Make Me A Scene

DET 2019 PROJ02

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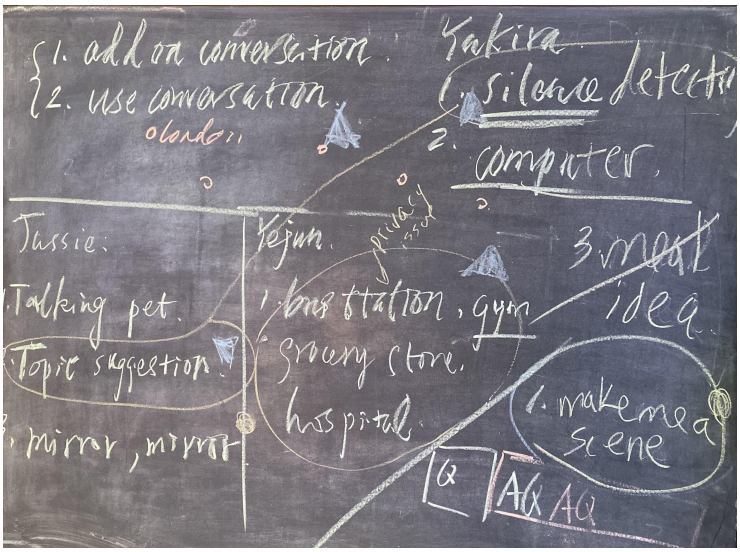
Ideation

Observing and Problem Finding

To kick off our group project we had a problem finding brainstorming session. Each person came up with 2- 4 ideas and put them on our blackboard. Then we went through and grouped them based on similarity or ideas that may overlap as shown in the figure below (left):

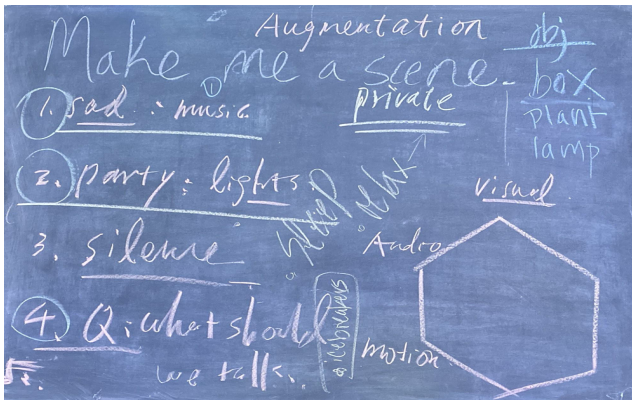
- Concept aiming to get at breaking the silence
- Connecting folks from distant places
- Augmenting existence



Group brainstorm session

Concept Development

To decide between the concepts, we made a pro (+) / cons (-) list, which lead us to unanimously agree on the Make Me a Scene concept. We held another mini-brainstorm session to talk through which scenes we wanted to highlight and design for. Based on that initial session we chose: 1) sad 2) party 3) silence 4) topic recommend agent. It appears we were trying to merge in some of our previous concepts that we eliminated.



Brainstorming scenes to showcase

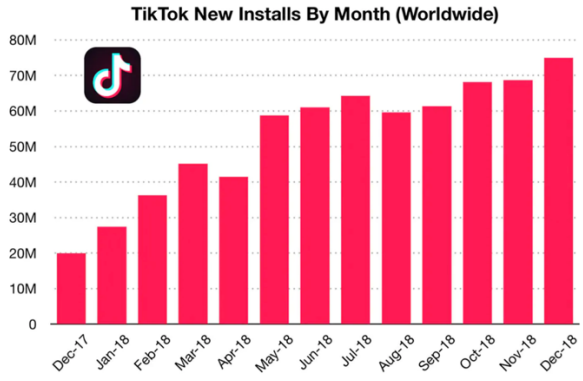
We envisioned our product to be non-intrusive object for the living room, that could sit on the floor or coffee table. Regardless of its location in the room, it should not be the center of focus but rather out of mind out of sight. Having a truly integrated system for home set up would be the long-term vision but for the scope of the course a simple plant was decided upon. Moreover, selecting the living room made the most sense since this is the place in a home the majority of time is spent and is less private than say, a bedroom. With our object size limitations in mind, while we wanted to utilize both an oil diffuser and a fun bubble machine, we opted for the oil diffuser for an olfactory aspect versus the bubble machine which would have added touch.

