Frontend Design

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Frontend development includes progress in general layout and functionality of the user interface-- certain major functions such as display of sentence for the user to pronounce, recording of the user's audio response, and evaluation of the audio response.

There are two main features/mechanisms that we have for users to improve their language pronunciation. The first is a system where given user's personal information such as occupation and scenario, we give them personalized sentences that they would likely encounter during social interactions. Then they would record their pronounciation of the prompted sentence, and our ASR model would evaluate its accuracy. In the second system, user enters his or her own sentence instead of a sentence from our database, and he or she would be free to pronounce words or sentences that are on their mind.

User Testing

When we tried the application amongst the group members, we observed that the general functionalities flowed smoothly. The user is able to open up the interface, pick his or her occupation and scenario, get a text prompt, record his or her audio response, and get evaluated based on that. But when we took a step back to evaluate our application's effectiveness based on our end goal, which is to help foreign language speakers pronounce better so that they overcome discrimination in society and anxiety in certain social interactions, we realized that there were many aspects we need to improve on.

First, we thought to improve our user feedback system so that we can gauge how helpful the application is for the users to achieve their goals. For basic evaluation, we can use measurements from the amount of time they spend on our application and the number of times they use it. To understand their thoughts on our system better, we will prompt users to score our application out of 5 stars and leave comments that we can read. Second, we thought that the sentences users are prompted with might not be what they want to hear and might be fully effective in helping them through stressful social situations. So we wanted to design the sentences better to fit what the users might want to hear. This would require user feedback for further improvement. Lastly, we thought to add and improve on personalized data shown to users. This would include information such as the words they mispronounce the most, the scenarios they

are anxious with the most, etc. These data would be displayed to them in well-made graphs and pie-charts. There would also be added user feedback prompts to ensure that these features actually do help them achieve their end goals.

Resulting Refinements

In response to the user testing results, we decided to implement the said suggestions. Mostly we added fields and prompts for user feedback on the different features to check that their occupations and scenarios are accounted for and that they are benefitting from the evaluations on their pronounciation. We also added the user profile page for the display of their data in using this application.