Designing Interactive Devices Fall 2021 - Lab1 - Tinkerbelle Lab - Writeup

NetIds: abk98, lat89, myh26, mb2393

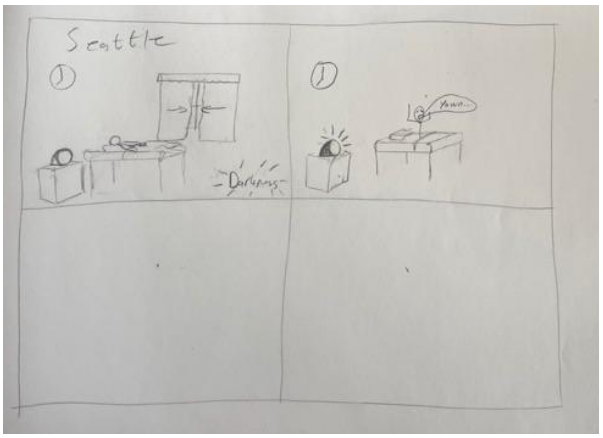
Alex Kluver, Lauren Tran, Magdalena Horowitz, Mayur Bhandary

Describe your setting, players, activity and goals here.

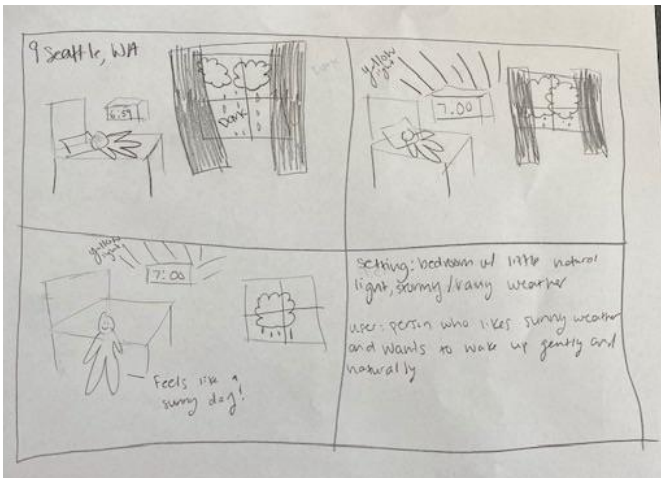
Our original brainstorming storyboards center on an alarm clock that wakes up the user using a light of their choice. We wanted to be able to imitate a sunny wake up for users who live in dark, gloomy areas like Seattle or a relaxed, rainy day wake up for users who live in sunny areas like California. The idea is that no matter where a person lives, the alarm will imitate their desired wake up weather conditions.

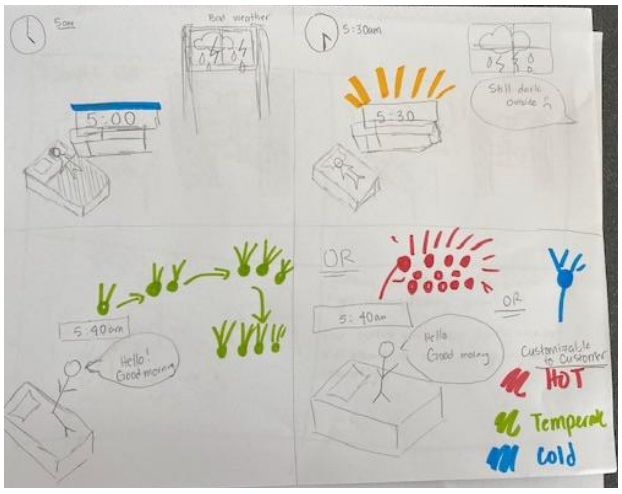
Our intended users are academics and professionals who want to wake up in a healthy, non jarring way through light rather than sound. Additionally, our users are people who may not live in the ideal weather setting of their choice but want to mimic their ideal morning weather, whether it's a sunny, bright day or a cool, rainy day.

