

Operating logic:

"Call elevator" is pressed on a random floor programatically. If that floor is not already in the "floors to call at" list, it is added as follows...

- If elevator is going up and call is higher than the next stop, call is added to the back of the list.
- If elevator is going up and call is lower than the next stop (but higher than the current floor!), call is added to front of the list.
- If elevator is going up and call is lower than the current floor, call is added to the back of the list.
- If elevator is going down and call is lower than the next stop, call is added to back of the list.
- If elevator is going down and call is higher than the next stop (but lower than the current floor!), call is added to front of the list.
- If elevator is going down and call is higher than the current floor, call is added to the back of the list.

Floor selections are also made by passengers who board the elevator. These are handled in the same manner as calls.

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However, the sorting is not perfect..!

If the elevator is going up and a call or selection is:

- Higher than the next stop
- But not the highest floor on the list

It will be incorrectly added to the back of the queue as it is higher than the next stop, not correctly inserted between the next stop and the highest floor.

Example: List is "4,6" and 5 is requested. 5 will be placed at back of list, as it is higher than 4 (next floor), whereas it should be inserted between 4 and 6.

Vice versa for descent!

This logic hole is fixed in the following way:

On its way to the next stop, if the elevator passes a floor which is in the list, it will stop there and remove that floor from the list.

Example: If the elevator has just stopped at 4 and the next floor order is "6,5" due to the sorting issue, the elevator will stop at 5 on its way to 6, thereby solving the problem.

On stops such as these, no floor selections are made - this gives the appearance of random passenger behaviour.

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User input:

You can call the elevator yourself on a PC, by pressing keys 1-9 for floors 1-9 and 0 for floor 10.

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Logic flowchart:

Overleaf

Example Logic