We also insist on keeping the conversation going while the effects are generating. This suits our goal of turning a daily conversation into a movie-like scene. We envision that our users are already familiar with the function of our device, hence they are comfortable with the outputs from our device.

Re-Designing Each Scene

After our first integration session, we re-defined our goal of augmentation and settled on creating a cinematic experience similar to Tik Tok or Snapchat, as we notice the unstoppable downloading trend and how our initial idea is effectively creating a real-time Tik Tok video clip. Our device wouldn't directly alter people's mood but rather amplify the moment, by adding

dramatic music, lighting and senses as movies do. We used color and music psychology to emulate and amplify the emotions in our scenes. More about the lights, sounds and smells we chose in Software Process of this document.



Design Methodology

Though out the entire design process—from the very beginning of our brainstorm to the final presentation rehearsal—we kept in mind two constraints that we consider being a key part of this design challenge.

First of all, we always want "conversation" to play an indispensable role in our deign. Every time we came up with a new design direction or idea, we asked ourselves: could we achieve the same goal equally or more efficient without using conversation? In our final demo, conversation initiate the scene; various effects augment the conversation. A closed loop centered by conversation is therefore created.

Secondly, as mentioned in the lecture, we ought to avoid building something that similar to current conversational agents. This allows us to keep the originality in our design. Instead of building a "conversational agent" who's bad at having conversation, we invented a good listener, an event organizer, and a surprise maker.

Hardware process

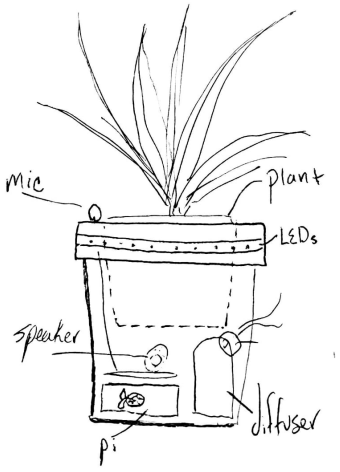
Overall Goal

We envisioned our product to be perfectly ambient with user's familiar environment. It could be a simple plant holder that sits in the living room, constantly listens to user's daily conversation, detects certain keywords and transforms boring moments into dramatic movie scenes. In terms of output, we wanted to incorporate as many human senses as possible, such as visual, sound, and olfactory to maximize the cinematic experience from different perspectives.

Prototyping

First Iteration - Singular plant

To seek out the most minimal design we thought of a plant with a pot that could hold the plant and house the electronics below as seen in the figure below. However, it proved challenging to fit all the electronics below without generously increasing the size of the pot.



Single Plant Prototype

Second Iteration - Wooden Box

For this iteration we opted for designing a pot-holder ourselves. The wooden box incorporated a small fake plant, a diffuser, a speaker, a mic, LED lights, a raspberry pi and wires. Ideally the box should be big enough to fit all these objects and small enough to avoid being intrusive in its surroundings.

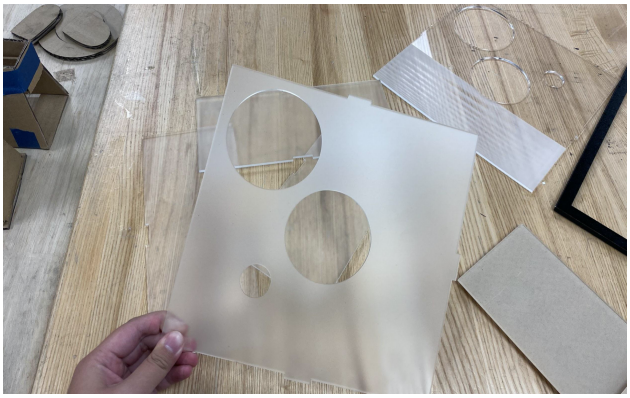
In order to test if everything fits well with each other, we cut the first version of the box in wood and assembled all the objects together. With the wooden pot-holder, users would only see the plant, the speaker and the top of the diffuser. Everything else was hidden inside the box. However, we encountered the problem of setting up the LED lights, because they would look too bright and intrusive if we attached all the lights around the box. It was also challenging to diffuse light nicely from our disco light box, although it fits well with the shape of the diffuser.

