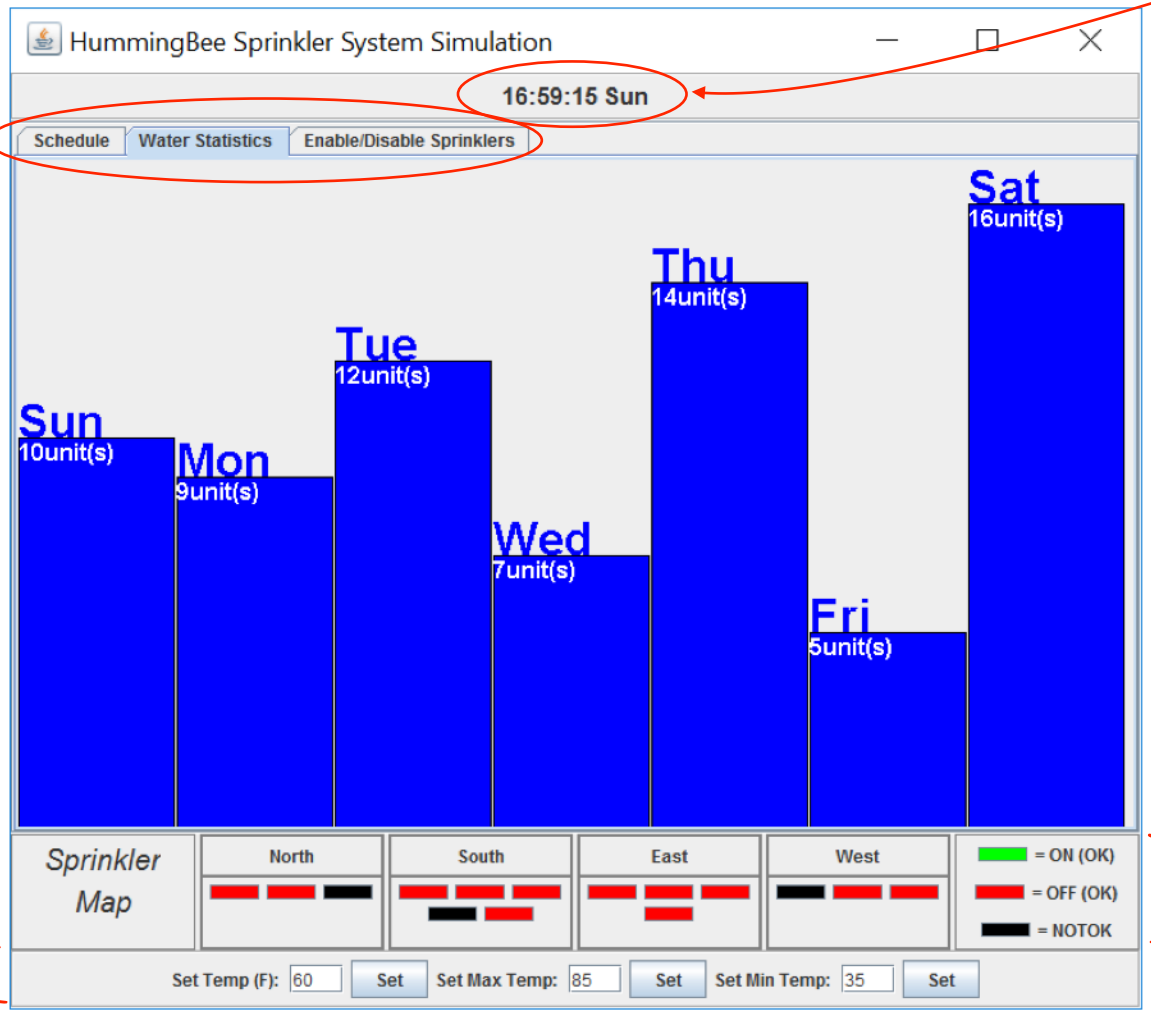
Hummingbee Sprinkler System Sample Execution

Program was designed to be displayed on a single panel (For example, a touchscreen mounted to the side of a home), so all functionality can be accessed through this tab pane.

We could set a schedule by pressing the "Schedule" tab or manually enable/disable sprinklers by pressing the "Enable/Disable Sprinklers" tab

System time and date used as the basis for the watering schedule



In this menu, we have the water usage over the last 7 days. This menu is always-up-to-date!

