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Final Year Project 2019-20

CS6PO5

Interim Report

Fitness App

2019-20 Autumn

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I confirm that I understand my coursework needs to be submitted online via Google Classroom under the relevant module page before the deadline in order for my assignment to be accepted and marked. I am fully aware that late submissions will be treated as non-submission and a mark of zero.

ABSTRACT

The following report is based on application development which operates on android platform. This project falls under the part of the interim report for the final year project. This document showcases a visual report of the interim report consisting of Introduction aims & objectives, background & similar system, methodologies work completed and further planning. The major objective of this system is to develop a health and fitness app “GetFit” which operates on Android platform. This report is the initial of the system which will be done in the future.

ACKNOWLEDGEMENT

I am highly indebted to our final year supervisor Mr. Ishwor Shrestha and Miss. Subeksha Shrestha for their guidance and constant supervision as well as for providing necessary information regarding the project & also for their support in completing the interim report.

My thanks and appreciations also go to my friends who guided me in the development of the project by showing technical and non-technical support.

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Chapter 1: Introduction

1.1. Introduction to topic

In today's digital world, there is very little that gets done without a smartphone. While phones are getting smarter and slimmer, the people using them are getting lazier and heavier day by day. However, with the help of health and fitness apps, one can lose inches and get fit as well. These kind of mobile apps are designed to promote healthier living.

At present, the interest in fitness aiding technologies is also on the rise, especially wearable devices such as smartwatches. To aid these smart devices in becoming companions for individual's fitness and health-related activities, mobile applications are needed. Health and fitness applications can include – fitness tracking, data storage and management, nutrition and diet guide, fitness activity, medical and general health companion etc. As per a recent research by Flurry Analytics, demand for the health and fitness apps has grown by 330% in 3 years, with 25% users accessing their fitness apps more than 10 times a week. For the fitness enthusiast, it would not be far-fetched to be saying that they are addicted to their fitness applications. Also, for those who are using health companion guides to keep track of their diet or medication, they rely on these applications to send them reminders and to enable them to make healthy choices. The demand for studio and fitness apps is highest and users have voiced their need for using their mobile application through their workout session. Due to this preference, gyms and studios are offering an application that users can use during their workout sessions. Gym-goers are no longer content with simple information such as their weight. What they are curious to know more about is their progress, from body fat percentage to sleep quality. Hence there is substantial scope for health and fitness application growth.

1.2. Current Scenario

Keeping the current scenario in mind, I urged to develop such health and fitness application which would cover most of the fitness features such as activity tracking, healthy diet plan, workouts and exercises, calorie measurement, etc. This application helps people struggling with obesity to adopt a healthy workout routine. Many apps have already been created to help out people who want to have a better diet or to be able to track calories but, none of them teach users where to start. *MyFitnessPal* is a popular app that calculates calories and recommends daily calorie intake based on one's weight and height. *Fooducate,* a similar food app, gives nutritional value of the food that one searches up by barcode. All these apps are very helpful. Nevertheless, I think it would be great to have a single platform for all these features with better design. My app would help the users in the same manner. The app certainly creates positive impact on its users: The fitness routines can be more affordable and accessible, one can set realistic fitness goals and monitor their workout routines. Moreover, such apps can help one to stay connected with people having same fitness goals.

1.3. Problem Statement

In distinction to my survey regarding the development of this app, I found out that people want to get healthier. However, are not motivated to start working out and eating healthy because they feel like they have to get mentally prepared and clean up their schedule. Although, there are a group of people that have already started their exercise routine and are loving it so far. So I guess my app would be of more help.

The project is aimed to develop a fitness application which shall provide a clear and efficient user interface that helps to promote a healthy life style for the people of all ages. This app is able to track time, distance, calories burn, pace during a running session, and record information within its internal files. Users are primarily allowed to know the important and necessary information about the types of exercises, meal plans, their progress and many more. Suggesting the fitness routine according to gender, different types of workouts according to muscles, instructions for movements according to targeted muscle workouts, comparing performance and progress by generating BMI (Body Mass Index), planning personalized exercise routine, reminders and alarm, tracking steps, distance, time, speed, counting calories etc. can be stated as the salient features of the application.

1.4. Aims and Objectives

The project is aimed to develop a fitness application which will provide a clear, usable and efficient user interface which will promote a healthy life style for the people of all ages. This android app will be able to track time, distance, calories burn, pace during a running session, and will be able to record information within its internal files.

- Get information about what the users need and what functionally is going to be useful.
- Collect various information through similar systems
- Evaluate several user interfaces through other systems based on user interface principles.
- To develop the complete system within time.
- To develop the android application.

1.5. Structure of Report

The following format below showcases how the structuring of the report is organized.

Chapter 1: Introduction

This part of the section discusses about the subject matter of the project. Furthermore, it gives us a brief history and developments on the specific field and also showcasing the problems and aims and objectives of the project.

Chapter 2: Background

This part of the section showcases the context and background that are interrelated to the project. It gives an insight view regarding the technology used for the development phase of the project..

Chapter 3: Development to date

The development section discusses about all the possible consideration that were done before the developing phase of the project.

Chapter 4: Analysis of progress

This part of the section showcases the gradual progression of the project till present date. Based on the Gantt chart, it shows further work of progress.

Chapter 5: Future Work

The following section displays all the remaining work that are to be completed in later time for the completion of the project.

Chapter 6: Appendix

It contains extra documents and all the information which are proof for the progress till date like Gantt chart.

Chapter 2: Background

2.1. Similar System Comparison and Analysis

- Fitness Buddy

Fitness Buddy is one of the best health and fitness which has more then 400+ unique exercises at your disposal, Fitness Buddy will revolutionize your training regimen. It has comprehensive exercises for all major equipment's including barbell, ez curl bar, dumbbells, kettlebells, resistance bands, medicine ball, machines, and stability balls. With this app, you will find the workout tracking process simple and easy in order to sustain your motivation and enforce your commitment to your fitness goals.

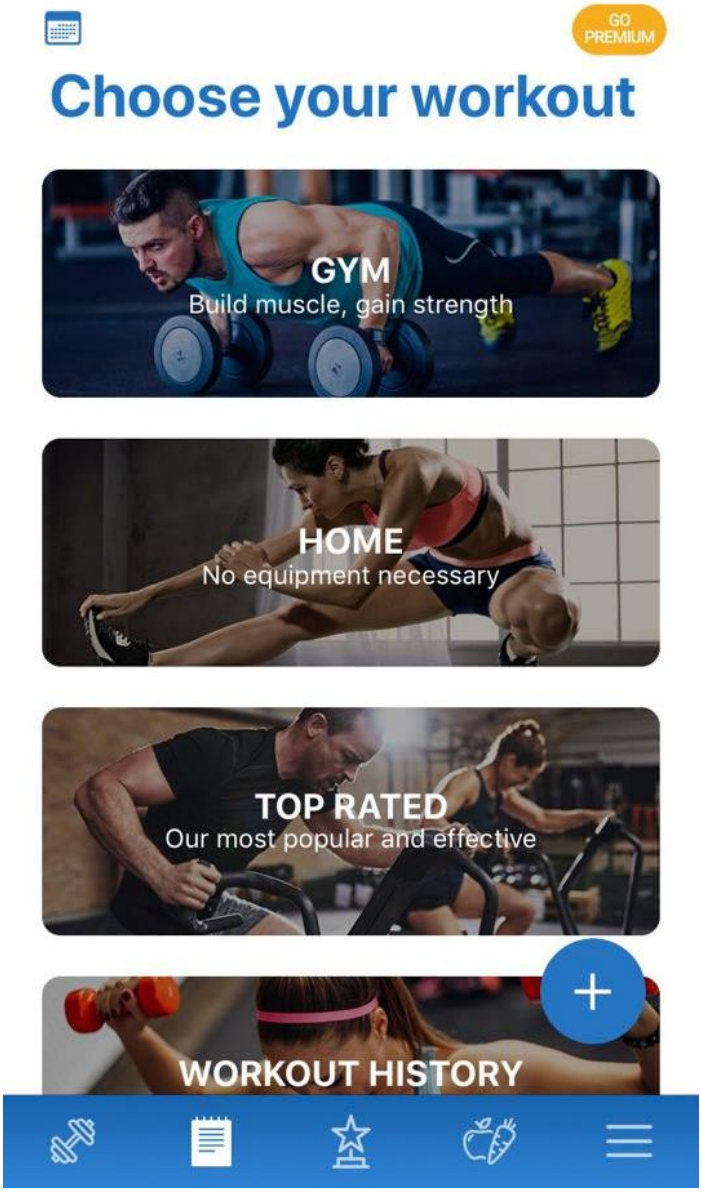

Figure 1 : Fitness Buddy Workout Page

Features:

- 100+ gym workouts for all fitness goals (big chest, shredded abs, butt toning, weight loss, etc.)
- 8 meal plans to choose from (Muscle Building, Clean Eating, Keto, etc.)
- 4000+ exercises, animations, Step-by-step photos, videos, and instructions for all equipment
- Tracking system such as Heart Rate tracking, Sleep tracking, Calorie Tracking, Cardio tracking, Bodyweight and body metrics tracker
- Comprehensive workout history

Drawbacks:

- Fonts are too small, cannot edit a workout if you have already made it.
- Not been updated since 2015
- App crashes continuously and becomes slow to use
- You cannot use without paying
- Too many ads.

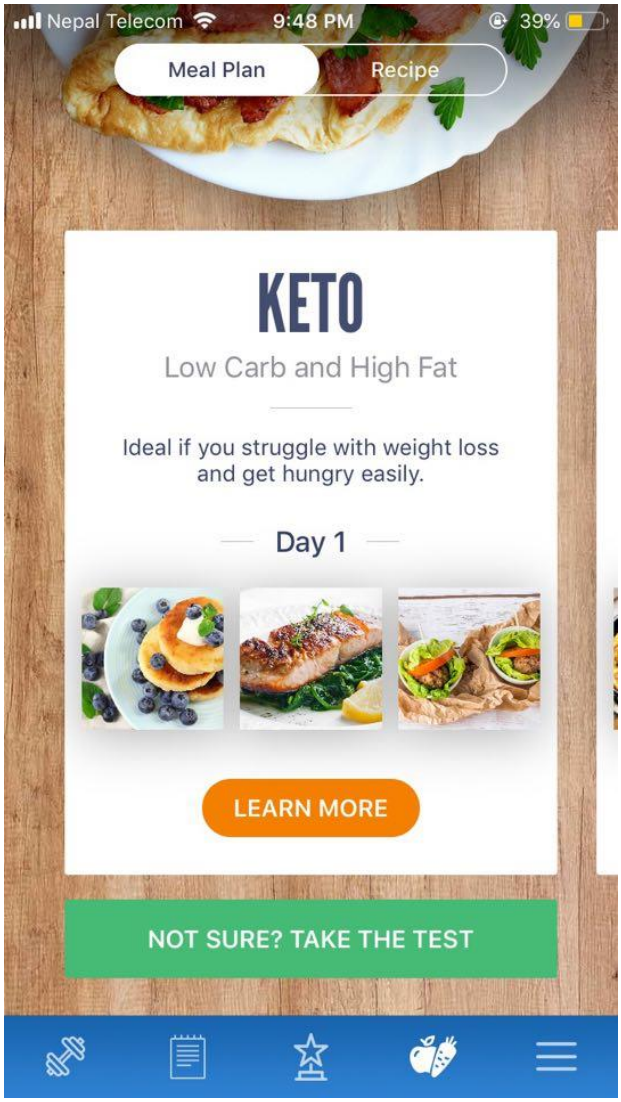

Figure 2 : Fitness Buddy Diet plan page

- JEFIT

JEFIT provides free fitness program database to help you stay fit, make progress and get the most out of your gym or home fitness sessions. From beginner programs like 5x5, 531, strong lifts, 3- or 4-day splits, starting strength to advanced bodybuilding, weightlifting, powerlifting or kettlebell routines to programs using bodyweight, limited space or specialized equipment.