Wooden Box

Fake Plant and Light Testing

Third and Final Iteration - Translucent Box

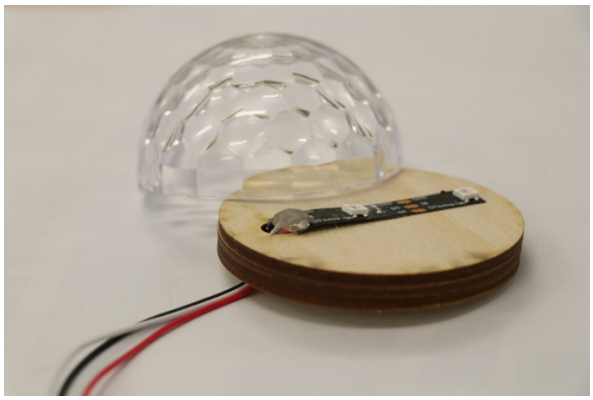
From the second iteration, we decided the box structure of our product and its size, but we wanted to make sure the lighting looked better and less intensive. Therefore, we decided to cut the box in translucent acrylic so we could put all the LEDs inside the box while showing the different lighting effects properly. Initially we didn't find the translucent acrylic in both Jacobs and Invention Lab store, so we tried to rasterize a clear acrylic board so it could become translucent. As we just started the long rastering process in the Invention Lab, we were told by the design specialist they actually sold the frosted acrylic there so we bought and cut, which saved us a huge amount of time.



Translucent (Frosted) Acrylic and Transparent Acrylic (Partially Rastered)

Intermediate Disco Light Design

Though the original LED strip light generate a really neat atmosphere, the lighting effect wasn't able to cover the entire room like a traditional disco ball would. For our "party scene," we aimed to create a theatrical effect of an old-fashioned dance party. This led us to think about creating a disco light ball. We started by scrutinizing a commercial mini Disco Light Ball owned by one of our team members and observed immediately that the key is the prismatic lens.

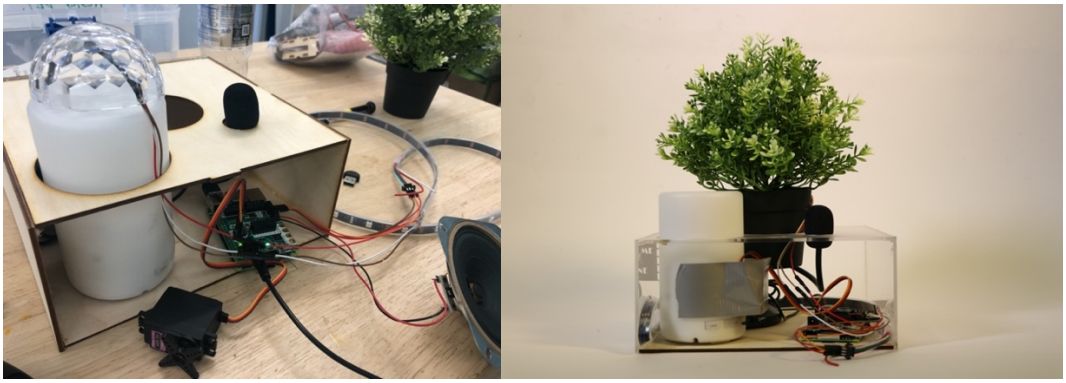


Unfortunately, the brightness of our LED light was not powerful enough to penetrate through the prismatic lens we disassembled from the commercial Disco Light Ball. For the final demonstration, we decided to put three extended LED lights on the flowerpot.

