Task #2

Description

You are requested to design a simple elevator system with the following requirements:

- The building consists of four floors.
- Each floor has two buttons one for going up, and one for going down except for the ground and last floor have one button only
- You should have at least five buttons inside the elevator cart, one for each floor.
- The elevator door waits for 5 seconds before closing, and the door can be stopped from closing by pushing an open button. Also, the elevator door opens if someone blocks the door.
- If the elevator is going up, it should not stop for a "going down" request, and vice versa: if it is going down it should not stop for a "going up request".
- For simplicity, you can assume that a "going up" request go to the top floor, and a "going down" request, make the elevator go to the ground floor.
- The elevator system should save the requests, for example if the elevator is going up, and you pressed on the "going down" button, the elevator shall ignore the request initially, but when it reach the top floor it should go back to pick up that one who want to go down.
- The maximum load is four persons. If the number of persons exceeds four, an alarm should be worked and elevator will not move.
- You can mimic the existing elevator systems

Hardware

- You should display the floor number on a 7-segment.
- You can use a stepper motor or a servo motor to move the elevator box.
- You can code either in Assembly language or C.

Submission due date: 18/04/2019

Requested Materials

- A working simulation mimicking real scenario.
- You should submit a report including:
    1. A circuit schematic and diagram.
    2. Description for your design and circuit operation
    3. Source Code.