. We will need to prepare a staging environment that matches the production environment.

**Entry Criteria**: Test Strategy document is completed

**Exit Criteria:** Smoke Test by the QA team to confirm readiness of test environment

**Phase 5 - Test Execution:** This phase the testing of CatSharing App is conducted. All test cases need to be executed and defects found need to be reported, so that the development team can work on those. In this phase, we will need to:

* + Execute Test Cases and document test results
  + Report defects and map them in our RTM
  + Retest defects
  + Determined test environments

**Entry Criteria:** All test cases have been and all test cases were created and reviewed

**Exit Criteria:**

* + 100% Test Coverage
  + 90% of test cases are marked as passed
  + No critical defects to resolve that affect functionalities (uploading, liking, and commenting photos).
  + 100% of test cases for Acceptance Testing are marked as passed.

**Phase 6 - Test Cycle Closure:** Test execution phase is completed. We should complete a Test closure report to assess time, test coverage, cost and objectives. This will help us prepare for other testing cycles in the future.

Regarding our testing levels:

* **Unit Testing:** Purpose is to test different and individual units/functionalities of our code.
* **Integration Testing:** Purpose is to test the different interactions and interfaces between our integrated components.
* **System Testing:** Purpose is to test how the entire system functions and behaves.
* **Acceptance Testing:** Test according to the business requirements and ensure that it is ready for deployment.

Regarding the responsibilities within our STLC:

**Development Team**

* Responsible for the Unit Testing
* Fix any defects during testing
* Collaborate with QA team to fix defects and make testing efficient

**QA Team (Testers)**

* Responsible for System Testing
* Responsible for Integration Testing
* Responsible for Acceptance Testing

**Scrum Master**

* Facilitate communication and collaboration in the team
* Help with blockers during the progress of testing activities
* Help prioritize tasks and achieve sprint goals

**Product Owner**

* Help us define acceptance criteria for user stories
* Collaborate with the team through the testing process to ensure the testing is according to the goals and requirements

Regarding the different types of testing, we will focus on:

* **Functional Type of Testing:** 
  + **Smoke Testing:** We will complete short test cycles to confirm that all main functionalities of the App still work. We’ll do it after we build the test environment, and everytime we change the code either to fix a bug or add a new feature.
  + **Functional Testing:** So that we can test if the behaviour of a functionality in the CatSharingApp is as expected. This will help us test the different features of the App against the requirements set.
  + **GUI Testing:** So that we can test the interface to check if size, font, color are according to the requirements, and if the App behaviour is consistent.
  + **Security/Access Testing:** So that we can test the security of the system, as well make sure our users data is protected against hacker attacks, viruses, and unauthorized access.
  + **Regression Testing:** Re-runs test cases, after changes are made to the code (will happen after smoke test is complete) to confirm that the previously existing functionality works as before.
  + **Sanity Testing:** If necessary, will also run sanity tests, for specific functionalities, after minor changes to the code or bug fixes, to ensure that these haven’t been impacted
* **Non-functional Type of Testing:** 
  + **Load testing:** So that we can test the performance for an anticipated high number of users
  + **Usability Testing:**  So that we can test if the App is clear and intuitive to use for our users
  + **Security Testing:** S that we can test and potential identify vulnerabilities and ensure data is protected
  + **Configuration Testing:** So that we can test ifif the App works as expected for different devices and operative systems

For our testing approach, we will use an Agile methodology, Scrum.

# Test Environment

We will only use two environments:

* **Development Environment:** Environment used for development, where Unit Tests and Smoke tests can also happen.
* **Staging Environment:** Where all the testing happens before we launch the software code into production
* **Production:** The environment used for the final users. Some of our use acceptance tests will happen here right before we launch the app

# Testing Tools

The tools used for this projects will be:

* **Jira:** Used for project management. Sprints and user stories will be tracked here.
* **TestRail:** Where all the testing data around test cases, test executed will leave. The team will manage all the testing within TestRial.

# Release Control

| **Version** | **Date** | **Modifications** | **Test Status** |
| --- | --- | --- | --- |
| 1.00 | 2023/11/06 | Initial release | Currently in Progress |
| 2.00 | 2023/11/20 | Bug fixes | - |
| 3.00 | 2023/12/04 | Bug fixes | - |
| 4.00 | 2023/12/18 | Performance improvements | - |
| 5.00 | 2023/12/18 | Launch an App Beta Version | - |

# Risk Analysis

* **Security Issuses:** Security tests, so that we can do an assessment on potential vulnerabilities
* **Usability Issues:** Acceptance testing, and initially launch a beta version of the App to a set of end-users to identify potential UX issues
* **Functional Issues:** Execute functional testing (including unit, integration, and system testing) as early on in testing to avoid functional defects to persist

# Review and Approvals

| **Final Date** | **Review** | **Team(s)** |
| --- | --- | --- |
| 2023/10/23 | Test Strategy Review | **Development Team**  **QA Team**  **Scrum Master**  **Product Owner**  **Company Stakeholders** |
| 2023/10/27 | Traceability Matrix Review | **Development Team**  **QA Team**  **Product Owner** |
| 2023/11/03 | Test Cases Created | **Development Team**  **QA Team**  **Scrum Master**  **Product Owner** |
| 2023/12/21 | Test closure report | **Development Team**  **QA Team**  **Scrum Master**  **Product Owner**  **Company Stakeholders** |