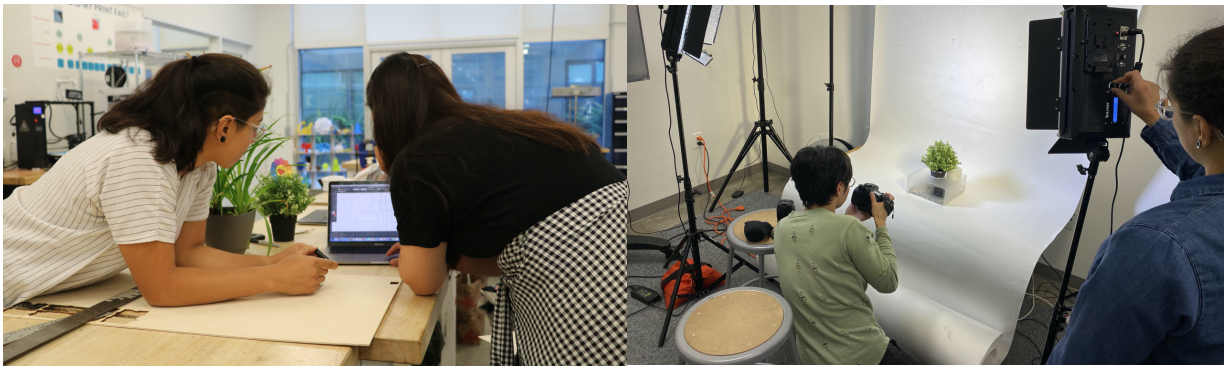
Assembling

One issue we encountered during the assembling was the shadow that all the wires created when the LED lights are on. We managed to circumvent this issue by fixing the majority of our LED strip at the inner edge of the box using hot glue.

Below are the documenting pictures for our assembling process.



Before vs After



Team in working

Software Process

Detecting Algorithm

In our system, we use the standard Google Cloud NLP API to detect the key words like “party”, “relax”, “stressful” to trigger the according effect. For our demo, after the key word is detected, the Raspberry Pi will generate the effect we programmed immediately, with the “actor” continuing their conversation.

We anticipate that with more sophisticated machine learning algorithm, along with a more sensitive detecting device, the interaction between the device and the participants could be much smoother.

LED Light

The color, pattern, and brightness of the spotlight are highly pertinent with the emotional expression. We bought some extra LED strips for the benefit of our demo’s light effect.
We tried several different LED effects: chasing, breathing, rainbow, etc. We decided to settle down with the light effects that goes along with our music’s beats, as this is a frequently used light pattern in the theatre. In addition, for the demo, we do realize that the light might not be catching enough under the daylight, hence using twinkling effect could compensate the brightness part.

In the future settings, we can completely abandon the design of LED light and take advantage of the original light settings in our user’s room. The overall experience thereby could be even more ubiquitous and non-intrusive.

Background Music

We mapped Chopin's nocturne to Relaxing Scene and Maroon 5's Move Like a Jagger to Party Scene; they are both natural and safe choices in terms of reflecting the user's current physical or mental state. We also chose the opera piece Carmen by Georges Bizet for our conflicting scene. We all agree that this is a bold design choice that somehow against audiences' common sense.

The ideology behind this choice of sound is that although in the movies, when people are having conflicts, especially physical conflicts, the background music tends to be intense and strained, we don't think it is suitable for our design to further amplify the negative part of a daily conversational conflict. On the contrary, we deliberately designed this scene to mimic the style of a dark comedy—glorious and refulgent classical music combining with a trivial and exhausting quarrel. Later on, when the users replay this scene, they will laugh together and make fun of this.

The choice of Georges Bizet's Carmen for our conflicting scene illustrates our product's charisma of whimsically twisting the surrounding atmosphere and spicing people's daily life conversation.

Humidifier with Essential Oil

In our demo prototype, we include a humidifier and use a motor to turn it on during the first scene when we hit the keyword “need to relax.” At the very first glance, adding a humidifier to our design seems arbitrary. On the contrary, we made this decision through a rigorous design process and utilize lavender since it has been scientifically shown to reduce stress and improve sleep.

