

# Breazy Fit

## Proposal



# BREAZY FIT

Github Link:

[https://github.com/ChazArvizu/CECS491\\_Hexadecimators.git](https://github.com/ChazArvizu/CECS491_Hexadecimators.git)

Team Name: Hexadecimators

Team Leader: Chaz Arvizu

Team Members: Carlsean Claricia, Tania Adame, Tyler Kelsey,  
Andrew De La Rosa, Sean Iida

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# Version History

Version 1.0.0 - Created Initially: 09/20/2022

Version 2.0.0 - Implementing changes mentioned in proposal feedback from first submission:  
09/26/2022

Version 3.0.0 - Implementing new features to make the application more unique: 09/28/2022

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# 1. Background

Maintaining a proper workout regimen and meal plan can be hard for many people, whether it's due to poor planning, lack of motivation, or because staying active and eating healthy can feel like a chore for many people. In an online health article written by Neil Hill, a world renowned bodybuilding coach, he stated, "...they tend to have days where they have little or no structure and end up making poor food choices..."(Hill, 2019). We are going to help eliminate such factors of variation with our single page web application. This application will assist the user in reaching their own fitness goals by providing a personalizable and convenient experience that will make fitness simple and fun.

## 2. Project Scope

The application that will be delivered is a fitness maintaining application designed to suit the user's needs in a way that is convenient and customizable. The finished application will be directed towards people who want to maintain a balanced regimen with daily routines, specialized personal help, and who want a more organized experience. The application that will be developed is a single page web application designed to run on Chrome 104.x (64 bit). The language and units of measurements will be made using U.S English and the common U.S. measurement standard.

## 3. Project Projections

This section contains project projections that examine the timeline, resources and potential risks that could be encountered.

### 3.1 Timeline

Before November 11 - Milestone 1

- Milestone 1 will focus on user access
  - Login/Logout
  - User Access Control / User Management
  - Logging / Logging Archive

Before December 12th - Milestone 2

- Milestone 2 will focus on User permissions
  - Authentication
  - Authorization
  - Account Recovery
  - Following the completion of Milestone 1 we will review our code and try to rework any pieces we had gotten wrong to rebuild and improve upon them for our other User Access based resources that utilize registration and logging

#### Before February 22nd - Milestone 3

- Milestone 3 will focus on three unique features
  - Researching which food API's are best suited
  - Meal Scheduling
  - User Trainer Lookup
  - Event Planning
- Following the completion of Milestone 2 we will review our code and try to rework any pieces we had gotten wrong to rebuild and improve upon them for our other Account based resources that utilize authentication and authorization.

#### Before March 8 - Milestone 4

- Milestone 4 will focus on the last three unique features
  - Workout Databases Challenge
  - Caloric and Macronutrient Recommendation
  - Workout/Calorie Tracker

#### Before March 14 - Testing

- Testing will include a testing plan that will list out the different types of testing based on certain features.
  - Input Validation: prevent users from inputting wrong and/or irrelevant characters
  - Runtime Error Handling: prevent errors to crash the system as a whole.
  - User Feedback: display the user a friendly message regarding the error that occurred.

#### Before April 21 - Release

- Release will focus on any bug fixes or enhancements.
- Bug Fixes
  - Design a bug hierarchy
- Enhancement
  - Adding new functionalities
  - Update BoM if new enhancement come up

## 3.2 Resources

All of the technologies that will be used in the development of this application will be free to use and widely available. For the Integrated Development Environment (IDE),

we will be using either Visual Studio Code 1.70+ or Visual Studio 2022 Community edition. The back end will be constructed using the .NET 6.x framework. The languages that will be used are C# 10/11, ECMAScript 11+ / TypeScript 4.x+. The data will be stored in Sql Server 2019 Developer/Express Edition as the database engine and SQL Server Management Studio as the database client. The web server will be IIS 10+.

