This document presents some scenarios of an elevator system as showed in Figure 1. We assume that the building have 4 floors: Floor 0 up to Floor 3.

**Scenario 1**. Initial state: Cabin is at Floor 0, the door is closed, the motor is stopped, the moving direction is up.

- User 1 arrives at Floor 0 and presses the up button
- The cabin door opens (closed to half then to fully open)
- The up button on Floor 0 is clear (e.g., no longer lit up)
- User 1 enters the cabin and presses the Floor 2
- The door closes (open to half then to closed)
- The motor starts winding
- User 2 arrives at Floor 1 and presses the up button
- The cabin moves from Floor 0 to Floor 1
- The motor stops (hence the cabin stops at Floor 1)
- The door opens (closed to half then to fully open)
- The up button on Floor 1 is clear (e.g., no longer lit up)
The door closes (open to half then to closed)
- The motor starts winding
- The cabin moves from Floor 1 to Floor 2
- The motor stops (hence the cabin stops at Floor 2)
- The door opens (closed to half then to fully open)
- The button for Floor 2 (inside the cabin) is clear (e.g., no longer lit up)
- The door closes (open to half then to closed)

**Scenario 2**. Initial state: Cabin is at Floor 0, the door is closed, the motor is stopped, the moving direction is up.

- User 1 arrives at Floor 0 and presses the up button
- The cabin door opens (closed to half then to fully open)
- The up button on Floor 0 is clear (e.g., no longer lit up)
  - User 1 enters the cabin and presses the Floor 2
  - The door closes (open to half then to closed)
  - The motor starts winding
  - User 2 arrives at Floor 1 and presses the down button
  - The cabin moves from Floor 0 to Floor 1
  - The cabin moves from Floor 1 to Floor 2 (note that the elevator ignores the move down request at Floor 1 for the moment)
  - The motor stops (hence the cabin stops at Floor 2)
  - The door opens (closed to half then to fully open)
  - The button for Floor 2 (inside the cabin) is clear (e.g., no longer lit up)
  - The door closes (open to half then to closed)
  - The direction is changed to down
  - The motor starts unwinding
  - The cabin moves from Floor 2 to Floor 1
  - The motor stops (hence the cabin stops at Floor 1)
  - The door opens (closed to half then to fully open)
  - The down button on Floor 1 is clear (e.g., no longer lit up)
  - The door closes (open to half then to closed)

**Scenario 3**. Initial state: Cabin is at Floor 0, the door is closed, the motor is stopped, the moving direction is up.

- User 1 arrives at Floor 0 and presses the up button
- The cabin door opens (closed to half then to fully open)
- The up button on Floor 0 is clear (e.g., no longer lit up)
  - User 1 enters the cabin and presses the Floor 2
  - The door closes (open to half then to closed)
  - The motor starts winding
  - User 2 arrives at Floor 2 and presses the down button
  - The cabin moves from Floor 0 to Floor 1
  - The cabin moves from Floor 1 to Floor 2
  - The motor stops (hence the cabin stops at Floor 2)
  - The door opens (closed to half then to fully open)
– The button for Floor 2 (inside the cabin) is clear (e.g., no longer lit up)
– The door closes (open to half then to closed)
– The direction is changed to down
– The door opens (closed to half then to fully open)
– The down button at Floor 2 is clear (e.g., no longer lit up)
– User 2 presses Floor 1
– The door closes (open to half then to closed)
– The motor starts unwinding (note that the motor only starts when there is a request)
– The cabin moves from Floor 2 to Floor 1
– The motor stops (hence the cabin stops at Floor 1)
– The door opens (closed to half then to fully open)
– The button for Floor 1 is clear (e.g., no longer lit up)
– The door closes (open to half then to closed)

**Scenario 4.** Initial state: Cabin is at Floor 0, the door is closed, the motor is stopped, the moving direction is up.

– User 1 arrives at Floor 0 and presses the up button
– The cabin door opens (closed to half then to fully open)
– The up button on Floor 0 is clear (e.g., no longer lit up)
– User 1 enters the cabin and presses the Floor 2
– The door closes from open to half
– User 2 arrives at Floor 0 and presses the up button
– The door opens from half to open
– The up button on Floor 0 is clear (e.g., no longer lit up)
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