

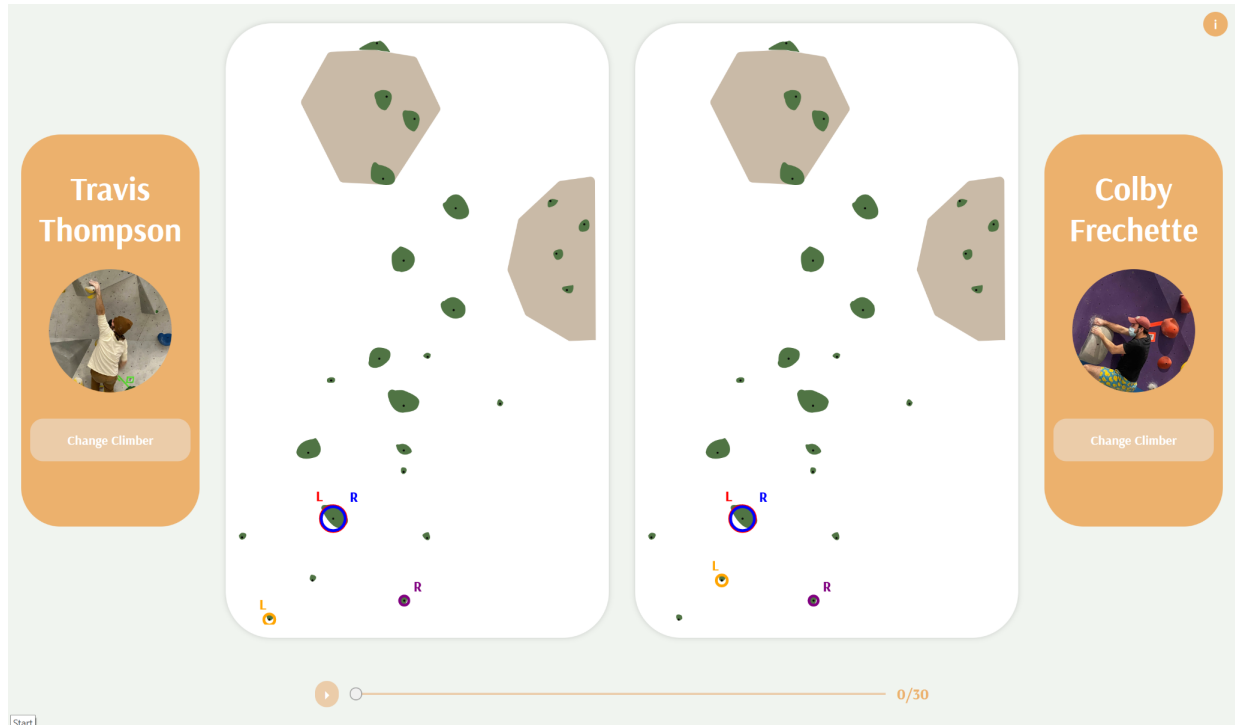
CS 480x Final Proccess Book

Climbing Route Visualization

By: Travis Thompson

Project Overview & Motivation

The goal of this project was to visualize the differences in speed and hold choice in a climbing route between different climbers. The idea for the project stemmed from my love of the sport and fascination with how one route can be done in many different ways, due to strength, height, technique, etc. The visualization allows for the user to select between two different climbers. The user can then press the play button on the bottom of the website to view the hold choice of the climbers in real-time. The climber's extremities are color-coded by a circle surrounding the hold they are touching (Right Hand: Blue, Left Hand: Red, Right Foot: Purple, Left Foot: Orange)



Climber Route Visualizer

How to Use

Select your desired climbers by clicking the 'Change Climber' button on the right and left panels. Then Click the play button at the bottom of the page to view the hold selection of the climber.