Here we have a map of sprinklers and their status. We can see that all sprinklers are currently turned off (the RED ones) and that there are some malfunctioning sprinklers (BLACK)

This is the temperature override panel. You can set the temperature here to experiment what happens at various temperatures, and can also specify behavior based on the temperature.

If the actual temperature drops below the minimum temperature (35F in the picture) then all watering will stop until the temperature increases — you don't want to have water freeze your entire crop! Similarly, if the temperature exceeds the max temperature, then some additional watering will be performed to compensate for the heat.

COEN 160 Final Project Deliverables 2

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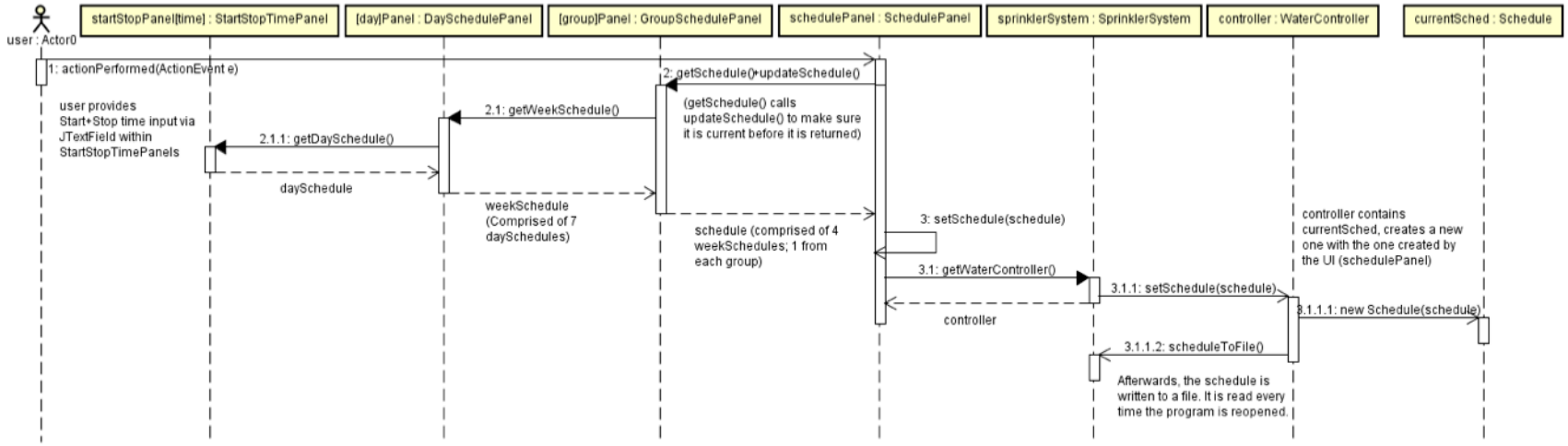
SEQUENCE DIAGRAMS

(Note: Set Sprinkler Status use case omitted because it is not a program requirement)