Storyboards:



The storyboards depict various wake up scenarios where a users is woken up by a light of their choice (warm and yellow versus cool and blue)





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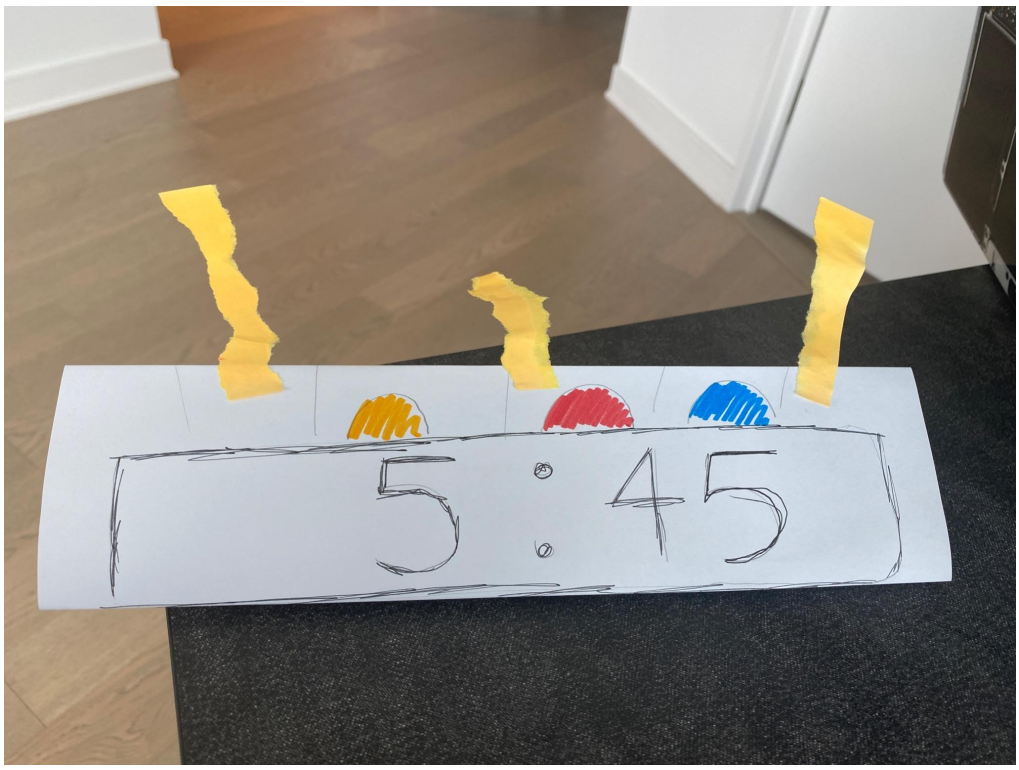
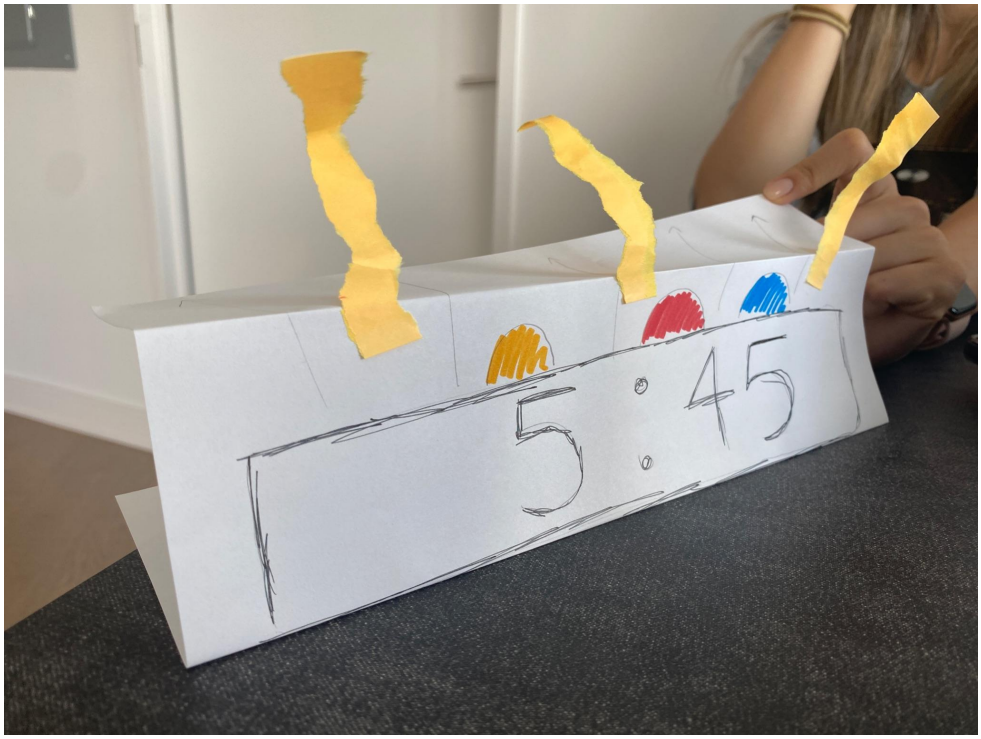
Paper prototype: (orange strips represent light)





