

# Elevator

Group 29

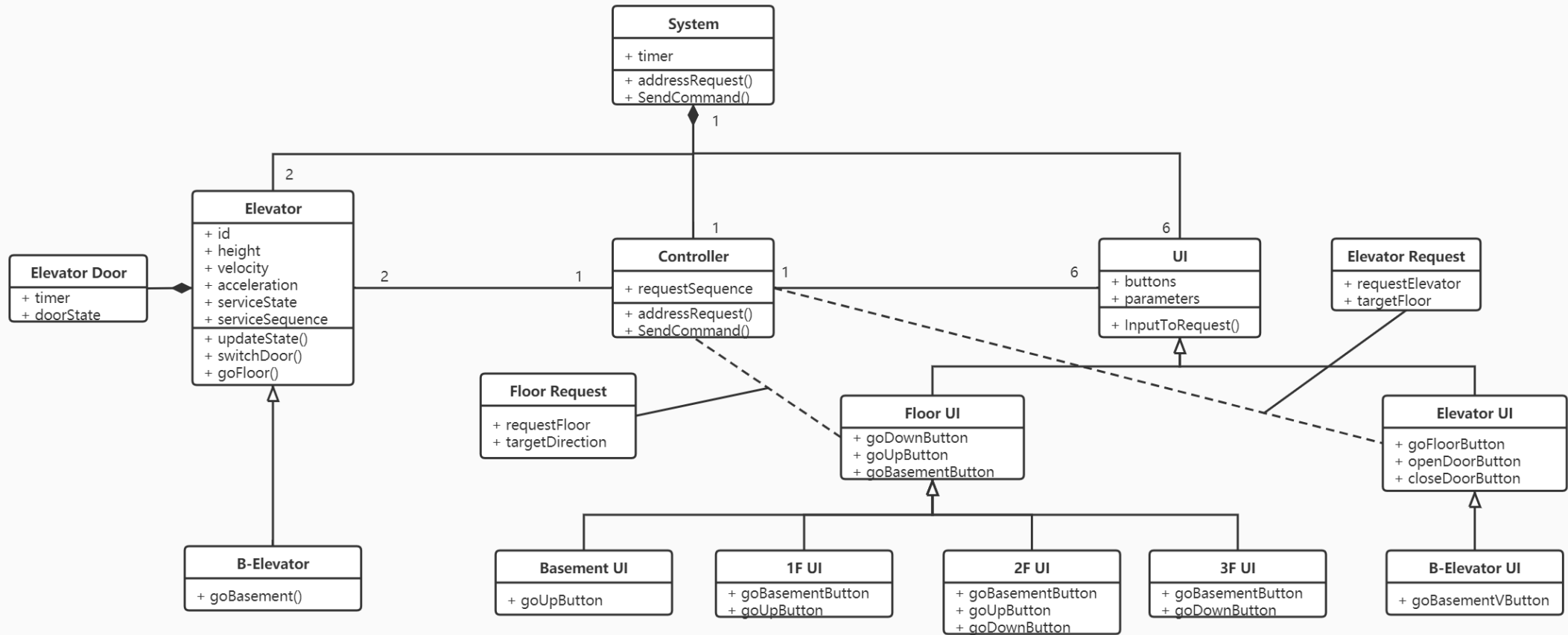
**What we have done**

# Requirement

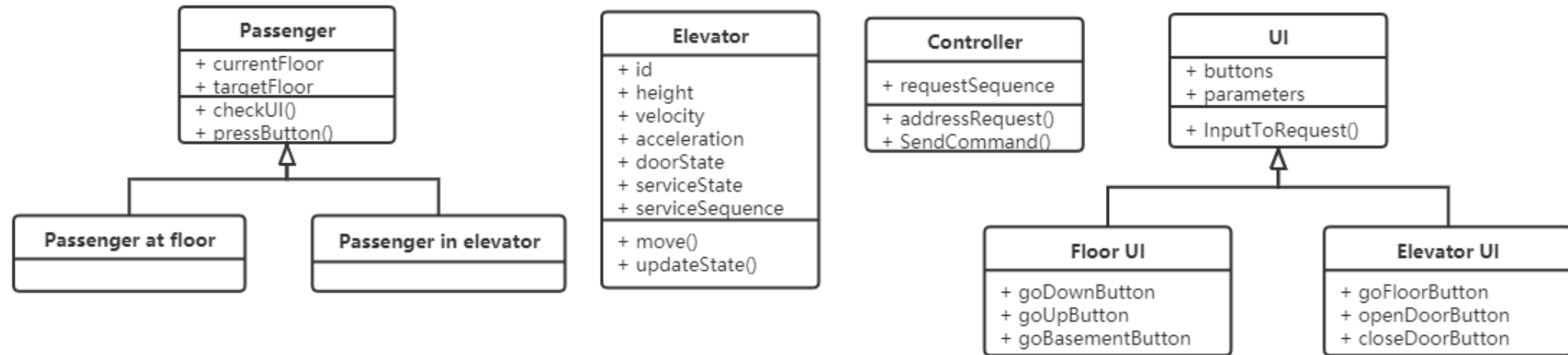
# System Objective

- In this project, we are developing a software that simulates 2 elevators in a building with 3 floors and 1 basement and design an automated algorithm to schedule and control them according to user requests. The key difference between two elevators is that only one can reach basement floor when another cannot.
- The software will take care of the graphic interface, display real-time movements of elevators and determine how to process service direction and order of elevators, which ensures every passenger to reach target floor promptly. Also a status HUD is provided for maintainers to check physical parameters and service status of elevators.