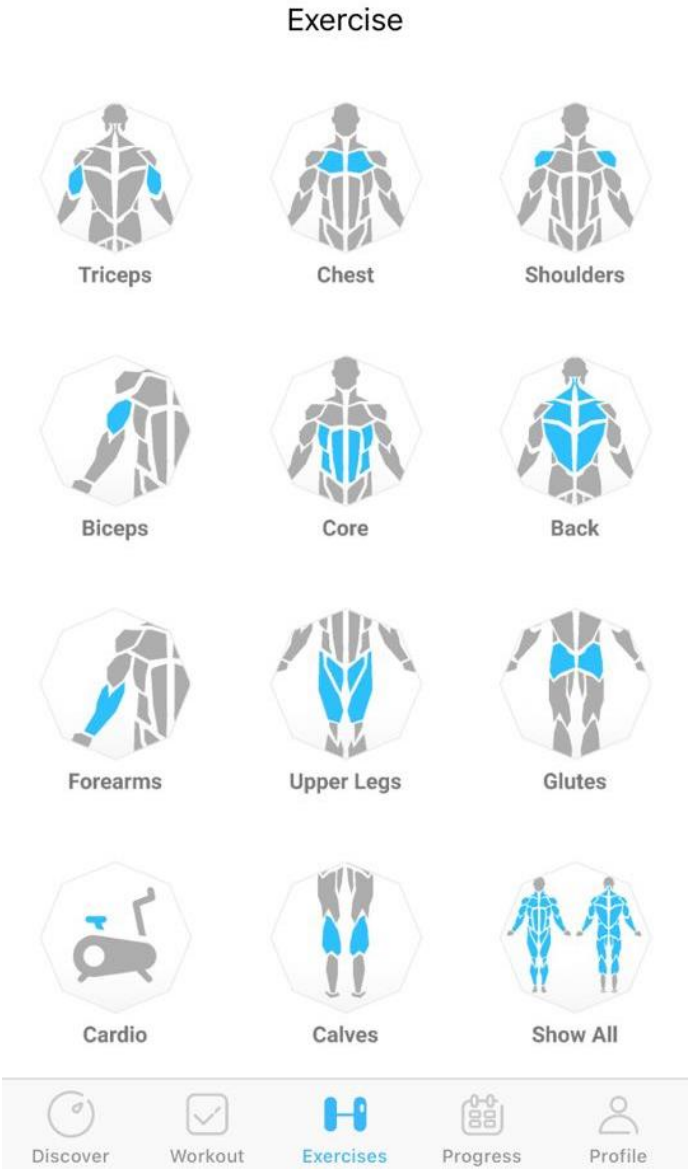

Figure 3: JEFIT Exercises page

If you've logged your workouts in a journal, planner or just love training at the gym on your own schedule, JEFIT will help you reach your strength, weight and fat loss, and training goals from beginners to advanced lifters. We've made the app to motivate you by rewarding you for consistency, pushing yourself to new personal records and committing to challenges with the community.

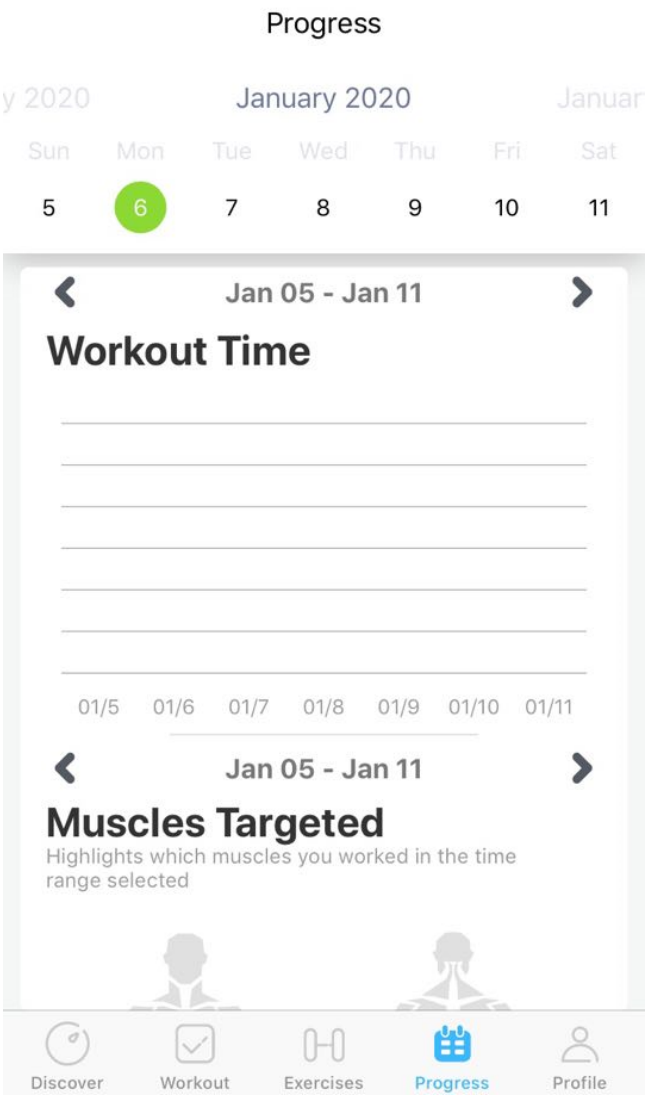

Figure 4 JEFIT Progress page

Features:

- Access from Desktop and Web
- Rest Timer - Set custom times to remind when to lift
- Supersets and circuit training routines supported
- Interval Timer, Set Notes and 1 Rep Max Calculator
- Body Measurements and Weekly Planner for Scheduling
- Social Feed and Community Contest
- Store Workouts in the Cloud and share with your personal trainer

Drawbacks:

- Custom workouts could not be created.
- Difficult to use and time consuming.
- App is slow on android devices.
- Even though it's a free workout app, you have to pay for most of the workout programs.
- Don't have the features of tracking steps, distance, time, speed, counting calories etc.
- Too many ads.

- **HomeWorkout**

Home Workouts provides daily workout routines for all your main muscle groups. In just a few minutes a day, you can build muscles and keep fitness at home without having to go to the gym. No equipment or coach needed, all exercises can be performed with just your body weight.

