

IDEA9101 - ASSESSMENT 2:

AI-BASED DISTRIBUTED RESPONSIVE ENVIRONMENT

DESIGN STATEMENT

Yiyang Ren _yren4072 Ruijuan Mao _rmao8944

Yiyun Zhang _yzha6851 Jing Chen_jche5588 Yuqi Zhou_yzho6208

INDEX

- **Precedence**
- **Problem space & Design opportunity**
- **Location & target user**
- **Design concepts**
- **Hifi-Prototype**
- **References**
- **Appendix**

PRECEDENT

When conducting case study, we specifically look at some installations used in bars and art exhibitions. These systems are usually highly visual, interactive, and playful to provide a better music experience.

"Mood Mixologist" uses the emotion recognition technology to capture the change of facial organs and muscles, and judge the six most basic human emotions corresponding to the expression of the experience according to the algorithm model (Happy, Sad, Surprised, Angry, Calm, Fearful) percentage. Based on the ratio of emotional combinations, the algorithm automatically recommends the most matching emotional cocktails. (DIGITALING, 2018)



(Figure 1: Private phone booth shape)



(Figure 2: The user is experiencing the Mood Mixologist)



(Figure 3: Emotion analysis result)

PROBLEM SPACE & DESIGN OPPORTUNITY

At present, most bars provide apps for users to order songs and food conveniently. However, these apps lack memory points and interactive space with simple functions, and users rarely open them after placing an order. Meanwhile, the sameness of interface designs cannot meet the unique use environment of music bars, nor can they improve the brand image.

1

Many music bars invite singers to sing and play music videos, and the interaction between the audience and music is limited to the changes in lights and songs. It is difficult to establish an emotional connection and resonance between the audience and the music in such a simple way.

2

• DESIGN OPPORTUNITY

Our goal is to create an immersive music environment through semantic analysis and barrage interaction. We integrate elements of music bars into mobile applications to enhance interaction and personalized experience, use semantic analysis technology to recommend personalized cocktails, and create unique music visualization patterns to echo live music performances. By barrage interaction, users can interact with music performances and others in real time, sharing thoughts and emotions, creating an engaging and interactive atmosphere.

LOCATION & TARGET USER

We tend to put our project in music bars in Chinese cities, such as Shanghai or Shenzhen. Because these cities usually have a dense musical atmosphere and a well-developed music industry, this can attract people with a high pursuit of music quality.

Our project benefits both guests and bar owners:

- For guests, our music visualization and bullet chat interaction allow them to better understand the emotions conveyed by music, enhancing their emotional resonance and social experience. The Mood Cocktail Mini Game adds an element of surprise, mystery, and romance, providing a personalized and enjoyable experience for guests.
- For bar owners, music visualization barrage and emotional cocktails creates an energetic and exciting atmosphere, attracting customers and prolonging their stay at the bar. The use of semantic analysis technology in recommending cocktails adds creativity and uniqueness to their offerings. This approach can also increase the turnover.

