Project Outline

Members:

Isaac Hilton-VanOsdall
Strengths: Familiar with many data structures and OOP design from CS17-18.
Weaknesses: Not super familiar with GitHub, other tools related to software development, as well as GUI-related stuff like JavaScript and CSS.

Trevor Houchens
Strengths: OOP/functional programming from 17/18, AI from AI/Computer Vision
Weaknesses: Not too confident with github, CSS

Jarrett Huddleston
Strengths: Experience with OOP bases design from CS 15. the use and implementation of various data structures and algorithms from CS16. Experience with both implementing and teaching Test Driven Design as a teaching assistant for CS4. I also have experience modeling probabilities and algorithms from CS 1450.
An eagerness to learn.
Weaknesses: Limited experience with web development.

George Lee
Strengths: Understands Object Oriented Programming from CS 15 and Basic Data Structures and Algorithms from CS 16, Computer Systems with CS33, Have some experience with React and design with Adobe XD.
Weaknesses: Not very familiar with networking and working with databases.

Requirements:
Many groups (friends, study groups, etc..) face the challenge of finding a location to meet. The criteria for being a good meeting location aren't always clear, but there are certain factors that can influence how desirable a certain spot is. Our product will try to find good meet-up locations for a certain group of people given their locations, a time to meet, and any other preferences they may hold. Our project will allow users to create groups with other users and, within those groups, plan events using our ranking algorithm to generate suggestions.

Critical Features:
1) Group and User Creation

a) We will need some way to represent users and groups on our site. When a specific user creates a new event, we will need a group that the event is affiliated with, and we will need users associated with that group. This structuring will allows site users to access their groups and each of those group's events.

b) Something that might be difficult to implement here is the data transfer. A form will first be filled out on the website which will then have to be sent to our backend to update our database. It could be tricky to make sure that everything is transferred properly and efficiently.

2) Suggestion Generation
   a) We will need to enable whomever is creating the event to apply the desired filters before suggestions are generated.
   b) What could be difficult with this is applying the filters to the ranking algorithm without having to redefine the algorithm for every possible combination of filters while still producing deterministic and accurate results.

3) Suggestion Ranking
   a) Will need to combine rankings from multiple factors such as distance, cost, type of location, etc.
   b) Challenges that will come from this is allowing multiple forms of ranking in a relatively fast way and accommodating the application and removal of filters while maintaining the integrity of the ranked list of suggestions.

4) Group Voting
   a) Implement a point based voting system where a user can pick their top three events those events will receive 5, 3, and 1 points respectively.
   b) One challenge that would arise in implementing this feature is tracking which votes have already been cast and enabling users to switch their votes without changing the point allocations already assigned.

General Challenges:

It could be difficult to interface with other software from sources like google or facebook. We will need to access the users' locations and it would be nice to have some way to incorporate our product into facebook messenger.

Another general challenge that is presented is the compilation of the data to use in the project, as each suggestion that is generated will need to have data for all of the presented suggestion ranking possibilities, such as cost, distance, and medium. One way to solve this would be to interface with some pre-existing database, such as Yelp or GoogleMaps, to access the data. That method,

however, then adds its own challenge of integrating the source of the information in with our project in such a way that suggests that our project is better than the source of the information for the purpose of event planning.