A. Project Name:

BuffWeights

B. Team Member:

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C. Elevator Pitch:

BuffWeights is a set of weights targeted toward weight-training enthusiasts that sense the number of complete repetitions and sets performed on that particular weight. This combination of the weights and the companion app will help solve the problem of the user forgetting how heavy they last trained and how many reps they needed to perform to reach failure since the weights and app will track them for the user.

D. Target User Group:

The user group for this project would be people who go to the gym and perform strength training exercises on a regular basis. Both males and females of all ages would fit into this category as long as they strength train regularly. However, in order to reap the most benefits from the surrounding environment of the Boulder community and to get the most focused opinion, I would like to target those who already have the habit of tracking down their reps and sets or are looking to do so, and also those who have goals in mind in terms of bodybuilding, fitness, or physique in the age range of about 18-35. This target user group would be the people I plan on talking to later in the project.

E. Versions:

As mentioned above, it would be most useful for BuffWeights, the actual weights, to have a companion app. The app would most likely just have one version. Although I am not working with a partner, if time permits, I would like to create different versions of the weights. The most basic and original type of

weights I plan on implementing would be the dumbbell. In addition, straight barbells, kettlebells, EZ curl bars, trap bars prototypes would complement the dumbbells very well, since they all fit in the same category and serve the same purpose. These different types of weights would also expand the user's choices and inventory for what to use.

F. How This Project Meets the Theme of Personal Data:

One aspect of this app is that in the user sign-up step or in the user profile, it has the option of tracking and saving the user's height and weight, along with other basic information such as body fat and muscle percentage, muscle vs fat ratio, etc. If the user updates these data regularly, then this feature can find trends and show graphical data and visualizations of these numbers. The main aspect of this app, however, would be tracking the reps and sets for each exercise for each workout. The app can then display these numbers graphically for the user to gauge the intensity of their workout and also keep track of how heavy are the weights they are using and how intensely they are exercising. The app can also use these data to suggest the user to increase their weight or decrease rest time in order to achieve a more intense workout for better results if it notices that the user has been plateauing. If many users opt-in to share their data, the app can recommend a certain user what weight they should use (especially if they are beginners or they are in need of a guideline) based on other users with similar body composition and training experience. Another feature of the app is to have a leaderboard section that is in the app and also can be displayed for users who want to compete in a friendly manner with their friends and family. For this feature, data would be shared amongst the user's selected group of people. Furthermore, the user and his or her chosen group can set goals together and try to reach those goals as a group, with the app using the data to calculate how close each person is to their goal (this can also be an individual function and does not have to be only for groups).

G. Interaction Challenges:

1. One big challenge is that currently, the weights would have to be pre-set, which leads to two main problems. One challenge is that this would mean the app only works for this particular set of weights, unless the user wants to input all the weights and reps and sets manually, which would be similar to existing apps already. Another limitation is that non- pre-loaded weights (such as ez bars) would also be harder to implement, since the user adds on the weight, and it is not as simple as a five-pound dumbbell that is already set to five-pounds.
2. Another challenge is figuring out how to calculate one repetition. For motions like picking up and then putting the weight right back down, it would be similar to doing one repetition.
3. A third challenge would be figuring out whether to place buttons on the weights for simple interactions or not. Some examples would be maybe a button on the weights for recording how this exercise felt or a button to start and stop recording. This would decrease the need to use the app so frequently, but holding onto two weights and pressing buttons would not be easy or convenient for the user.
4. A fourth challenge is how to differentiate between exercises. Would the user need to input the name of the exercise every time before they start one,which would be inconvenient, or would the weights be able to sense what they are doing (e.g. standing bicep curls vs. sitting bicep curls on a pad), or would the weights learn after the user inputs a unique exercise in the app once?