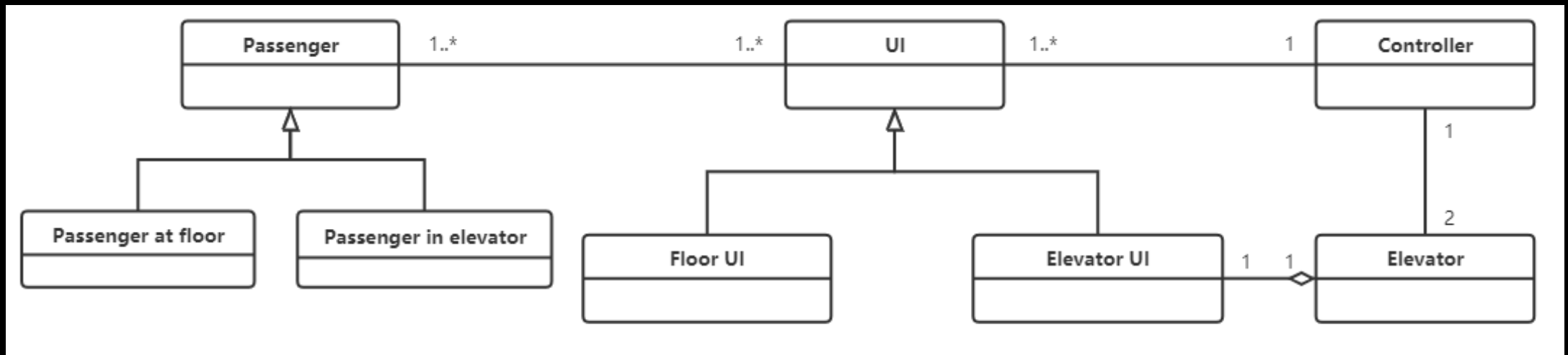
# Domain Analysis



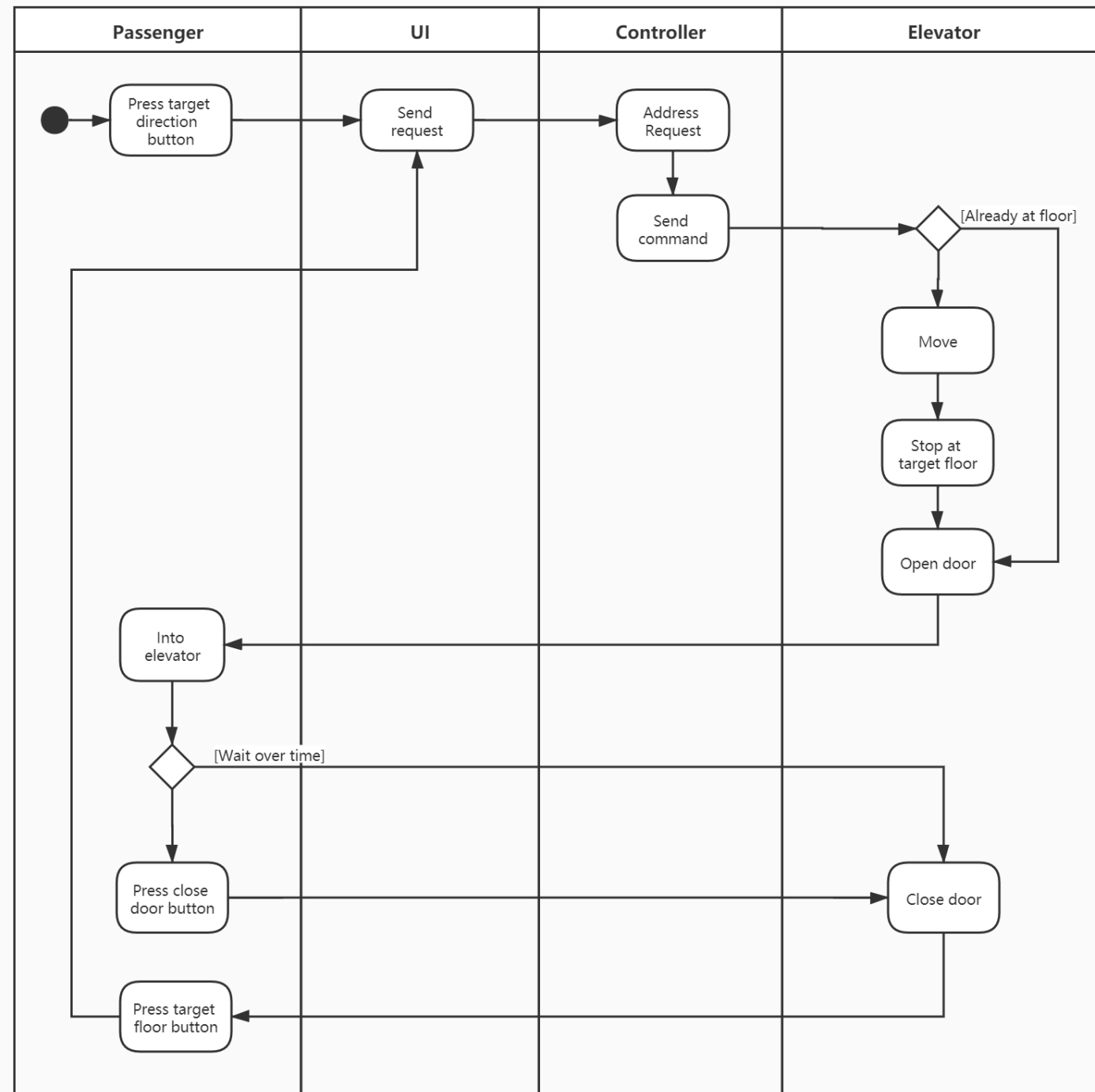