To start with, a humidifier is a common object that we can easily find in one’s bedroom. Adding Essential oil in the humidifier serves as an effective way to alter the atmosphere in people’s daily regimen. Including a humidifier in our device makes our overall design even less intrusive. Moreover, one of our original ambition is to go beyond visual and audio effect by introducing some olfactory or tangible elements into our scene design. Using a humidifier to diffuse the sense of lavender (or any other smell our users select) is an economical way that allows us to experiment with a type of immersive augmentation for conversation.

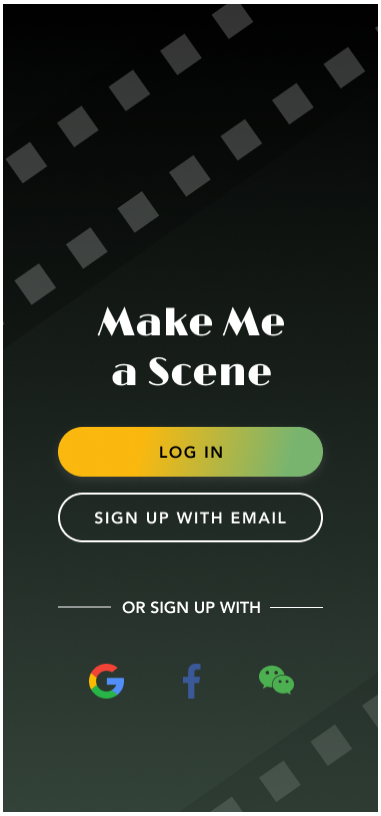
In conclusion, instead of being an ancillary gadget for the demo, the humidifier and the essential oil plays a key role in establishing a higher dimension of interaction.

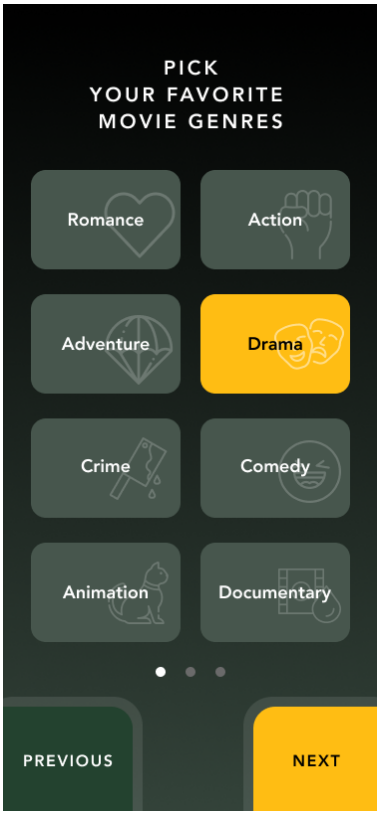
App Design

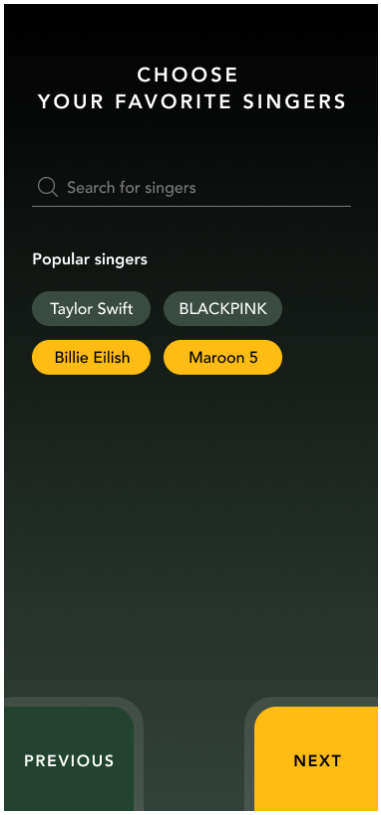
In addition to the product itself, we believe it's necessary to design a mobile app to allow users to customize their scene preferences. Before users start to use the product, they will be asked to download the app, pick their favorite movie genres, favorite artists, preferred lights and scents. Their preferences will be automatically generated and saved in the system and users will be able to edit them seamlessly.

