Eon

Temperature Control System - Den

Test Plan

Revision History

Authors	Description of Change	Sections	Rev	Date
Erine Estrella Mohamed Jaafar Devontae Reid Sean Wulwick	➢ Initial release	All	O	4-10-18
Devontae Reid	➢ Created Test Definitions ➢ Added Hardware needed for project	Section 2 Subsection 1,2	I	4-12-18
Erine Estrella Mohamed Jaafar Sean Wulwick	➢ Updated Test platform ➢ Added Test Description ➢ Expanded Test Definitions	Sections 2, 2.1, 2.2	II	4-17-18
Mohamed Jaafar	➢ Updated the Test Definition section according to changes made in the Written Requirements document.	Section 2.2	III	4-24-18

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1 Team Description

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2 Test Description

Our test plan will utilize several tools (that are described below) in order to carry the necessary tests that would determine whether our product is designed correctly and according to the guidelines we previously specified. We have highlighted below the equipment that will be used, along with the different types of tests that will be carried.

2.1 Test Platform / Hardware / Environment

The tests will involve using:

A. Equipment

1. Raspberry PI 3: the computer that we will be using to run the program. This will serve to validate that our code functions properly, with no bugs/errors.
2. Breadboard: a construction base for electronics prototyping. This will serve as a circuit board to allow for the functionality of the LED light. Without this, we would be unable to perform our testing successfully.
3. Adafruit Touchscreen: This is the touchscreen display that will be used to allow for interactivity and user control. In terms of testing, this will allow us to see test results based on specific input. This function can in fact be served by a terminal, but using the display will allow us to obtain a user perspective while testing.
4. LED light: an indicator of current state of the system (on/off).
5. A power source: needed to properly run any type of equipment in this case.
6. Temperature Sensor: device that would measure the current temperature.

B. Software Environment

1. Raspbian: the Debian-based operating system that will be used as a testing environment.

C. Configurations

1. System input via calendar
2. System input via city selection
3. User Input

2.2 Test Definition

2.2.1 Test 1: Basic Functionality

Requirements tested: **RID-001, RID-008,RID-009, RID-010, RID-011,RID-012,RID-013**

Description: This test validates the default settings and modes that are available to the user.

2.2.2 Test 2: Setting up Calendar

Requirements tested: **RID-001, RID-002, RID-003,RID-004, RID-005**

Description: This test is suppose to create a template event that would in turn set the system temperature to the temperature for that event

2.2.3 Test 3: Setting Temperature Based on City

Requirements tested: **RID-001, RID-006, RID-007,RID-009**

Description: This test ensures that the system is able to receive the temperature from the Yahoo Weather API and displays it to the user.

2.2.4 Test 4: Setting User Defined Temperature

Requirements tested: **RID-001, RID-008, RID-010, RID-011,RID-012, RID-014, RID-015, RID-016**

Description: This will test the system's ability to take user input, activate the system, force a disable of the system and re-enable of the system. It will also leave the system in vacation mode and retake the user input to show that it will not be activated in vacation mode.

2.3 Verification Cross Reference Matrix

Requirement Identifier	Where Tested
RID-0001	Test 1: Basic Functionality Test 3: Setting Temperature Based on City Test 4: Setting User Defined Temperature
RID-0002	Test 2: Setting up Calendar
RID-0003	Test 2: Setting up Calendar
RID-0004	Test 2: Setting up Calendar
RID-0005	Test 2: Setting up Calendar
RID-0006	Test 3: Setting Temperature Based on City
RID-0007	Test 3: Setting Temperature Based on City
RID-0008	Test 1: Basic Functionality, Test 4: Setting User Defined Temperature
RID-0009	Test 1: Basic Functionality, Test 3: Setting Temperature Based on City
RID-0010	Test 1: Basic Functionality, Test 4: Setting User Defined Temperature
RID-0011	Test 1: Basic Functionality, Test 4: Setting User Defined Temperature
RID-0012	Test 1: Basic Functionality Test 4: Setting User Defined Temperature
RID-0013	Test 4: Setting User Defined Temperature
RID-0014	Test 4: Setting User Defined Temperature
RID-0015	Test 4: Setting User Defined Temperature
RID-0016	Test 4: Setting User Defined Temperature