Zoho School for Graduate Studies

Duration : 2:30 hrs

1. The input for the program should be given through command line arguments i.e the input should not be hard coded inside the program. The program should work with any input without changing the program for each input.

2. Solve the use-case one by one.

3. Program logic, coding standards, and modularity will be considered for evaluation.

4. Once you have completed the app, show the output to the invigilator and explain the code structure.

5. Java must be used for writing the programs.

6. Create a folder in your gitHub profile and share the link with your mentors.

7. Improvise in your current program for every use-case. If there is override in usecases, separate them as methods. Write separate methods for each functionality. If possible, commit the code in your git after completion of each use-case to have clear history of improvisation.

Lift system

There were 8 modules. Consider totally 5 lifts and 10 floors.

1. Display the position of Lift

Lift : L1 L2 L3 L4 L5
Floor: 0 0 0 0 0

2. Assign Lift to the users

Input : 2 5

(Input has 2 numbers. First number indicates the floor from which the passenger presses the lift button. Second number indicates the destination floor)

Output :
L1 is assigned
Lift : L1 L2 L3 L4 L5
Floor: 5 0 0 0 0

3. Assign the nearest lift by comparing their current positions.
Assume,

Lift : L1 L2 L3 L4 L5
Floor: 5 2 7 9 0
Input : 4 10

Output :
L1 is assigned
Lift : L1 L2 L3 L4 L5
Floor: 10 2 7 9 0

Explanation : L1 is near to 4 floors

4. If two lifts are nearest to the user's source floor, assign the lift with the same

direction of the user's requirement.
Example: if the user requests to move from 4 to 2, and if L3 is in the 5th floor & L5 is in the 3rd floor, then we should assign L3 because the user requested for downward motion, so L3 will move down from the 5th floor

Lift : L1 L2 L3 L4 L5
Floor: 10 2 5 9 0
Input : 4 2

Output :
L3 is assigned
Lift : L1 L2 L3 L4 L5
Floor: 10 2 2 9 0

Explanation : L3 is nearest to the 4th floors in the same direction.

5. Restrict the lift accessible to 0-5th floor for L1 & L2, 6-10th floor for L3 & L4, and all floors for L5. All lifts will have access to the 0th floor. Initially, all lifts are at the 0th floor.

Example:
L1 and L2 will stop at floor 0, 1, 2, 3, 4, 5
L3 and L6 will stop at floor 0, 6, 7, 8, 9, 10
L5 will stop at all floors

6. Assign lift with least number of stops
Example:
If L3 is in the 9th floor
And L5 is at the 8th floor
If the user wants to move from 8 to 0
We should assign L3 because L3 will stop at 8,7,6 and then 0, NumberOfStops = 3, but L5 will stop at 8,7,6,5,4,3,2,1,0 and NumberOfStops = 8 so we should assign L3

7. Assign capacity (Number of people capable to travel) to all lifts and assign according to capacity

8. If any lift is under maintenance, then their current position should be marked as “-1” and that lift should not be assigned at any cost.