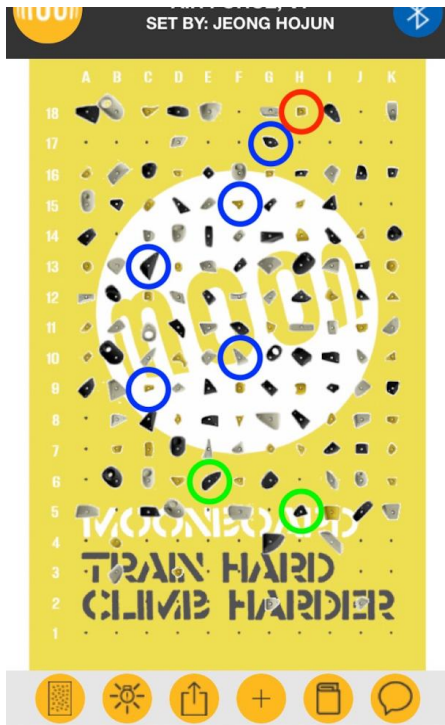
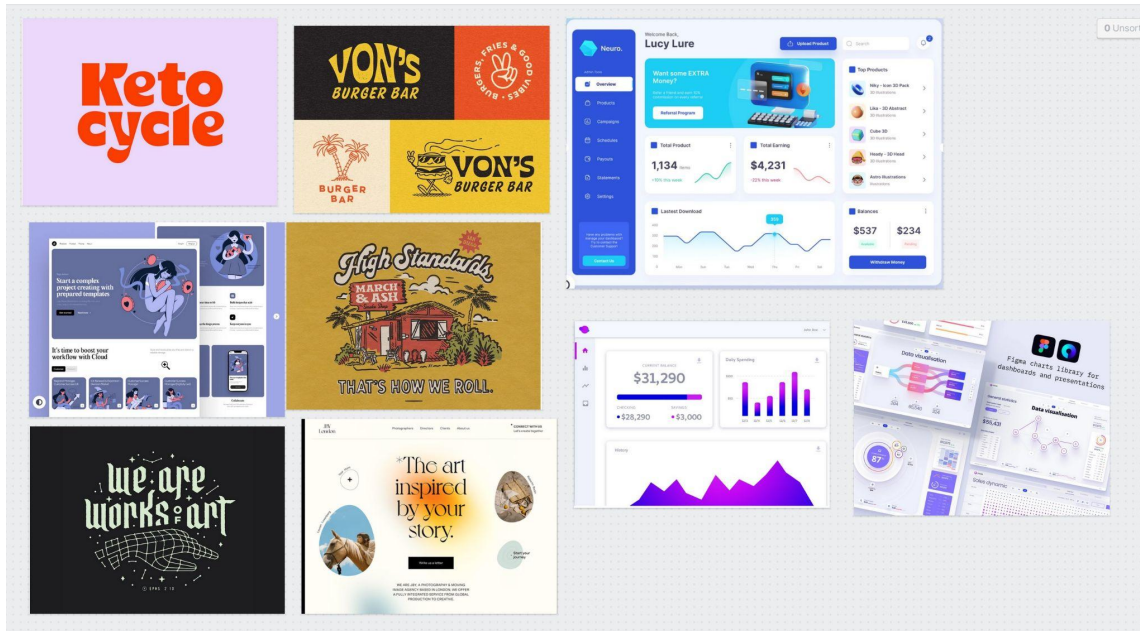
- Right Hand
- Left Hand
- Right Foot
- Left Foot

Close

Made by Travis Thompson

Inspiration

Design inspiration was taken from these snippets I found from scrolling across dribbble



Additionally, I was inspired by the way Moonboard visualizes the holds for a route on their spray wall.

