

A circular graphic on the left side of the image. It features two crossed orange softball bats with white outlines, set against a dark red diamond shape. Below the bats is a white softball with red stitching, also with a white outline. The entire graphic is set within an orange circle.

SLOW-PITCH SOFTBALL CAMERA:

WEEKLY UPDATES

SDMAY25-11

THIS WEEK'S DEVELOPMENTS



DATA COLLECTION

Trained object detection model for accurate results



FLUTTER CAMERA

A mobile app allows for an affordability and portability.



SCREEN SKETCHES

A setup calibration allows for adaptability to each field



CALIBRATION

Fast computing language to analyze camera video

DATA COLLECTION

- Southwest Recreation Softball Fields
- Heights of 12ft, 10ft, and 6ft were recorded
- Replacing frames from camera input to video input allow for testing capabilities

CyBox Videos



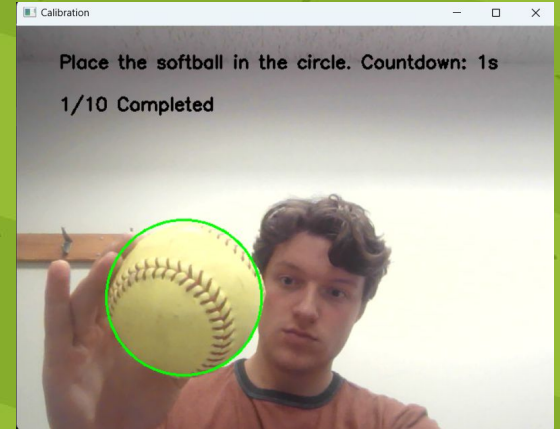
CURRENT DETECTION MODEL

- Object Detection
 - Using non-machine learning to detect softball by color
 - Given a specific range of colors, the softball can be detected quickly
 - Setbacks
 - Softball colors can change based on lighting or ball
- Height Detection
 - Trained model to output distance given ball radius and camera position