# Domain Analysis



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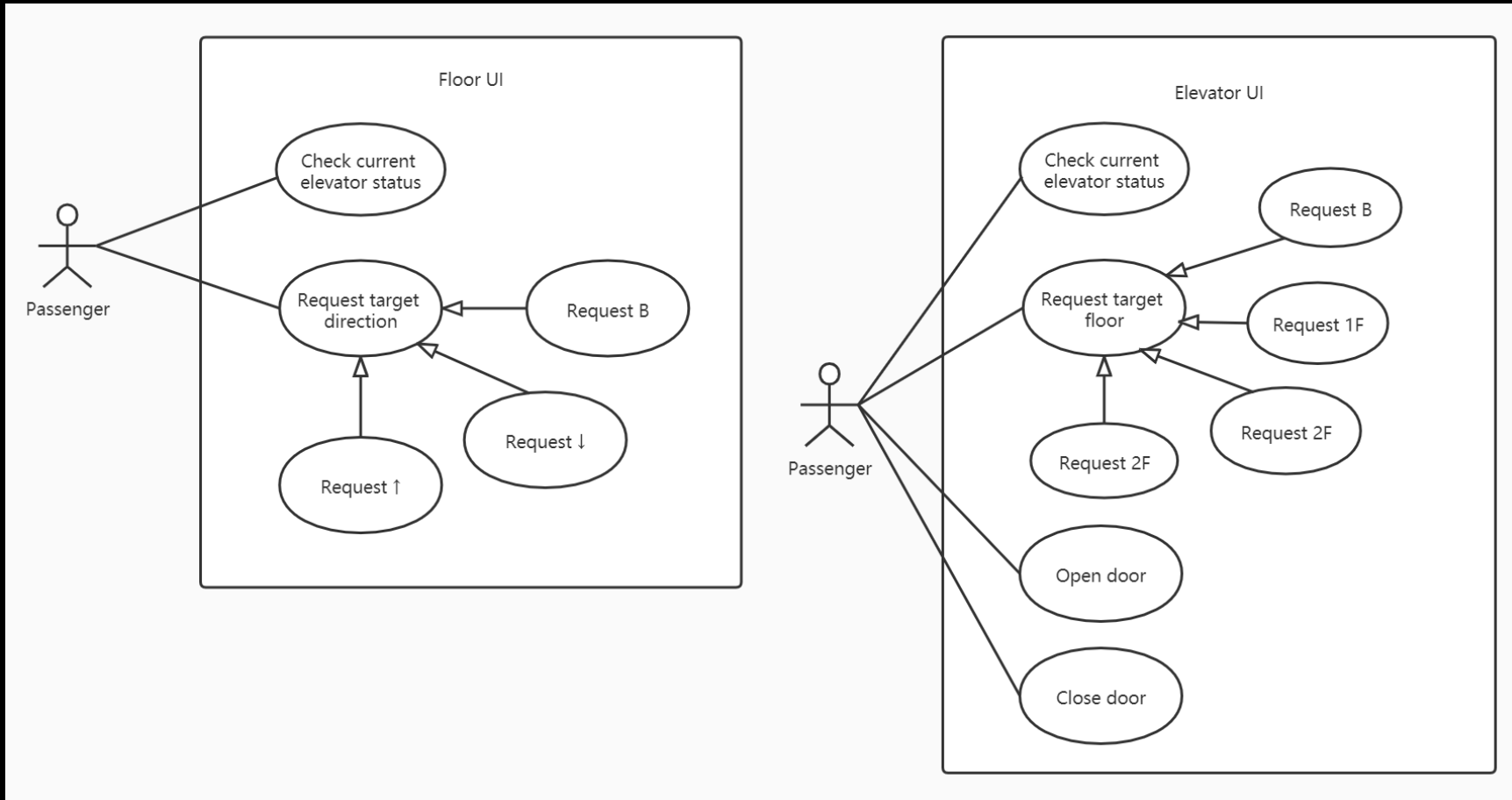


