NLC Elevator Heuristic Evaluation

Floor Selection

1. Major: **It is not clear to new users that you select floors before getting in the elevator** (help and documentation)

This elevator system is pretty different from what virtually all users are accustomed to. As a result, even though the floor selection is relatively intuitive, users might get confused if there are no directions or explanations available.

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2. Major: **Current floor button has the same affordance as the other floor buttons** (affordances)

On the floor selection display, the current floor appears to be as selectable as all the other floors even though it is not actually selectable.

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3. Major: **It can be confusing that both the elevators and the "You are here" marker are represented by rectangles** (consistency and standard)

The map in the floor selection display does a good job of mapping out the position of the four elevators relative to the user. However, since the rectangles represent elevators, this map suggests that there is an elevator in front of the user, which is obviously untrue.
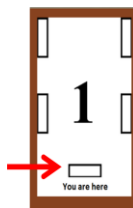
4. Minor: **There is no way to undo floor selections** (user control and freedom)

Similarly to most elevators, once a floor selection is made, it cannot be undone. However, since this is a novel interface for most users and is more prone to error, the ability to undo floor selections could be helpful.

5. Minor: **It is not clear to new users that the line being drawn on the map is telling them where to go** (help and documentation)

Although savvy users might be able to figure out that the lines being drawn as they select their desired destinations point to the elevator they are supposed to go, some users might need more hints. Having written instructions or even just turning the line into an arrow could help users to figure it out.

6. Minor: **There is no feedback on the map when selecting a floor that uses an elevator already being called** (visibility of system status)

If a user selects a floor that causes the map to draw a line to an elevator and then selects another floor that has the same elevator as the first, the map does not provide any additional feedback. While the color mapping is rather effective, the lack of feedback on the map could cause confusion, especially if the user only selects two floors and they both direct the user to the same elevator.

In this case, it might not be clear to the user that the map is color coded. The user then might not realize that the second selection is directing the user to the same elevator.

7. Good: **Simple, yet effective, mapping between selected floor and appropriate elevator** (natural mapping)

While it still leaves room for confusion among the least savvy of users the mappings are simple and effective. The mapping between the colors of the selected floor buttons and the colors of the paths on the map is, for the most part, clear and simple.

Elevator Selection and Waiting

8. Major: **Destination display above elevator door does not display standard information** (match between system and real world)

The display above the elevator door with the lit up circles is intended to represent the destination(s) of the arriving elevator. However, for regular elevators, these displays usually represent where the elevator currently is. Thus, this discrepancy could cause some confusion.

9. Major: **It is not clear that sometimes one must wait for an elevator going in their direction** (visibility of system status)

For example, if a user is on level 5 and then clicks levels 4 and 6. If, for whatever reason, both selections direct the user to the same elevator, the display above the elevator door does not display information for both level 4 and level 6. The display above the elevator door only displays the destination of the next arriving elevator. In this case it might only indicate that an elevator is coming destined for level 4 and only after this elevator arrives and leaves would it display that an elevator is coming destined for level 6. As a result, someone who wanted to go to level 6 would have to wait a while for indication that an elevator is coming with level 6 as a destination, which can lead to confusion.

10. Minor: **Users must remember which elevator they are supposed to go to** (recognition rather than recall)

While there are some indicators above the elevator doors of which destinations correspond to which elevators, they are not obvious from a distance, and thus users must recall the map from the level selection display. It would be helpful if the color mappings were more visibly extended to the elevator doors, so that users would only have to recognize the color of the elevator they are supposed to go to.

11. Minor: **Destination display above elevator displays the destination floors twice** (aesthetic and minimalist design)

It is unnecessary to have the destination floors be listed above the elevator twice. Since it the floors are being displayed twice and in two different forms it suggests that the displays mean different things and could cause confusion.

12. Minor: **Arrow pointing elevator direction is irrelevant** (aesthetic and minimalist design)

The arrow pointing the direction of the next arriving elevator is useful for conventional elevators, but it does not matter much to the user in this case, since these elevators already have set destinations before the user gets in them. Also, the arrow suggests that the elevator is like conventional elevators and that everyone who wants to go in that direction should enter the elevator, but this is not the case and thus can cause confusion.
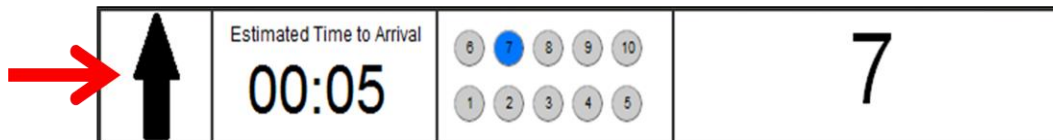
13. Minor: **Floor numbers are organized differently in the floor selector and the floor destination display** (consistency and standard)

While it probably will not cause trouble for users, it is worth noting that the display of floor levels above the elevator does not match the display of floor levels from the selection display. This forces the user to re-find their desired floor.

14. Minor: **There is nothing that notifies users that no elevator is coming at inactive elevators** (help users recognize, diagnose, and recover from errors)

If a user somehow ends up in front of an elevator door in which no elevator is called to arrive, there is nothing on the display that tells the user that they are not waiting in front of the right elevator.

15. Good: **Destination display above elevator displays the same colors as selected floors in the floor selector** (consistency and standard)

The color mapping is a simple reassurance to users that they are waiting in front of the correct elevator.

Inside Elevator

16. Minor: **Only the next elevator destination has an estimated time of arrival listed** (visibility of system status)

All users would appreciate seeing what the estimated time of arrival to floor is, thus it could be frustrating for users to only get an estimated time or arrival when there floor is the next destination.

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10
9: arriving in 00:03
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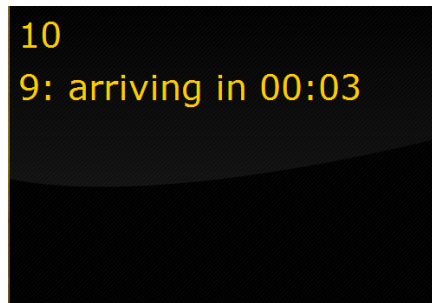
17. Minor: **Once in the elevator, users must wait to exit at the next stop if they change their minds and want to go to a different floor** (user control and freedom)

Users cannot change the destination of the elevator once inside of the elevator. Although this may be necessary for efficiency, it takes a lot of control away from the user and could cause stress and/or frustration when users make mistakes.

18. Cosmetic: **The display for estimated time of arrival in the elevator does not directly notify that the user has arrived at a certain floor** (visibility of system status)

While the doors open when the elevator reaches a floor, there is no sound or display indicator, which could cause users to be uncertain of what floor they are on and/or allow distracted users to miss their destination.