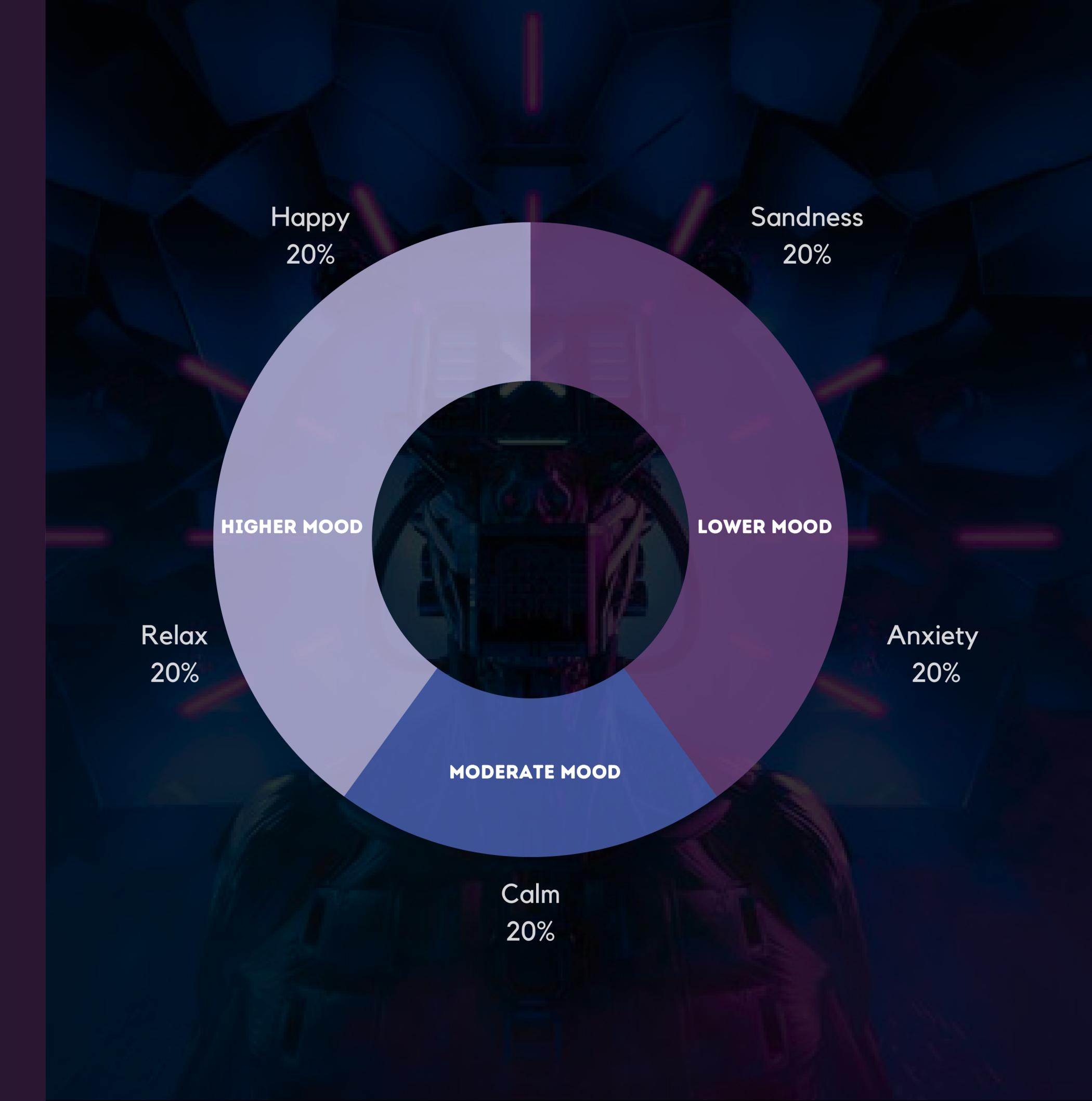


DESIGN CONCEPT

In this design, we classify emotions into three categories (positive, neutral, and negative), and use five words happiness, relaxation, peace, anxiety, and sadness to express emotions. (Simone M. Ritter, Sam Ferguson, 2017) Then, based on the semantic analysis, we create a conceptual version of the sentiment analysis model, which can receive a mood description and give a percentage according to the polarity and intensity of the sentiment. This is used to indicate the range of the mood

Linking digital content to the taste and texture of a cocktail conveys a unique feel and experience. (Simone M. Ritter, Sam Ferguson, 2017)
People can use taste (as the source) to describe emotion (as the target). (Yanyun Zhou, Chi-Shing Tse, 2020)

The results showed that bitterness corresponds to sadness, sourness corresponds to anxiety, sweetness corresponds to happiness, salt corresponds to peace, and tasteless corresponds to chill (Yanyun Zhou, Chi-Shing Tse) So we put together our designs to connect flavors with emotional metaphors to convey specific feelings and experiences: Bitter corresponds to sadness, sour to anxiety, sweet to happiness, salty to peace, tasteless to cold (Yanyun Zhou, Chi-Shing Tse, 2020).



DESIGN CONCEPT

Features and Attraction:

- Semantic analysis: Design a text box to input barrage, analyze and understand the content input by users through semantic analysis technology, and extract emotional keywords from it.
- Five emotions correspond to five types of cocktails: classify the user's emotions into five types, and each type corresponds to three special cocktails, expressed through the matching relationship between emotion and taste.
- Musical atmosphere: use visual elements to express the mood and atmosphere of the music and echo the rhythm and emotion of the music, such as creating a sense of emotional diffusion through gradient apertures; use wavy patterns or animation effects to represent the emotional fluctuations, let the audience feel emotional transformation.