### 3.3 Risks

One of the possible risks to our team is the fact that our development team is relatively small. If any of the group members are unable to work on the project due to unforeseen circumstances, this will slow the production of the application down. Another possible risk is that our development team has little experience with some of the technologies given. To minimize this risk we must do research on the given technologies to see how they work.

## 4. Product Scope

In this section we will discuss all the core components and how our unique features will work and use some of the core components in this application.

### 4.1 Core Components

**Login** - Users can log into an account with proper authentication with a username and password.

**Logout** - Users can sign out of their session which will refresh back to a normal page without any personal and private user information.

**User Access Control** - Each registered user uniquely has access to their private features and information. No user can revoke or update other users' access to these. Only the system can revoke or update other users' access to their private features and information.

**Logging** - recording daily logins and access of unique users, logins that failed, log of errors and the events that occurred before the error happened, how long users are tabbed into our webpage, and what users click on the most.

**Log Archiving** - logs will be updated within a database and offload every log after exactly a year since they were added.

#### **User Management:**

**User Registration** - users can create their own account by coming up with their own username and password, then their email to register.

**Delete User** - If the user wishes to delete their account, then there will be an option to and it will completely remove them from our database alongside any information in the logs tied to them.

**Update Profile** - Users may change their username, email, and password, as well as their stats which include their weight and height.

**Update Permissions** - The user is able to update their private features and information.

**Analytics** - use information from the log archive database to further improve our web application throughout the future. We will be using data collected of: how many unique users login or access the site already logged in daily, unique-user click counts of objects to understand which function is the most and least useful and/or popular, the time that users are tabbed in our web application, and errors with their prior events before it happened that may have occurred from users to fix and prevent those errors from happening again.

## 4.2 Unique Features

**User Trainer Lookup** - Users can register as either a trainer or trainee and can list what type of physical activity or sport they are participating in. Trainers will have an about me where they specify what they specialize in. Once a user finds a trainer that they would like to hire, they can send the trainer their phone number for future contact. Additionally, the trainer will have to verify if they are a certified trainer to avoid any problems between the trainer and trainee.

**Event Planning** - Using the user's location, the user can look through a variety of events that are nearby them, such as marathons, weightlifting events, and other types of fitness events. This will work in tandem with the Caloric and Macronutrient Recommendation so that the application can recommend which types of macronutrients to take ahead of time to get them well prepared based on what kind of event they are attending.

**Meal scheduling** - Displays a calendar where each day of the week contains the individual days worth of food along with scheduled eating times. The meals that they can choose will be either ones that they have saved from the recipe database or ones that they have manually entered. Users will be able to plan meals for up to a month at a time. User Authentication will ensure that one user cannot modify another user's meal schedule.

**Caloric and macronutrient recommendation** - Takes in the users' body mass index (BMI), targeted weight and the body type they are aiming to become. With this given information the application will give recommendations on optimal caloric and macronutrient intake for each of the meals. The recommendation will also take into account what ingredients the user enjoys and do not enjoy to choose items and recipes that will fit the users taste the best. The application will also give users an option to further specify their preference by rating the recommendations given to them. Users can also select a fitness event they are planning on participating in and the application will recommend which macronutrients they should focus on consuming leading up to the event.

**Workout Challenge Database** - Users can search in a database of different workout routines/regimens to use at home or the gym. Filters can be applied to help narrow down what the user is looking for. Routines will also be recommended based on the previous ones done. Users also have the option to submit their own routines for others to use. Each challenge will also have ratings on them based upon the difficulty.

**Workout/Calories Tracker** - Allows the users to write down which type of workouts they did and the duration of that workout. With the data about the workouts the user completed, we can calculate the total calories that the user burned using the Metabolic Equivalent (MET) formula. The user then can see the amount of calories that they consumed each day so that they can see if they are in a surplus of calories or in a deficit along with burned calories from the MET formula. Additionally, if the user chooses to do so they can share this information with their trainer for better fitness results by downloading the file as a document or pdf.