# Domain Analysis





# Use Case

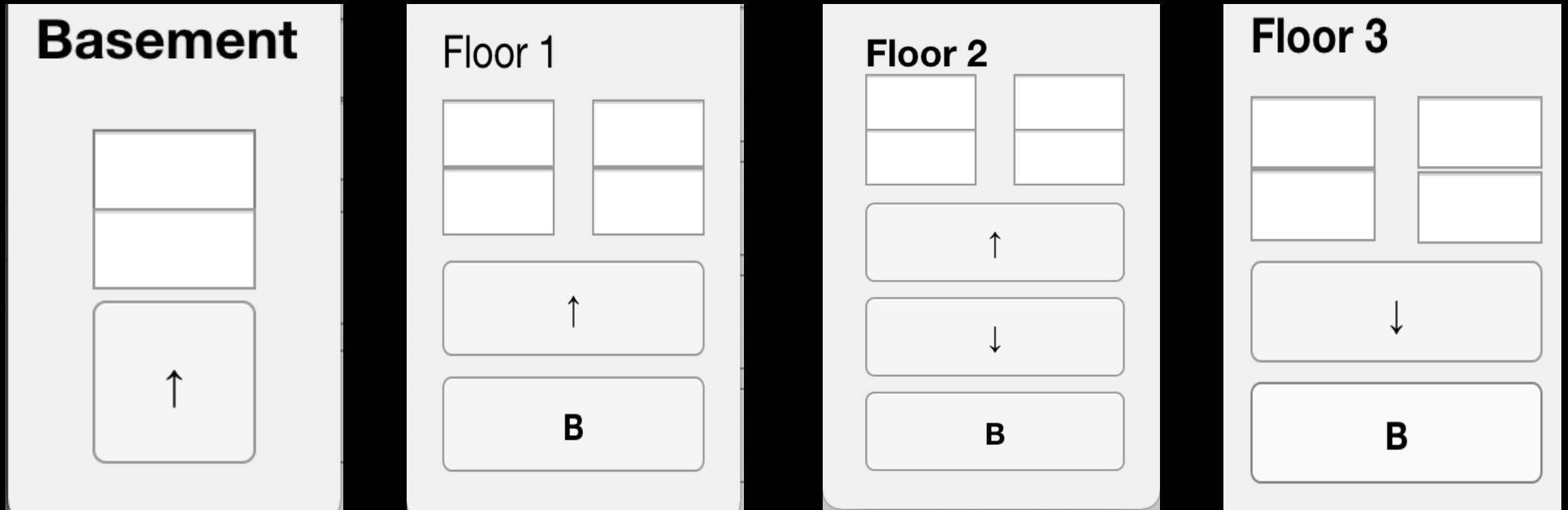


# Software Requirements

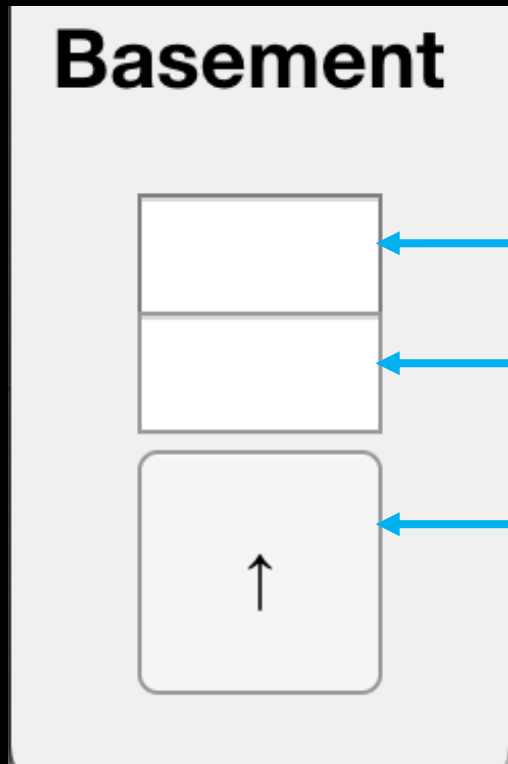
- R1: Floor UI
- R2: Elevator UI
- R3: Controller

# Development

# Floor UI



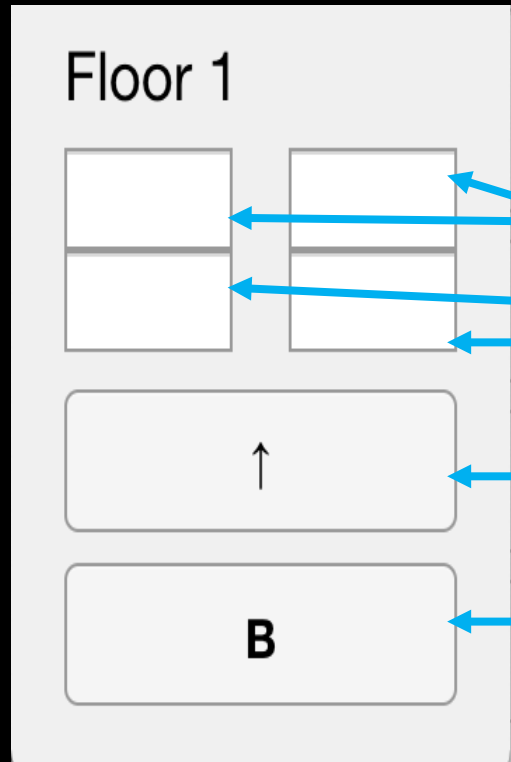
