Calista Nguyen
Project Proposal

1. **What is your project?**
    a. I want to make a rock climbing application that keeps track of your climbing progress. In this application, you can record what kinds of routes you climb (bouldering, lead, top roping) and store them every time you go climbing. Since it is a climbing log, it will act as a journal on all the routes you do. You can take pictures of different routes, write notes on what felt good on that route, annotate the route, etc.
2. **What technologies are you planning on using?**
    a. Gatsby:
        i. What I will use to help set up my working environment, like my local server.
    b. React and Typescript:
        i. Rating: slightly familiar
        ii. I worked with React during my last internship and have familiarity with making components and how to piece components together.
    c. SCSS
        i. Rating: Familiar
        ii. This would help with the styling of my application. I used this in my internship this last summer.
    d. PostgreSQL?
        i. Rating: familiar
        ii. I am familiar with PSQL from using it in software development last semester. I am not as familiar with integrating it with react applications
    e. Unit testing:
        i. Jest if I do React which I am slightly familiar with
3. **What are the essential parts of the project?**
    a. My project won't work if it doesn't have a database that stores past user data about all of their climbs. This is essential if the user wants to keep track of their progress.
    b. My project won't work if it doesn't have a way to graph user data. This is essential if the user wants to see their progress over time.
    c. My project won't work if it can't keep track of multiple users' data. This is essential if I want multiple people to be able to use my application. If I am unable to achieve this, I will make this app personal and something that only I can use until I am able to understand how to manage multiple users.
    d. My project won't work unless a user can keep a record of all the routes they have climbed by taking a picture. This is essential because there are multiple routes of the same level and some routes are easier than others.
4. **What outside resources do you require?**

a. On a day that I go climbing, I can take pictures of different routes I do and notes about the route. I can also just create dummy data about routes. I just need to make sure I take pictures of routes next time I go climbing.

5. Architecture Proposal:

a. Front end:

i. I will be using React to make components that will create every front end component.

1. I will be using React Functional Components
2. Components for main parts of the log:
    a. Picture component
    b. UserNotes component
    c. RouteDescription component?
    d. An overall log component for each route log that will include the Picture,UserNotes, and RouteDescription components. The log component will take in user input as the props and pass those props into the other components.

ii. SCSS will be used to make the styling of my application

b. Back end:

i. I will be using PostgreSQL to hold the data

ii. I will find any nodejs dependencies that I can use to integrate PSQL with my react application

iii. If I use c++ I will find a library that can integrate PSQL with C++

iv. Database:

1. Each user will have their own table. One table holds all of the data of a single user and their climbs. Ex:
2.

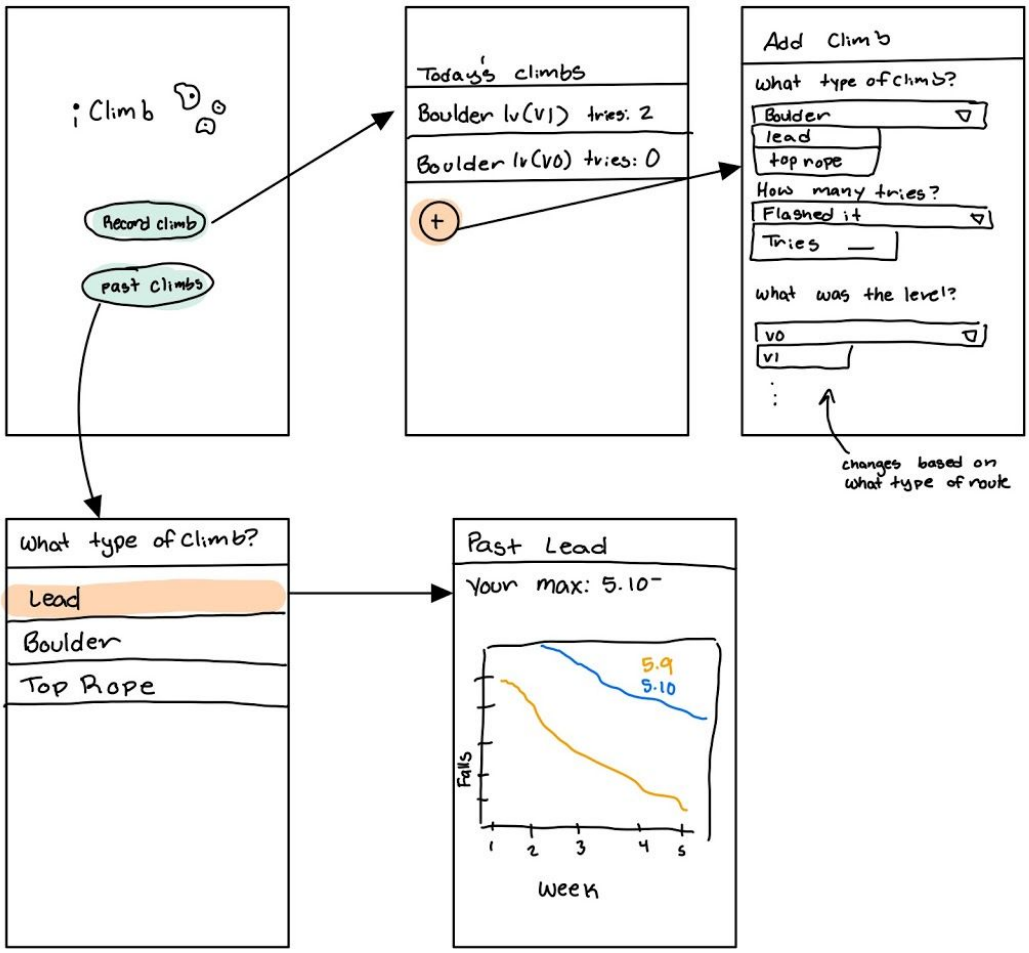
Date	Route Type	Difficulty	User Notes on the route	Picture of the route	
Date climbed	Lead, Bouldering, top rope?	Difficulty of route climbed	How did the user feel about the route?	Pictures taken of the route	

3.

v. As of now, which it is subject to change, I think I want to implement a Flyweight design pattern. Based on what the definition is, I believe that it

would be the best design pattern because it deals with creating a large number of similar objects. For example, if an object was a certain climb someone did and how much they climbed it, there would be multiple objects similar to each other in a sense where there are different climbing types.

6. **GUI**



a.

7. **Detailed Plan**

Sep 28 - Oct 2	Set up the github repository
Oct 5 - Oct 9	**October 4:** Have outside feedback done Make database architecture done -Take pictures of sample routes to make

	dummy data -Start making Overarching ClimbingLog web app component - Work on figma prototype - This will allow me to design how I want the website to look and figure out the styling in the future
Oct 12 - Oct 16	- Fill up the database with dummy data - Learn how to incorporate PostgreSql into React - Start making specific climbing log component
Oct 19 - Oct 23	- Learn how to pass in Postgres Data as props to my climbing log components
Oct 26 - Oct 30	**October 23:** Have the database finished and finish writing most of my main components
Nov 2 - Nov 6	-Learn how to write unit tests with jest -Learn how to unit test my components to make sure they are rendering correctly -Start writing basic unit tests
Nov 9 - Nov 13	**November 13:** Have finished unit tests
Nov 16 - Nov 20	Add react transitions to make some animations
Nov 23 - Nov 27	**November 25th:** Fully completed components and working application. Unit tests are all passed.
Nov 30 - Dec 4	Work on final presentation for class
Dec 7 - Dec 9	**December 9:** Present final presentation to the class.

8) How will I stay engaged with the course?

I will try to stay engaged by finishing the lecture activities during lecture time and finishing the programming exercises the day when they are assigned. I want to keep up by allocating most of my time to my project by doing the class work early.