ELEVATOR CONTROLLER

1 INTRODUCTION

For my project, I plan to use my cortex-m3 board to implement and simulate an elevator controller of 3(or 4) floors. There would also be CLI(Command Line Interface) implemented into the application, it will display the state of the machine and include the ability to affect the state.

1.1 LOGIC

The machine would have 3 floors and would start at the ground floor and display on the CLI what floor the simulated elevator is at. Then the CLI would also show commands that the user can type to operate the machine. The machine can be moved up or down or it will stay in the same position, it would also simulate the door opening and closing. There would be another state which would be the operator state that would be activated on press of the user button on the stm32f103RB, the operator mode would turn off the whole system.

2.TASKS

There would be four tasks;

1- The CLI controller: This would control the command line and be in charge of the interactions and the states within the elevator's logic, that would include the standby state, the “in-motion” state and the operator state.

2- The CLI display: This would control displaying and updating the current CLI status and user events while using the elevator. This would be implemented as a task using RTOS(Real-Time Operating System)

3- The Receive inputs task: There would be a task that would handle the user inputs from the CLI. It would handle all the commands the user inputs from the CLI.

4- The Operator display Task- There would also be a separate task that would implement the operator events and commands while the machine is in operator mode.

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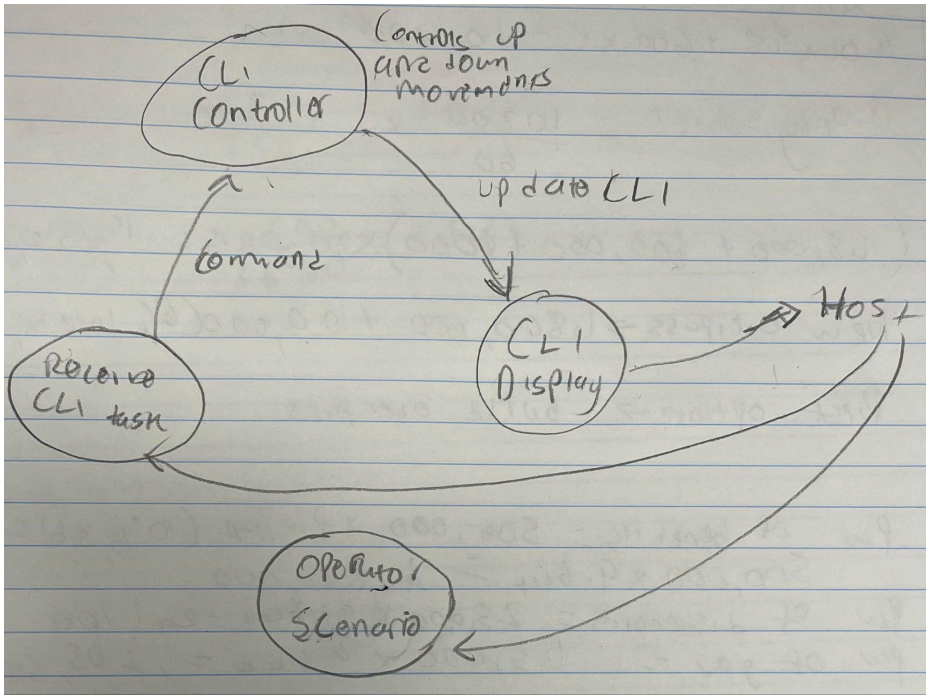
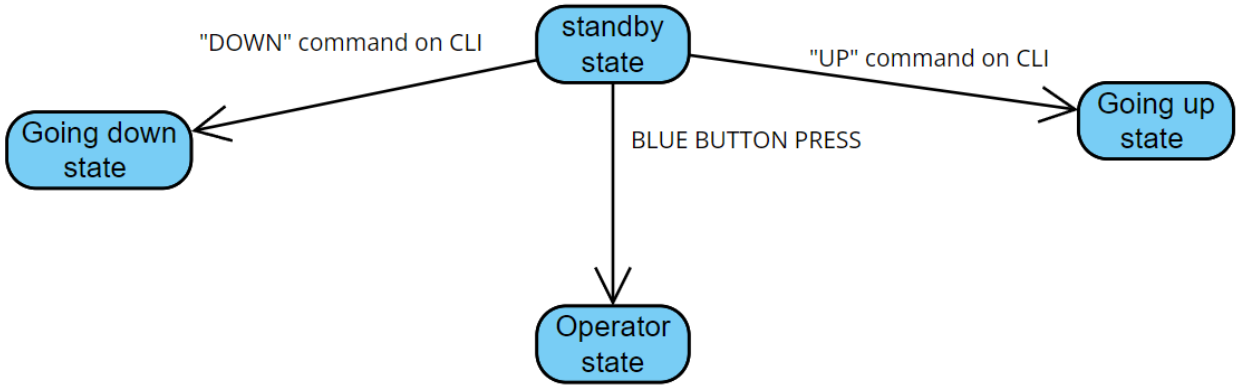
DIAGRAM:



STATE MACHINE



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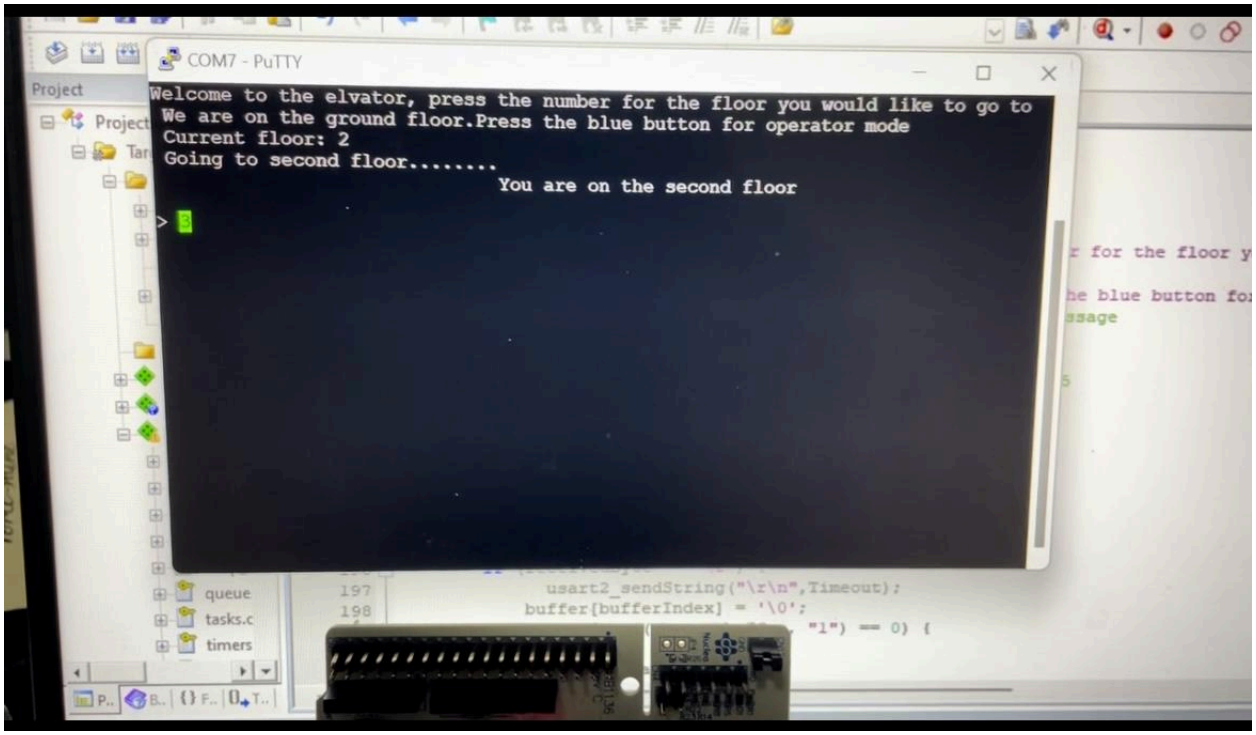
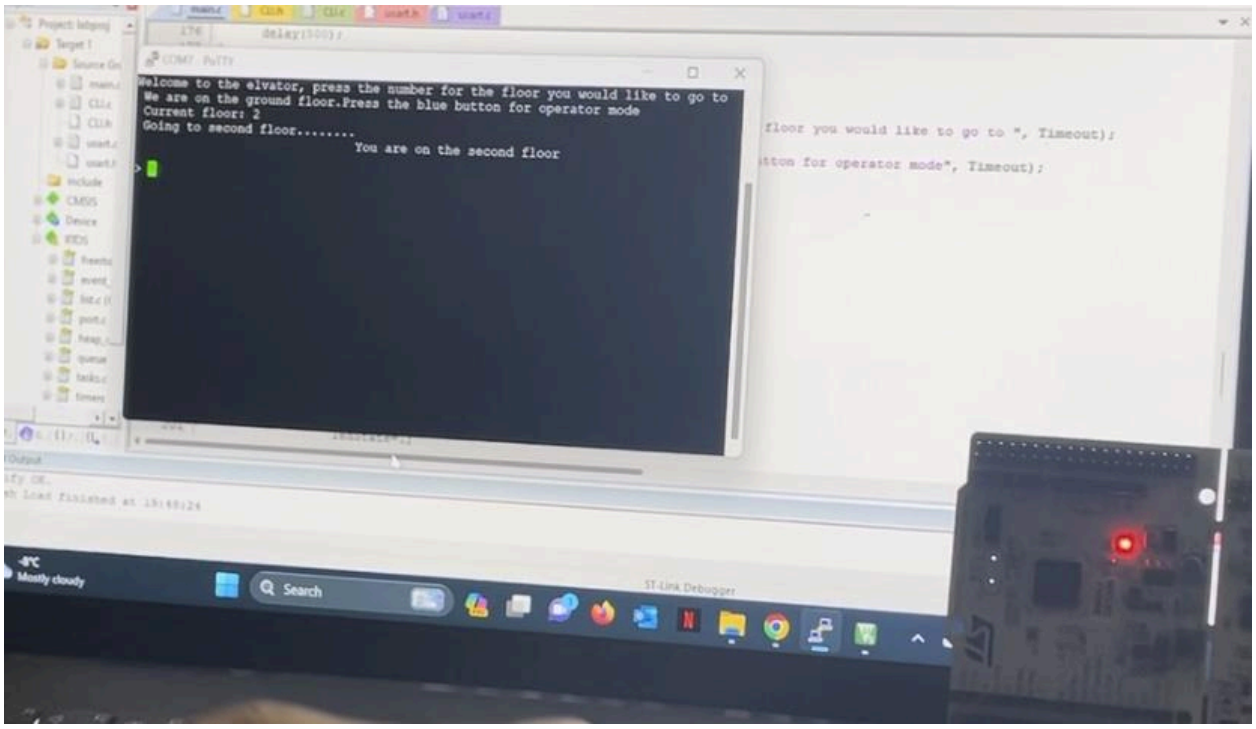
RESULT





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