Eon

Temperature Control System - Den

Written Requirements

Revision History

Authors	Description of Change	Sections	Rev	Date
Erine Estrella Mohamed Jaafar Devontae Reid Sean Wulwick	➢ Initial Release	All	O	2-28-18
Erine Estrella Mohamed Jaafar Sean Wulwick	➢ Correction based on meeting ○ More granilerized ○ Less wordy	3	I	3-13-18

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1 Team Description

Team Member Name	Email Address
Erine Estrella	erine.double@gmail.com
Mohamed Jaafar	mohamedjaafar95@csu.fullerton.edu
Devontae Reid	devontae.reid@gmail.com
Sean Wulwick	sean.wulwick@csu.fullerton.edu

2 Terminology

Term	Definition
HVAC	HVAC stands for heating, ventilation, and air conditioning. This technology provides thermal comfort and acceptable indoor air quality.
Weather Channel API	An API is an application programming interface, which allows the temperature control system obtain desired data from the weather channel.
Threshold	A certain temperature range that the system will be able to maintain.

3 Temperature Control System

A heating/cooling control system that is capable of taking user input (temperature in either Fahrenheit or Celsius) in and activating a HVAC system. This system also allows for scheduling and a external temperature display based on location information that is collected from the Weather Channel API. The control system is also capable of maintaining a climate type within a room at a predefined threshold of temperature. For example, if the user would like a warm climate, a temperature of 80 degrees F can be maintained constantly.

3.1 Overview

The system provides interior temperature control. There will be a weekly calendar setting, city of choice, and user override.

1. Connection to Wifi

The system **shall** allow the user to connect to their home wifi, enabling features of the system that require internet connection.

1.1. Features that will require internet connection

- ❖ Setting temperature based on user defined city
- ❖ Display weather channel API

2. Weekly Calendar

The weekly calendar provides user with the capability to set up a temperature schedule.

2.1. Weekly Table

This **shall** display temperatures at desired times and days of the week.

This **shall** require 3 inputs from the user: day, time and temperature.

2.2. Modifications of the calendar

The system **shall** allow for the insertion, modification or deletion of data, at any point in time (i.e: changing temperatures in calender).

2.3. Recurring Schedule

By default the system **shall** repeat the weekly schedule every week.

3. Setting temperature based on user defined city

The system **shall** take user input of a city to set the temperature.

3.1. Error handling

The system **shall** consider invalid user input (i.e: zip code) and display error messages in such cases.

4. Custom temperature input

The system **shall** allow user to input (or modify an already set) temperature of choice to adjust the indoor temperature.

5. Display of Weather Channel API

The system **shall** display local temperature and weather forecast.

6. Maintain temperature threshold

The system **shall** allow for a simple entry of temperature, which is maintained with the aid of the thermostat.
The system **shall** have a default threshold of 3 degrees.

7. User defined temperature threshold

The system **shall** allow the user to set their own temperature threshold.

8. Enable / disable system

The user **shall** be able to enable or completely disable all events in the system for an unspecified amount of time.

9. Vacation Mode

This **shall** disable all user defined actions and set a base temperature to 40 degrees (F) to avoid weather damage to the residence.

10. Error Override

The system **shall** disable itself in the event of a malfunction resulting in temperature not changing for an extended period of time while the HVAC is running.
The system **shall** display an error message on the screen.