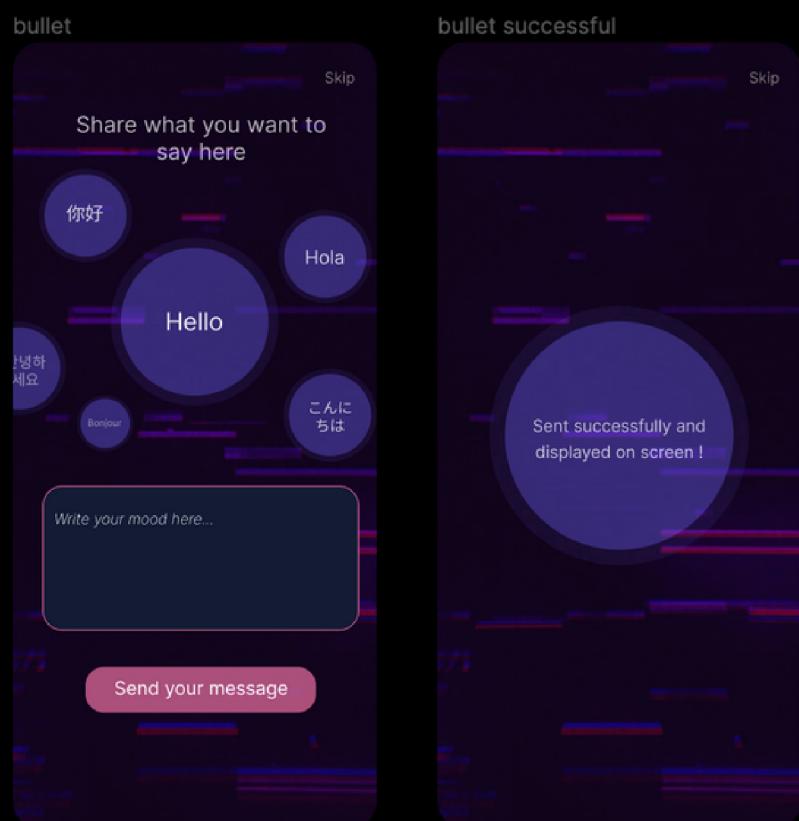
DESIGN CONCEPT

Bullet chat interactive function:

- In terms of appearance, we adopt different presentation methods, such as sliding in from the bottom, fading in and out, etc., to increase the visual effect and attractiveness.
- Appearance effect: You can add some dynamic effects to the barrage, such as flashing, zooming in and out, etc., to make it more vivid and interesting, and attract users.
- Trigger special effects: According to the content of the barrage, the conditions for triggering special effects can be set. This can add interest and personalization to the interaction.

Design elements for server:

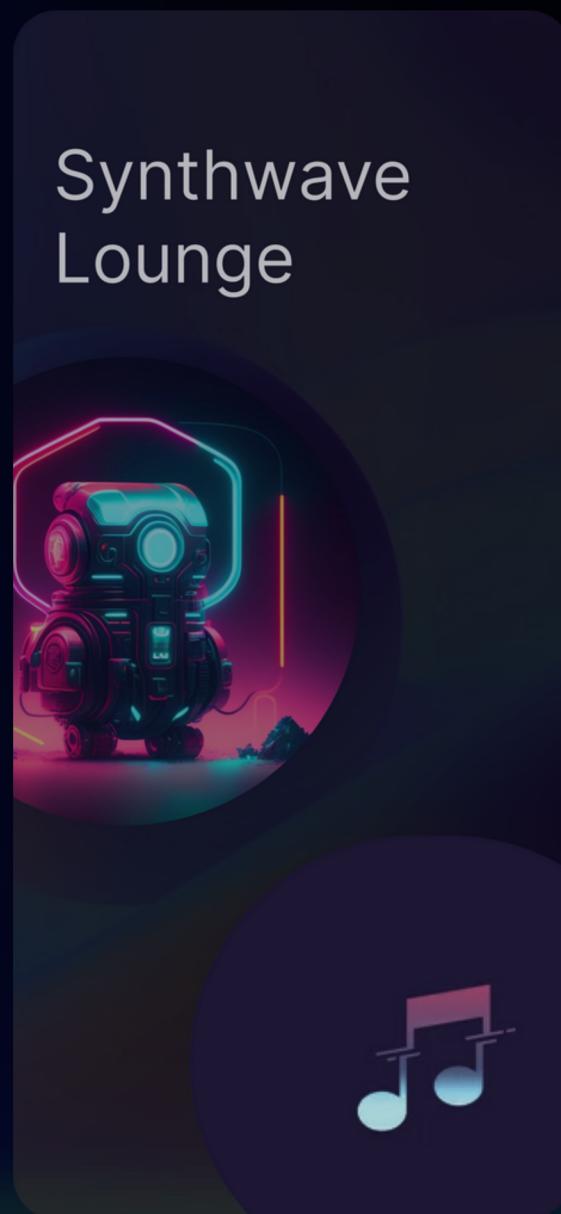
We skillfully integrate the elements of the electronic ladder to create a technological visual experience. When the music is played, undulating steps appear on the walls of the bar, making the audience feel the emotional fluctuations of the music.