# Basement UI and its function



Person at basement have the ability to know where the left elevator is and its move state.

Person at basement have the ability to go up.

# Floor1 UI and its function

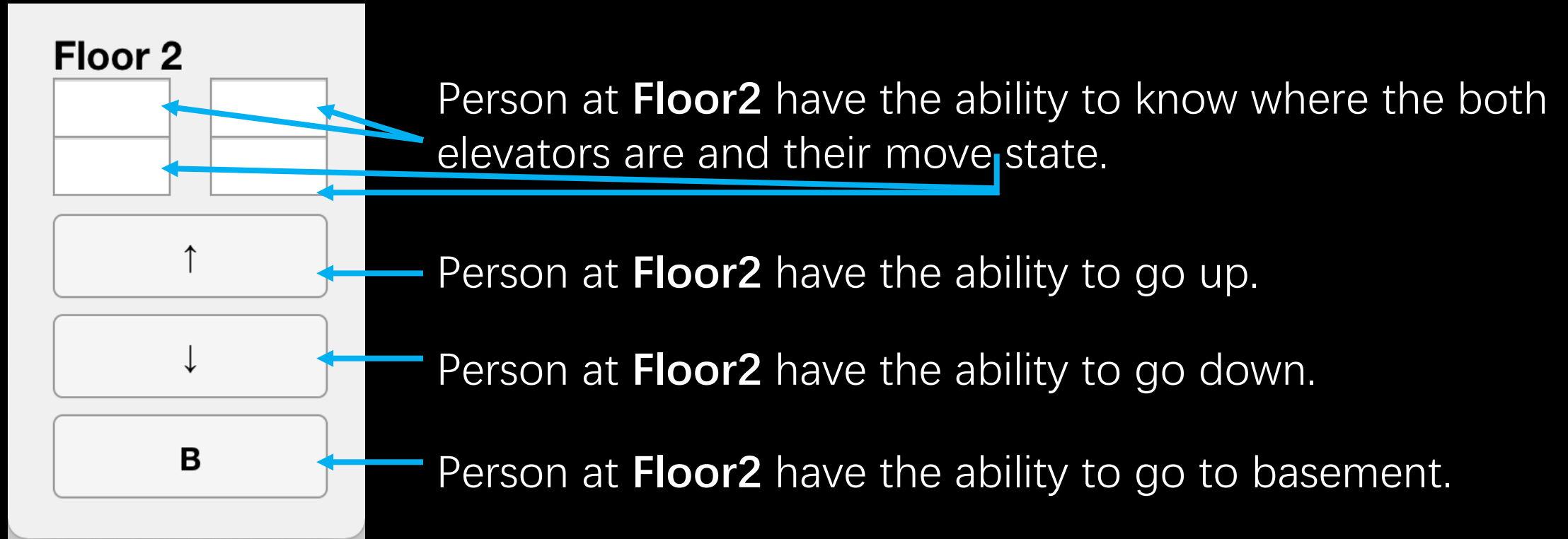


Person at **Floor1** have the ability to know where the both elevators are and their move state.

