THINK2 HELPME PROJECT

TEST PLAN

Version 1.0
10/23/2022

VERSION HISTORY

Version #	Implemented By	Revision Date	Approved By	Approval Date	Reason
0.1	Marcus Ong	20/10/2022	Quek Xuan Hao	21/10/2022	Document Write Up

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Test Plan Identifier - HelpMeL2TP1.0

Test Plan Identifier uniquely identifies the test plan. It identifies the project and may include version information. Test plan identifier contains information of the test plan type. Here are the following types of test plans:

- Master Test Plan: A single high level plan for a project or product that combines all other test plans.
- Testing Level Specific Test Plans: A test plan can be created for each level of testing i.e. unit level, integration level, system level and acceptance level.
- Testing Type Specific Test Plans: Plans for major types of testing like Performance Testing Plan and Security Testing Plan.

This test plan is a Level 2 Test Plan for the HelpMe Android application developed by Think2. It is the first approved version of the Master Test Plan as of 23rd October 2022. The test plan will cover the scope, approach and schedule of the testing activities to be undertaken for HelpMe's development lifecycle as well as during the maintenance phase.

Introduction

This document defines the methods and strategies that will be utilized during the testing of the HelpMe application. The following are the objectives that will be accomplished:

- identify Use Cases or features to be tested,
- describe testing strategies including criteria for failure,
- identify suspension and resumption criteria,
- identify required resources to estimate test efforts.

We will apply 3 levels of testing techniques namely:

- Unit Testing,
- Integration Testing
- and System Testing.

Utilising Black Box Testing & White Box Testing.

Test Items (Functions)

The following items will be tested:

- Software Requirement Specification
- Quality Plan
- HelpMe Application
    - Functional Requirements
    - Use Cases
    -

Software Risk Issues

The following are the software critical area identified to be tested:

A. Delivery of a third party product.
B.
C.
D. Extremely complex functions
E. Modifications to components with a past history of failure
F. Poorly documented modules or change requests

There are some inherent software risks such as complexity.

A. Safety (i think pretty safe)
B. Multiple interfaces
C. Impacts on Client
D. Government regulations and rules

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Features to be Tested

The following table shows the various features to be tested. Functions tested are also given a risk level rating, High (H), Medium (M) and Low (L). More complex functions will be given a higher risk rating and simpler functions will be given a lower risk rating.

Function	Description	Risk Level
Login / Register	1. Users with existing accounts with verified email must be able to login successfully as long as the password is correct. 2. Users can create a new account, prompted by an email verification immediately thereafter. 3. “Forgot Password” should send an email to the user's registered email with a link to change the account password.	H
Manage Profile	1. Users must be able to modify their personal details, including their name, email address and contact number, for an unlimited number of times. 2. User must be able to logout of the account on the application	H
Post Services	The following functions must be reflected in the list view once completed.	L

	1. Users must be able to post a service/request. 2. Users must be able to enter a title, description, price, region, category and type of service for their posts. 3. Users must be able to delete the service they posted and the post must be removed from the database indefinitely.	
List View	1. Users must be able to see and display the list view of services posted by every user on the platform. -Explore Page(Offer/Request) 2. Users must be able to see and display the list view of services posted by them. - My Service 3. Filter Functions must be able to filter to user's specification such as: ● Choosing a region ● Choosing a category ● Choosing the type of service ○ Offer/Requests 4. User must be able to contact the poster through the use of the Contact/Email Link on the post	M

Table 1: Functions to be tested

Features not to be Tested

All features are required to be tested.

Approach (Strategy)

No specialised tools will be required for the tests, hence no special training will be required. The Strategy for the tests are as follows:

Test Strategy	Component Tested	Description	Metric Collected | Level
Whitebox testing	HelpMe Application (Full component)	The flow of the application through each function will be scrutinised using control flow testing. These paths are finite and will be predefined.	System performance - disk utilisation rate Database performance - Latency, lost data Ease of use - Can a new user navigate through the app

		Data Flow test - Determine how flow test data will flow through the system.	
Black box testing	HelpMe Application (Full component)	Inputs are provided and the output that is generated will be observed. What will be identified is how the system responds to expected and unexpected user actions, its response time, usability issues and reliability issues.	How the actual output matches the expected output

A meeting will be conducted before testing to brief testers on the different components to be tested and the schedule as specified in this test plan. A meeting will be conducted after the testing is done to notify Think2 about the defects and the schedule to fix the defects. Defects and bugs will be documented in an Excel sheet shared by the testers and the developers to know the status of the correction done. This will prolong until the software reaches an acceptable level of defects.

