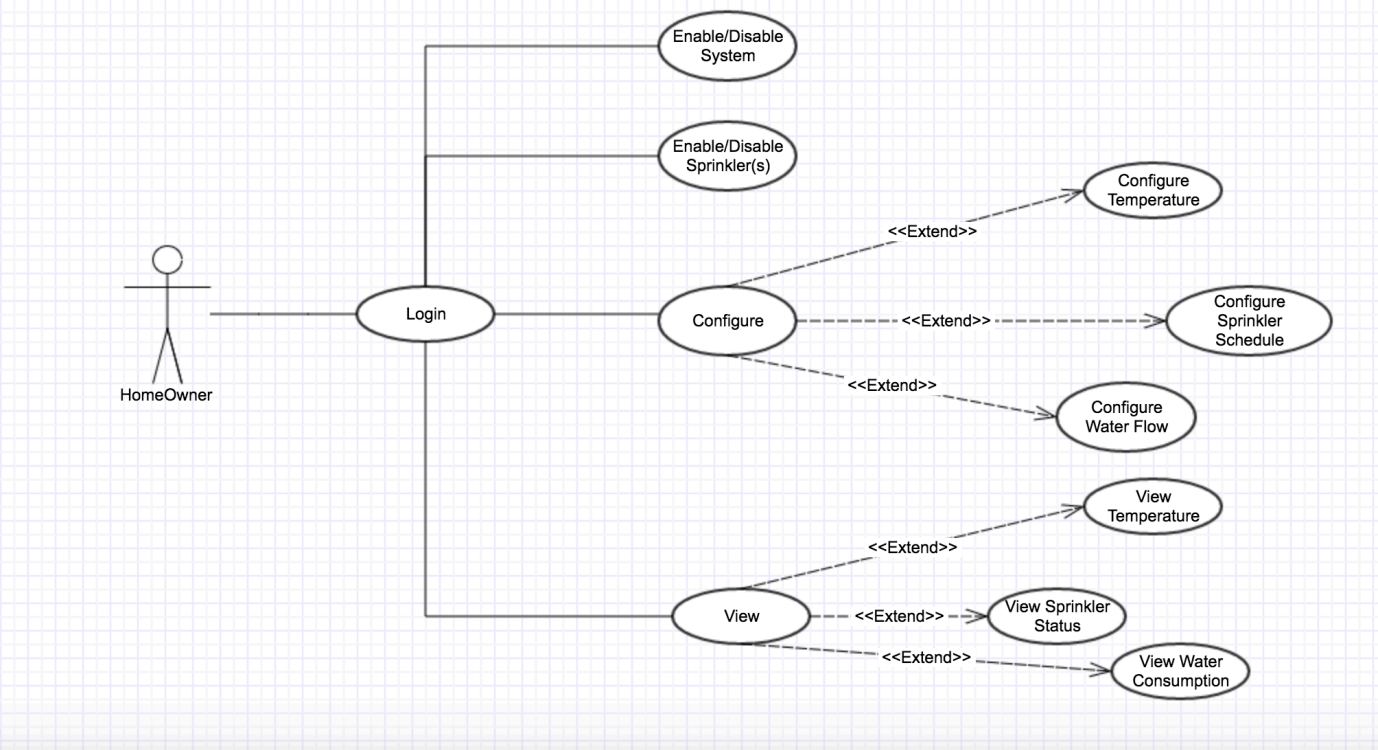
DELIVERABLE 1 OF HUMMINGBEE HOME GARDEN SPRINKLER SYSTEM

Use Case Diagram



Use Cases

Use-case (Goal): Enable the system

Actors: Home-owner

Type: Primary, Essential

Description: Home-owner wants to enable the system

Cross-references: N/A

Scenario Details

Actor action	System Response
1. Home-owner chooses to enable the system. Home-owner logs into dashboard	2. Login OK. Home-owner can view UI

Use-case (Goal): Configure Sprinkler(s) schedule

Actors: Home-owner

Type: Primary, Essential

Description: Home-owner wants to configure the system to start the sprinkler(s) at specific time(s)/day(s) of the week

Cross-references: N/A

Scenario Details

Actor action	System Response
1. Home-owner logs into dashboard	2. Login OK. Home-owner can view UI
3. Chooses to schedule sprinklers	4. Prompted to enter sprinkler ID/group, time(s) and day(s)
5. Enters day(s)/time(s) during which specific sprinkler(s) are to be turned on	6. Generates a message saying day(s)/time(s) have been recorded

Use-case (Goal): Enable a group of/individual sprinkler(s)

Actors: Home-owner

Type: Primary, Essential

Description: Home-owner wants to completely enable a group of/individual sprinkler(s)

Cross-references: N/A

Scenario Details

Actor action	System Response
1. Home-owner chooses to enable a group of/individual sprinkler(s)	2. Generates a message that the appropriate sprinklers have been enabled.