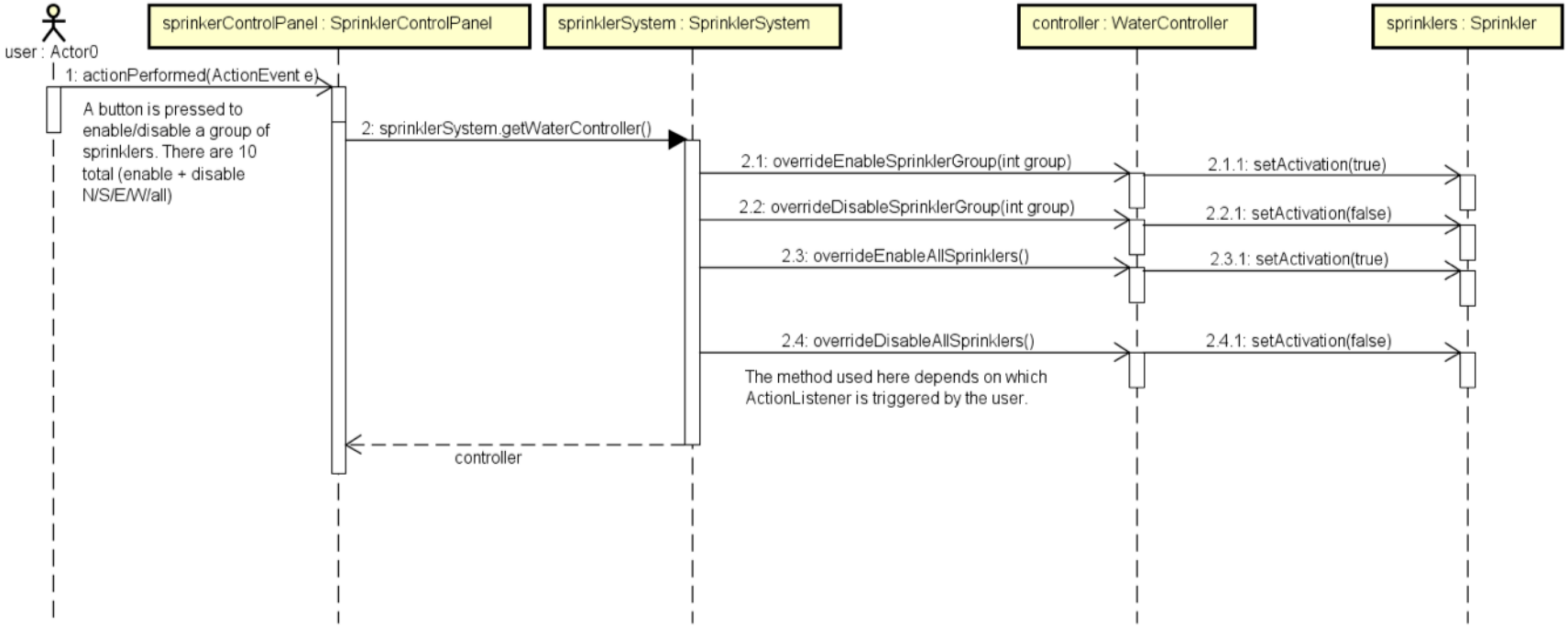
1. Set Schedule



(setSchedule within schedulePanel calls sprinklerSystem's controller's setSchedule() method)

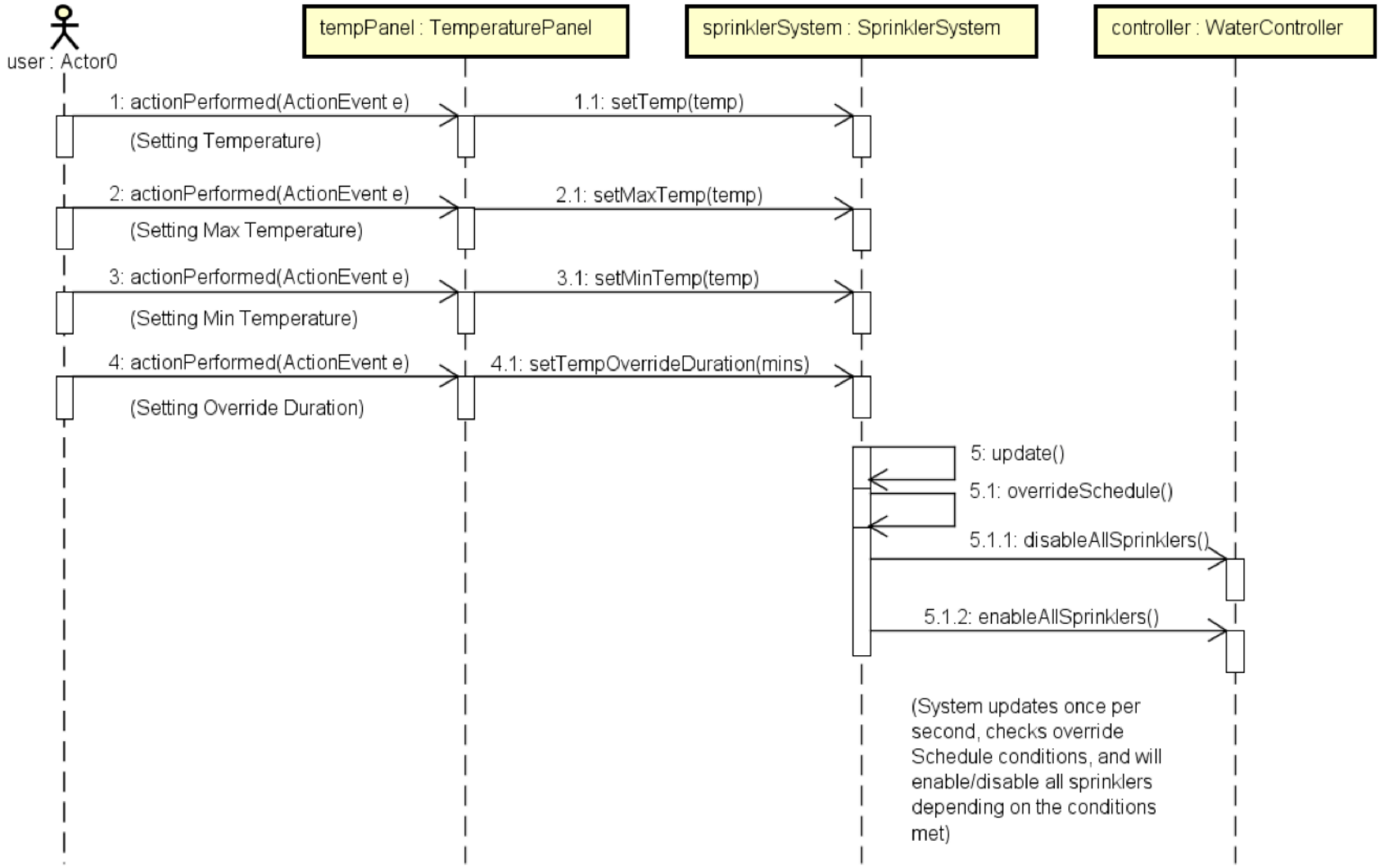
SEQUENCE DIAGRAMS (Continued)