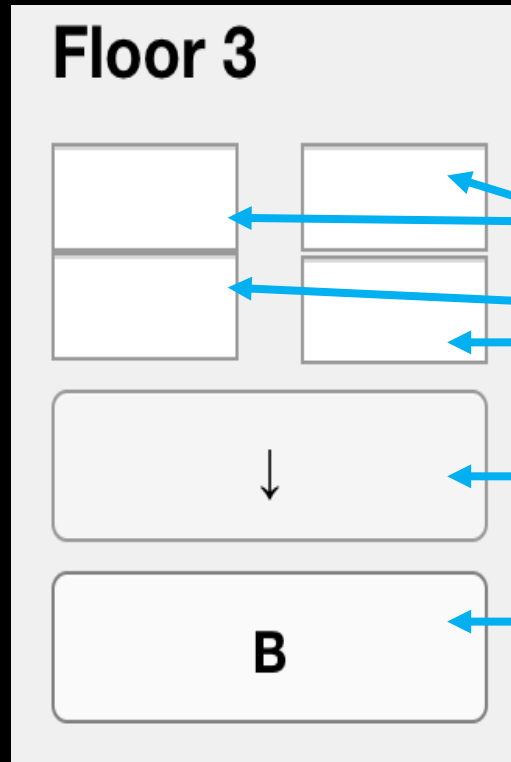
Person at **Floor1** have the ability to go up.

Person at **Floor1** have the ability to go down(basement).

# Floor2 UI and its function



# Floor3 UI and its function



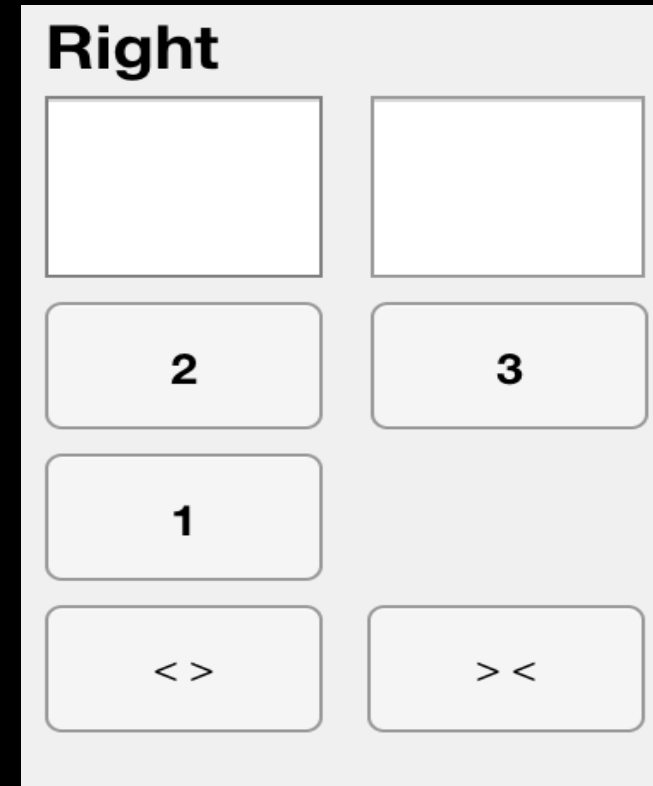
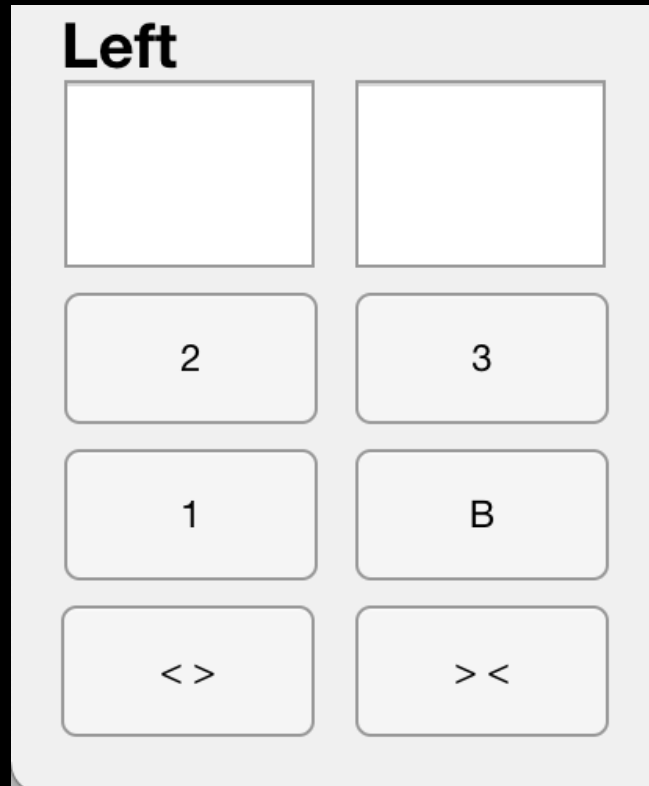
Person at **Floor3** have the ability to know where the both elevators are and their move state.