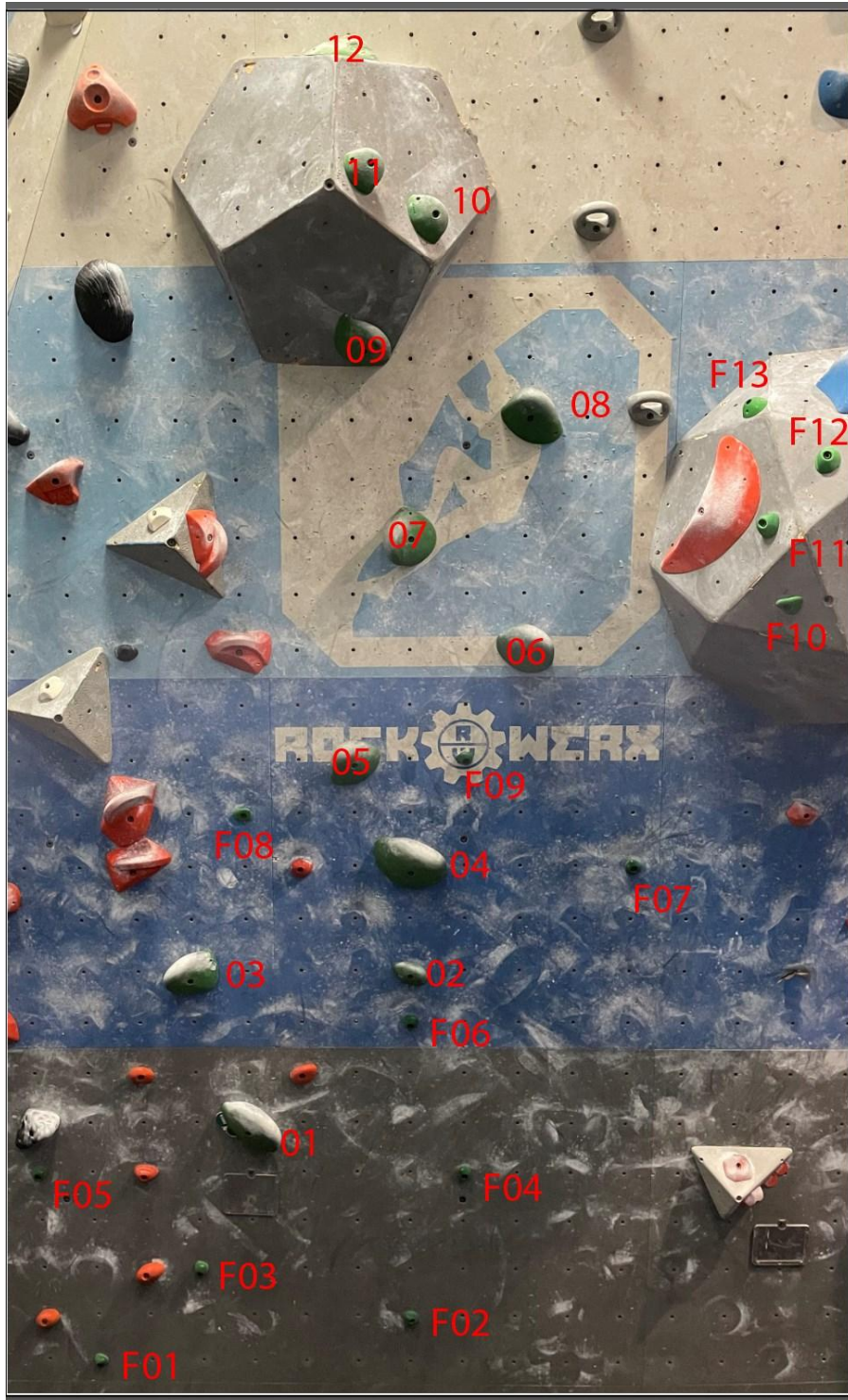
Reasons for Visualization

This visualization was created to view the differences in beta(hold choice) between different climbers. A question that arose throughout the project was how height and strength came into account but that was not addressed in the end due to it leaving the scope of the main objective.

Data & Exploratory Data Analysis

I collect my data by recording people climbing a route.