Use-case (Goal): Disable a group of/individual sprinkler(s)

Actors: Home-owner

Type: Primary, Essential

Description: Home-owner wants to completely disable a group of/individual sprinkler(s)

Cross-references: N/A

Scenario Details

Actor action	System Response
1. Home-owner chooses to disable a group of/individual sprinkler(s)	2. Generates a message that the appropriate sprinklers have been disabled.

Use-case (Goal): Configure the temperature

Actors: Home-owner

Type: Primary, Essential

Description: Home-owner wants to configure temperature to override daily schedule if the temperatures fall below certain limit or rise above a certain limit.

Cross-references: N/A

Scenario Details

Actor action	System Response
1. Home-owner logs into dashboard	2. Login OK. Home-owner can view UI
3. Chooses to configure temperature	4. Prompted to enter maximum and minimum temperature
5. Enters maximum and minimum temperature	6. Generates a message saying temperatures have been recorded

Use-case (Goal): Configure water flow

Actors: Home-owner

Type: Primary, Essential

Description: Home-owner wants to regulate the volume of water flow per hour.

Cross-references: N/A

Scenario Details

Actor action	System Response
1. Home-owner logs into dashboard	2. Login OK. Home-owner can view UI
3. Chooses to regulate volume of water flow per hour	4. Prompted to enter sprinkler ID/group and flow per hour
5. Enters sprinkler ID/group and flow per hour	6. Generates a message saying values have been recorded

Use-case (Goal): View Sprinkler(s) Layout/Status

Actors: Home-owner

Type: Primary, Essential

Description: Home-owner wants to view the layout of the sprinklers

Cross-references: N/A

Scenario Details

Actor action	System Response
1. Home-owner logs into dashboard	2. Login OK. Home-owner can view UI
3. Chooses to view layout of the sprinklers	4. Map of garden and sprinklers layout is displayed. The status of the sprinklers is also displayed

Use-case (Goal): View Water Consumption

Actors: Home-owner

Type: Primary, Essential

Description: Home-owner wants to view total water consumed

Cross-references: N/A

Scenario Details

Actor action	System Response
1. Home-owner logs into dashboard	2. Login OK. Home-owner can view UI
3. Chooses to view water consumption	4. Bar graph displayed where each bar denotes total amount of water consumed in a given month

Use-case (Goal): View Temperature Threshold

Actors: Home-owner

Type: Primary, Essential

Description: Home-owner wants to view temperature threshold

Cross-references: N/A

Scenario Details

Actor action	System Response
1. Home-owner logs into dashboard	2. Login OK. Home-owner can view UI
3. Chooses to view temperature threshold	4. Bar graph displayed where each bar denotes total amount of water consumed in a given month

Use-case (Goal): Disable the system

Actors: Home-owner

Type: Primary, Essential

Description: Home-owner wants to disable the system

Cross-references: N/A

Scenario Details

Actor action	System Response
1. Home-owner chooses to disable the system; home-owner logs out of dashboard	2. Generates a message that all sprinklers have been disabled; System successfully logs out.

CRC Cards

The identified items in *Home Garden Sprinkler System are:*
Sprinkler
TemperatureSensor
SprinklerSchedule
SprinklerConfiguration
TemperatureConfiguration
WaterConsumption

Class Name: *Sprinkler*	
Responsibility	**Collaborator**
Know its ID, group name, water flow, function status and active status.	
Display the sprinkler status	

Class Name: *Temperature Sensor*	
Responsibility	**Collaborator**
Know the current temperature.	

Class Name: *Sprinkler Schedule*	
Responsibility	**Collaborator**
Maintain the scheduled start and stop time of the sprinkler(s)	*Sprinkler*

Class Name: *Temperature Configuration*	
Responsibility	**Collaborator**
Maintain and configure the threshold temperature.	*Temperature Sensor*
Display the current temperature configurations or settings.	

Class Name: *Waterflow Consumption*	
Responsibility	**Collaborator**
Keeps track of the total water consumption of the sprinklers per month.	*Sprinkler, Sprinkler Configuration*
Display total water consumption bar graph.	

Class Name: *Sprinkler Configuration*	
Responsibility	**Collaborator**
Maintain and configures the schedules of the sprinklers and water flow.	*Sprinkler, Sprinkler Schedule*
Configures or change the schedules of sprinkler with change in the current temperature above or below threshold temperature.	*Temperature Sensor, Temperature Configuration*
Display the current sprinkler configuration.	