Full Name: _____

Lab 1: Analysis and Design Lab

Note: This work must be completed by the end of the lab.

Goals:

1. Be able to analyze use cases.
2. Be able to discover preconditions and postconditions.

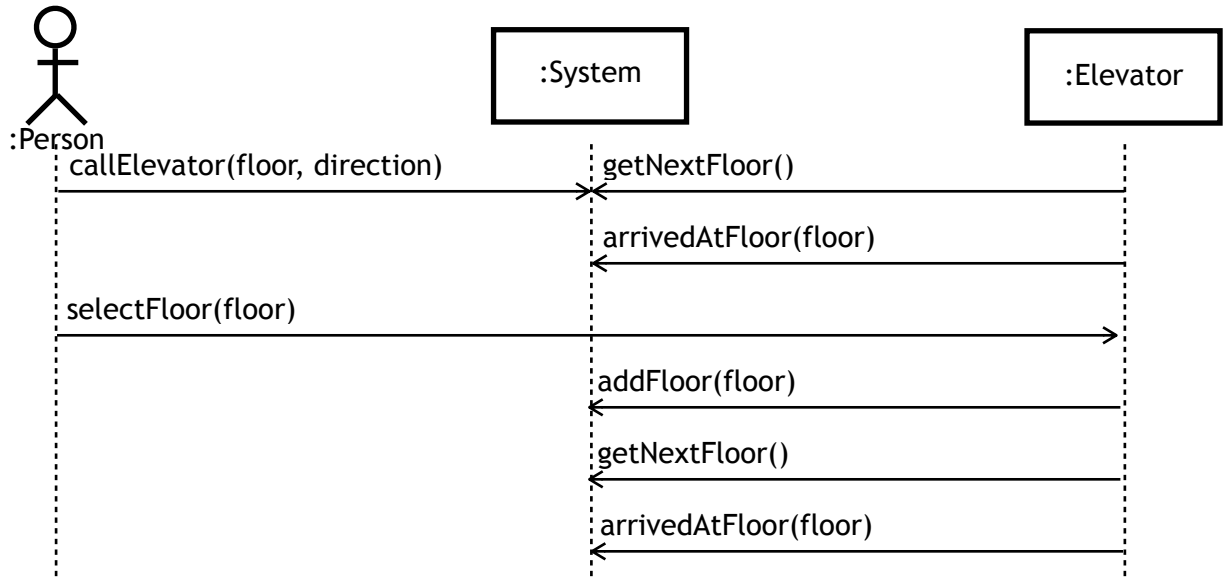
Tasks:

- (/10) Given the use case below, come up with the corresponding domain model.
- (/10) Given the system sequence diagram below, come up with the corresponding contracts.

Use Case:

1. This use case begins when a person presses an elevator call button *C*.
2. The elevator system notes the floor *F* on which the person is located, as well as the direction associated with *C* (up/down), and adds this information to the list of floors *L* that must be serviced by the elevator. It also indicates acceptance of the call by turning on *C*'s light.
3. Concurrently, the elevator moves to the next floor *N* contained in *L*.
4. Step 3 is repeated until *N* == *F*. Subsequently, the elevator informs the elevator system of its arrival and opens its doors.
5. The elevator system turns off *C*'s light, plays a chime, and opens its doors.
6. The person steps into the elevator and presses a target floor button *T*.
7. The elevator informs the elevator system that *T* was pressed, turns on *T*'s light, and closes its doors.
8. The elevator system adds *T*'s floor to *L* and closes its doors.
9. The elevator gets the next floor in *L* from the elevator system and keeps servicing floors listed in *L* until reaching the person's target floor.
10. The elevator informs the elevator system of the arrival, turns off *T*'s light, and opens its doors.
11. The elevator system opens its doors and the person leaves the elevator.
12. The elevator and elevator system close their doors.

System Sequence Diagram:



Please use the next page for your **final** answers