2. Enable/Disable Sprinklers (Schedule override)



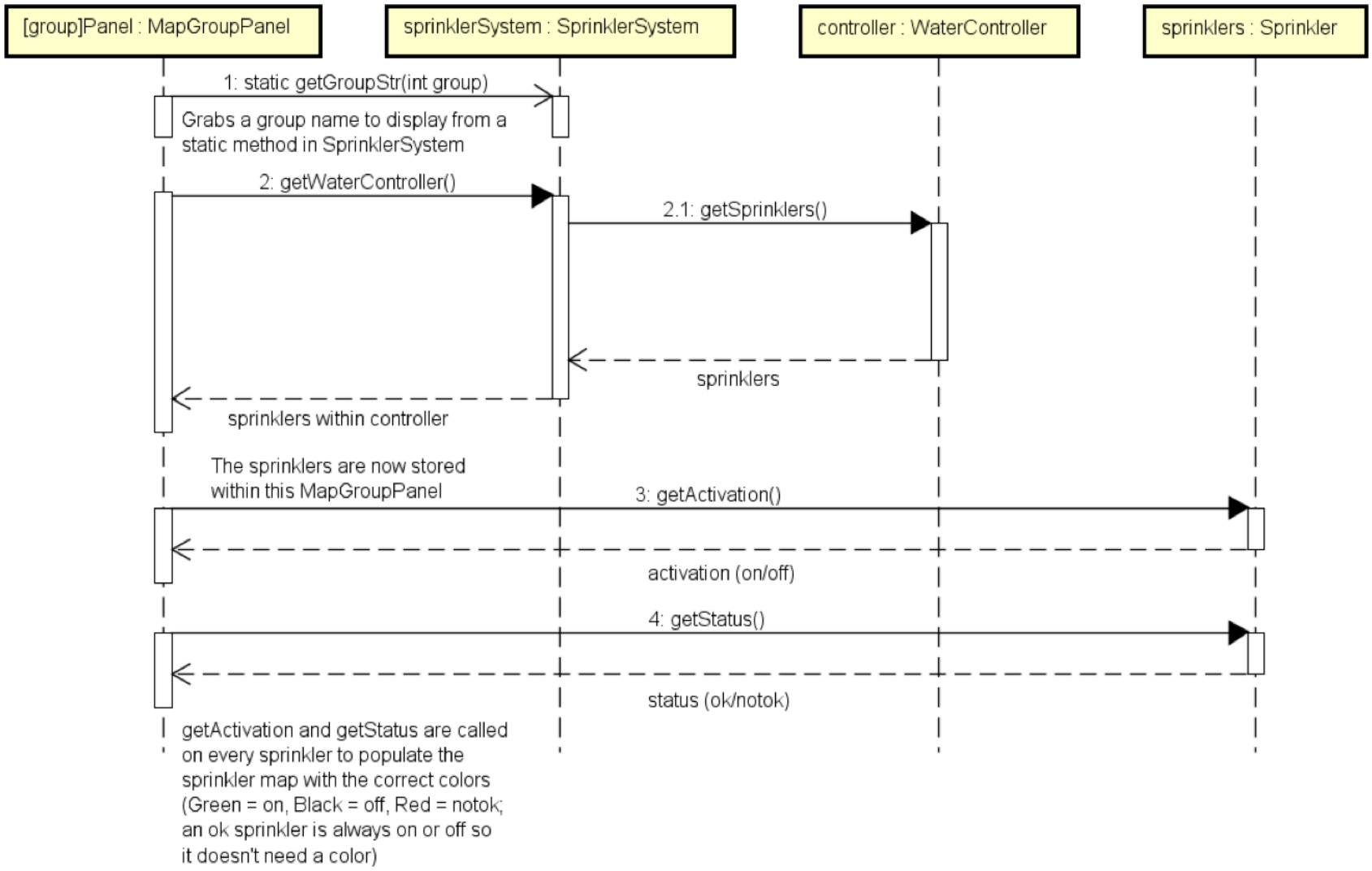
SEQUENCE DIAGRAMS (Continued)