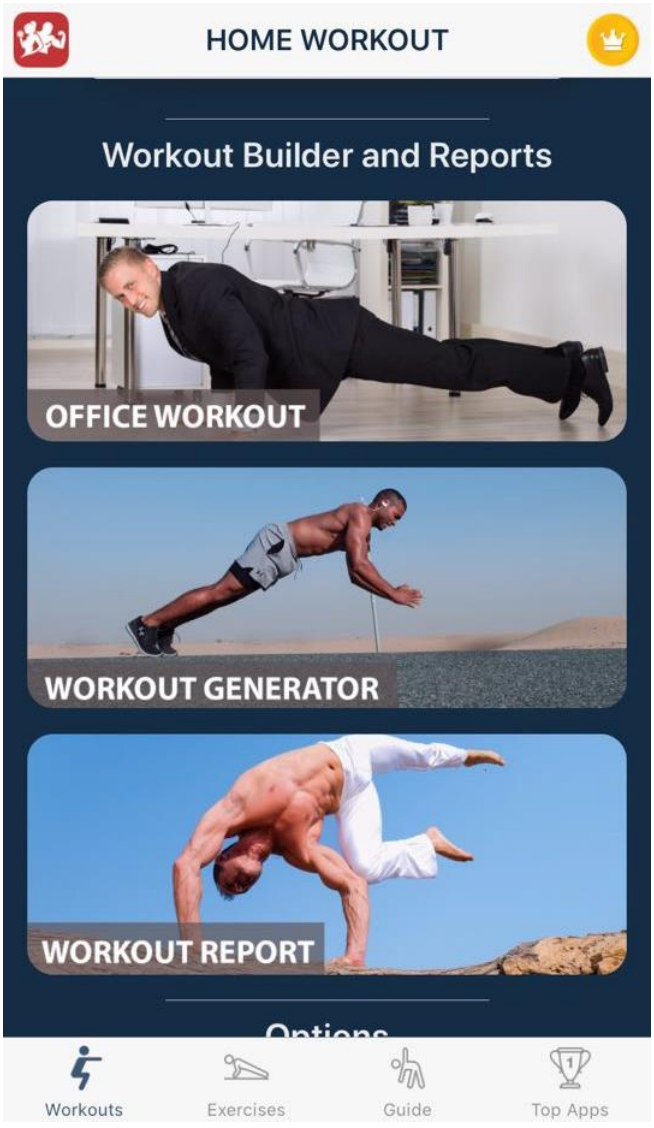

Figure 5: HomeWorkout Workouts page

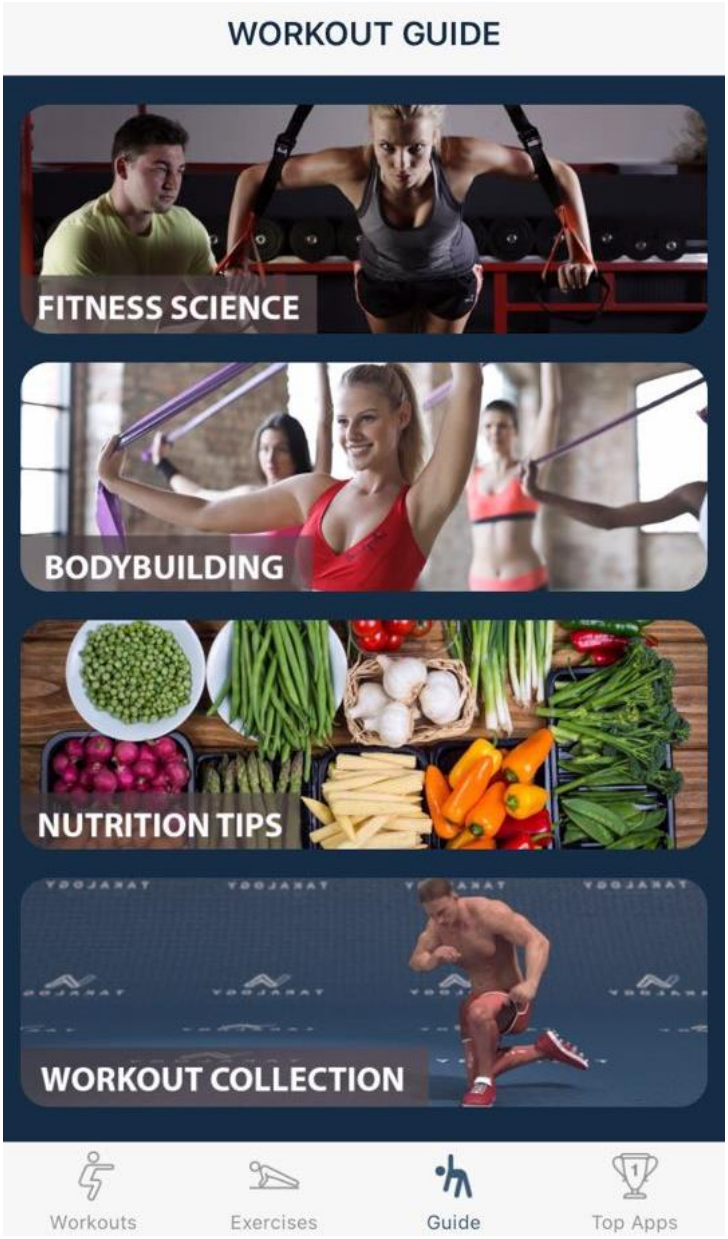

Figure 6 HomeWorkout Workout Guide page

The app has workouts for your abs, chest, legs, arms and butt as well as full body workouts. All the workouts are designed by experts. None of them need equipment, so there's no need to go to the gym. Even though it just takes a few minutes a day, it can effectively tone your muscles and help you get six pack abs at home.

The warm-up and stretching routines are designed to make sure you exercise in a scientific way. With animations and video guidance for each exercise, you can make sure you use the right form during each exercise.

Features:

- Warm-up and stretching routines
- Records training progress automatically
- The chart tracks your weight trends
- Customize your workout reminders
- Detailed video and animation guides
- Lose weight with a personal trainer
- Share with your friends on social media

Drawbacks:

- Lack of balance in workouts (for e.g. In the full body workout by day 10 there is still no sign of leg workout.
- Even though it's a free workout app, you have to pay for most of the workout programs.
- It does not take into consideration if someone has health issues or is handicapped.
- Don't have the features of tracking steps, distance, time, speed, counting calories etc.
- Too many ads.

2.2. Comparison of similar system with my system

	My System	**Fitness Buddy**	**JEFIT**	**HomeWorkout**
List of workout plan	Yes	Yes	Yes	Yes
Activity Tracker	Yes	Yes	No	No
Share with friends	Yes	Yes	Yes	No
Diet Plan	Yes	Yes	No	No
Personal Trainer	No	Yes	Yes	No

Table 1: Comparison of similar system with my system

2.3. Technical Aspects

- Hardware Required: Laptop, internet connection
- Software Required: Visual Studio Code, Database, Laravel
- For Frontend: HTML, CSS along with bootstrap will be used to code for front end of the application.
- For Database: The web server XAMPP will be used for managing databases. This software is configured for the Apache Web server with all the features available. XAMPP provides MySQL database, PHP and Perl. In this project I will be using MySQL because it is structured query language which is based on relational databases management system and supported by Oracle.(Apache friends, 2019)
- For Backend: Laravel Framework is used for backend

Chapter 3: Development

3.1. System Architecture

The following diagram shows the system architecture that this project will adopt. The software design pattern comprises of three main components: Model, View and Controller.

Model: Model mainly helps handle the database. It's a data access layer known as logical data structure which handles the data. It is the middleware and data handler between the database and the view.

View: The view layer is used to execute the business logic and interact with the model to carry data and render template.

Controller: A Controller, which represents the classes connecting the model and the view, and is used to communicate between classes in the model and view. (Rouse, 2020) (Tech Terms, 2018)

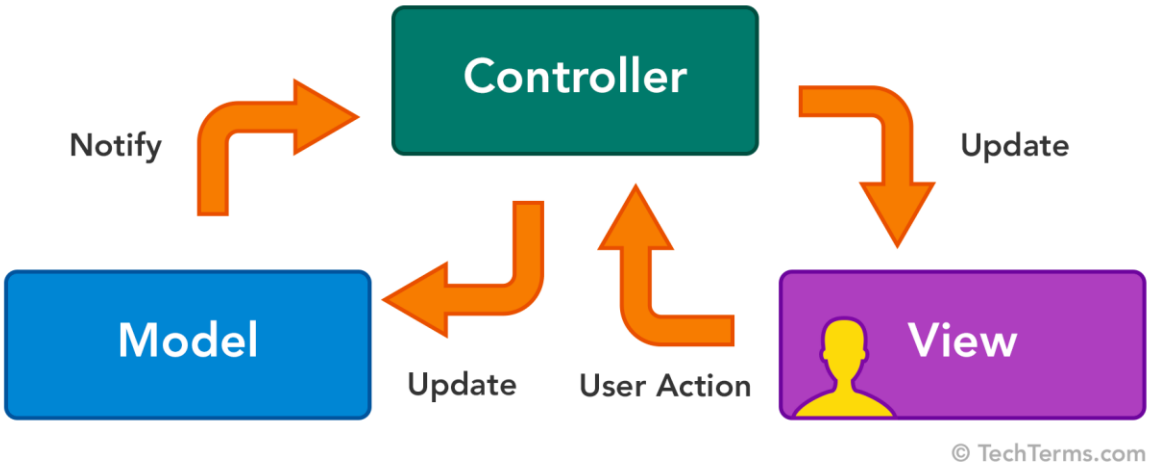

Figure 7 System Architecture(MVC) (TechTerms, 2018)

3.2. Methodology Selection

3.2.1. Waterfall Model

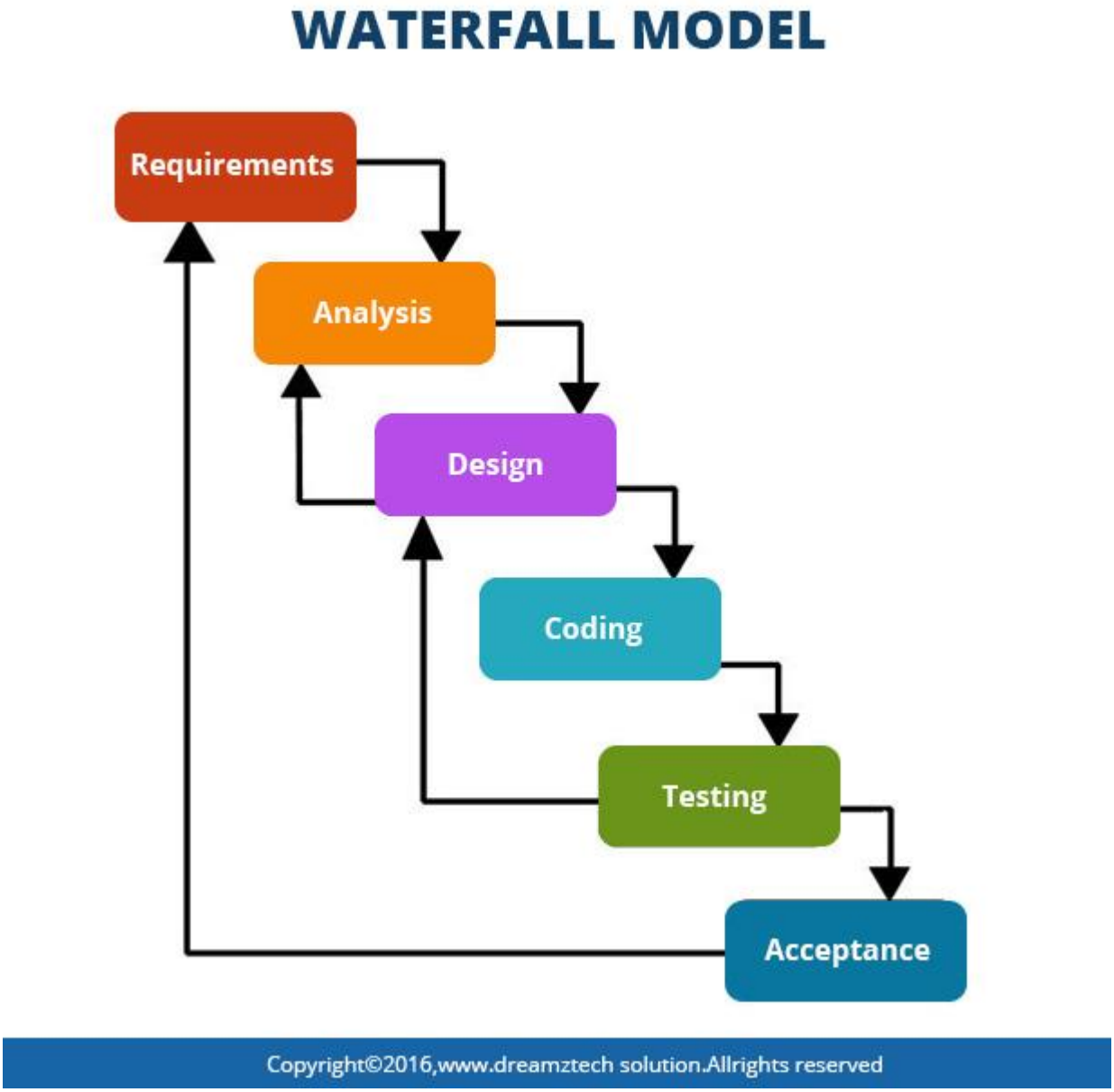

Figure 8: Waterfall Methodology (Preedy, 2016)

It is a traditional method of software development process where each process is clarified into a linear flow which basically means that any phase in this development process begins only of the earlier phase is completed. There is no such definition on going back to previous phase to handle changes in requirements in this development approach.

This methodology was considered due to following reason:

- Easy to understand as after each stage is finished the next starts
- Each phase is planned in detail and requires elaborated documentation
- Very effective for small projects where requirements are unchangeable and well understood
- Significant amount of time is saved as each phase are processed and completed at once in a time

Reason for not using this methodology

There is no such definition on going back to previous phase to handle changes in requirements in this development approach. My project has a client and there is no guarantee of a fixed requirement. There are initial requirements gathered by conducting meetings, interviews and surveys. There can arise a condition where client would want to add or remove some features so if I had opted to develop project following this methodology then it would arise many problems.

As my client would demand some progress during the development phase and if I had followed this methodology then there would be nothing to show because the working software is created only at the end in this methodology.

