2023 Challenge Puzzle: Software Engineering

Design a single bank/single car elevator system for a 100-floor commercial building. Each floor has a panel to call the elevator (with an up and down button), the first and top floors only have the option to call the elevator to go in one direction (up or down). Inside the elevator, there is a panel that contains buttons for floors 1-100, door open, door close, and emergency stop.

1. What questions would you ask of the product team to clarify the requirements and constraints?
2. Outline your approach to handling elevator requests and talk through the algorithm that will process elevator button presses to move the elevator. Optimize for the best route.
3. How would you test the system? What test cases would you write?
4. Highlight any assumptions that you've made along the way and list any future considerations and improvements to the system.