Elevator Finite State Machine Final Draft

States: (5 States total: Each floor is its own state, compressed for simplification)

Current Floor [Input]: Elevator is stationary, doors opened.

Moving Up: Elevator is moving up, door closed.

Moving Down: Elevator is moving down, doors closed.

Inputs:

Go to Floor 1 (0x05): Command to move to Floor 1.

Go to Floor 2 (0x06): Command to move to Floor 2.

Go to Floor 3 (0x07): Command to move to Floor 3.

Outputs:

Move To Floor [Input]: The motor controller moves the car to the requested floor.

Transitions:

Current Floor to Moving Up

Current Floor to Moving Down

State Flow I/O Logic:

Input: Go to Floor 1 [0x05] -> Transition to Moving Down (if Current Floor > 0x05)

Output: Move To Floor [0x05]

Resulting State: Current Floor 1 [0x05]

Input: Go to Floor 2 [0x06] -> Transition to either Moving Up or Moving Down…

Moving Up (if current floor < 2) or Moving Down (if current floor > 2)

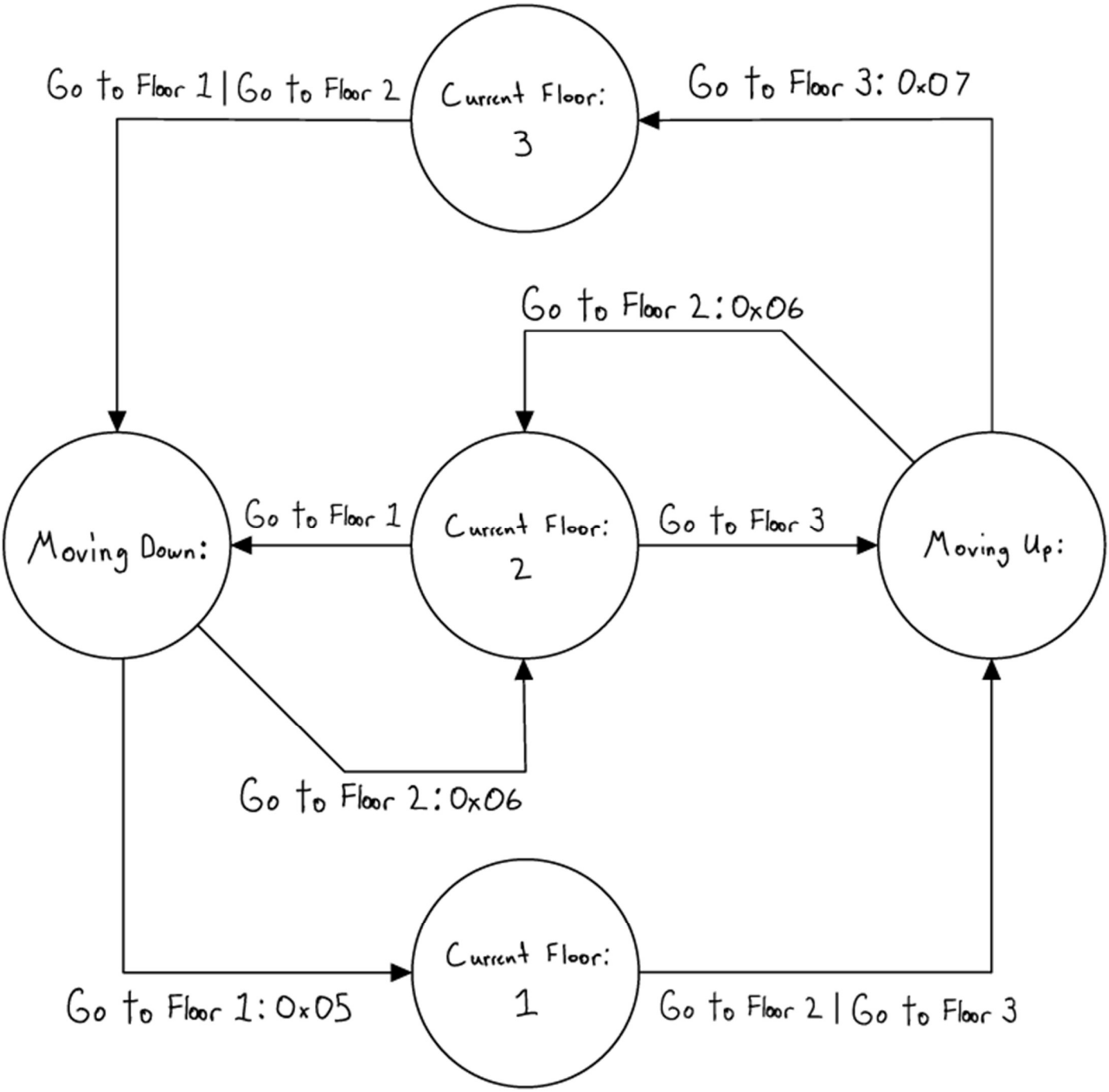
Output: Move To Floor [0x06]

Resulting State: Current Floor 2 [0x06]

Input: Go to Floor 3 [0x07] -> Transition to Moving Up (if current floor < 0x07)

Output: Move To Floor [0x07]

Resulting State: Current Floor 3 [0x07]


Go to Floor 1 | Go to Floor 2
Current Floor: 3
Go to Floor 3: 0x07
Go to Floor 2: 0x06
Moving Down:
Go to Floor 1
Current Floor: 2
Go to Floor 3
Moving Up:
Go to Floor 2: 0x06
Current Floor: 1
Go to Floor 1: 0x05
Go to Floor 2 | Go to Floor 3