3.2.2. Prototype Methodology

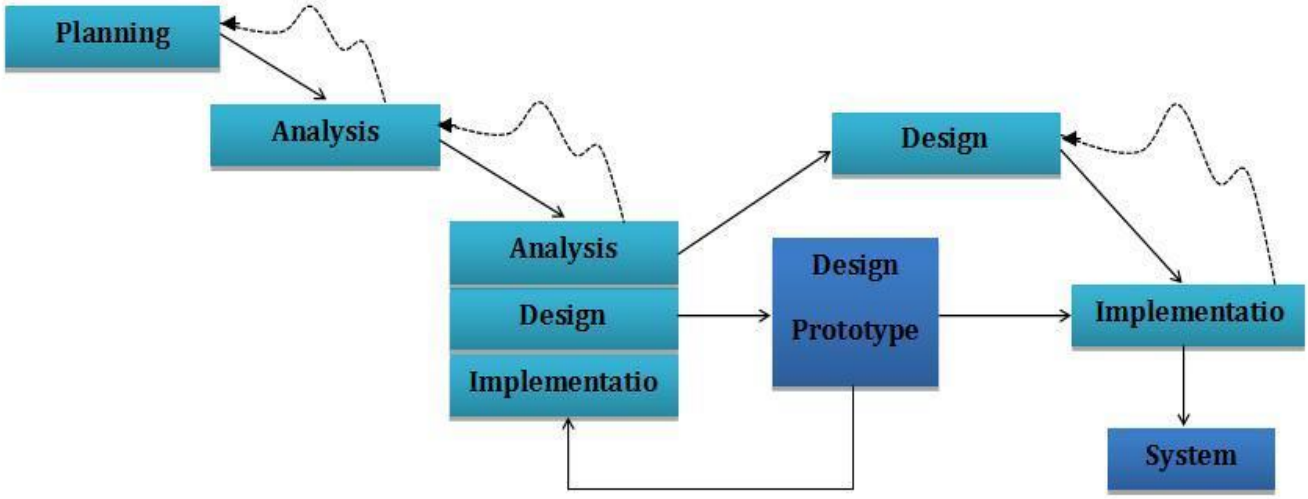

Figure 9 Prototype Model (Rodrigo, 2012)

This software development process initiates developers to make only the sample of the resolution to validate the customer's functional essence and make essential changes before the authentic final solution is created. This methodology was considered to be used as the methodology for following reasons:

- When a prototype is shown to the clients, they get a clear understanding of the functionality of the software and a complete sense of it.
- This methodology gives clear idea about the software's functional process.
- This method reduces the risk of failure significantly, because potential risks can be identified early on and moderation steps can be taken quickly.

Reason for not using this methodology

This methodology requires significantly more involvement of client and which may affect the flow of development process of my project. The requirement given by client can be changed and may result in many modifications, which ultimately disturbs the workflow of entire project.

3.2.3. Feature Driven Methodology

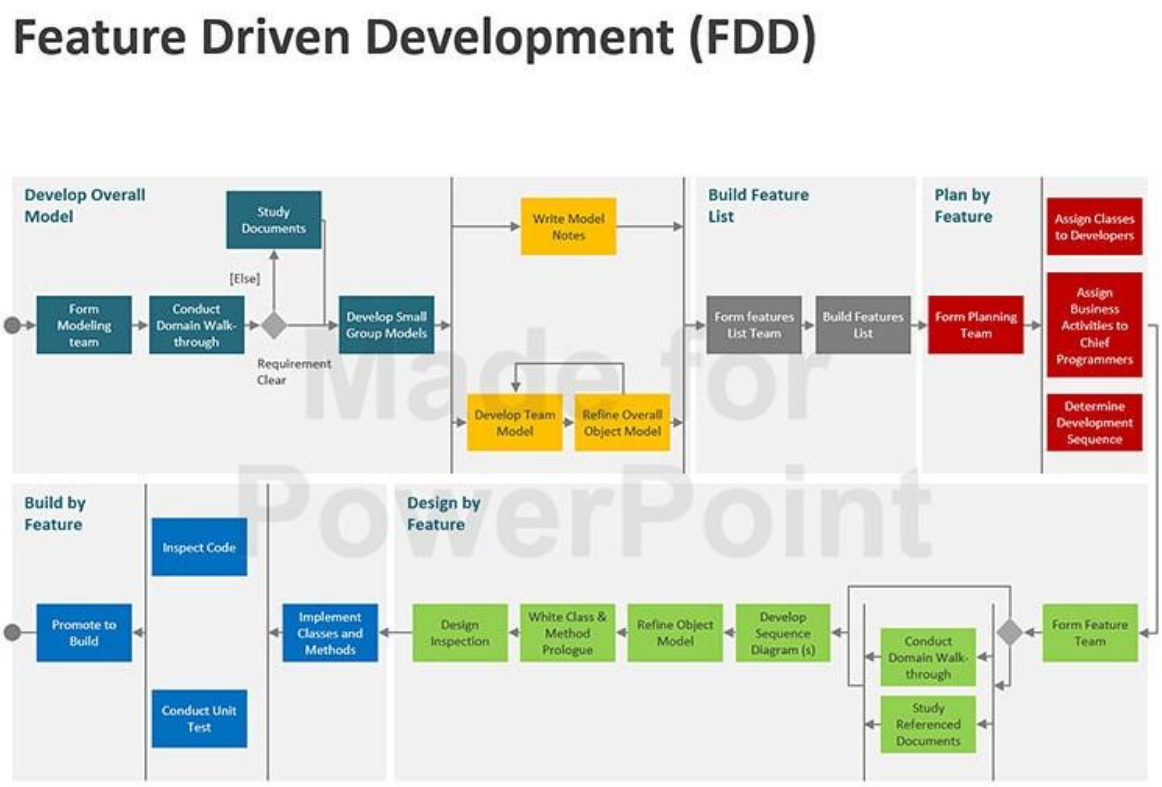

Figure 10: Feature Driven Methodology

This iterative software development methodology is mostly used for big projects and serves a large number of teams working on project based on object-oriented technology.

This methodology was considered to be used as the methodology for following reasons:

- This methodology consists of simple five processes to bring the work done in a short time and easiest manner
- Very beneficial for projects that requires continuous updates.
- The output results always outshine the inputs in this methodology.

Reason for not using this methodology

This current project is not a huge industrial grade project and do not consist of huge number of members so this project is no suitable to be built under feature driven methodology. Another reason is that in this methodology the documentation is weak and is not enough to get a proof of software.

3.2.4. Agile Scrum Methodology

The Agile software development methodology is iterative and incremental in which the processes need to be personalized to suit the specific project requirements of the customer. In Agile methodology, there is an incremental delivery of the tasks. This process always allows the companies to adapt smoothly to the changing requirements. This methodology was considered to be used as the methodology for the following reasons:

- Scrum is a lightweight, simple-to-implement way to manage the software development projects within small team-based setting.
- For every sprint, testing is done for deployment issues.
- The Agile framework for managing the process yields a high quality of software, customized to the needs of the product owner.

Reason for choosing this methodology

Considering above reasons and nature of my project Scrum stands out to be the best choice for my project.

Scrum Terminologies

- Burn down Chart

The Burn-down Chart is a graphical representation to show the work remaining per day against the projected time. The Burn-down Chart acts as a visual measurement tool for tracking the progression of a particular sprint towards the completion of the committed work. The backlog is depicted along the vertical axis on the horizontal axis and the time is taken. The Burn Down chart is very useful for estimating the time of completion.

- Epics

Epics are the big pieces of work (customer requests, features or business requirements) which can be broken down into less small specific tasks, or user stories. Epics are typically implemented through numerous iterations. They are a great way to organize the work and to make a hierarchy.

- Product Backlog

It is a collection of work which can be done on a product that may add value in to it. During the planning the user stories are picked up from the product backlog, dissected, discussed, and then refined.

- Product Owner

The project's key stakeholder symbolizes the customer end as the stakeholder has the final say in it. The product owner also prioritizes the product backlog throughout the sprint planning meeting, engages with all stakeholders and looks at the minute details.

- Sprint Backlog

Stories of the users are taken from the product backlog, based on the priority. The Scrum team then holds the discussions to find out the feasibility and then decides on the stories to work on a specific sprint. The Sprint Backlog is the collective list of every the product backlog items that the Scrum team works on a specific sprint.

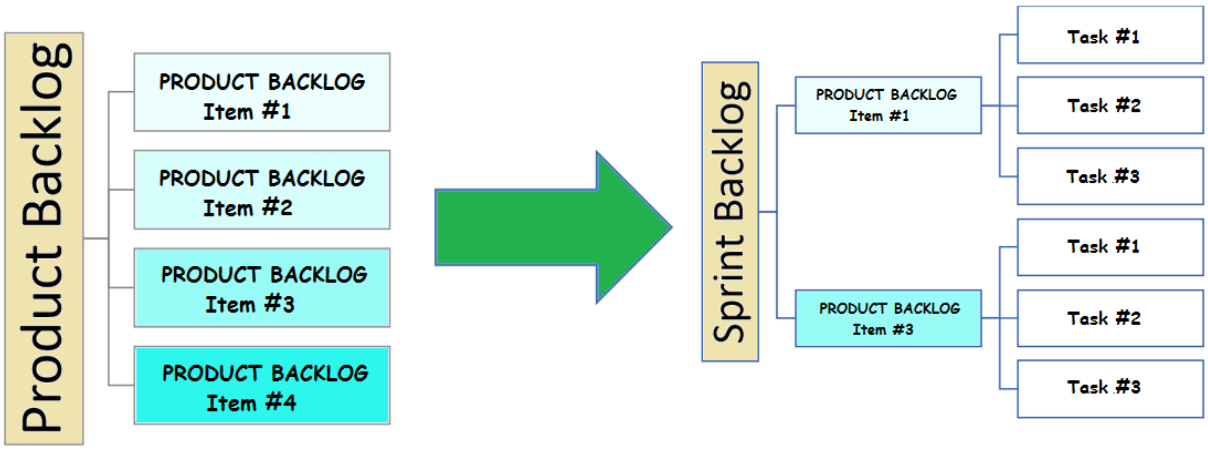

Figure 11: Sprint Backlog (Simplilearn, 2019)

- Scrum Master

Scrum Master is the implementer of the Scrum team.

Figure 12 Scrum Master (Simplilearn, 2019)

- Scrum Team

This is the development team of normally 3 to 9 team members.

- Sprint

Sprint is a pre-fixed time frame in which the project is to be completed for production deployment or review. The sprint cycle is normally 1 to 4 weeks.

