Designing an Elevator

* How would you model a program that controls one elevator in a 20-story high rise?
  + What inputs do you need?

You need, inputs for the outside whether you are going up or down. Input inside the elevator to which floor you are going, or to close or open the elevator.

* + What classes would you write?

Two classes, one for the inputs of the user and another one is for the set of states the elevator will have.

* + What instance variables would your classes have?

The instance variables I would have in the classes, is by storing the inputs of the floor the person want to go in a list, and sort the floor number, so it stops first on that floor. ie: ([5,9,15]) then the guy adds floor 6 so it would be added to the list and sorted as to be ([5,6,9,15]) but first it checks where the current state and where they are right now, if current floor < added floor, it gets added to the list of floor to stop next else, it gets added to the next queue.

* + What methods would your classes have?

For the inputs, there would be methods that take the inputs on the outside whether you are going up or down, then there are methods inside the elevator for the inputs on which floor you want to go and other inputs about closing/opening the door.

For the set of states for the elevator class, there would be method on which floor the elevator should stand, and when it receive a call from the input, it goes to that direction. Another one is a method for elevator moving up, each time it goes up, it checks the inputs if it needs to stop and open the door and waits a certain time before closes. Also the a method for moving down, similar with the up but in reverse direction

* How should elevators decide which request to service next?

When the floor goes down or up, it checks whether the input outside is going to the same motion as the elevator. Example is elevator is at 15th floor, someone press going down at floor 11th. It checks for current\_state > pressed\_state and if its true, then it stops and its opposite for going up.

* How would your answers change if there were 4 elevators instead of one?

There would be scheduling such as if one elevator is available, pick up the ones the other elevator couldn’t pick up, or if the elevator is standing at that floor, pick that one that uses that on that floor. Picks up what the others couldn’t pick up basically and then finally pick elevator with lowest load, if the elevator is full.