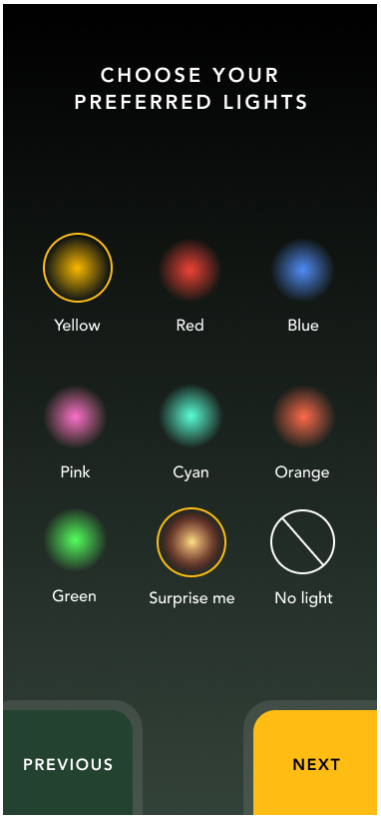
We add this extra step for two main reasons. First, we want our users to have the full authority to choose the types and levels of effect that they feel completely comfortable with—after all, they are the protagonists and our device is just a supporting part. In addition, it would be such a shame that our spontaneous and invaluable impromptu is merely ephemeral. Creating a APP that help our users to commemorate some of their great moments would be a delightful part of their product experience.

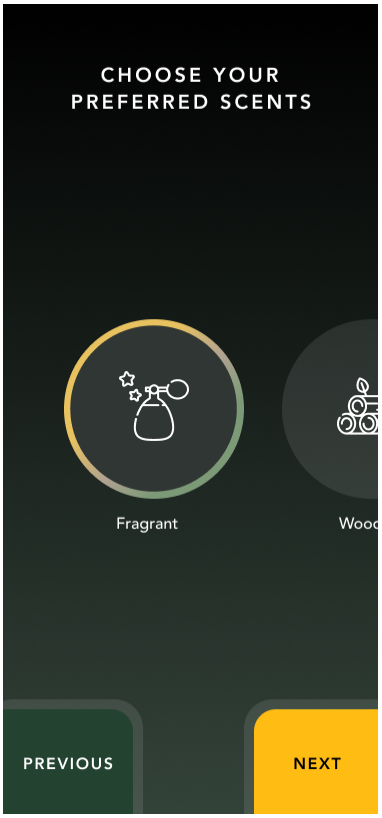
We include the brief UX flow diagram below, from which one can have a taste of the considerate ecosystem that we strived to create for our users.

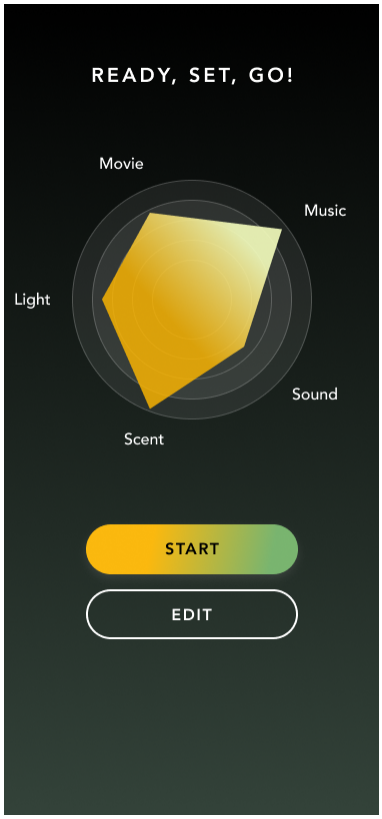

Make Me
a Scene
LOG IN
SIGN UP WITH EMAIL
OR SIGN UP WITH


PICK
YOUR FAVORITE
MOVIE GENRES
Romance
Action
Adventure
Drama
Crime
Comedy
Animation
Documentary
PREVIOUS
NEXT

