

# Boosting Fitness:

*How Our App Helps You Reach Your Goals!*

## Step #1

Fitness apps are used to help people track their activities and give them reminders to keep them motivated. They help a person take control of their body, allowing them to track how much they walked, ate, among other things. A weirder example is within Apple Fitness & Health, which actually allows you to track how loud and for how long you listened to audio using earbuds. It's a really good, helpful feature, which allows us to theoretically, predict when we'll theoretically damage our hearing beyond the point of saving. While Apple Fitness & Health does that, our goal is to instead create an application that allows to help people take charge of their diet, giving them another chance to be healthy within their own vision.

The market of fitness apps is decently large, with a lot of them being primarily about tracking calories and steps. Hell, some of our parents have these apps, and there's also the other end which is all about diets. Our app is specially to cater to both ends of this spectrum, so we become a One Size Fits All of an application.

## Step #2

When we started designing our app, the process was full of trial and error. We came up with many ideas, but after some discussion, we agreed on one that we felt was really strong. The entire procedure was team-based, meaning we all worked together closely to figure out what the app should look like and which features to include. There were a lot of mini debates within the group about what features were necessary versus what would just be extra and not really needed. This helped us focus on what was truly important for the app's success. Our design process had two main parts. The first was the starting screen that users would see when they first opened the app. We wanted this to be engaging and easy to navigate, setting the tone for the rest of the experience. The second part was what happens after the user signs up and enters the main section of the app. This required careful thought about user flow and ensuring everything was intuitive and functional. Although we could have designed the app online using various tools, we chose not to. While online platforms offer convenience and a wide range of design inspirations, we felt that working physically together was more valuable. If we relied on online sources, we might have ended up just copying ideas rather than coming up with our own unique solutions. By working in person, we had the opportunity to brainstorm as a group, bounce ideas off each other, and collaborate in a more meaningful way. Additionally, one of the

presenters from Toronto mentioned that becoming an engineer is not just about technical skills, but also about communication. This really resonated with us because, throughout the process, we communicated constantly to make decisions and share our ideas. Our teamwork and open discussions were key to shaping the app's design and features, and we believe this process made our final product stronger.

## Step #3

After we finished going through our admittedly chaotic trials, our first move was to make the most important feature, step tracking. You've probably seen it in every fitness-health application however, so we realized that we absolutely need one. And as such, our journey begins.

For our prototype, we got an instance of MATLAB. If I'm being perfectly honest, MATLAB is a nightmare to work with, however it was the fastest option for us to get a prototype down. And with this option, we began working. We began by importing some experimental data, containing positions, accelerations - to create distances. With all of that, we got time statistics, and were then able to calculate the amount of steps a person would theoretically have taken.

To do all this with utmost accuracy, precision, whatever word you'd like to use to describe our algorithm, first we had to make sure our data updated every test. To do this, in MATLAB, we opened up our algorithm by scrapping the old data, and retrieving the most recent version of it from storage. After doing this, we can now begin by calculating the distance, which begins with where we started, and ends with where we reached.

With that data, we retrieved the time elapsed between every stored point. This allows us to create a line graph with the given data, namely distance between points, vs the time taken to reach each point. With this data, we were able to calculate both totals for time, steps, distance, as well as being able to plot graphs covering all of it.

To begin these calculations, first we had to take the distance between points 1 and 2 for example. All of that data was stored in latitude and longitude coordinates, meaning we could technically draw it out as a map, although there's realistically no point of doing that - we're making a fitness app, not another GPS mapping service. So with that data, we got the total distance - in miles - and we converted that back to feet, which we used to calculate how many steps the person took, over how long. Using this, we could create a graph almost similar to other applications, which track your steps overtime.

## Step #4

Our first prototype after finishing the coding portion was made of paper. I know, really weird. But it worked, because our goal was to see how a theoretical user would react. We asked a couple people from outside of our group to try our low-fidelity prototype, which was just paper templates of what it would theoretically look like.

Our interface was easy for our testers to understand - even on their first impression of it, and the interface was not particularly chaotic or excessive, leaving all the information a user would want to see accessible, and also easy to find and navigate around. From the signin page, all the way to the statistics containing everything anyone wanted to see, or change. It was even easy for people to add and modify any statistic they looked for. In the end, our testing did end successfully.