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Setting up the functional prototype:

Functional Prototype:

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Summarize feedback you got here

Our original idea was to simply wake up users with a bright white light. However, on examining this situation, we realized that a bright white light would be a jarring wakeup, almost as jarring as waking up with a loud noise which is the situation our users are trying to avoid. As a result, we changed our idea from a bright white light to colored lights of various intensities that would allow users to choose the intensity of their light wake up.

Are there things that seemed better on paper than acted out?

One issue we ran into when setting up this prototype was that the light source was not strong enough to wake someone up, especially if the device is set on a bedside table, similar to where an alarm clock normally is. To compensate, we decided to add more light sources around the room that would fill the room with the desired amount of light rather than having one, singular, weak light source.

Are there new ideas that occur to you or your collaborators that come up from the acting?

Get a stronger light source ie: projecting the desired light throughout the room. This was hard to model with the prototype, but the end goal is the device has a projector feature that floods the room with the chosen light color and strength: such as a light purple all across the ceiling, walls, etc at a brightness of 100000 nits. This setting should be controlled and set by the user based on their preferences.

We also hope to include in future iterations an additional light signal *after* the user wakes up. This second light source will portray the *temperature* of the outside environment. Red for hot, green or purple for temperate, and blue for cold. The user will be able to customize his or her preferences: ie: Mayur thinks that above 50 F is actually really hot (whereas some people might think over 80F is hot)! So a red light will go on if it's 51 degrees outside. This way, a user will know how the temperature is relative to his or her own preferences rather than regular temperature standards.

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Setting up for the video interaction:

Give us feedback on Tinkerbelle.

The tinkerbell application was not very compatible with the school wifi as the wifi sets up profiles and makes it so we cannot connect to tinkerbell through our phones without the use of a hotspot.

Include your first attempts at recording the set-up video here.

See Github for video file

Show the follow-up work here.

See github for the video file.
We made changes to the user interaction of the device and how bright our light source was. We also discussed potential options for showing the secondary source of light after the user wakes up indicating the temperature outside.