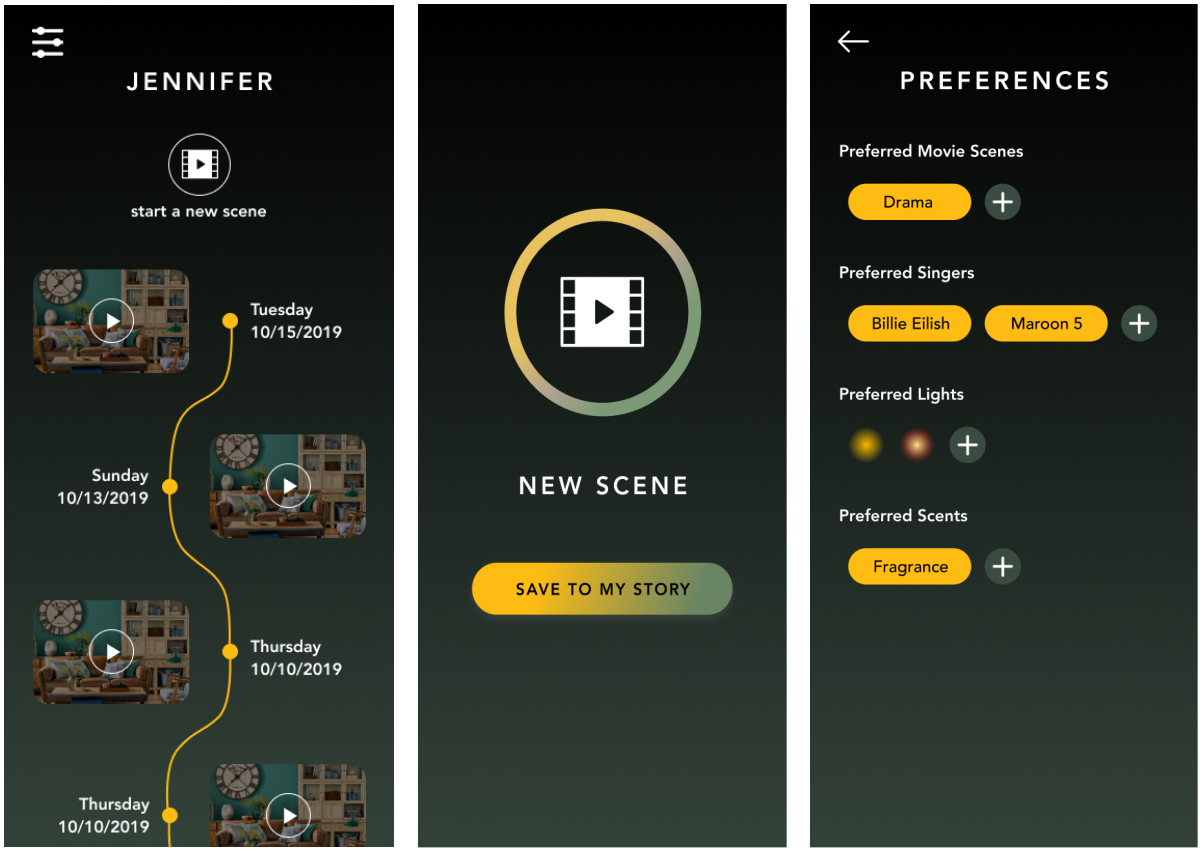

CHOOSE
YOUR FAVORITE SINGERS
Search for singers
Popular singers
Taylor Swift
BLACKPINK
Billie Eilish
Maroon 5
PREVIOUS
NEXT


CHOOSE YOUR
PREFERRED LIGHTS
Yellow
Red
Blue
Pink
Cyan
Orange
Green
Surprise me
No light
PREVIOUS
NEXT