3. Set temperature, and override schedule based on min/max temperature limits (Previously 2 separate use cases)



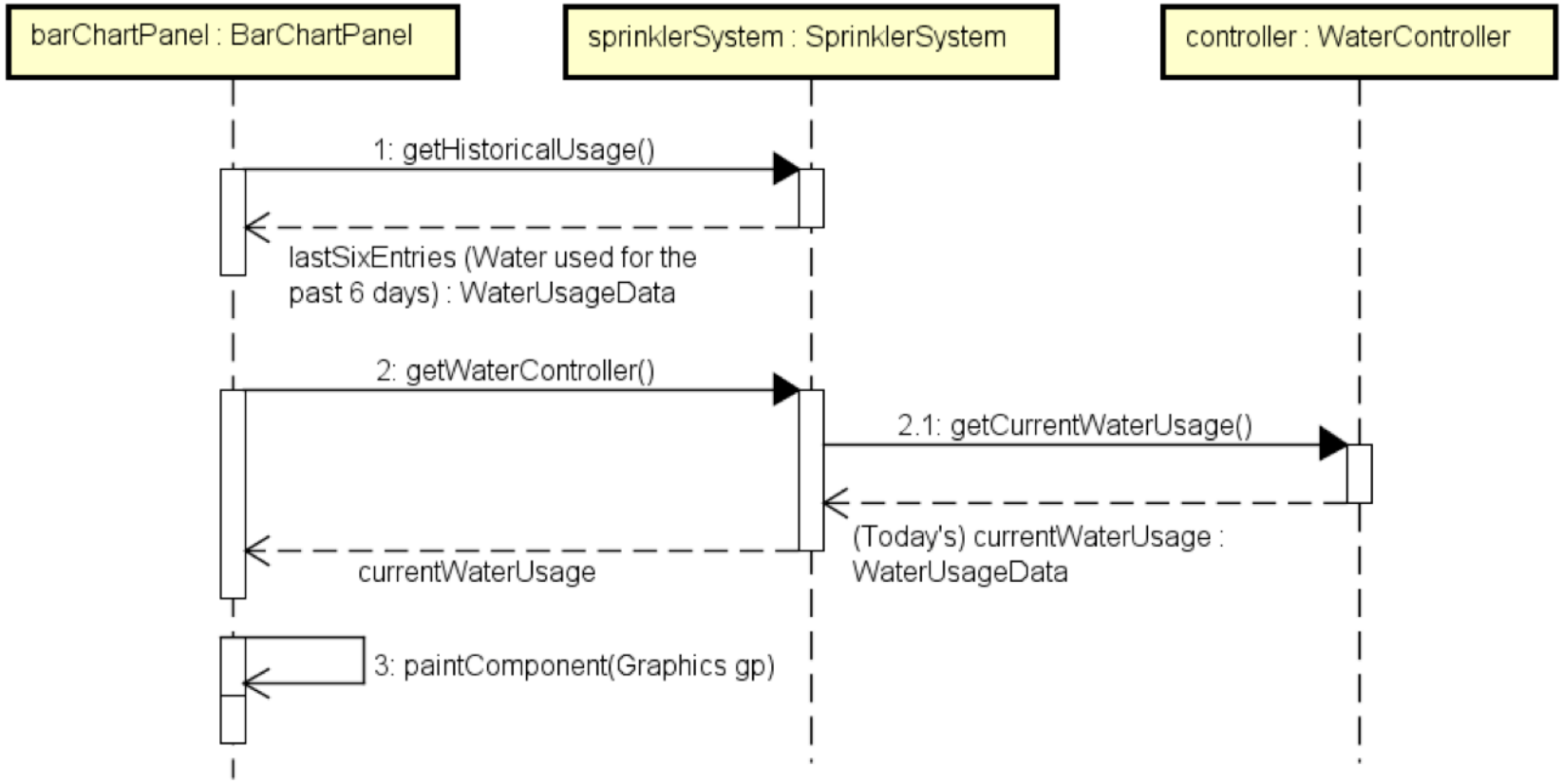
SEQUENCE DIAGRAMS (Continued)

