GTA-Group

WaterMe
Test Plan

Version 1.0

Revision History

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Test Plan

1. Introduction

1.1 Purpose

The purpose of the Iteration Test Plan is to gather all of the information necessary to plan and control the test effort for a given iteration. It describes the approach to testing the software, and is the top-level plan generated and used by managers to direct the test effort.

This Test Plan for the WaterMe project supports the following objectives:

- Outlines the testing approach that will be used.
- Identifies the required resources

1.2 Scope

This document addresses the following types and levels of testing:

- User Interface Tests
- Functional Tests

1.3 Intended Audience

This document addresses the project members of WaterMe.

1.4 Document Terminology and Acronyms

N/a

1.5 References

N/a

1.6 Document Structure

N/a

2. Evaluation Mission and Test Motivation

2.1 Background

N/a

2.2 Evaluation Mission

It is important to make sure that everything works as we intended. Therefore, Testing is essential in accomplishing this task. We want to eliminate as many bugs as possible.

2.3 Test Motivators

N/a

3. Target Test Items

The listing below identifies those test items software, hardware, and supporting product elements —that have been identified as targets for testing. This list represents what items will be tested.

- Menu navigation within the App
- Establishing connection to Pi
- Request data from Pi
- Python Scrips running on Pi

4. Outline of Planned Tests

N/a

4.1 Outline of Test Inclusions

N/a

4.2 Outline of Other Candidates for Potential Inclusion

N/a

4.3 Outline of Test Exclusions

N/a

5. Test Approach

N/a

5.1 Initial Test-Idea Catalogs and Other Reference Sources

N/a

5.2 Testing Techniques and Types

5.2.1 Data and Database Integrity Testing

We are still working on implementing a database so we are unable to test this section.

5.2.2 Function Testing

Technique Objective:	Overall testing of the code
Technique:	We try to cover all use cases within one test by executing them one after another.
Oracles:	We are relying on the outcome of our testing tool
Required Tools:	Espresso (pre-installed plugin for Android Studio)
Success Criteria:	The tests pass without error messages
Special Considerations:	Testing the ability of the app connecting to the pi requires the user to confirm manually the Bluetooth activation request. Of course, the Pi must be running and the python script needs to be executed. To make sure we test everything, the humidity values provided by the humidity sensor must vary. The best solution is to fake those values.

5.2.3 Business Cycle Testing

N/a

5.2.4 User Interface Testing

The User Interface Testing will be covered within the Function Testing.

5.2.5 Performance Profiling

N/a

5.2.6 Load Testing

N/a

5.2.7 Stress Testing

N/a

5.2.8 Volume Testing

N/a

5.2.9 Security and Access Control Testing

N/a

5.2.10 Failover and Recovery Testing

N/a

5.2.11 Configuration Testing

N/a

5.2.12 Installation Testing

N/a

6. Entry and Exit Criteria

6.1 Test Plan

6.1.1 Test Plan Entry Criteria

N/a

6.1.2 Test Plan Exit Criteria

N/a

6.1.3 Suspension and Resumption Criteria

N/a

6.2 Test Cycles

6.2.1 Test Cycle Entry Criteria

N/a

6.2.2 Test Cycle Exit Criteria

N/a

6.2.3 Test Cycle Abnormal Termination

N/a

7. Deliverables

7.1 Test Evaluation Summaries

N/a

7.2 Reporting on Test Coverage

N/a

7.3 Perceived Quality Reports

N/a

7.4 Incident Logs and Change Requests

N/a

7.5 Smoke Test Suite and Supporting Test Scripts

N/a

7.6 Additional Work Products

7.6.1 Detailed Test Results

N/a

7.6.2 Additional Automated Functional Test Scripts

N/a

7.6.3 Test Guidelines

N/a

7.6.4 Traceability Matrices

N/a

8. Testing Workflow

N/a

9. Environmental Needs

9.1 Base System Hardware

The following table sets forth the system resources for the test effort presented in this *Test Plan*.

System Resources		
Resource	**Quantity**	**Name and Type**
Raspberry Pi	1	Raspberry Pi (requires Bluetooth)
Client smartphone	1	Android 4.3 or higher + Bluetooth

9.2 Base Software Elements in the Test Environment

The following base software elements are required in the test environment for this *Test Plan*.

Software Element Name	Version	Type and Other Notes
WaterMe App		
Python package for Pi	2.7.9	

9.3 Productivity and Support Tools

The following tools will be employed to support the test process for this *Test Plan*.

Tool Category or Type	Tool Brand Name	Vendor or In-house	Version
Test Management	tbt		
Project Management	Jira	Atlassian	

9.4 Test Environment Configurations

N/a

10. Responsibilities, Staffing, and Training Needs

10.1 People and Roles

Every team member is involved in testing.

10.2 Staffing and Training Needs

N/a

11. Iteration Milestones

N/a

12. Risks, Dependencies, Assumptions, and Constraints

N/a

13. Management Process and Procedures

N/a

13.1 Measuring and Assessing the Extent of Testing

N/a

13.2 Assessing the Deliverables of this Test Plan

N/a

13.3 Problem Reporting, Escalation, and Issue Resolution

N/a

13.4 Managing Test Cycles

N/a

13.5 Traceability Strategies

N/a

13.6 Approval and Signoff

N/a