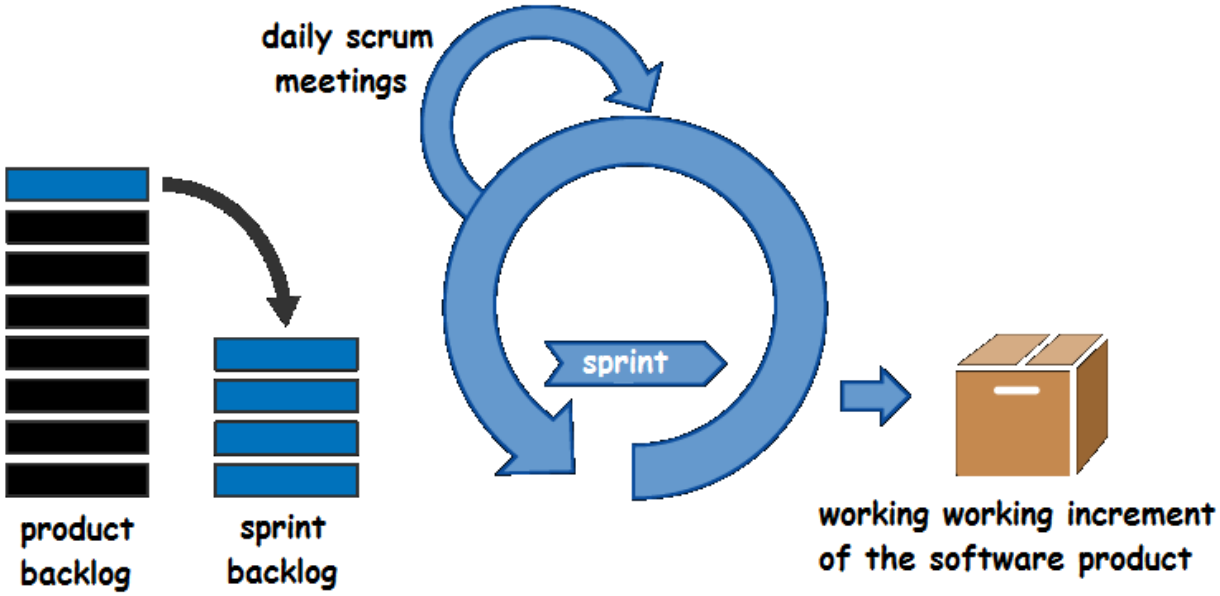

Figure 13: Sprint (Simlilearn, 2019)

- Story Points

A quantitative indication of the size of a user story is called Story points. In here we determine the efforts and estimation for a story based on the story point. The story point is not fixed. Smaller and precise user stories help the creation of the reliable estimates of story points.

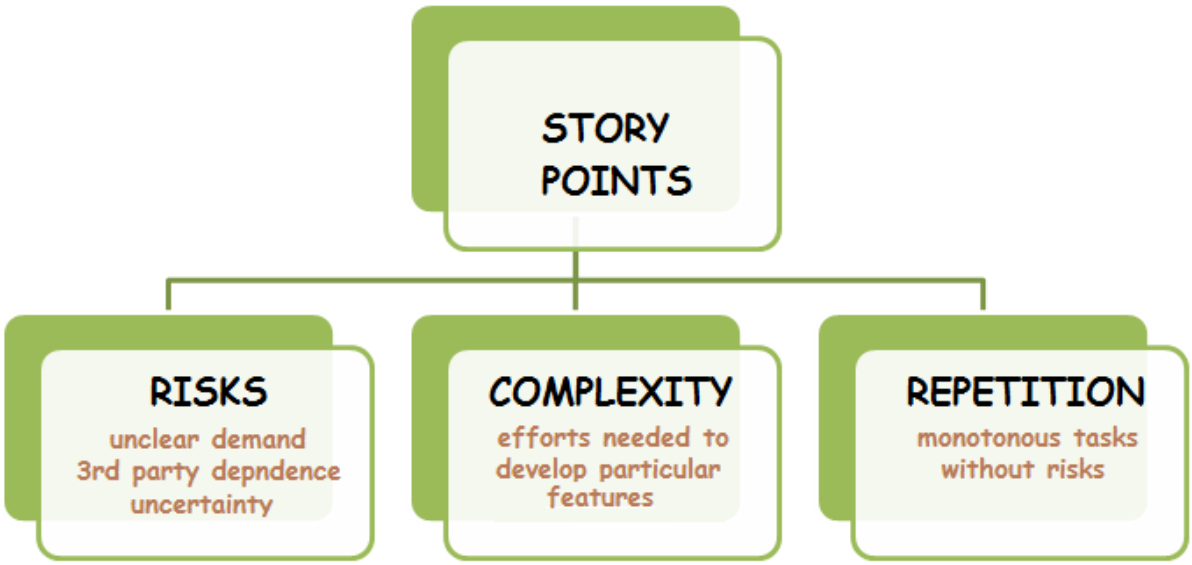

Figure 14 Story Points (Simplilearn, 2019)

- User Story

User stories are the requirements that are expressed from a user perspective, and then they are defined in a single paragraph.

- Velocity

The total amount of the work completed that a Scrum team collects in a sprint, is called velocity. Velocity helps in judging/referencing the Scrum team.

The Advantages and Disadvantages of Agile and Scrum Methodologies

Let us take a look at the advantages and the limitations of Agile and Scrum methodologies.

Advantages:

The reasons why Agile is being adopted by the organizations are listed below:

- High flexibility and adaptability
- Faster implementation of changes
- Incremental updates of the software
- Faster time-to-market
- More rapid development and delivery of high-value features within short cycles
- Evolution of product design as per customer requirements
- Higher product owner/customer satisfaction
- Promotes innovation and creativity
- Higher productivity of teams
- Lower project costs due to focus on high-value features
- High visibility of daily progress, supports management strategies and decision making

Disadvantages:

- The absence of detailed documentation may lead to communication gaps.
- If there is any change in customer vision, integration becomes cumbersome, making it difficult to estimate the time and quality of the end product
- In-team conflicts and competition is routine, requiring extra vigilance and management
- Add-on training may be required in some cases
- Complete organizational transformation is necessary
- Difficult to assess the time and resources required
- Users are required to test almost on a daily basis
- Results may differ from that expected in terms of product features, delivery, quality, implementation, etc.
- Inconsistency in project integration

3.3. USE CASE

A UML Use Case diagram is a primarily a graphical depiction of a system or a software requirement throughout its underdevelopment. The use case specifies specific behaviour and the interation among the elements of the system. Use case is also used for the system analysis to identify, clarify and organize system requirements.

The main goal of use case is to visually represent a design of the system from end user's perspective.

The use case diagram consisits of four components which are listed below:

- Boundary: Boundary defines the system of interest in relation to the world around it.
- Actors: The actors are the individuals which are involved with the system.
- Use Cases: The use cases are the exact roles playesd by actors within the system.
- Communication link: It shows the relationship between an actor and use case.

3.3.1. Usecase Diagram:

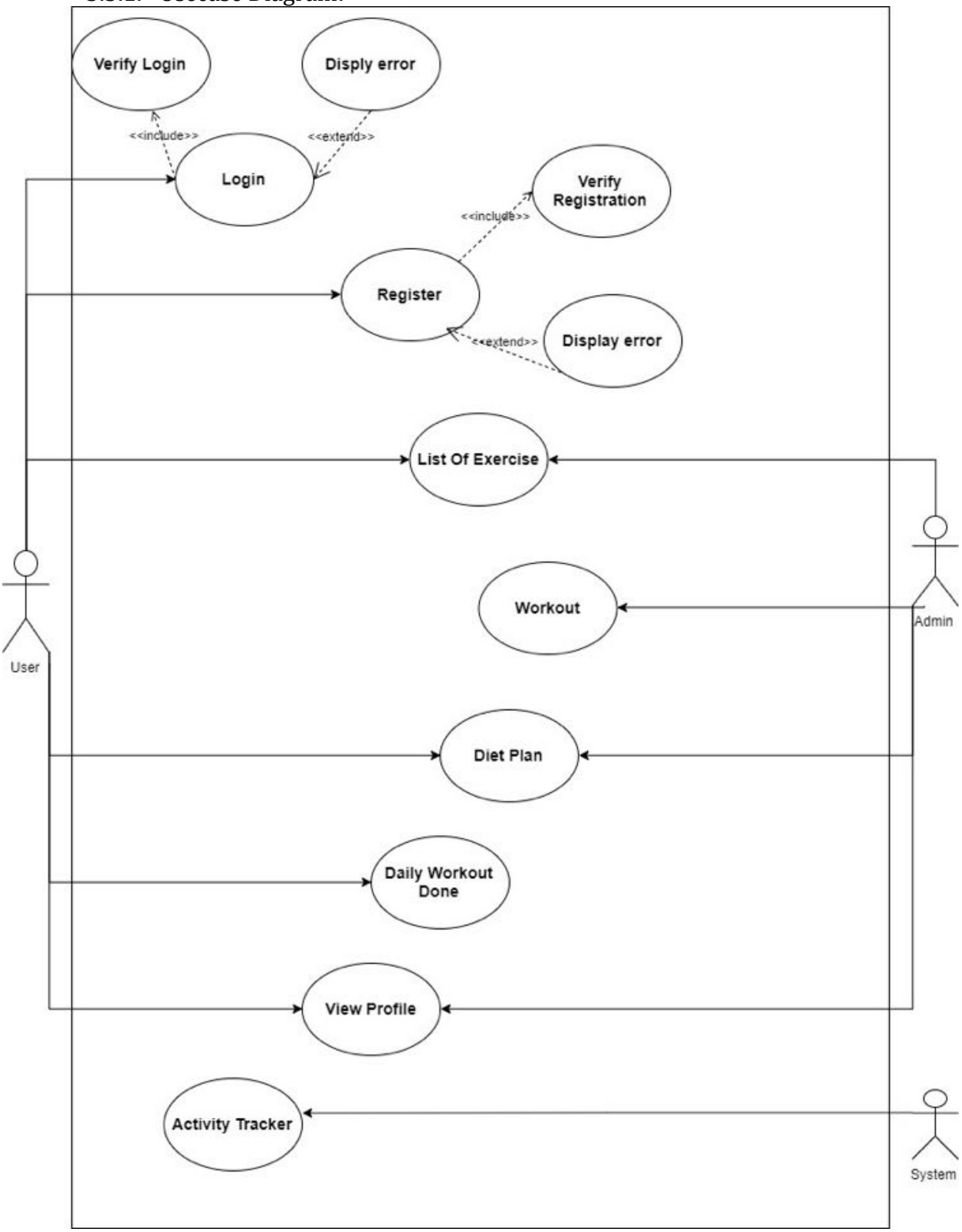

Figure 15: Use case Diagram

3.3.2. Extended use case diagram

- Login

Fitness User	System
1. Enter user details.	
	2. Verify username and password.
	3. Registration.
	4. Redirect to front page.

Table 2: Login

- Register

Fitness User	System
1. Enter user details.	
	2. Verify username and password.
	3. Login successful.
	4. Redirect to front page.