4. Display Map



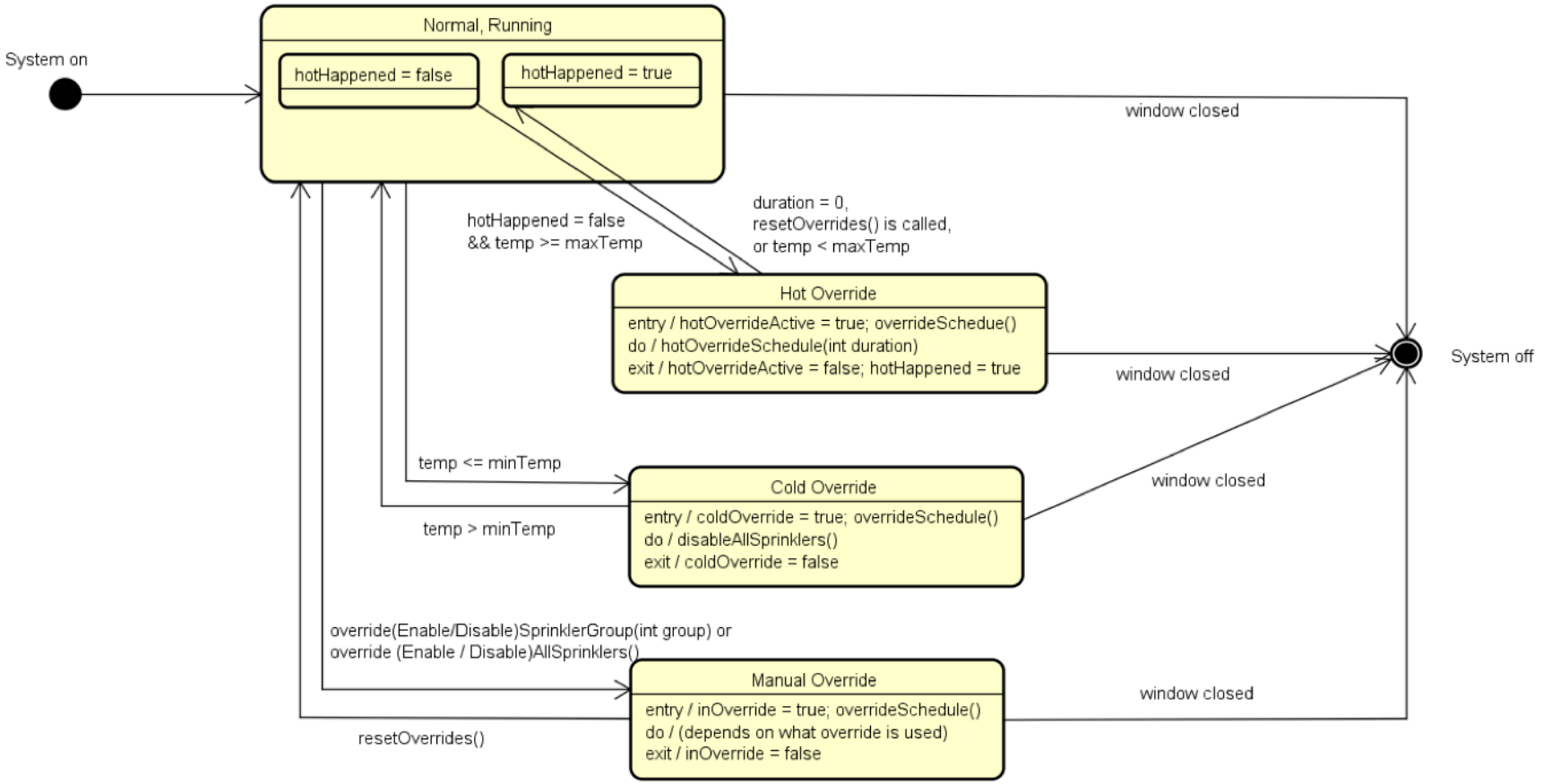
SEQUENCE DIAGRAMS (Continued)

