# **SOFTWARE TEST PLAN**

ARDUINO WEATHER STATION- HUMIDITY OUT

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### ChangeLog Table:

Version	Change Date	Ву	Description
1	19/4	Israt Sumiya	Edited
2	20/4	Yen Tran	Edited
3	26/4	Israt Sumiya	Edited

#### 1 Introduction

This document is the software test plan which guides our thinking and encourages a better communication with other project team members, testers, managers and other stakeholders. It includes scope of testing, test strategy, workflow, methodologies, environment requirements, schedules which are used for the Arduino Weather Station - Humidity out project. It provides the framework for all testing related to this project.

#### 1.1 Scope

The overall purpose of testing is to ensure that our product meets all of its requirements. The list of the test items which must be tested:

- Arduino
- LCD
- Ethernet
- Frequency counter
- MQTT

Factors influencing test scope:

- Size of project
- Complexity of project
- Budget for project
- Time scope for project
- Number of testers
- Easily track bugs
- Ensures working test items

Individual test cases will be written for each version of the application that is released. This document will also be updated as required for each release.

#### 1.2 Quality Objective

The test team is responsible for testing the product and ensuring it meets their needs.

- Ensure the Application circuit Under Test conforms to functional and non-functional requirements
- Ensure the Application circuit Under Test meets the quality specifications defined by the client

• Bugs/issues are identified and fixed

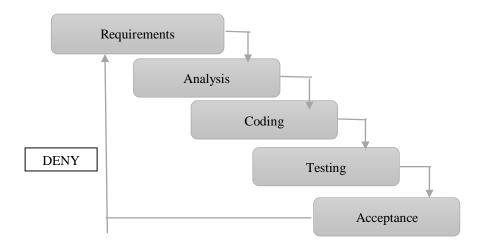
### 1.3 Roles and Responsibilities

Role	Name	Responsibilities
QA Analyst	Israt jahan sumiya	Ensures every possible
		measurement has been taken for
		testing and manage all the
		activities to meet the objectives
Test Manager	Yen tran	To lead the team and have the
		full responsibility for the
		project's success
Configuration Manager	Hasan mahmud	Maintain product's performance
Developers	All team member	Directing software programming
		and documentation
		development. Working with
		customers or departments on
		technical issues
Installations	All team member	

# 2 Test Methodology

#### 2.1 Overview

The main purpose for selecting Waterfall methodology has always been to help internal teams move more efficiently through the phases of a project, which can work well. Also, requirements can be easily tested Using waterfall model.



## 2.2 Test Levels

The Testing Levels depends on the scope of the project, time and budget. Before testing software you need to add neccesary libararies:

- 1. Ethernet
- 2. MQTT
- 3. TimerOne
- 4. LiquidCrystal

The test activities or cases that must be perform for every test level which is given below:

Arduino

•Led signal is turned on while Arduino running

LCD

- · Condition: Arduino is working
- •LCD screen should printout correct signals. If it is not showing correct data check the wiring and select the right cable. Make sure Arduino IDE is working properly if not restart the Arduino IDE and don't connect anything to digital pin 1 and 0 while uploading sketch.

<u>Et</u>hernet

- Condition: Arduino and LCd are working
- •Connect Ethernet module with the internet checking IP and virtual MQTT signal. If it is not reading completely in LCD screen check the wiring, voltage and frequency test mode is activated or not. Do not forget test mode can read only by pressing reset button in Arduino. After booting pressing is not needed.

MQTT response

- •Condition: LCD, Arduino and Ethernet are working fine
- •Test mosquitto MQTT broker from VM connceting IP and MQTT server is okay.
- •Implement a command response message see file Test\_report.doc

MQTT server to database

- •Condition: LCD, Arduino and Ethernet are working fine and able to send data to MQTT broker from client side
- •Test MQTT massage can store into database see file Technical document.doc

#### **2.3** Bug

Bugs	Type	Status
Messages are sent in	syntax error	fixed
the wrong format		

#### 2.4 Test Completeness

Here is some criteria to check Test Completeness:

• 100% test coverage

- All Test cases executed
- All bugs are fixed or will be fixed in next release

# 3 Test Deliverables/ Milestones

#### 3.1 Test Schedule

Task Name	Start	Finish	Effort	Comments
Arduino Test	29/1	30/1	1 day	Pass
LCD test	1/2	9/2	2 days	Pass
Ethernet testing	18/2	21/2	2 days	Pass
Frequency test	18/2	21/2	2days	Pass
Mosquitto test	8/3	13/3	1 day	Pass
MQTT client to server	19/3	6/4	3 days	Pass
MQTT server to database	6/4	12/4	2 days	Pass
Performance testing	12/4	20/4	2 days	Pass
Release to Product	22/4	23/4	1 days	Pass

#### 3.2 Deliverables

Deliverable	For	Date / Milestone
Test Plan	Project Manager; Test Team	11/3
		23/4
Test cases	Test manager	23/4
Bug Reports	All the team	22/4
Test Strategy	Test team	11/3
		23/4

# 4 Test Environment.

- Hardware: computer and fully installed circuit
- Software: Arduino IDE
- Internet connection between the board and computer
- VPN switched on and VM log in are a must