Person at **Floor3** have the ability to go down.

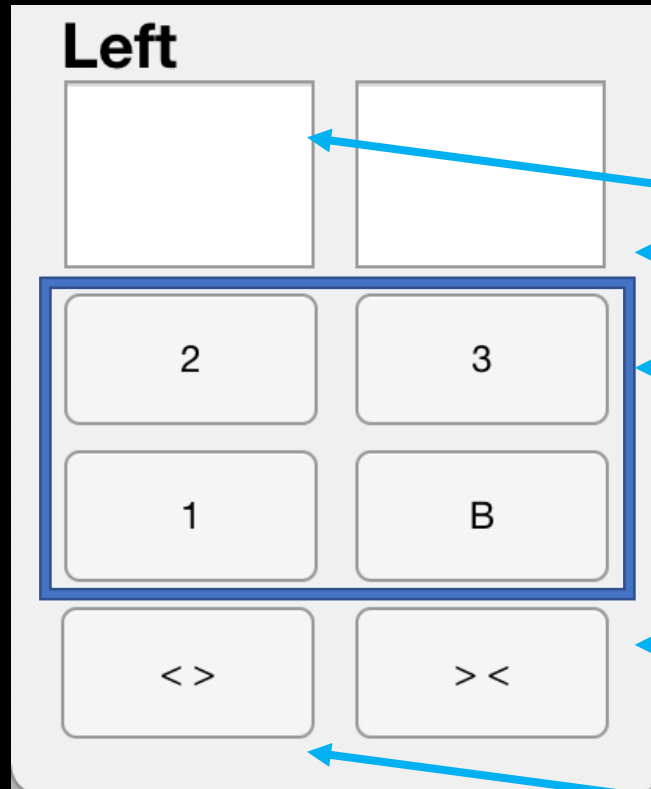
Person at **Floor3** have the ability to go basement.



# Elevator UI



# Left Elevator UI and its function



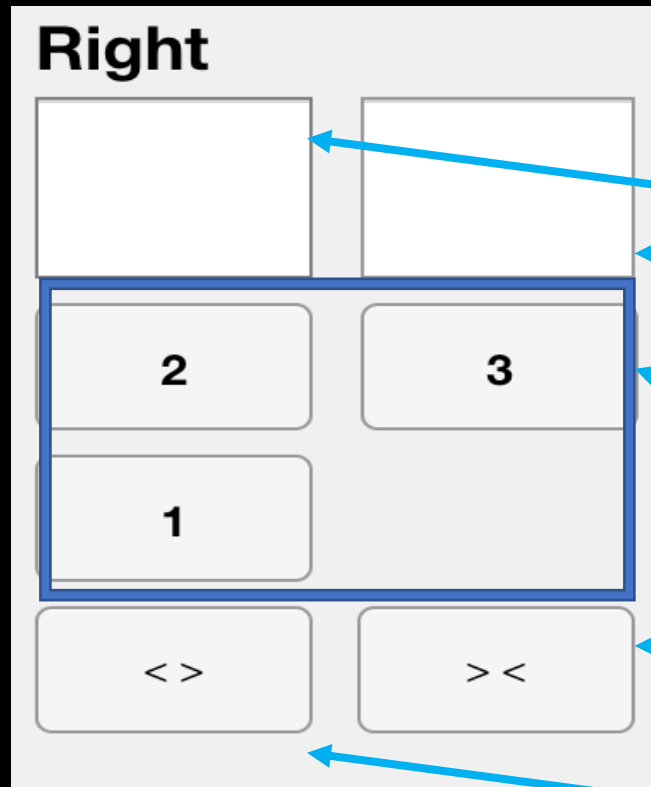
Person at **Left Elevator** have the ability to know where the elevator is and its move state.

Person at **Left Elevator** have the ability to go to any floor.