CHOOSE YOUR
PREFERRED SCENTS
Fragrant
PREVIOUS
NEXT

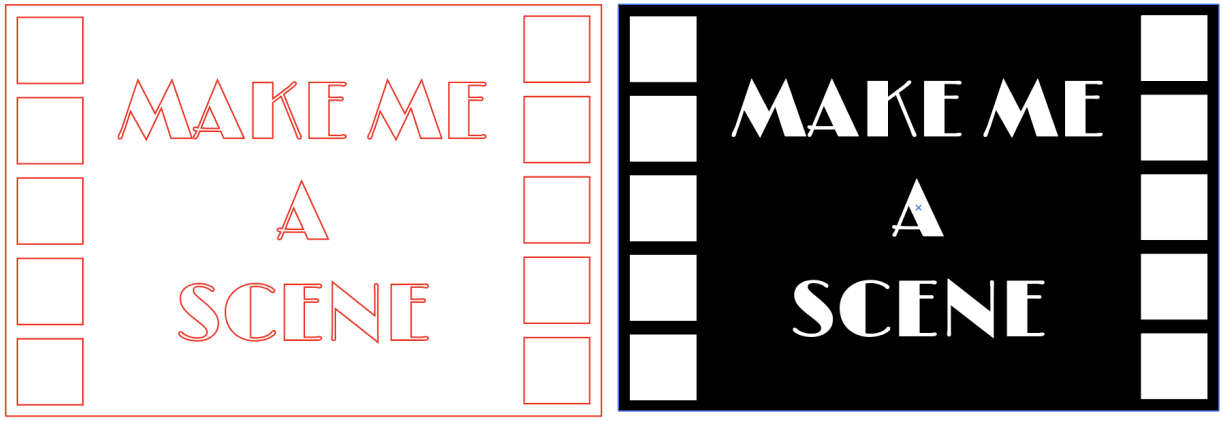

READY, SET, GO!
Movie
Music
Light
Sound
Scent
START
EDIT

From the hardware perspective, we will include a non-intrusive camera system based on our user's preference to automatically record all the different scenes that happen every day. Users will be able to review and edit the scenes through the app and share their favorite ones to their friends.



Branding Design

1. Our Logo



Keeping in mind that our product aims to cinematize everyday conversations, we designed a logo that incorporates film elements and the product name. The typeface we used was "Limelight", which has a vintage 80s movie subtitle style. This font was also used sporadically throughout our presentation.

2. Branding

We vinyl printed several logos. The logo is not only attached to the box, but also on everyone's t-shirt. On the demo day, each team member wore a white shirt/t-shirt with the "Make Me A Scene" logo, which created a strong and consistent team branding information.

Detailed hardware and software files can be found at

https://github.com/WesleyDeng1016/Augmented-Conversation

User Feedback

After working on our design for several days we sought feedback from our classmates, friends and family. We have grouped the feedback and comments into four main categories.

- Aesthetics - We received plenty of feedback regarding its minimal and small design. Some users liked the fake plant that was included while others would anticipate switching out the fake plant for a real one. That interchangeability was well received.
- Scenes - When we tested out the sad scene in the first iteration, folks were worried that further creating a sad and depressing scene could potentially be harmful to an everyday user and his/her mental health. “So, it amplifies my sadness?” This served as a pivot point in focusing on more positive moments for our demo or thinking about how we could ake a negative scene more comedic / lighthearted.
- Privacy - “Seems a little creepy that it’s always listening” This user really wanted to know about how it listens and the data it collects. Furthermore, she seemed interested so long that there would be a complete off switch or programed to turn off during certain times or when given a particular command.
- Sharing scenes - One user really wanted to know how to share it. This fueled our decision to add this feature in future iterations. Moreover, adding a camera would enable this feature.

Future Vision

For the future iterations, this product will have the ability to connect with numerous home devices (like Google Home currently does with smart li) and generate more immersive and dramatic movie scenes. We'd also like to build a social media platform as Tik Tok for our users to share their own movie scenes and interact with each other seamlessly. It also seems natural for us to cooperate with current music platforms and cloud storage companies.

Combining real time interaction and social media interaction, we envision our future product to be a well-rounded ecosystem that could potentially outperform current video editing social media applications.

Perhaps in the near future, everyone won't just be famous for 15 min as Andy Warhol famously asserts—people can always be a movie star with our design being around and make them a scene.