## 5. Target Audience

Our work aims towards a target audience of those who wish to meet a certain fitness goal, such as losing weight or gaining muscle through various methods, such as meal prep, tracking workouts and calorie intake, hiring a personal trainer, and participating in fitness events. Due to the wide variety of fitness goals, many different people can utilize this application to meet their own personal needs, for example, if they wanted to do cardio training then they can participate in marathons and use the meal prep feature to focus on the consumption of carbs over other macronutrients, or if they were to focus on muscle gain then they can plan meals that are high in protein and keep track of how much they are lifting.

## 6. Value

This application will enable users to find appropriate trainers to whatever physical activity they are participating in. With this application users will gain a sense of community with the workout challenge database, that will encourage the user to push to their physical limits. Users will also be able to track their nutrient/calorie intake for the day to make sure that the user stays on track with their fitness goal.

## 7. Identify Competitors

### Seven

Just like the name, users of the app only need to workout 7 minutes a day, and the app has over 200 workouts in their database. Users identify their workout goals and their fitness level being their experience in working out so the app can create a custom training plan that fits these inputs. Users can do 30 day challenges, join and chat with



other users in group workouts, or even face off with their friends in workouts. This one has a free basic plan, but must pay \$9.99 a month to get access to more workouts and get support from a personal trainer.

How we intend to compete with this app is that we will have different certified trainers for many other user trainees to get support from. Users can upload their own routine as well so while the Seven app has over 200 workouts, we will have our set amount of workouts in addition to other users' custom workouts, which gives a more unique experience for the user to try out new workouts. We also have our own meal planner alongside the caloric and macronutrients recommendation that plays along with keeping the users healthy and fit.

## **FiiT**

Users will have access to multiple classes for workouts that have different difficulty levels which can go on from 10 to 40 minutes each. There are over 20 training plans depending on the users' fitness goals and how experienced they are. Users will also have access to an online community and can workout with their friends alongside group leaderboards. It can also track your calories, heart rate, and how many reps you do. The app needs users to pay to even use it, only having a 14 day free trial before committing to pay.

This app only uses videos for classes and not real personal trainers. Having our certified personal trainers will make sure that users are using the correct form of workouts to prevent injury better than just having users copy a video with no experience. We will also have a way for users to see events near their location to join which is also corresponding to their caloric and macronutrients recommendation.

## **8. Product Vision**

Our vision is to create a web application for users who are hoping to achieve a certain fitness goal, such as getting ready for a marathon or even losing or gaining weight. Breazy fit keeps track of all calorie in-takes consumed on a certain day for easy access of information. Caloric and macronutrient recommendation will be based on the BMI of the user for better goal outcome. Meal scheduling will contain individual days' worth of food with their respective eating times so users can keep track of what foods they have consumed for the day. This will ensure an easy guide to user body goals be it that to lose or gain fat or muscle. Users can look up specialized certified trainers for a one-on-one session for a physical activity of a sport they are participating in. By using the user's location events will be recommended such as marathons or fitness events to help users get involved in events that help their regimen. Along with the fitness events there will be a workout database available for users who are looking to do workout routines at home or at the gym. Unlike other apps that don't give a personalized

regimen our product will provide an easy, and convenient organized web application to meet user body goals while also staying on a budget.

## 9. Glossary of Terms

**Body Mass Index (BMI)** - Body Mass Index takes in a person's height and weight to determine what weight category they fall into. The equation to calculate BMI is:  $BMI = 703 * ((weight(lb.)) / (height(in.)^2))$ .

**Macronutrient** - includes the main three nutrients your body needs for energy; carbohydrates, fat and protein.

**Metabolic Equivalent (MET) formula** - Each exercise has a corresponding MET value which can be used in the following formula to calculate the calories burned:  
 $calories\ burned\ per\ minute = MET \times 3.5 \times ((body\ weight(lb)) * 0.454) / 200$ .

## 10. References

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