

The Elevator

In this assignment, you will design alternative control interfaces for an elevator. A really long elevator. An elevator that can service all of the floors of a 10,000 floor building. Nevermind that such a building, at 30,000 meters (100,000 feet, or roughly 3-4 times higher than Mt. Everest) could probably not be built given current technology. Do consider, though, that at 20.5 m/s (the current top speed for an elevator, a record held by Shanghai Tower), it would take nearly 30 minutes to reach the top floor if there were no stops in between. Also consider that an elevator servicing so many floors would need to move a lot of people, suggesting a capacity of dozens, if not hundreds, of passengers.

There are three components to this assignment:

1. Sketch 10 different designs for a control interface for such an elevator. Keep in mind that such an interface would make riders aware of the elevator status (current floor, time to desired floor) as well as providing control. Keep in mind, also, that you can take advantage of multiple points of interaction, including panels in the elevator or lobbies, personal devices, wearables, etc.
2. Reflect on your initial sketches, and determine which design ideas are the most promising and worthy of further development. From these ideas, determine a set of criteria (characteristics that a successful design solution for this problem should have) and a set of constraints (factors that limit what design solutions would work--these could be technical, social, ergonomic, etc.) **Write down 3-5 criteria and/or constraints, with a brief (2-5 sentence) explanation of how you derived these criteria/constraints from your initial assignment.** Your resulting criteria/constraints should be narrow enough so that at least some of the ideas from your initial round of sketching would be excluded, but broad enough that several different particular designs would still be possible.
3. Keeping in mind your criteria and constraints, generate 10 new sketch ideas, attempting to diversify your ideas as much as possible within the established constraints.

For the peer assessment, please submit all 20 sketches, clarifying which are the "first 10" and which are the "second 10."

The first idea that came to my mind was to put 1000 buttons, in a 10*100 grid, with few extra buttons.

Cons:

1. **Too long.** You'd need a ladder if you were going to a higher floor. It'd be taller than the height of an average human (or else you'd be dealing with very tiny buttons).
2. Its likely that a you'll spend a good amount of **time searching** for the right floor button to press. A small pro although, is that you only need to press one button and you're done.

So a 10*100 grid is obviously not practical. Neither is a 20*50 grid keeping in mind point 2 above.

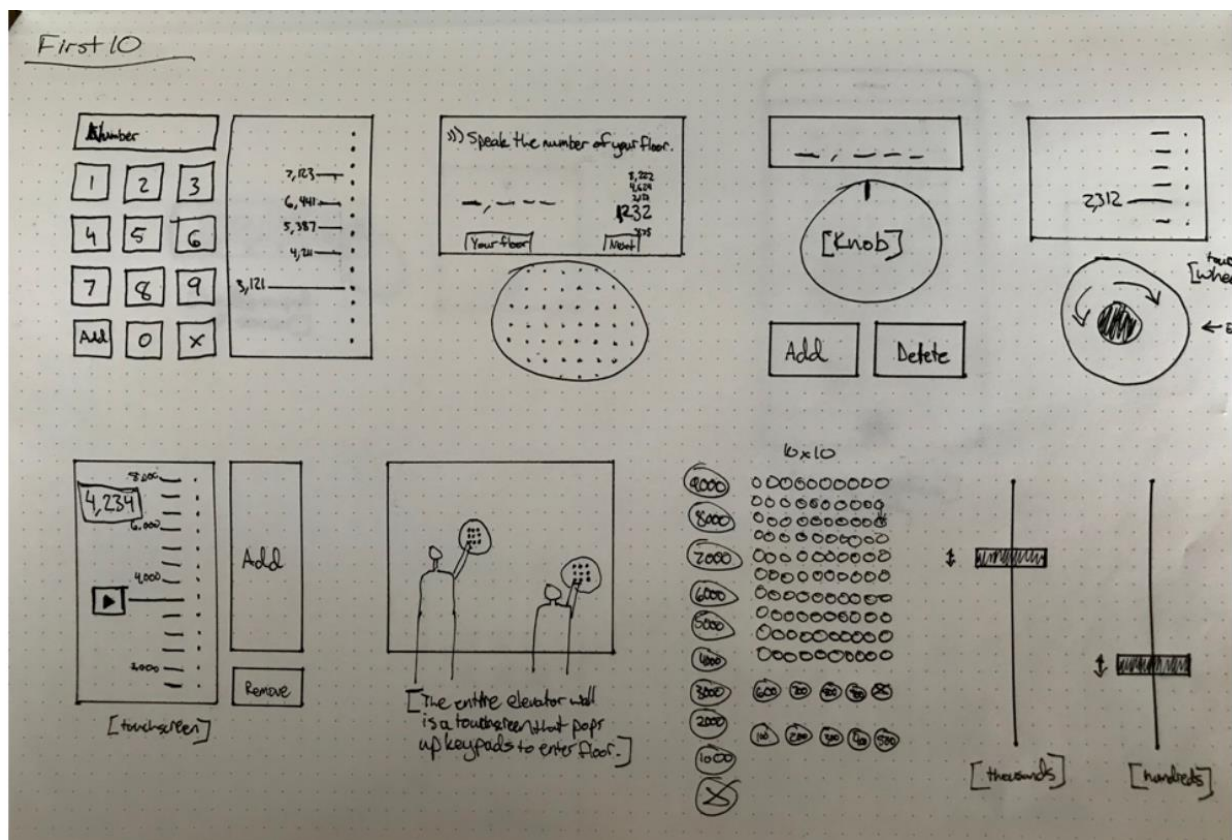
The Solution!