Table 3: Register

- Exercises

Fitness User	System
1. Select exercise list.	
	2. Get all exercises from database.
	3. Send exercise list to user interface

Table 4: Exercises

- Workout

Fitness User	System
1. Select workout plan.	
	2. Get all workout plan from database.
	3. Send workout plan to user interface

Table 5: Workout

- Diet Plan

Fitness User	System
1. Select diet plan.	
	2. Get all diet plan from database.
	3. Send diet plan to user interface

Table 6: Diet plan

- Profile

Fitness User	**System**
1. Select profile.	
	2. Get all data of profile from database.
	3. Send detail to user interface

Table 7 Profile

- Activity Tracker

Fitness User	**System**
1. Start activity.	
	2. Track sensor data.
3. Stop activity	
	4. Save data from sensors to database.

Table 8: Activity Tracker

3.4. Wireframe

A wireframe is a black and white line drawing that's used in early-stage web design to provide stakeholders with a visual representation of a web page's layout and information architecture. Wireframes can be thought of as problem-solving tools; they help design team members prioritize the placement of content on a page and identify user experience (UX) problems early on. The framework, which was inspired by the use of wire mannequins in the fashion world, serves as a skeleton for the page's design. (Rouse, 2020)

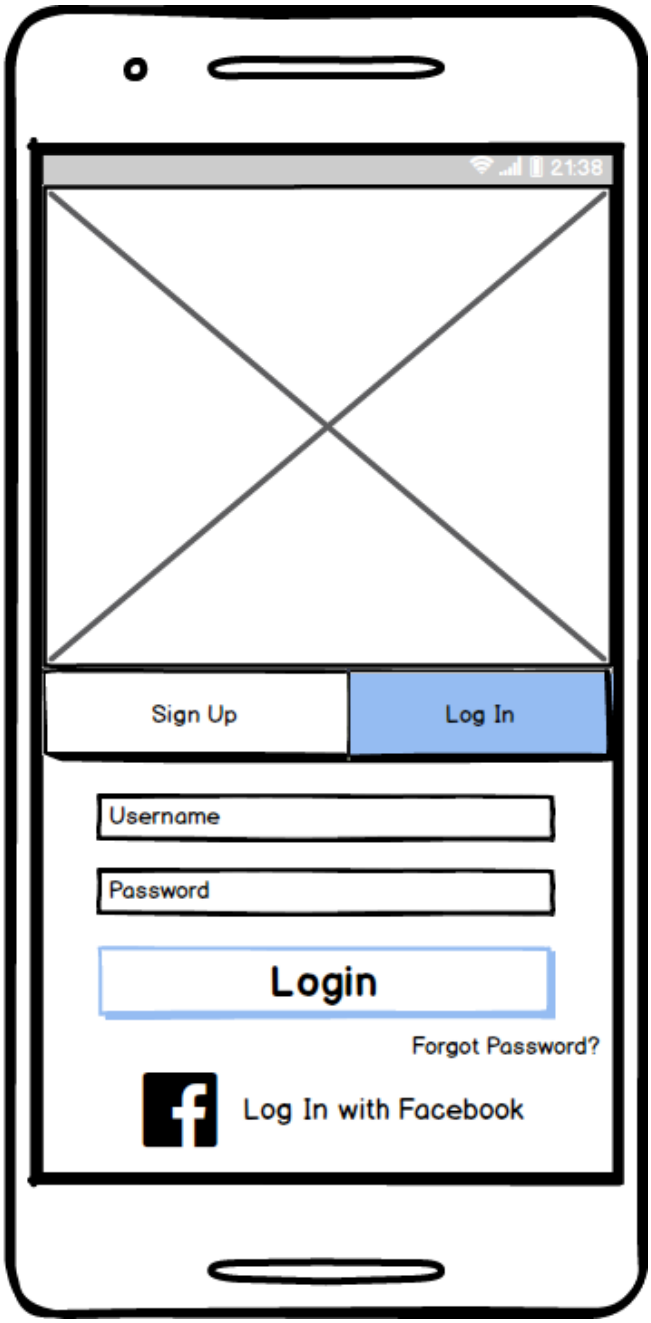