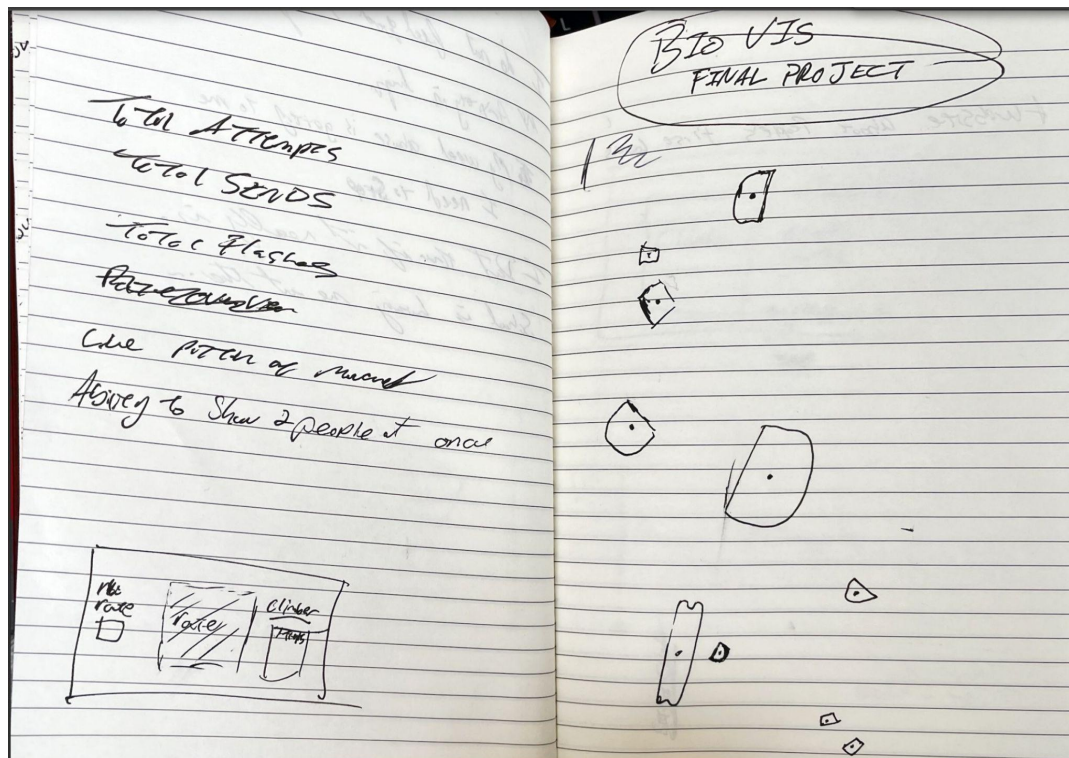


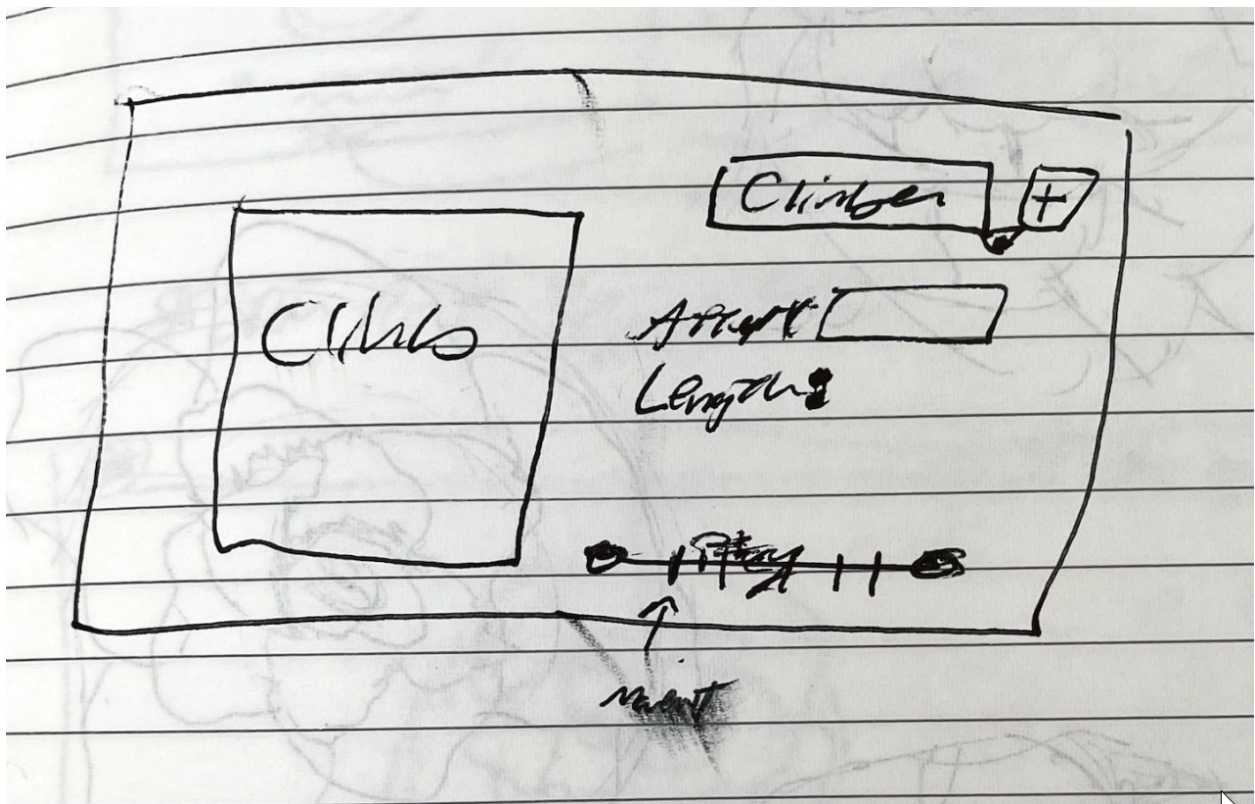
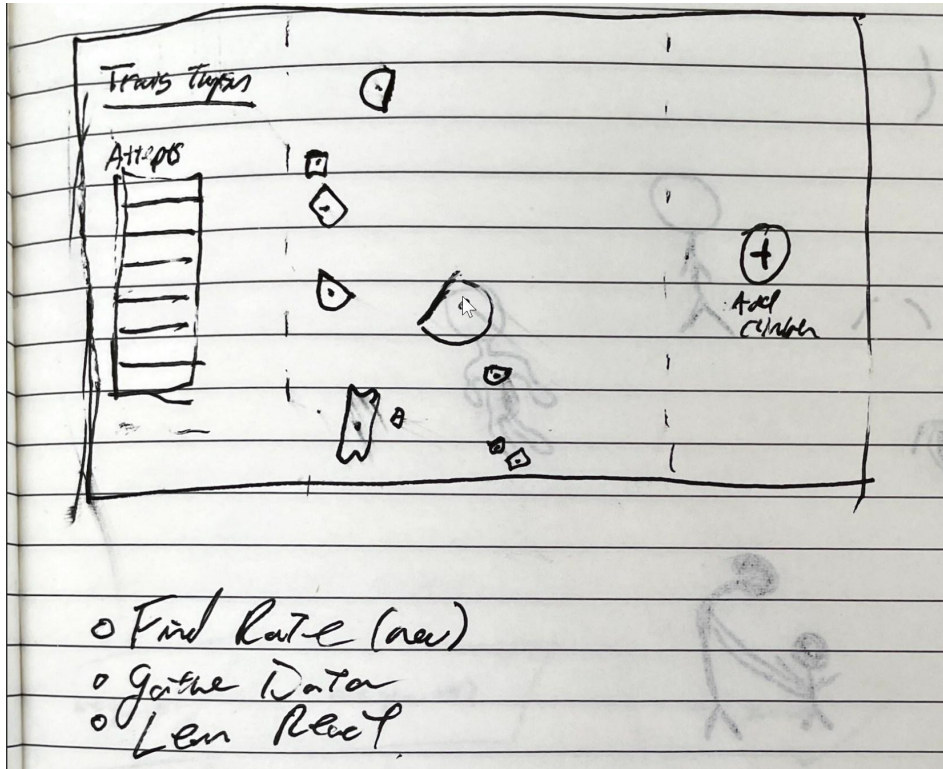


I gave each hold its own unique id and then manually added the second and frame the climber grabbed or left the hold to a json file by moving through the video frame by frame.