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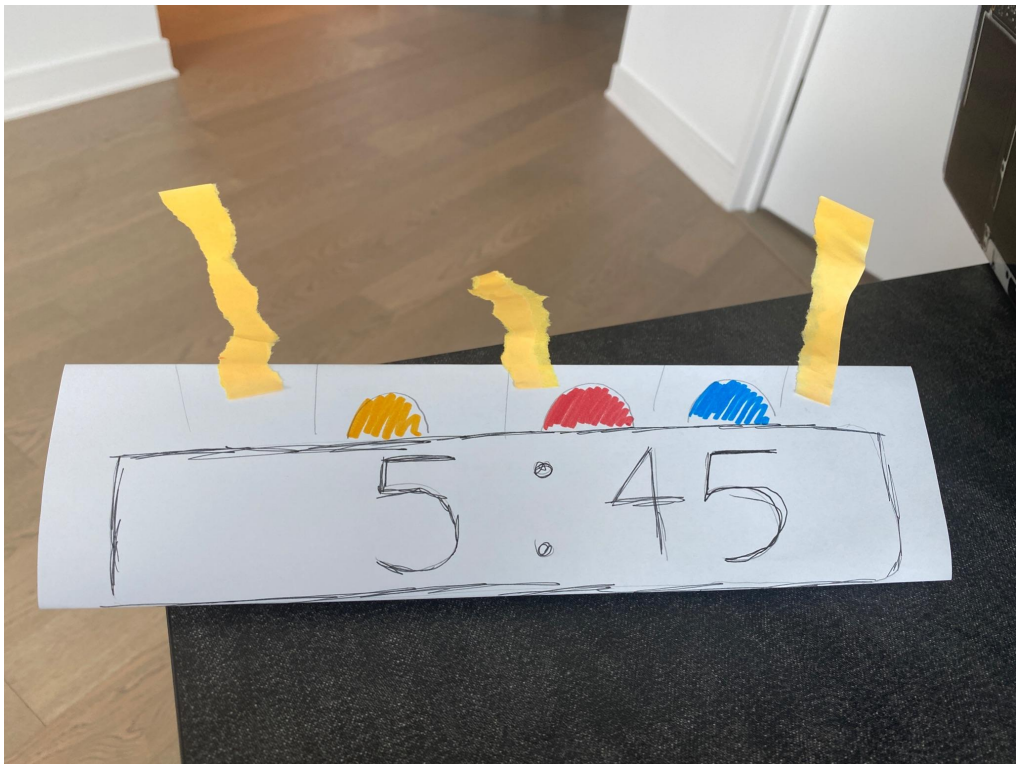
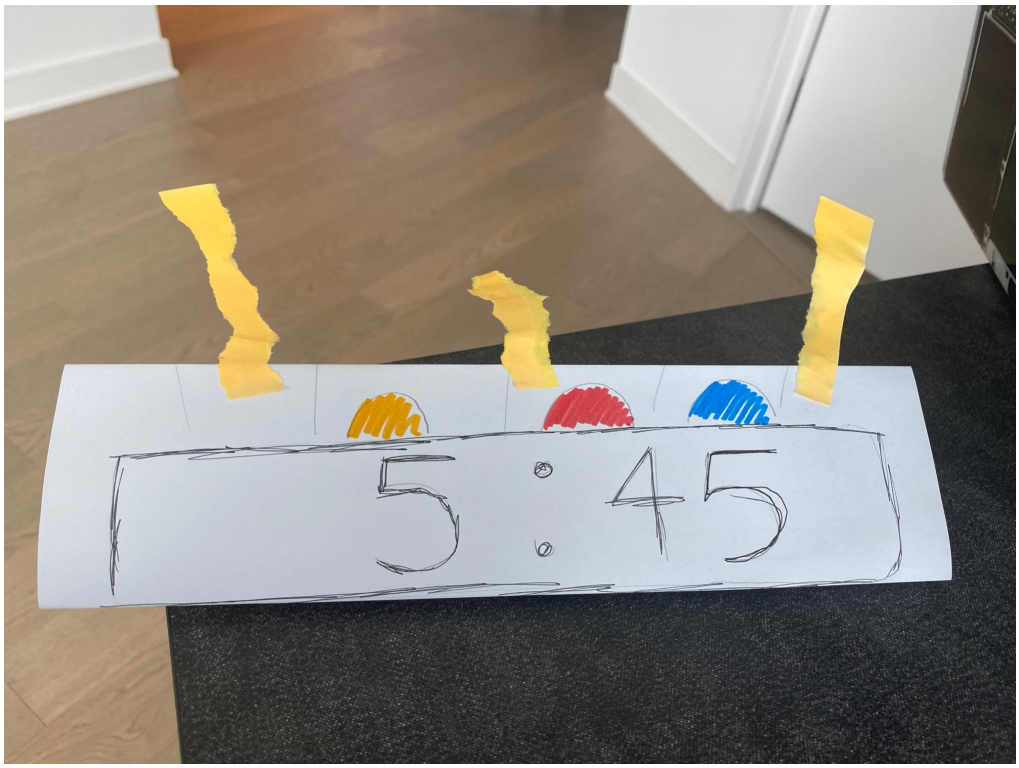
Include sketches of what your device might look like here.





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What concerns or opportunities are influencing the way you've designed the device to look?

We wanted the user to have minimal interaction with the device and to have a pleasant experience waking up. By incorporating 3 buttons to select the lighting type, we reduce the complexity of the device and make the choice easier.

Take a video of your prototyped interaction.

- See the GitHub for the uploaded video files

Please indicate anyone you collaborated with on this Lab.

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