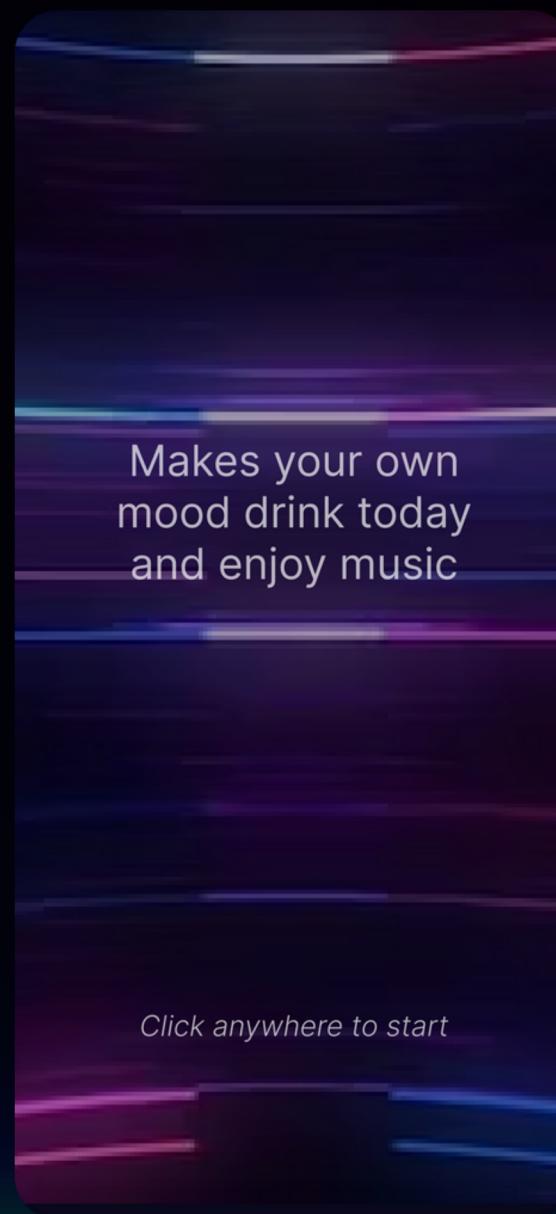
HI-FI PROTOTYPE

In terms of the interface design, we select cyberpunk purple blue and pink as the primary colors. These colors create a futuristic and technological vibe, reflecting the interactive nature of the barrage interaction. Purple blue represents mystery, innovation, and the unknown, adding to the avant-garde atmosphere of music bars. Pink conveys energy, warmth, and friendliness, delivering a pleasant visual experience to users.