Design Evolution

The main concept of the visualization stayed constant to what was proposed but the layout and additional features were played around with for a while. Firstly there was an idea to save multiple climber attempts but that overcomplicated the main focus of the project. Additionally the ability to view multiple people climber which became a feature in the end. The evolution of designs can be seen in the pictures below.

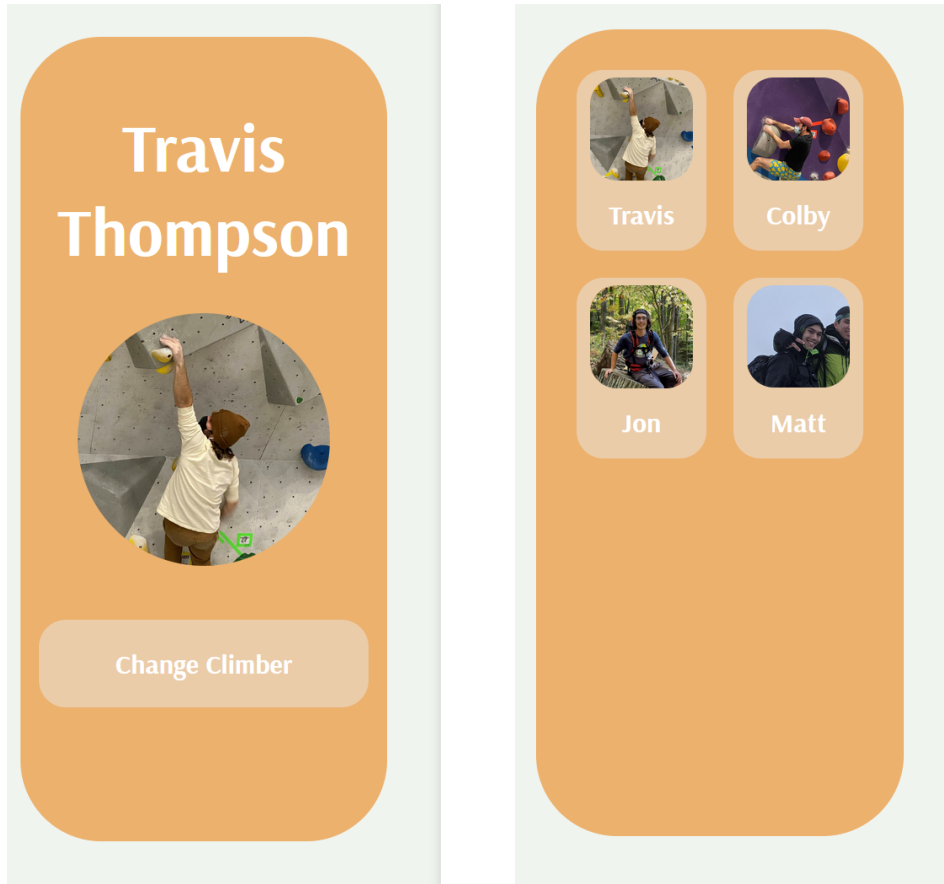




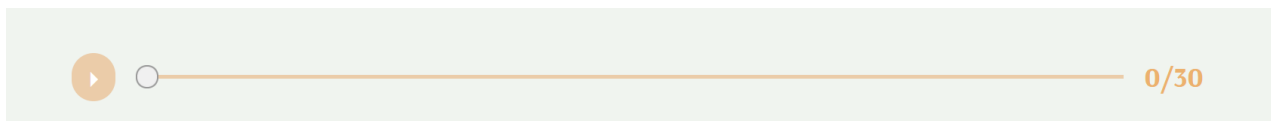
Start

Implementation

For the interactivity of this visualization, I first created the feature for the user to be able to select the climber they want to view.



I also implement the feature for the user to be able to scroll through the climb so they can manually control the frame being showed.



Evaluation

I learned that hold choice varies greatly between climbers, especially on a route with many holds. The visualization works well but it falls short on viewing smearing (when the foot is pressed on the wall), flagging, and hip position. This could be improved by overlaying the recording of the climber on top of the visualization.