# Project Research Document- Training/Food Finder App

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## 1. Detailed Discussion:

The idea I have come up with on my own for my project is a fitness/health app for an android phone. The system will be aimed at athletes that play range of sports. The athletes may be playing their sport for a number of years or just started playing their sport. This app will help athletes who are looking for training programs that will help them in a specific area in their specific sport. The user will choose the sport they play and select the goal they wish to achieve, e.g. a user may select basketball as their sport and then choose agility as their goal and this will return all articles and training programs associated with agility for basketball. If the user is registered and has an account set up on this app then they will not need to specify what sport they play as this information will be logged in the system when they first register. Once the user finds an article or training program they like, he/she can add it to their own account where they will be able to access it quickly without having to search for it each time they use the app. The user can also make the search more specific such as specifying what intensity they would like the program to be, i.e. low, medium, high, and they can also select whether or not they would like the training programs that are based around anaerobic or aerobic training. The user will also be able to see how many calories each type of programs burns. This information will be displayed to them through the use of d3. The app will also have a section for athletes to fill in training results if they wish. For example, before the athlete starts a training program for agility, he/she can undertake an agility test and then fill in their results into this section. Once they have finished their program, around 6-8 weeks later, they can perform the same agility test again and fill in their new results. Their improvements will then be displayed to them in a graph through the use of d3/tableau. The user can regularly re-visit this section and fill in new stats for each program they undertake as each program will have different credentials to be recorded and completed, e.g. an athlete undertaking a strength program will fill in starting details such as their 1 Rep Max (1RM) for bench press, squat, deadlift etc. The user may then rate the article if they wish and in time the user can filter the results of their search based on the rating, i.e. highest to lowest. The system will also have another section aimed at health enthusiasts, who may or may not be athletes, wishing to find unique foods that are hard to find in regular shops or that not a lot of people have heard about before, e.g. quinoa, black rice, brazil nut butter, specific gluten free products, liquid egg whites etc. When the user enters this section of the app they will choose which food there are trying to find and the app will use their GPS through their phone to find their location and it will then return all the stores nearby that stock the product they are looking for in a user friendly format. The app will also have a thread section where registered users will be able to leave comments and communicate with each other about training

programs they have tried, which ones they thought worked best or any other remarks they have in relation to training or in terms of the search facility for foods.

## 2. **Existing Applications in this Domain:**

Through my research I have not found anything similar to my idea as a whole. However I have found some apps that have part of my idea.

| **Name** | **Similarities** | **Differences** |
|---|---|---|
| Anabolic Minds | Can search for training topics<br><br>Users can post about topics | Search section not sport specific<br><br>Search results return forum posts from users and not specifically training programs<br><br>Can't track your training progress<br><br>Training topics not separated according to intensity<br><br>Can only search by keyword<br><br>Calories expenditure is not included in training programs<br><br>No search section to find unique foods |
| Fitness Builder | Can track your progress and this is shown in a graph<br><br>Informs user how many calories each exercise burns<br><br>Can rate training programs | No search section to find unique foods<br><br>Cant specify what sport you play and what goal you want to achieve in that sport<br><br>Not very sport specific for training programs. Training programs are for the sport as a whole rather than improving in one area of the sport<br><br>Users can't comment about workouts they have tried |
| PEAR Training | Can choose your goal you want to achieve | Goal options are not sport specific |

| | | |
|---|---|---|
| | Can choose the activity/sport you would like<br><br>Can track your stats from your workouts and this is displayed to the user in graph format | Activity selections are limited and don't cover all range of sports<br><br>No search section to find unique foods |

## 3. Platform, Technologies and Libraries:

I will be using a variety of resources for my project at hand in order to complete it and get it to the highest possible standard. For my project the language I will be using is java as android apps are written using this language. I will also be using the Android APIs and the Google APIs. I will be using android studio along with java SE development kit 8, as opposed to the android software development kit (SDK) in the eclipse IDE, to generate an emulator to test my app through the use of the Android Virtual Device (AVD) manager. I have chosen android studio over the eclipse route as I have found through research that android studio is more efficient and user friendly when making large projects due to its new improved interface design. I will also be using the java JDK package for this project. This app will run on android phones with an API level of 15 or greater which will support over 80% of android phones. My project will make use of the d3 javascript library, d3.js API and tableau software for implementation of the graphs depicting the user's progress and stats. Through this library I will incorporate the features of Scalable Vector Graphics, javascript, HTML5 and Cascading style sheets (CSS) to create the graphs and visuals. In terms of the location section of the app for user's to find unique foods nearby, I will be using the Google location services API that is part of the Google Play Services. I have chosen to use this API rather than the platform location API in the android.location as through research I have found that the Google location services API provides a more effective and elite framework that automatically handles user location and accuracy and also offers better battery performance. In terms of the backend for my project I will use Microsoft's Azure for creating the database for storing new users that set up an account on the app. I have chosen to use Azure as I believe it is a reliable cloud computing platform as it provides the capability to allow you to scale up but also to scale down if needs be. It also guarantees obtainability and endurance for my data that will be stored as all of my data will be copied to three different servers. I will be using my own laptop for the majority of the project as the android studio is downloaded on it along with tableau but I will also use the computers available in the college if needs be throughout the duration of the year to complete this project.

## 4. The Risks:

There are several risks that are associated with my project at hand. For one I am using one library, java, for this project to develop my app. As a result I am forced to rely on one way of implementing the majority of the features for this app; I have no alternative way of going about things if I am having difficulty employing certain aspects of this project. Another risk facing me is the introduction of d3. Until this year I have never used or heard of d3 or tableau before so I am essentially a beginner to this library and I must ensure that it is incorporated effectively into this project so that the users can get a clear view of their stats and other information which I plan to display by means of graphs. In addition to this I must also ensure that the app's performance rate and loading times are not affected and slowed down when the graphs are being displayed to the user as this will affect the user experience and degrade the overall app. Another point to note is that Android studio is a fairly new piece of software and there are still some bugs present in it as it has not been fully tested yet by enough developers. Thus, this is a risk that I will be facing throughout the duration of my project that I will have to deal with if any bugs do arise. Another element that is new to me is Google location services which I will have to spend a lot of time researching in order to guarantee that the user receives an accurate result of their search query for unique foods. I must also make certain that the users exact location is accurate, when calculating stores nearby that are selling the food they are searching for, as I have found through research online that the users location can be less accurate if they are using their phone outdoors rather than indoors.