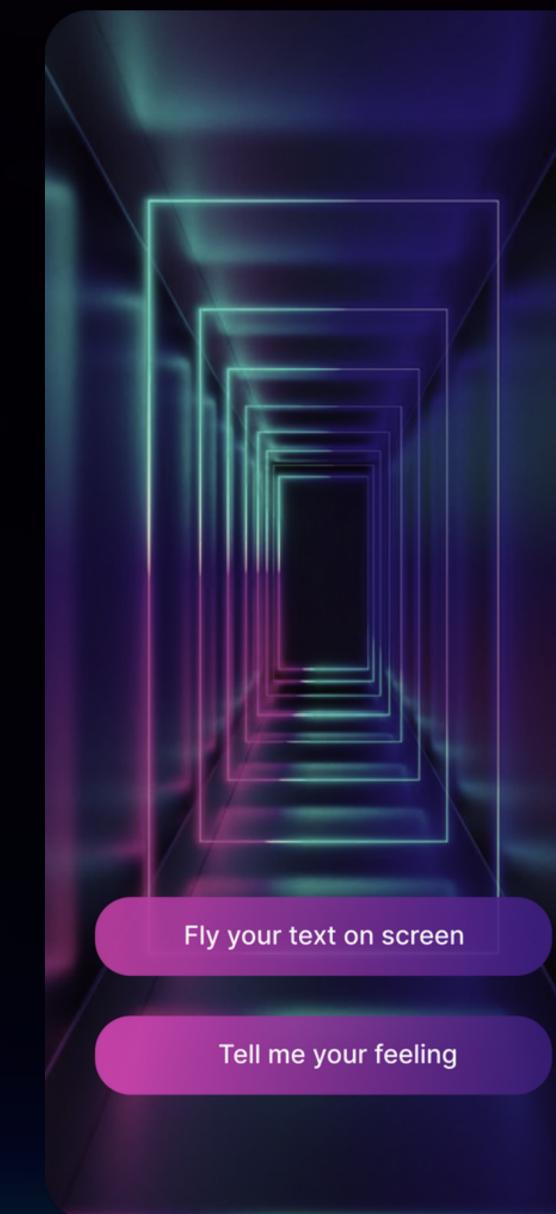
Homepage



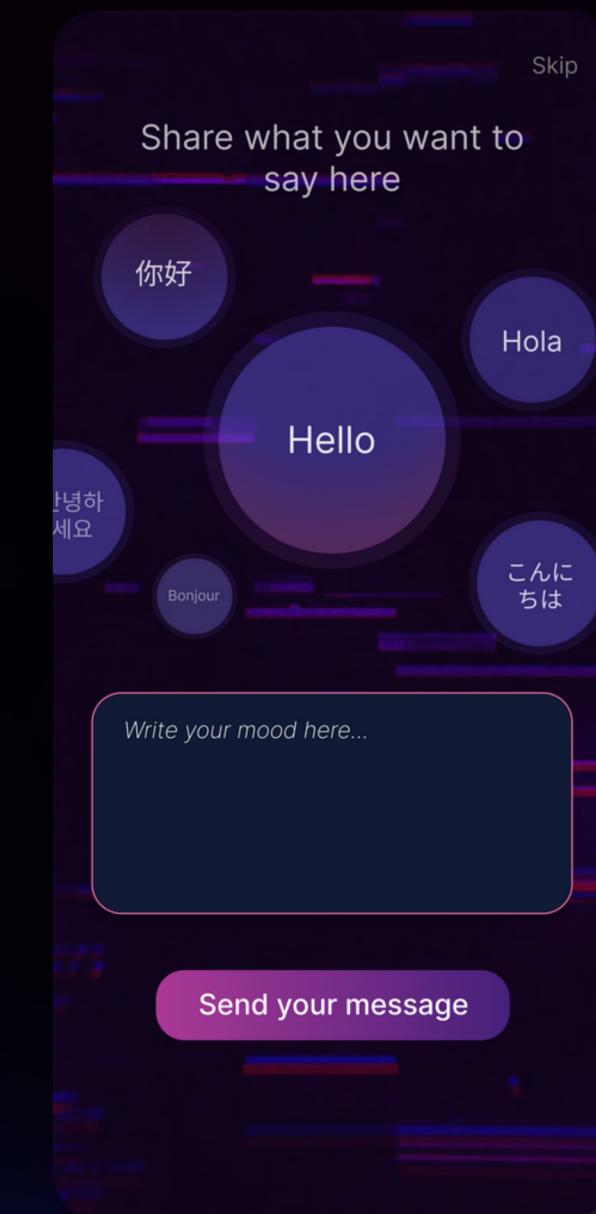
Start



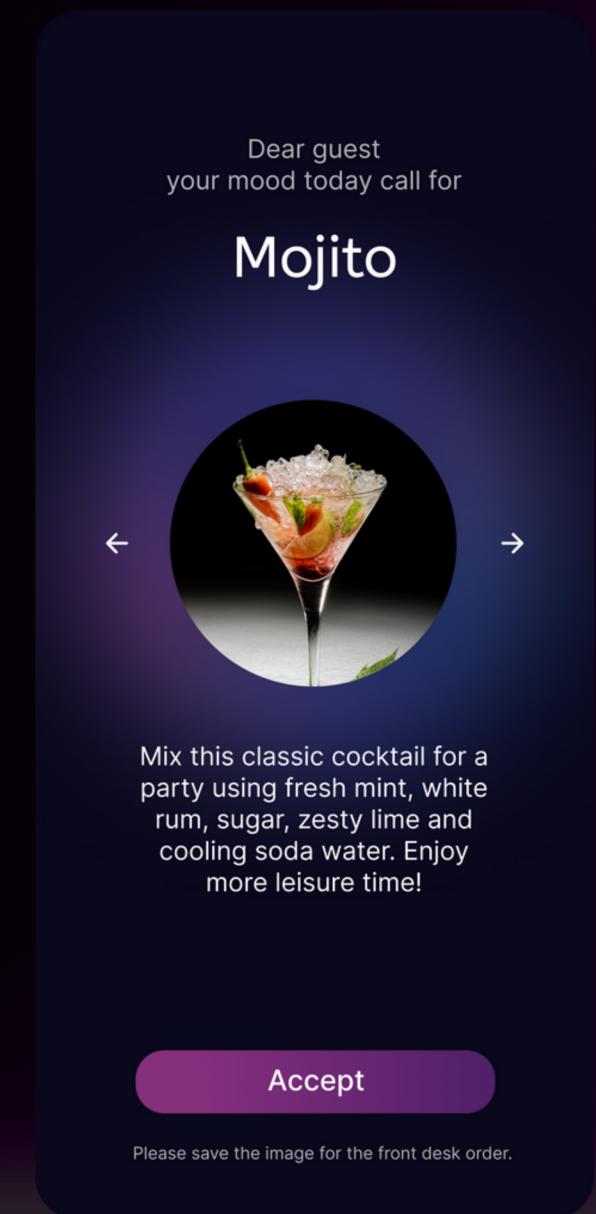
Selection Page



bullet comment



Cocktail recommendation



HI-FI PROTOTYPE

Users interact with the screen through mobile devices. In the final screen design, we decided to add elements of islands, waves, and starry sky to create a comfortable and relaxing environment for users. It is a dynamic effect of waves when no bullet chat is triggered. When there is a barrage sent from the mobile device: "happy" shows the special effect of exploding fireworks, "love" is the special effect of love, and finally "nice" is the wine glass.



REFERENCES

DIGITALING. (2018). A magical machine that can drink your own emotional cocktail with a swipe of your face!.
<https://www.digitaling.com/projects/27107.html>

Simone M. Ritter, & Sam Ferguson. (2017). Happy creativity: Listening to happy music facilitates divergent thinking. PLUS ONE.
<https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0182210>

Yanyun Zhou, & Chi-Shing Tse. (2020). The Taste of Emotion: Metaphoric Association Between Taste Words and Emotion/Emotion-Laden Words. Frontiers. <https://www.frontiersin.org/articles/10.3389/fpsyg.2020.00986/full>

APPENDIX - IDEATION

	Technique used	Statement	Whether to implement
Idea 1	Use "ML5.js" image classification technology to recognize facial expressions and create some simple emoji effects.	We use ML5.js image classification technology to recognize facial expressions and create some simple emoji effects. However, we found that ML5.js technology is not mature enough in this regard to accurately identify moods. To achieve better results, we need to use more sophisticated computer vision algorithms for facial emotion recognition.	
Idea 2	Using the audio input function of "ML5.js", with the help of the technology of " Teachable Machine and The Coding Train "	Developed a snake game controlled by voice. For example, making the sound of a cat can make the snake move to the left, and making the sound of a dog can make the snake move to the right. However, we rejected this idea because such a game would spoil the music bar environment and create a lot of cats and dogs barking noise.	
Idea 3	Using the Sentiment Analysis (SA) feature of "ML5.js"	Using this idea can be very suitable for the music bar scene. We have also developed a specialty drink called "Mood Cocktail", which is combined with sentiment analysis technology to bring users a superior experience.	