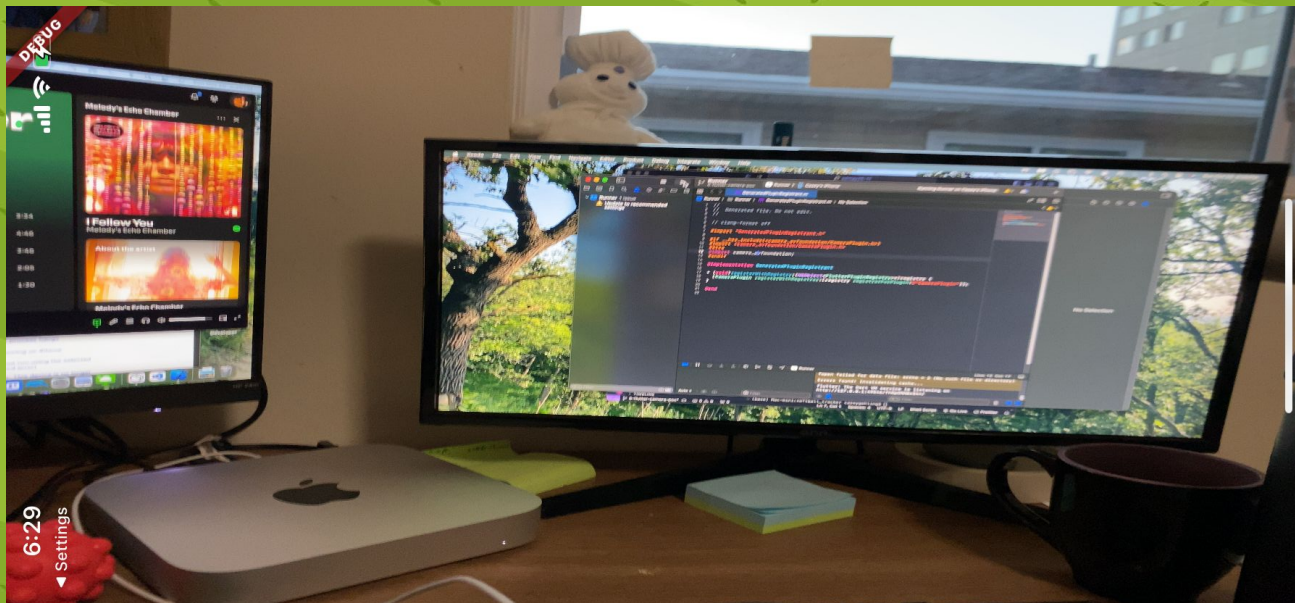
CALIBRATION

- Dealing with the color ranges for each game's lighting/ball
- Prompts ball to be placed at a random position distance from the camera
- Calculates the average color recorded from the known ball positions
- Allows for the detection script to be personalized for each game's lighting/ball



```
Average colors for each calibration:  
Calibration 1: (123.24154946952874, 168.91857883049593, 180.03626943005182)  
Calibration 2: (122.33758705063052, 178.86158479201956, 189.53532843967625)  
Calibration 3: (133.3694257034721, 171.69705446766497, 183.68306730294555)  
Calibration 4: (128.40035318947324, 175.0786923375113, 183.45212559762246)  
Calibration 5: (149.55960199004974, 197.23243781094527, 206.58825870646766)  
Calibration 6: (138.80688082113667, 183.07394031552937, 195.2556548184756)  
Calibration 7: (141.72312209908117, 183.1849957374254, 195.44330775788578)  
Calibration 8: (147.3561509021323, 200.23127392017497, 209.68704209950792)  
Calibration 9: (135.44028362508308, 185.91491247507201, 198.4223354752936)  
Calibration 10: (144.61996818793588, 194.74256698886578, 206.41404624984705)  
Average color (RGB): (194.85174358777735, 183.89360376757045, 136.48549230385234)
```

FLUTTER CAMERA POC



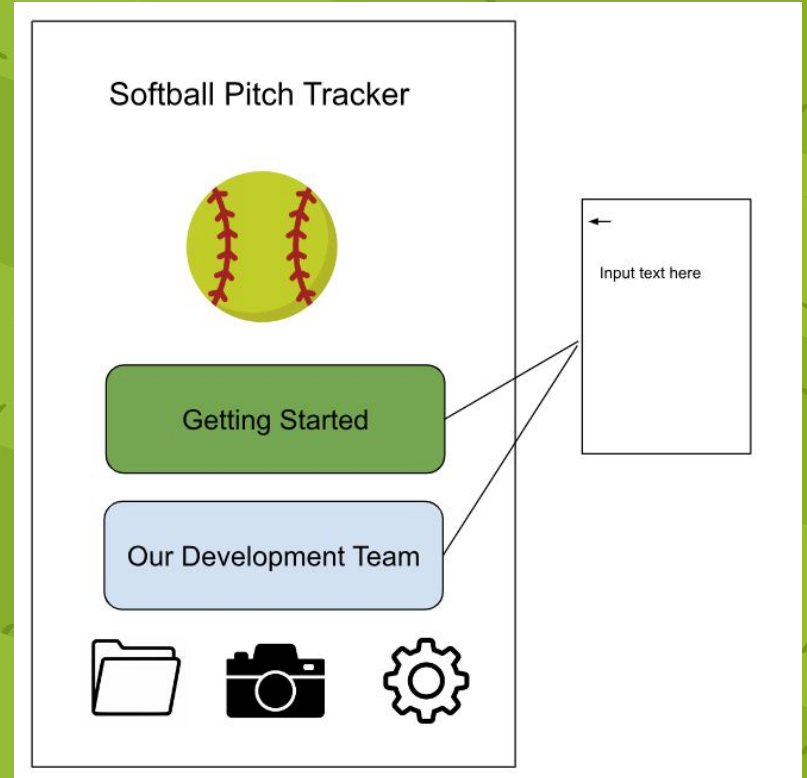
PROTOTYPED



SCREEN SKETCHES

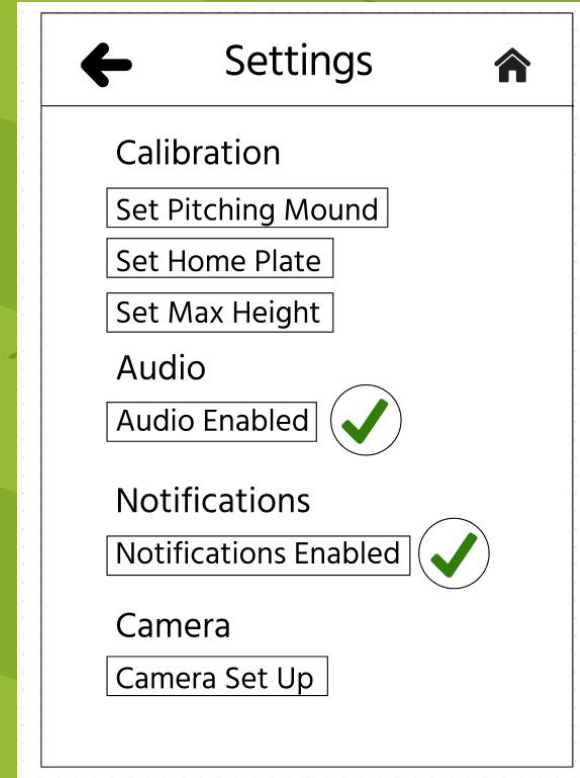
HOME

- Shows links to other pages
 - Camera
 - Past Pitches
 - Settings
- Popup text pages
 - Introductory "Getting Started"
 - Calibration, settings, how to use
 - Our Dev Team
 - About us, our project page



