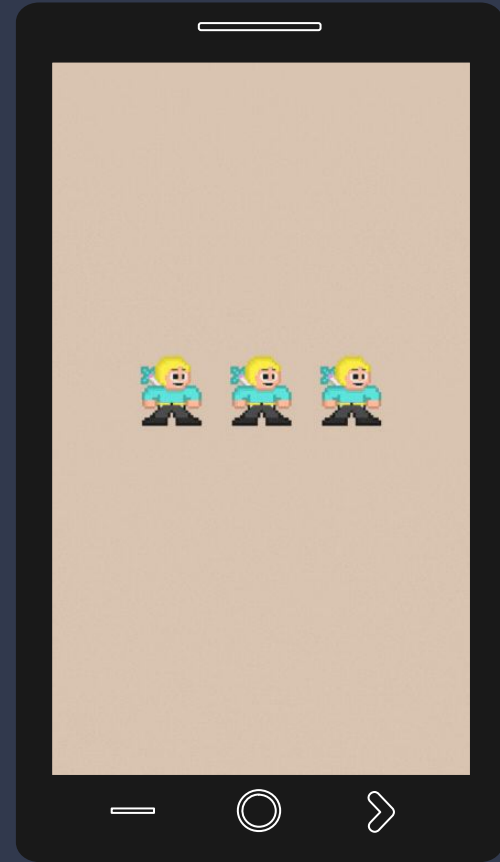# PROTOTYPE PRESENTATION

Cue-Cetera

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PROBLEM

A great amount of physical communication relies on visual cues. Those with social anxiety, and neurodivergent individuals may not be able to pick up the context behind one's words.

- Is there a way for these individuals to be able to identify these visual cues?
- Can they learn how to pick up on the speaker's intention or context?

SOLUTION: Cue-Cetera

- Mobile application: detect and classify visual facial cues using Machine Learning.

- Have a social impact by giving access to a learning tool.

- Help people that have a difficult time with facial cues.

- Bring awareness to these communities.
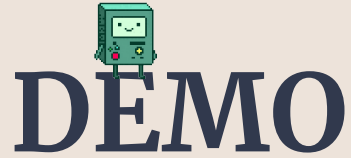
PROJECT STATE

COMPLETED

- User can upload or record a video.
- Video sliced into 10 fps with timestamps.
- ML prototype
- Send result to database
- Allow user to playback preloaded video at specific timestamps based on (currently arbitrary) emotion.

IN PROGRESS

- Optimizing machine learning model
  - CNN classify images into one of 28 emotions
  - Performance in training + testing is 50%

- Allow the user access to the video they sent in
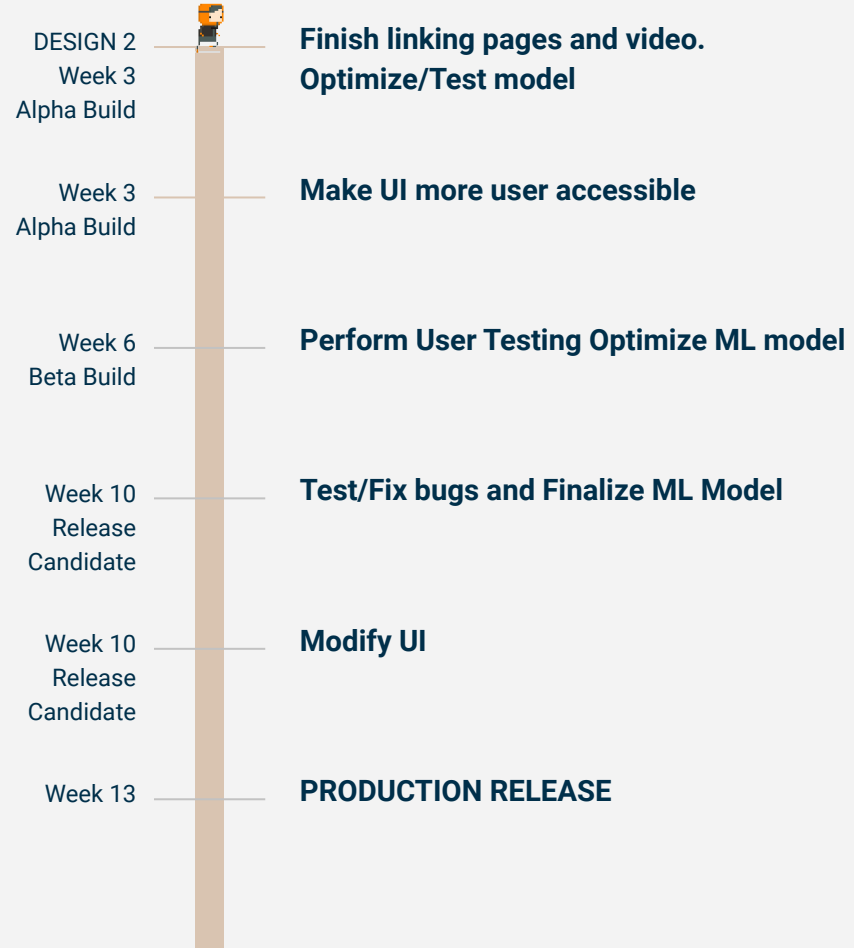- Pull the ML classifications from firebase.

PLANNED WORK

- Finish page functionality and linking.
- Measure usability of app by performing user testing.
- Use facial detection in each frame to improve data
- Perform extensive testing on application

DEMO

My Summer Branch: https://github.com/AmaniN16/Cue-Cetera/tree/matthew_summer

TIMELINE

DESIGN 2
Week 3
Alpha Build

Finish linking pages and video. Optimize/Test model

Week 3
Alpha Build

Make UI more user accessible

Week 6
Beta Build

Perform User Testing Optimize ML model

Week 10
Release
Candidate

Test/Fix bugs and Finalize ML Model

Week 10
Release
Candidate

Modify UI

Week 13

PRODUCTION RELEASE

PLAN OF ACTION

Front-End Improvements

- ○ Page functionality and linkage.
- ○ More user accessibility in the UI (e.g. text-to-speech options, adjustable font size, etc.)
- ○ UI more visually appealing.

These improvements will be done by our front-end members, using the built-in tools provided to us using Flutter.

ML Model Improvements

- ○ Continue training the model to increase its accuracy and overall performance.
- ○ Improve dataset to account for any racial bias.
- ○ Include facial recognition to increase reliability

These improvements will be done by finding more data to feed to our model, and implementing a facial recognition algorithm somewhere in our back-end.

Testing and Debugging

- ○ Perform user testing for UI
- ○ Ensure data processing and classification is secure
- ○ Prevent violation of user's privacy.

This will have to be achieved by finding volunteer test subjects, and putting further research into Firebase's security protocols.

THANK YOU
for your time!

Questions?

Cue-Cetera