Item Pass/Fail Criteria

The following are the Pass/Fail Criteria for the completion of this plan:

- Pass Criteria:
    - All tests completed with a low number of cases containing defects.
    - Cases containing defects are of low risks.
    - Latency from the database does not exceed 5ms on a 300kbps Upload/Download speed wireless connection.
    - Filters reflect exact related items.
    - All code Warning and Errors are addressed. Some warnings may be left untouched, to the discretion of the testers.
    - A new user has a shallow learning curve.
- Fail Criteria:
    - Defect causing application to crash.
    - Functional Requirements not met.
    - Latency exceeds 5ms on a 300kbps wireless connection.
    - A new user takes more than 10 minutes to understand the app’s functions.

Suspension Criteria and Resumption Requirements

Acceptable level of defect:

- Filter displaying wrong items
- Latency from database exceed 300ms
- UI not displaying as expected

Unacceptable level of defect:

- Unable to Log In
- Unable to Register
- Latency exceed 15s
- UI not displaying at all
- UI freezing
- Buttons not doing any action
- Service/Request uploading not functional
- Service/Request loading not functional
- Application crashing
- Critical Error, not allowing test flow to continue

For the unacceptable levels of defect, resumption of testing will only continue when the defect has been fixed.

Test Deliverables

The following are the deliverables as part of this plan:

- Test plan document.
- Test cases.
- Test design specifications.
- Tools and their outputs.Actual outputs of the test cases.
- Problem reports and corrective actions.

Environmental Need

The following are the special requirements for this test plan.
System And Hardware

- Personal computer with Javascript-compatible Internet browser
- Android device for physical deployment
- Firebase server
- Access to internet connection

Documentation

- Reference documents
- Test set designs
- Bug reporting tools

Personnel

- Project Manager
- Release Manager
- Quality Manager
- Quality Engineer
- Lead Developer
- Frontend Developer
- Backend Developer

Setup

- Android emulator
- Android device
- Internet connection

Staffing and Training Needs

The following staffing is expect for the test plan

- 1x Quality Assurance Manager
- 1x Quality Assurance Engineer
- 1x Lead Developer

The Quality Assurance Manager and Quality Assurance Engineer needs to be familiar with both the Test Plan Documentation, Test Case and Requirements Test Coverage Report. The Developer has to be Familiar with the Software System and detailed knowledge of individual components of HelpMe.

Responsibilities

Role	**Name of personnel**	**Tasks**
Test Manager	Quek Xuan Hao, Marcus Ong	• Provides management oversight • Sets goals and approach • Acquire required resources

Test Designer	Siti Nur Umm'aira Phang, Tanya Banerjee	• Design testing procedures • Generate test plan • Evaluate effectiveness of test effort
Database tester	Antoine Tran	• Execute tests on database • Log results • Provide rectifying measures if required
Function tester	Seph Chen	• Execute tests on functionality • Log results • Provide rectifying measures if required
Database administrator	Li Jin Xuan	• Ensure integrity of database during testing • Administer test data

Schedule

Task	**Estimated Time Taken**	**Deadline**
Design Test	3 day	12/10/2022
Implement Test	1 day	15/10/2022
Execute Test	1 day	16/10/2022
Evaluate Tests/Bug Fixing	2 day	18/10/2022
Test Re-run	1 day	19/10/2022
Documentation	1 day	20/10/2022

In the event that a slippage in the schedule occurs, Think2 will prioritise the functional and non-functional requirements defined in the System Requirements Specification, and negotiate with the client regarding additional features of the application. The schedule for the test plan will then be changed and modified according to the progress of the development.

Planning Risks and Contingencies

The risks and methods to mitigate them are as follows:

- Lack of personnel resources when testing is to begin:
  All team members including those not part of the test team will help with the testing process when they are available.

- Lack of availability of required hardware, software, data or tools:
  All team members have personal computers. Some members also have Android devices, so this should not be a problem.

- Late delivery of the software:
  More team members than usual can contribute to writing the software, in order to meet deadlines. Functions with higher importance will be tested first.

- Changes to the original requirements or designs:
  The team will check if the additional amount of work needed can be completed if the members work overtime. If this does not seem feasible, the schedule can be delayed by the required number of days.

Requirements definition will be complete by September 1, 2022, and, if the requirements change after that date, the following actions will be taken:

- The test schedule and development schedule will move out an appropriate number of days.
- The number of tests performed will be reduced.
- The number of acceptable defects will be increased.
    - These two items could lower the overall quality of the delivered product.
- Resources will be added to the test team.
- The test team will work overtime.
- The scope of the plan may be changed.

Approvals

Project Manager and Release Manager are in charge of approving the tests designed and implemented by Quality Manager. Once the tests are approved, test implementation is conducted by the Quality Engineers and the lead developer. They will have to report to the Quality Manager with documentation on the tests. The Project Manager and Release Manager are then updated with the progress of the testing.

References

Documents referenced in this test plan include:

- Project Plan
- System Requirements Specifications
- Development and Test process standards
- Use Case document and diagram
- Test Cases and Requirements Test Coverage Report