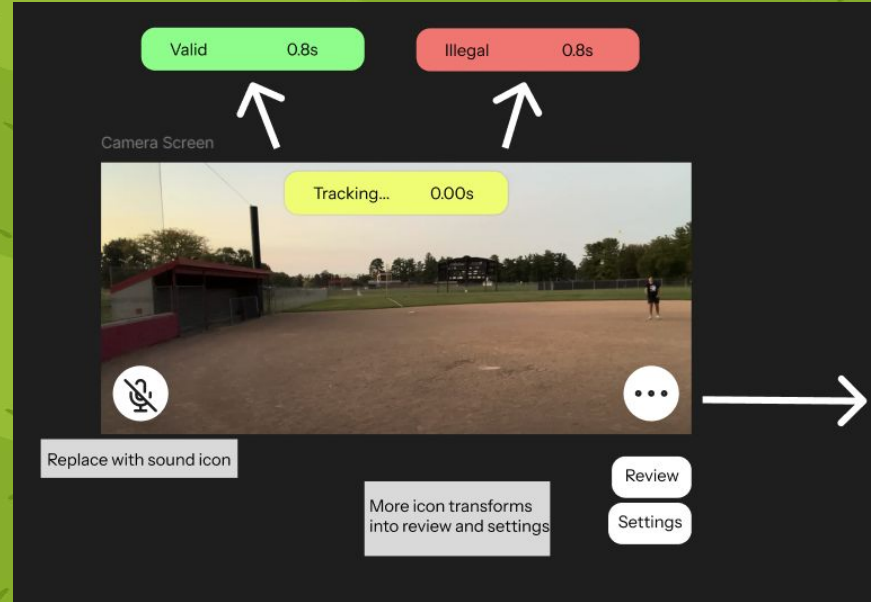
SETTINGS PAGE

- Calibration Settings
 - Settings entered by the user to help define the environmental setting
- Audio
 - Direct the output audio to a specific device
 - Specific audio settings (volume, alert message)
- Notifications
 - Permissions to send relative app notifications
 - "We noticed you left in the middle of recording. Click here to continue."
- Camera Setup
 - Starts a calibration script to record the camera's distortive effects



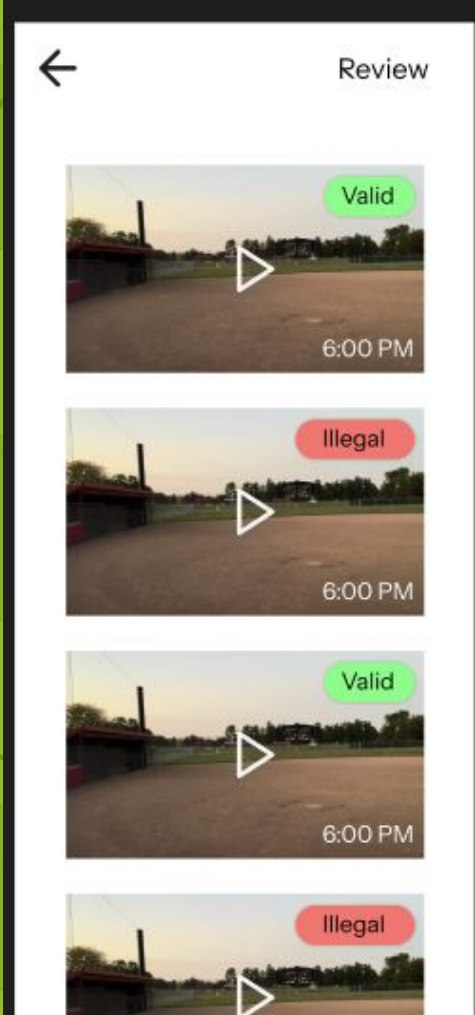
PITCH DETECTION

- Show the Tracking/Valid/Illegal along with time in seconds
- Show icons for sound/review/settings to navigate to the alternative pages
- Show the camera output on the screen



REVIEW

- The camera detection will be paused on opening the review page
- Contains the most recent pitches of the current detection run
 - Timestamps
 - Valid/Invalid
- Each video can be played to review the pitch
- Potential Feature
 - Option to report a pitch as incorrectly tracked



PAST PITCHES

- Past pitches will look similar to the review screen
- Shows past pitches from all time usage
- Shows date and time
- Each video can have the option to be exported



Past Pitches