Person at **Left Elevator** have the ability to close the door while the door is fully opened.

Person at **Left Elevator** have the ability to open the door while the elevator is stopped.

# Right Elevator UI and its function



Person at **Right Elevator** have the ability to know where the elevator is and its move state.

Person at **Right Elevator** have the ability to go to any floor **except the Basement** .

Person at **Right Elevator** have the ability to close the door while the door is fully opened.

Person at **Right Elevator** have the ability to open the door while the elevator is stopped.

# HUD Version

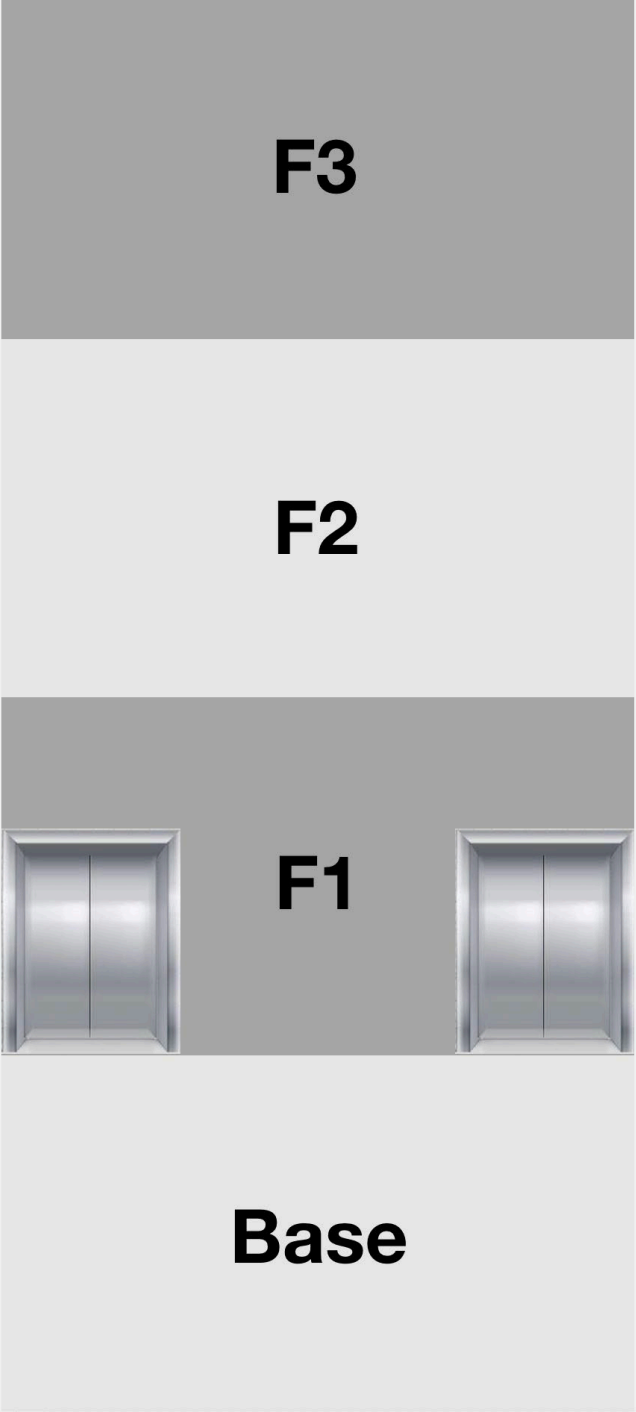
Floor

Velocity

Acceleration

Height

DoorState



Floor

Velocity

Acceleration

Height

DoorState

# HUD Version

Floor	<input type="text"/>
Velocity	<input type="text"/>
Acceleration	<input type="text"/>
Height	<input type="text"/>
DoorState	<input type="text"/>



# HUD function

Floor	<input type="text"/>
Velocity	<input type="text"/>
Acceleration	<input type="text"/>
Height	<input type="text"/>
DoorState	<input type="text"/>

Person use **HUD** have the ability to know where the elevators are and its states.

Floor













Speed

Acceleration

Height

Door(opened or closed or moving).

# OOP

 名称	Git
 Controller.m	<input type="radio"/>
 Elevator.m	<input type="radio"/>
 Sensor.m	<input type="radio"/>
 main.m	<input type="radio"/>
 EleVersion.mlapp	<input type="radio"/>
 F1UI.mlapp	<input type="radio"/>
 F2UI.mlapp	<input type="radio"/>
 F3UI.mlapp	<input type="radio"/>
 FBUI.mlapp	<input type="radio"/>
 LctrlUI.mlapp	<input type="radio"/>
 RctrlUI.mlapp	<input type="radio"/>

# Elevator Display



**What we're going to do next**