5. Display Water Usage

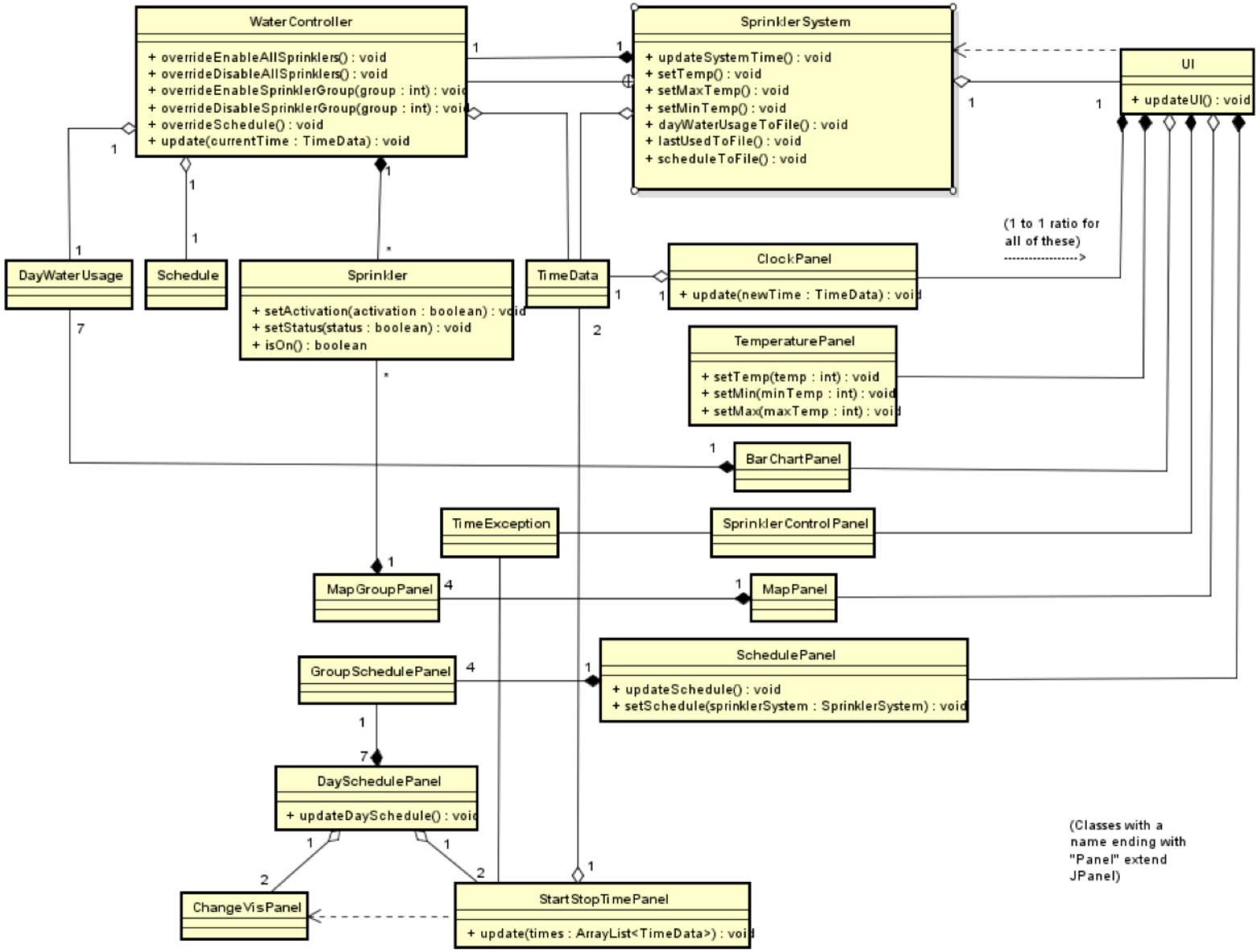


lastSixEntries and currentWaterUsage are then combined within a single data structure in barChartPanel and are used to draw a water use bar graph with paintComponent()

