Use Cases

I. Introduction

The use cases will be used as a guide on how the project flows when an actor performs a particular actions. The actor for the Garden Sprinkler System is the Homeowner. The main actions the actor can perform are outlined in the Figure 1. Where Actors can: enable/disable the system, add a schedule, set the threshold temperatures, view usage, and view status.

II. Diagram

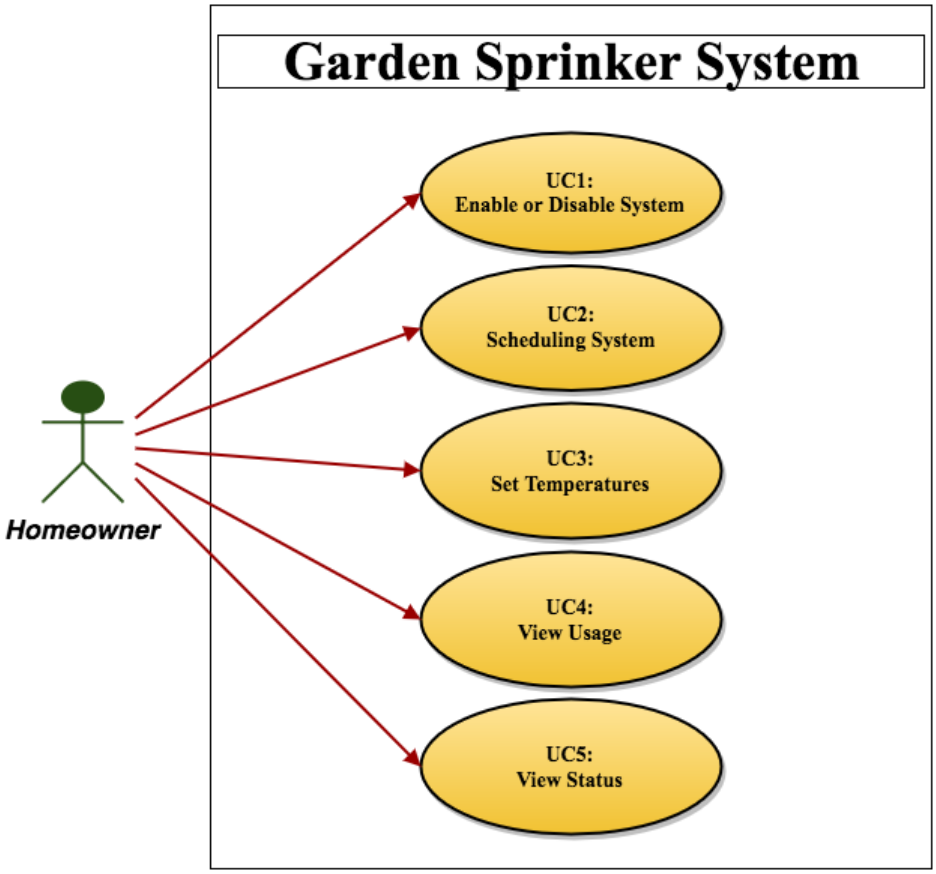

Fig. 1: Use Case Diagram

III. Descriptions

Use Case 1:

1. Name: Enable or Disable System
2. Goal: To change the state of the system as active or deactive
3. Actor: Homeowner
4. Type: Primary
5. Preconditions:
    a. Homeowner must be on the configuration page
6. Steps:
    a. Select the entire system, cluster of sprinklers, or individual sprinkler
    b. Select on/off button to manually override system

7. Postconditions:
    a. System confirms on/off status
    b. System redirects to the home screen
8. Exceptions:

Use Case 2:

1. Name: Scheduling System
2. Goal: Homeowners set the schedule for the following week's watering
3. Actors: Homeowner
4. Type: Primary
5. Preconditions:
    a. Homeowner must be on the configuration page
6. Steps:
    a. Select the scheduling system in the configuration page
    b. Select the entire system, a cluster of sprinklers, or individual sprinklers
    c. Add dates and times for the following seven days.
    d. Select update to finalize the scheduling
7. Postconditions:
    a. System confirms on/off status
    b. System redirects to the home screen
8. Exceptions:
    a. Incorrectly formatted dates and times
    b. Invalid date range entered

Use Case 3:

1. Name: Set Temperature
2. Goal: Set automatic on/off temperature thresholds to enable or disable the system
3. Actor: Homeowner
4. Type: Primary
5. Preconditions:
    a. Homeowner must be on the configuration page
6. Steps:
    a. Select the temperature icon
    b. Select the entire system, a cluster of sprinklers, or individual sprinklers
    c. Select a minimum temperature in fahrenheit
    d. Select a maximum temperature in fahrenheit
    e. Select update to finalize the configuration
7. Postconditions:
    a. System confirms changes
    b. System redirects to the home screen
8. Exceptions:
    a. Invalid temperature range

Use Case 4:

1. Name: View Usage

2. Goal: View the water consumption of the system
3. Actor: Homeowner
4. Type: Primary
5. Preconditions:
    a. Homeowner must be on the homepage
6. Steps:
    b. Select the usage icon
    c. Select the entire system, a cluster of sprinklers, or individual sprinklers
7. Postconditions:
    a. System displays the water usage
8. Exceptions:

Use Case 5:

1. Name: View Status
2. Goal: View the status of the system as functional or non functional
3. Actor: Homeowner
4. Type: Primary
5. Preconditions:
    a. Homeowner must be on the configuration page
6. Steps:
    a. Select the status icon
    b. Select the entire system, a cluster of sprinklers, or individual sprinklers
7. Postconditions:
    a. System displays the status
8. Exceptions: