

Lift Management System - JavaScript

Objective:

To design and implement a Lift Management System using JavaScript, focusing on simulating real-world lift operations in a multi-floor building scenario.

Task Overview:

The goal of this task is to develop a simple lift management system where a user can request a lift from different floors, and the system should be able to:

- Move the lift between floors.
- Handle multiple lift requests using a Queue.
- Simulate basic lift functionalities like opening/closing doors, moving between floors, and responding to calls.

Key Features to Implement:

- Basic Lift Operations:
 - A lift can move up or down based on the request.
 - The lift should open and close doors at the requested floor.
 - The lift should stop at each requested floor in order of the calls received.
- Handling Multiple Requests:
 - The system should queue multiple requests from different floors.
 - If a lift is already moving, the request should be added to the queue, and the lift will optimize its path to minimize travel time.
- Real-Time Status Update:
 - Display the current floor of the lift and whether it is moving up, down, or stationary.
 - Show a log of actions such as 'Lift moving to floor 3' or 'Lift doors opening on floor 5.'
- Error Handling:
 - Handle edge cases such as requests for the same floor or invalid floor numbers.
 - Ensure the lift doesn't operate beyond the building's available floors.
- UI Design
 - Text Input field – take user input which floor the user is requesting.
 - Submit button – After entering the floor number, user should click the Submit button.
 - Text Box – Show the status of lift. *moving/opening/closing doors* for example.
 - Text Box – Show Direction of the lift is moving. *Up/Down/Stopped* for example.