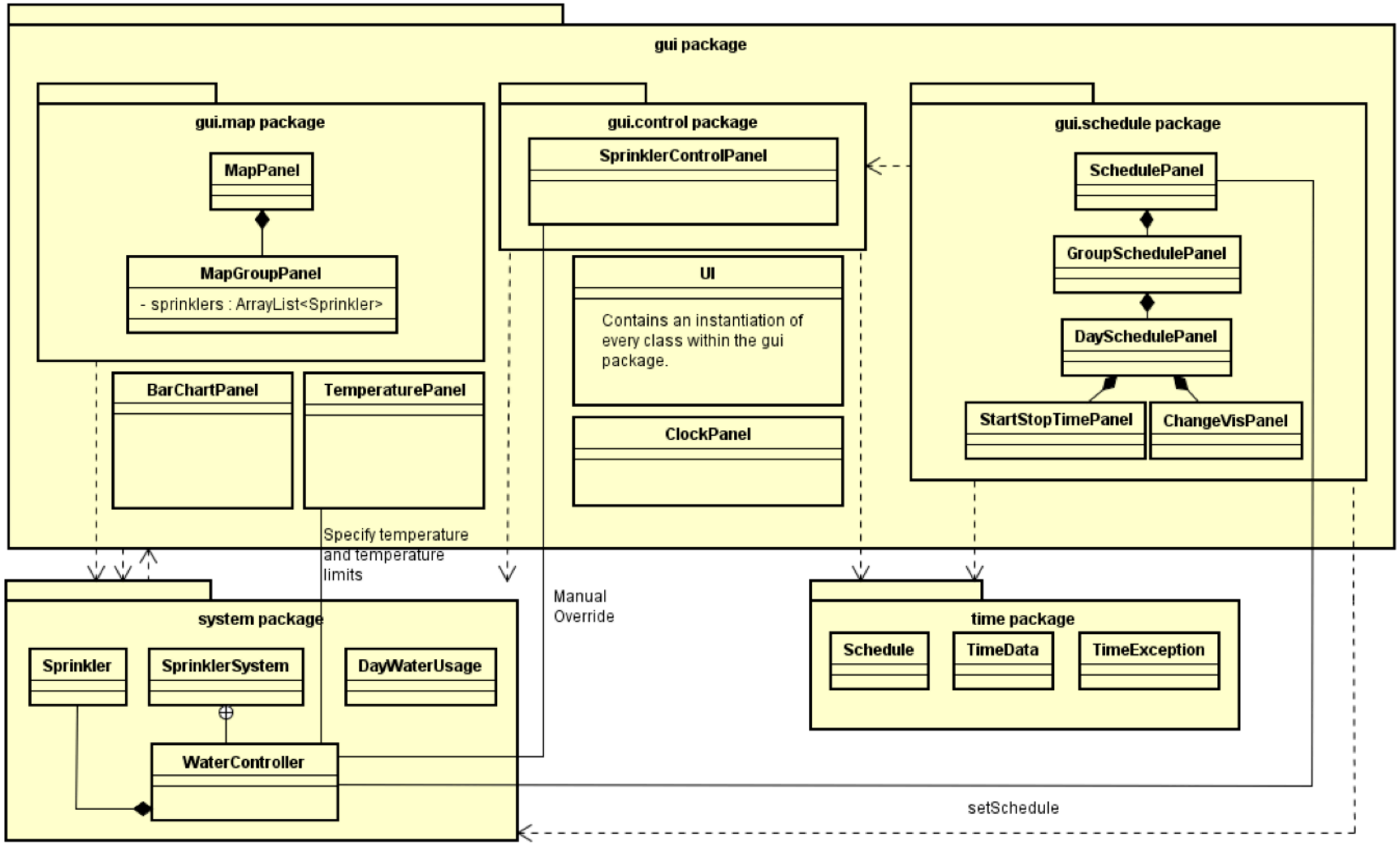
STATE DIAGRAM



CLASS DIAGRAM



PACKAGE DIAGRAM



USE CASE DIAGRAM