**Lift system**

Raj wants to construct a lift as a part of his construction duty. He tries learn about the working of lift, observes the working and he learned the basic working of a lift as the following. A [lift](https://www.designingbuildings.co.uk/wiki/Lifts) (or [elevator](https://www.designingbuildings.co.uk/wiki/Elevators)) is a [form](https://www.designingbuildings.co.uk/wiki/Form) of A vertical [transportation](https://www.designingbuildings.co.uk/wiki/Transportation) between [building](https://www.designingbuildings.co.uk/wiki/Building) [floors](https://www.designingbuildings.co.uk/wiki/Floor) , [levels](https://www.designingbuildings.co.uk/wiki/Level) or [decks](https://www.designingbuildings.co.uk/wiki/Deck), commonly used in [offices](https://www.designingbuildings.co.uk/wiki/Office), [public buildings](https://www.designingbuildings.co.uk/wiki/Public_building) and other types of [multi-storey building](https://www.designingbuildings.co.uk/wiki/Multi-storey_building). [Lifts](https://www.designingbuildings.co.uk/wiki/Lifts) can be essential for providing vertical circulation , particularly in [tall buildings](https://www.designingbuildings.co.uk/wiki/Tall_building) , for [wheelchair](https://www.designingbuildings.co.uk/wiki/Wheelchair) and other non-ambulant [building users](https://www.designingbuildings.co.uk/wiki/Building_user) and for the vertical [transportation](https://www.designingbuildings.co.uk/wiki/Transportation) of [goods](https://www.designingbuildings.co.uk/wiki/Goods). Some [lifts](https://www.designingbuildings.co.uk/wiki/Lifts) may also be used for firefighting and evacuation purposes. Here are the limitations he should follow while constructing the lift. Try to help him out in constructing. Hint (Your Ideation should be implemented by using these concepts Structures, Functions, Arrays and Pointers) .

***Note: As this Construction is done level by level you are intimated that for every level you need to try for the input and output limitations***

Input &Output Limitations to be followed:

**There were 8 modules**

**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

Output : L1 is assigned

Lift : L1 L2 L3 L4 L5

Floor: 5 0 0 0 0

**3. Assign 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 floor

**4. If two lifts are nearest to the user’s source floor, the assign the lift with same direction of user’s requirement.**

Example: if user request to move from 4 to 2 ,and if L3 is in 5th floor & L5 is in 3rd floor, then we should assign L3 because user requested for downward motion so L3 ill move down from 5th floor

**5. Restrict L1 & L2 for 0-5th floor , L3 & L4 for 6-10th floor , L5 for 0-10th**

Initially all lifts are at 0th floor.

**6. Assign lift with least number of stops**

Example:

If L3 is in 9th floor

And L5 is at 8nd floor

If user wants to move from 8 to 0

We should assign L3 because L3 ill stop at 8,7,6 and then 0 NumberOfStops = 3, but L5 ill 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 lift and assign according to the 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.**