

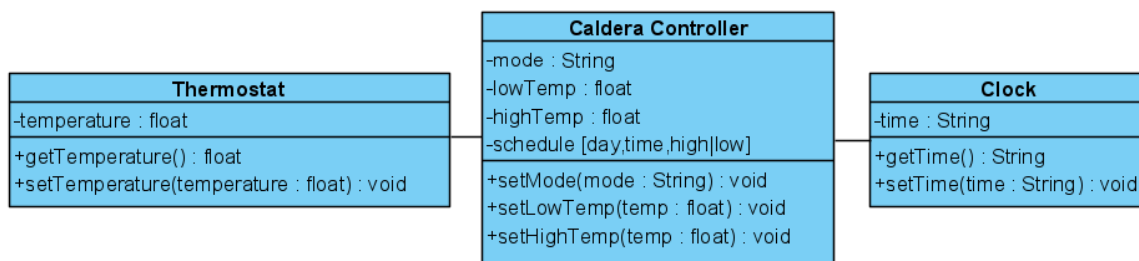
Principles of Software & Requirments

WINTER SEMESTER 2022

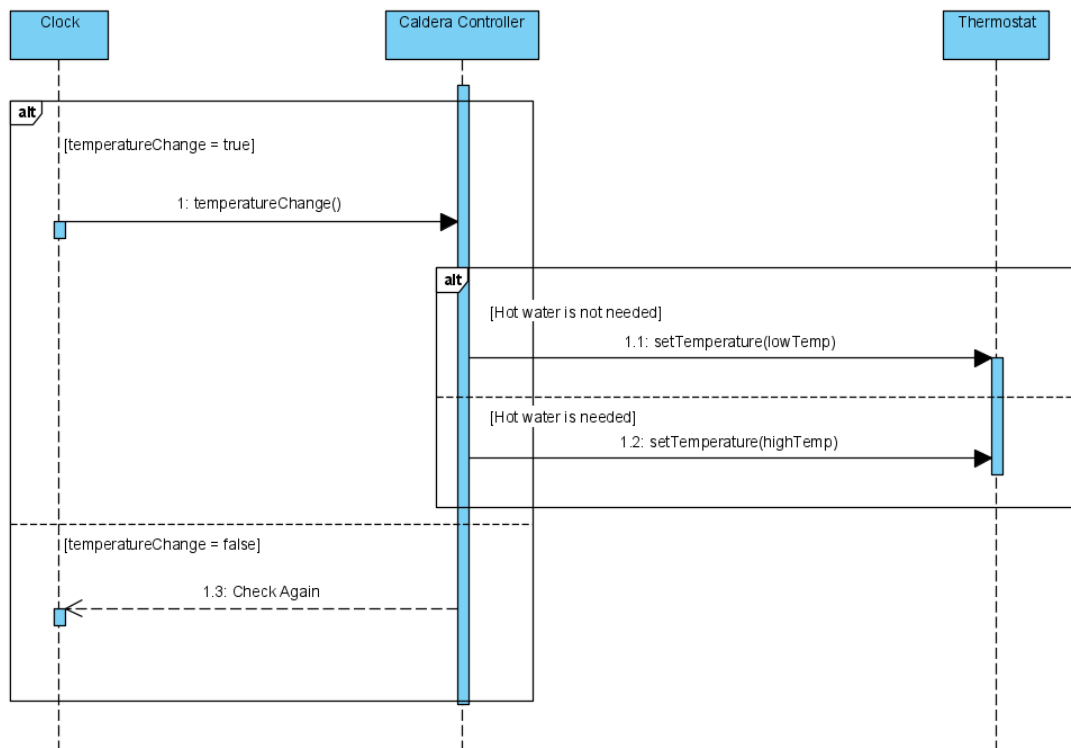
NAME: AHMAAD ANSARI
Tutorial Assignment No.3

Exercises:

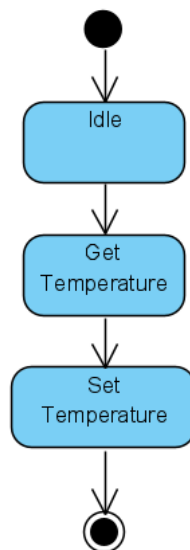
1. Add to the diagram a **Clock Class** and its association with the rest of the system. Include a label and quantity for the association. For the Clock Class include the attributes and operators.
2. Add attribute and operator parameter and return types, as well as access modifiers.



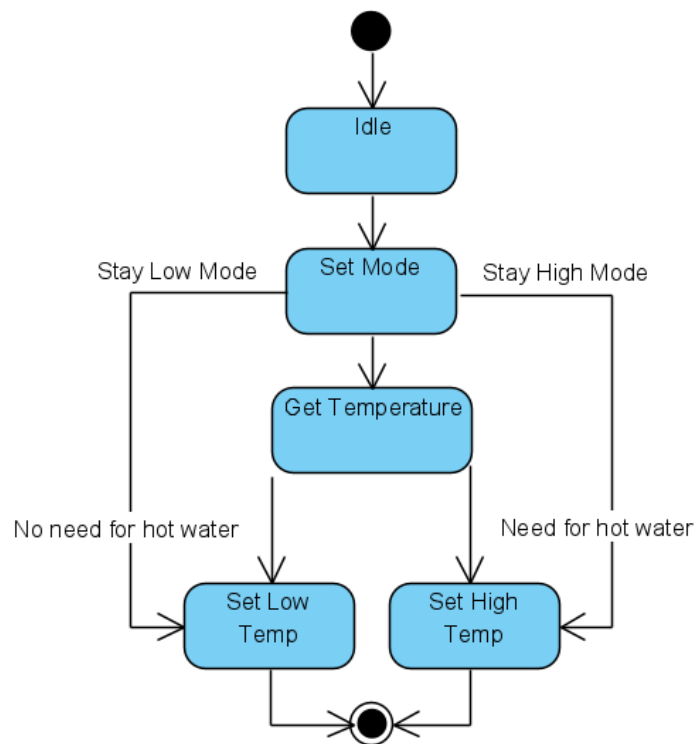
3. For the Normal mode operation create a sequence diagram that captures the interactions and messaging among the three Objects (Caldera Controller, Thermostat, and Clock). Make certain to use the appropriate sequence diagram interaction fragments (i.e. loops, alt, etc.) and correct message types (asynchronous, synchronous.)
Note: The details of comparing the time returned from the Clock to the schedule need not be captured. A Boolean that is checked if a temperature change required should suffice for example the use of an OPT [temperatureChange] fragmentation would suffice.



4. For the Thermostat create a state diagram that captures the thermostats behaviour.



5. For the Caldera Controller create a state diagram that captures the changes in the mode of operation of the controller. Include some internal transition actions that could occur when in those states.



Questions:

1. Do you think that a more detailed state diagram that captures the checking of the time with the schedule would be useful or makes sense when the Controller is operating in the normal mode? Justify your answer.

The state diagram should be moderately detailed. If the diagram were to be overly detailed it would waste time and provide information that is not necessary. It makes more sense that the controller will be working in normal mode due to the operations of the controller and that checking of the time will not be necessary when operating in normal mode.