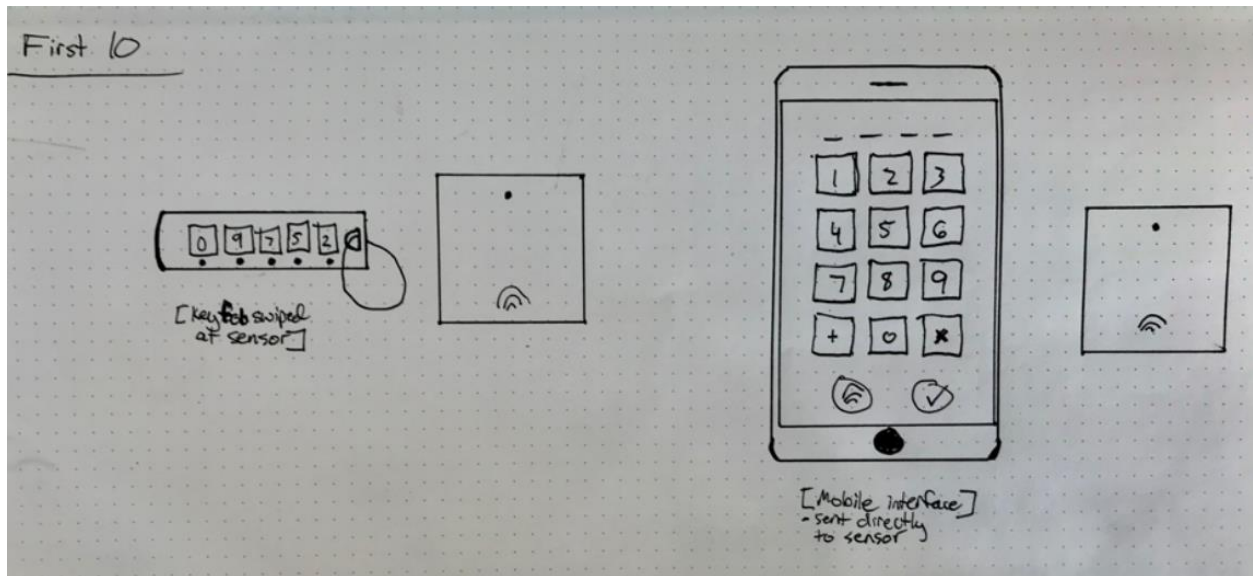
Adding and removing floors should be easy. Feedback should be seen visually.

1. Current floor, height and direction.
2. Total number and list of all the floors where the lift will stop should be shown in chronological order, separating user called floors and user input floors.
3. Time and details for the next floor.
4. Quick links for popular floors (parking, playground, hospital).
5. Open and Close buttons.

Using scroll list for entering floors

Overall, this solution works well for what it is, a quick way for multiple people to navigate between a large number of floors. Of course, if I was looking to actually implement this in real life, I'd go the multi elevator, double decker car route for efficiency purposes. Although that might not make a significant difference when it comes to using the interface I propose.





Characteristics:

Speed of use

The potential solution has to be able to be quickly utilized because the elevator will likely hold dozens, if not hundreds of users. The boarding process must be quick.

Ideally simultaneous use

If users can input floors at the same time as everyone else, this would greatly speed up the experience.

Constraints:

Time of input

Keypads and knobs take time to input the floor number, especially with thousands of options

Access of interface

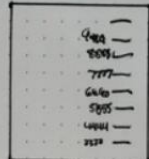
Even if the control interface is effective, if only a few are available, the time of use will increase and the experience will suffer.

Number of users

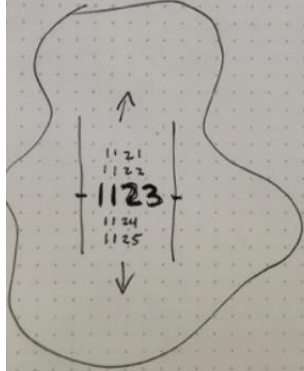
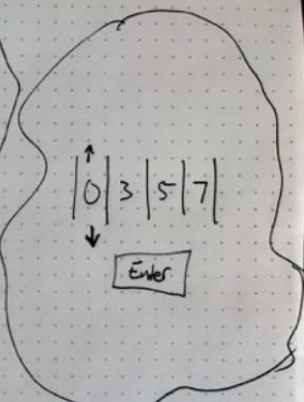
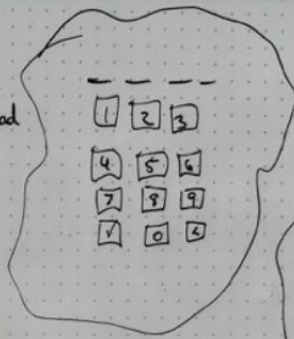
Even if interface is accessible there will still likely be a high number of elevator riders.

Second 10

[Voice activated. Everyone says floor number dance]

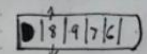


[Interface for elevator touchpad walls.]



[Interface for mobile]

[Interface for keychain/fob]



(Programmable Keychain)

