

# Elevator Project

## **Project Objective**

The goal of the project is to create an elevator system for a building where pressing a button on any floor will bring an elevator to that floor as quickly as possible.

## **Settings (settings.js)**

The settings page allows you to define the number of floors and elevators in the building. It also includes the height of each floor.

## **Design (main.css, help.css)**

The project's design is contained in two CSS files.

## **Floor Objects (elevatorfloor.js, ele.js)**

Each floor is an object with a button displaying the floor number.

Pressing the button will call an elevator and start a timer showing the elevator's arrival time.

## **Elevator Objects**

Each elevator object contains:

- The current floor of the elevator.
- A boolean indicating if the elevator is moving.
- The time remaining until the elevator completes all floors.
- The elevator object with a image of an elevator.
- A function moveFloor that runs every time the elevator animation finishes moving.

## **Algorithm (addToQueue)**

When a floor button is pressed, it turns green until the elevator arrives.

A function calculates the time it will take each elevator to reach that floor (the time it will take to complete its current floors in queue + time it will take to come from the last floor in the queue to that floor).

The elevator with the shortest calculated time is selected.

A timer starts showing the arrival time in the format mm:ss.

The floor is added to the end of the elevator's queue.

If it's the first request in the elevator's queue and the elevator is not moving, the goToFloor function is triggered.

## **Functions**

### **goToFloor(elevator)**

Sets isMoving to true.

Calculates the animation time based on the distance between floors.

Moves the elevator to the next floor in the queue.

Updates the current floor of the elevator.

Subtracts 0.5s from the elevator's timer every 0.5s up to the time it takes to come to that floor + 2-second stop at each floor.

### **moveFloor(elevator)**

Runs at the end of each floor transition.

Plays an arrival sound and changes the button color back to gray.

After a 2-second pause, sets isMoving to false.

Removes the floor from the elevator's queue and calls goToFloor function if there are more floors in the queue.

### **timeFormat(t)**

Converts a number of seconds into a string formatted as mm:ss.

For example, 70 seconds will be converted to 01:10.