Figure 16 Login

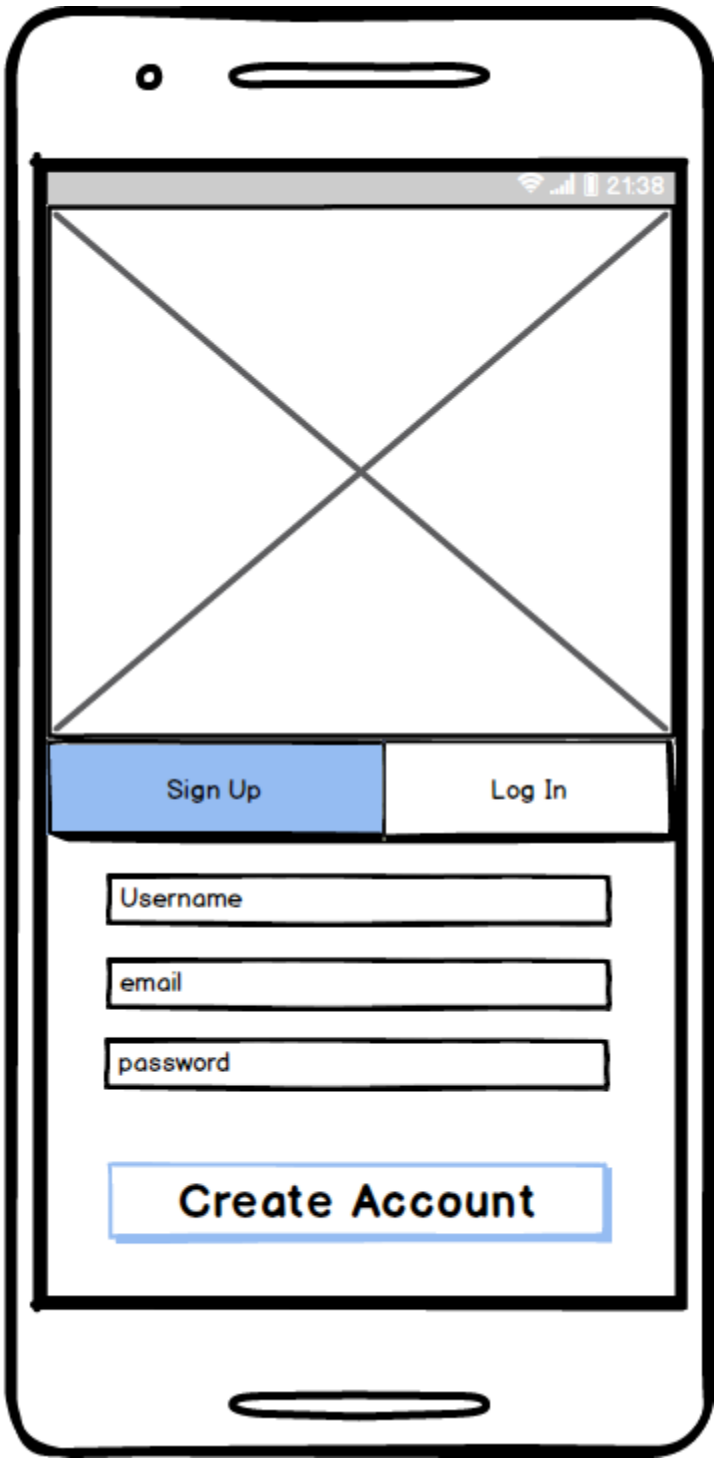

Figure 17 Register

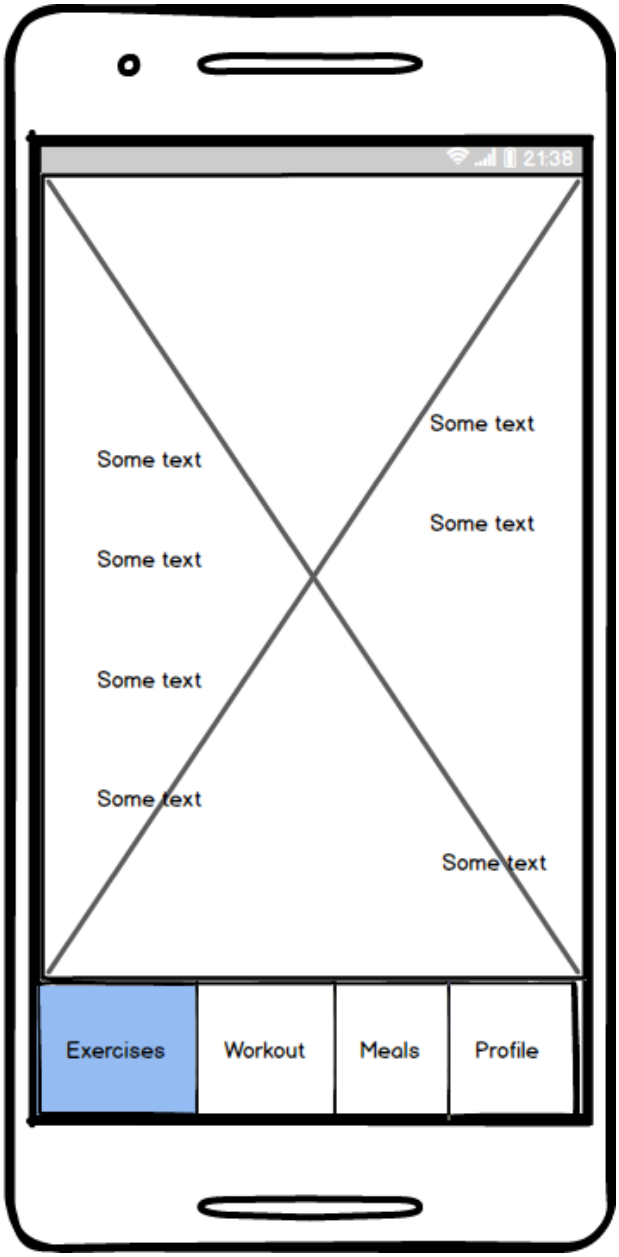

Figure 18: Exercises page

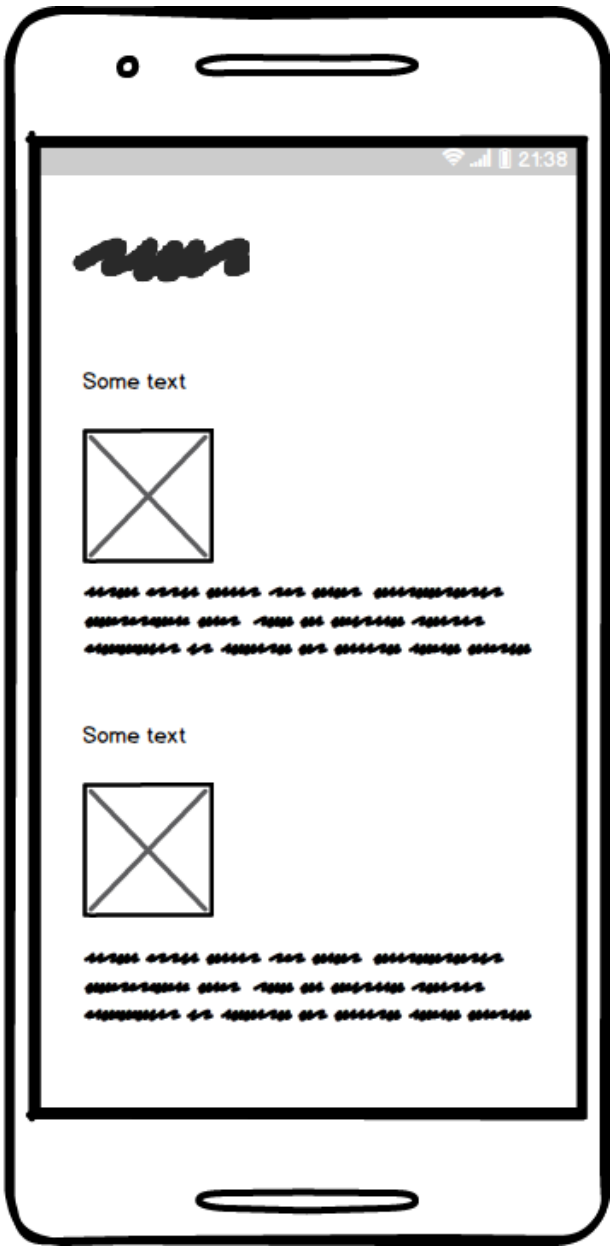

Figure 19: List of exercises

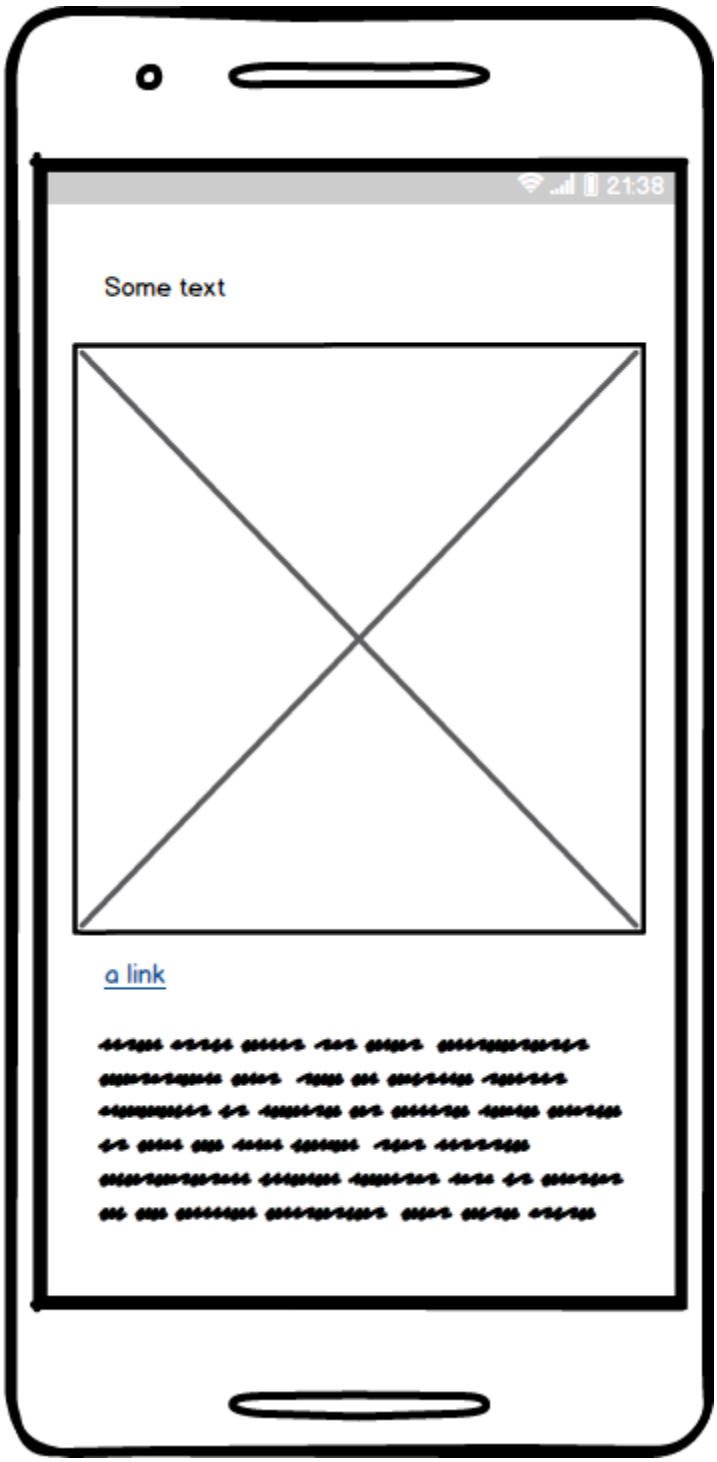

Figure 20: Description of exercise

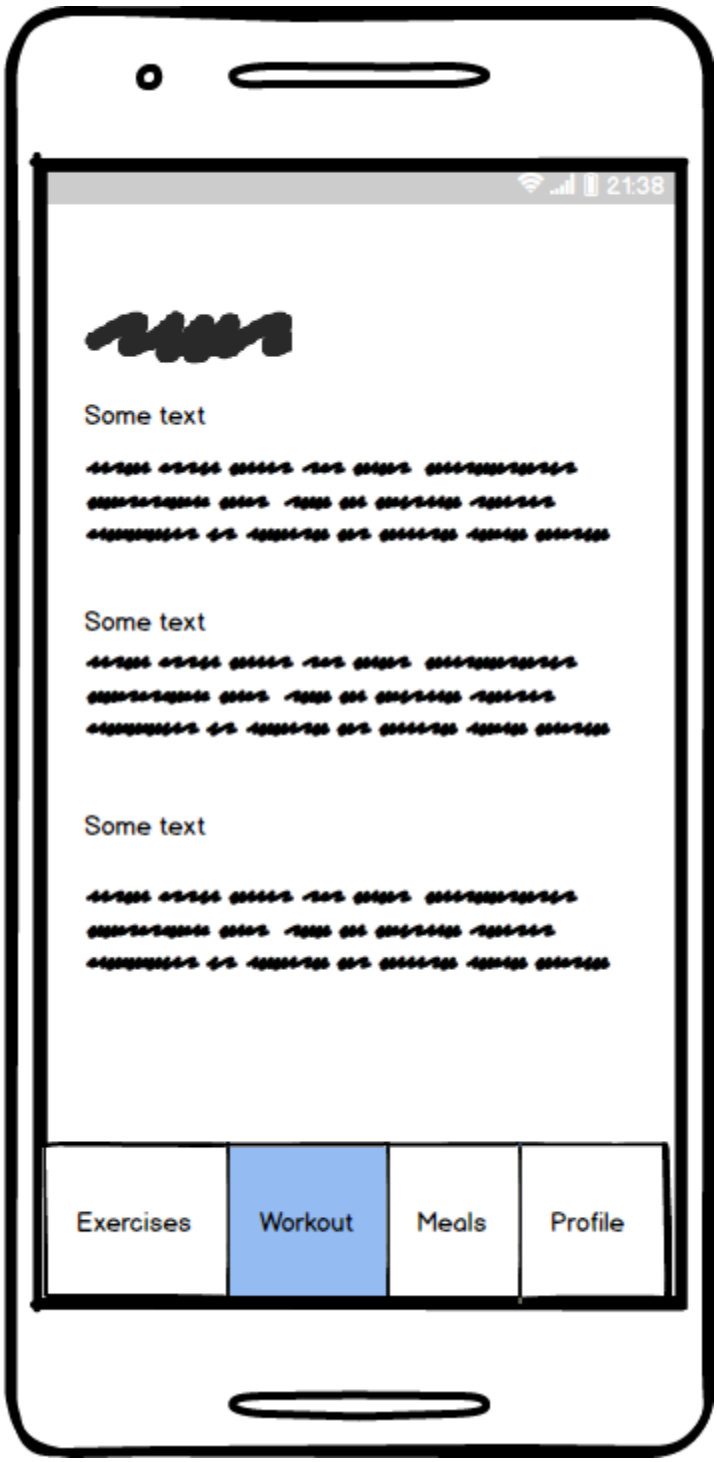

Figure 21: Workout page

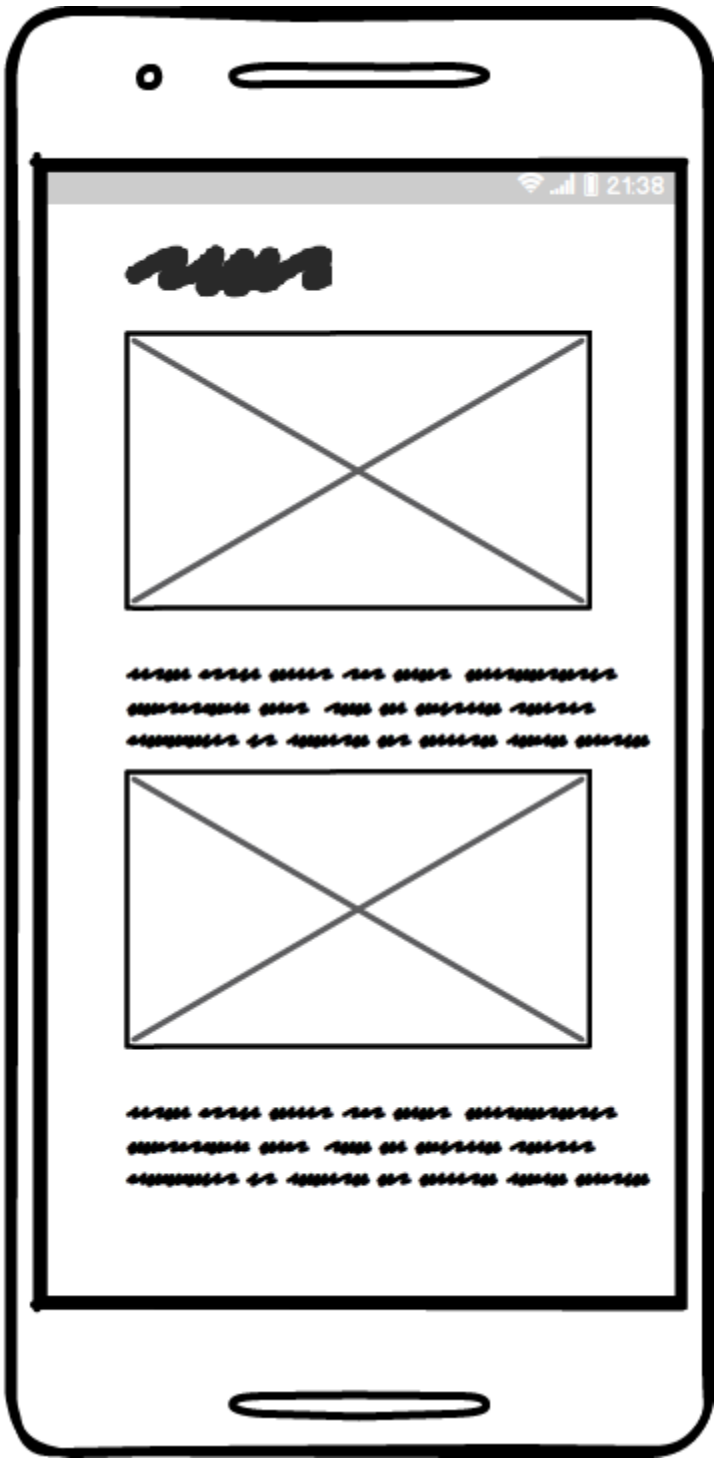

Figure 22: List of Workout

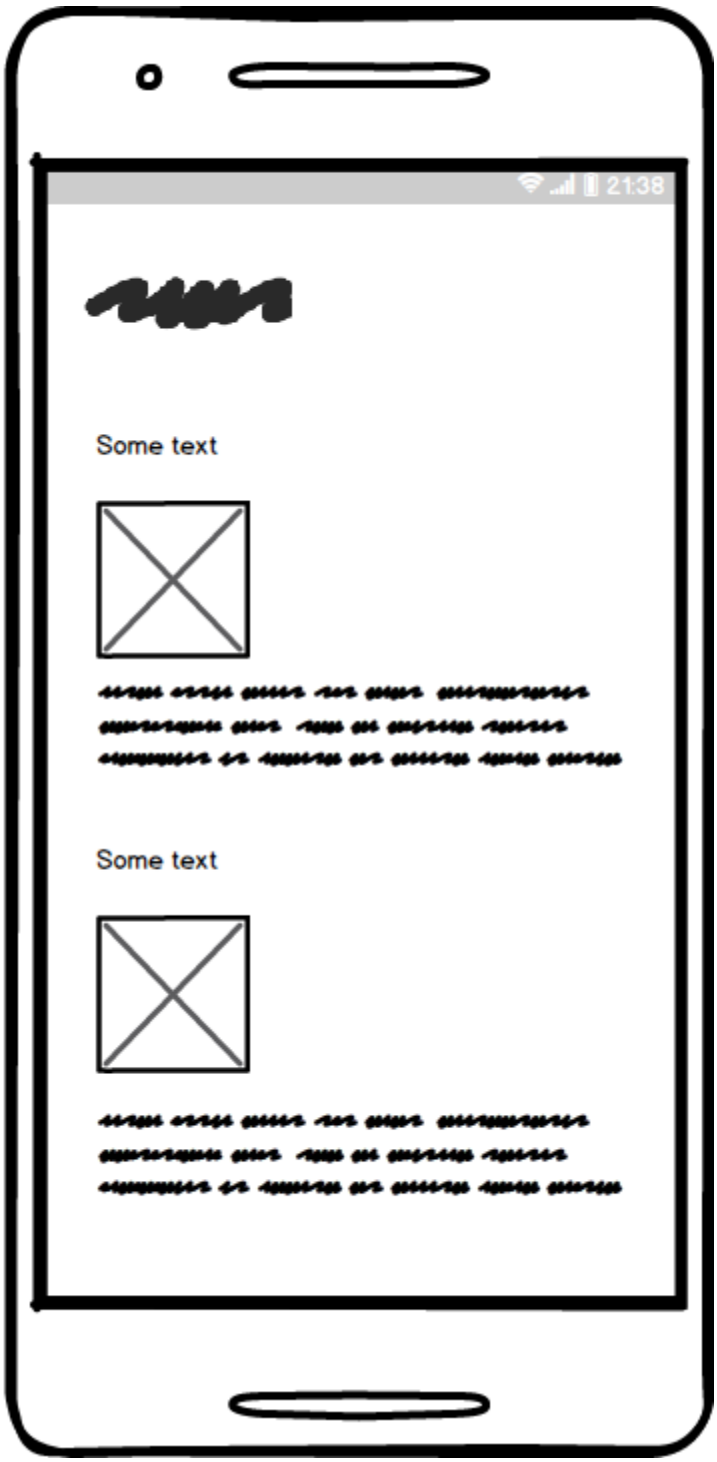

Figure 23: List of exercises in individual workout plam

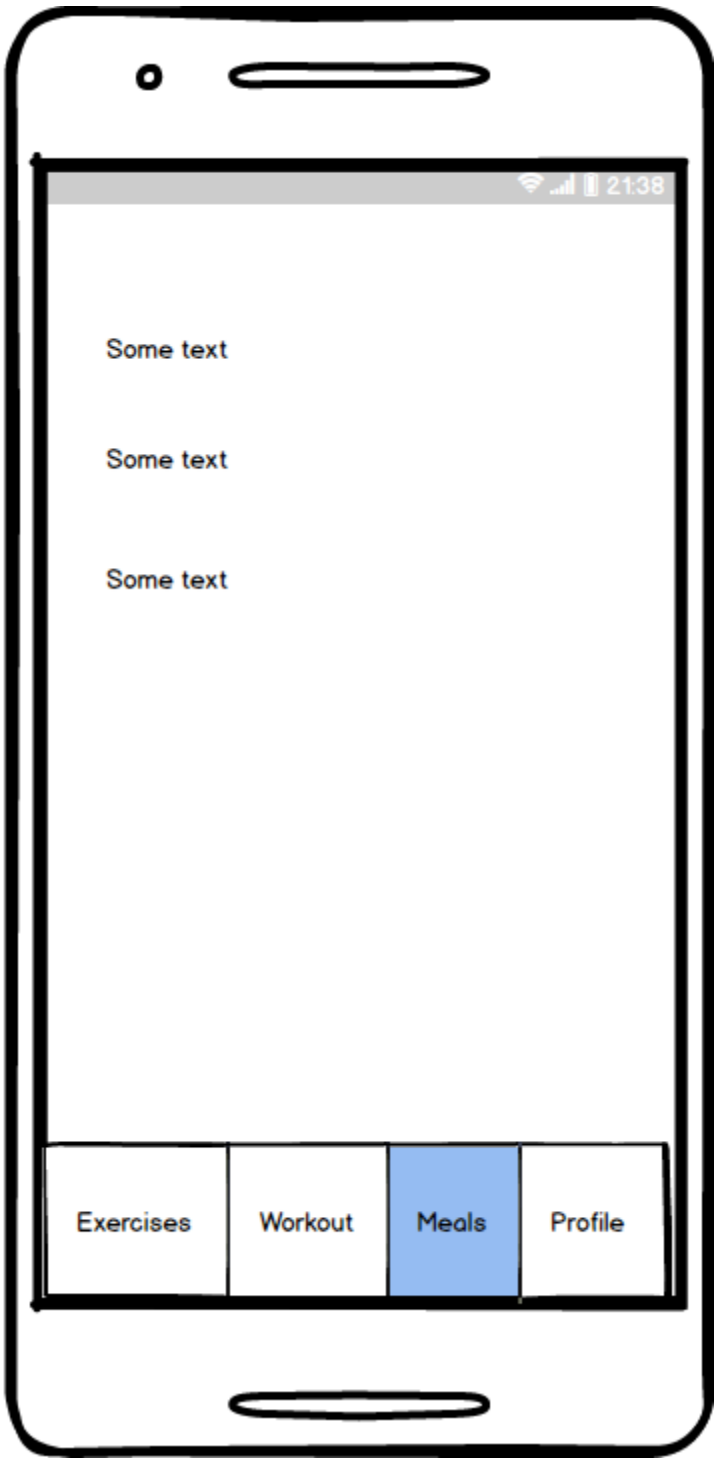

Figure 24: List of diet plans

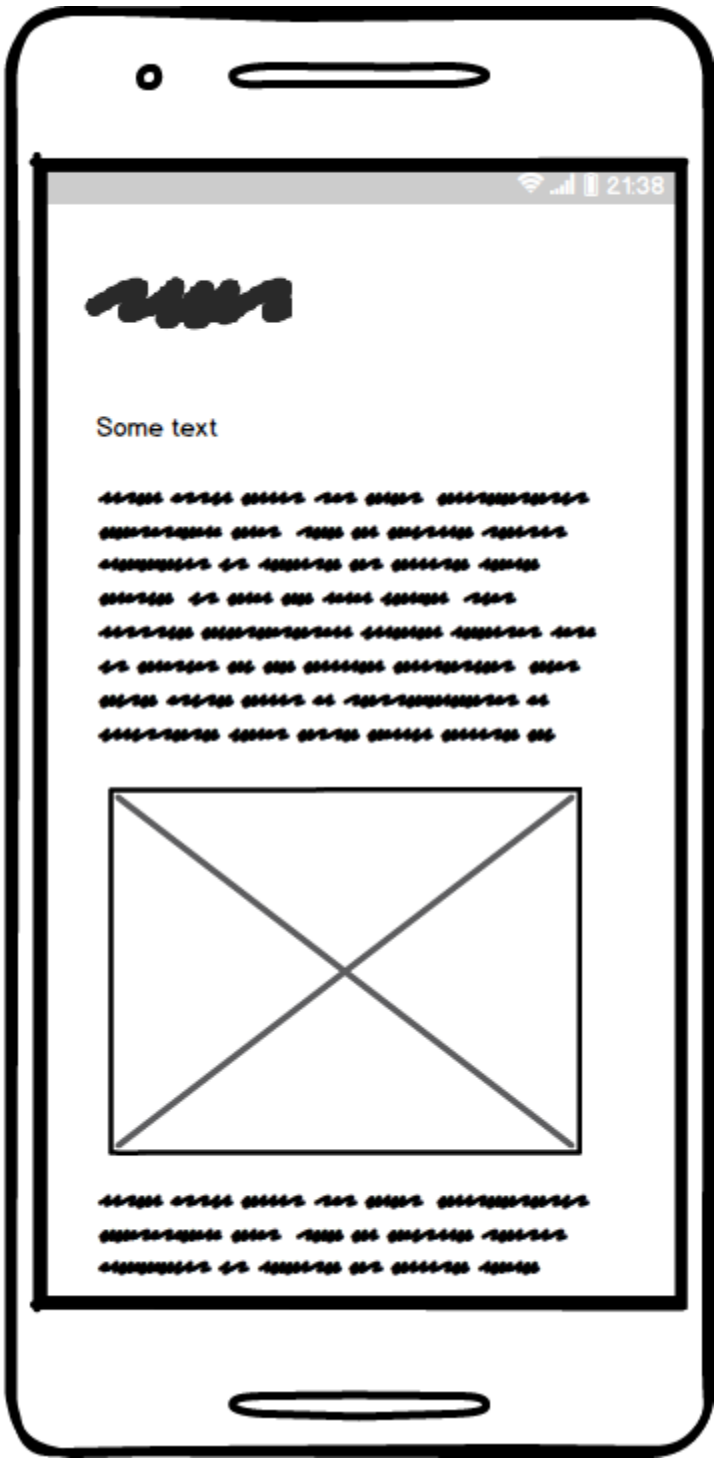

Figure 25: Description of dietplan

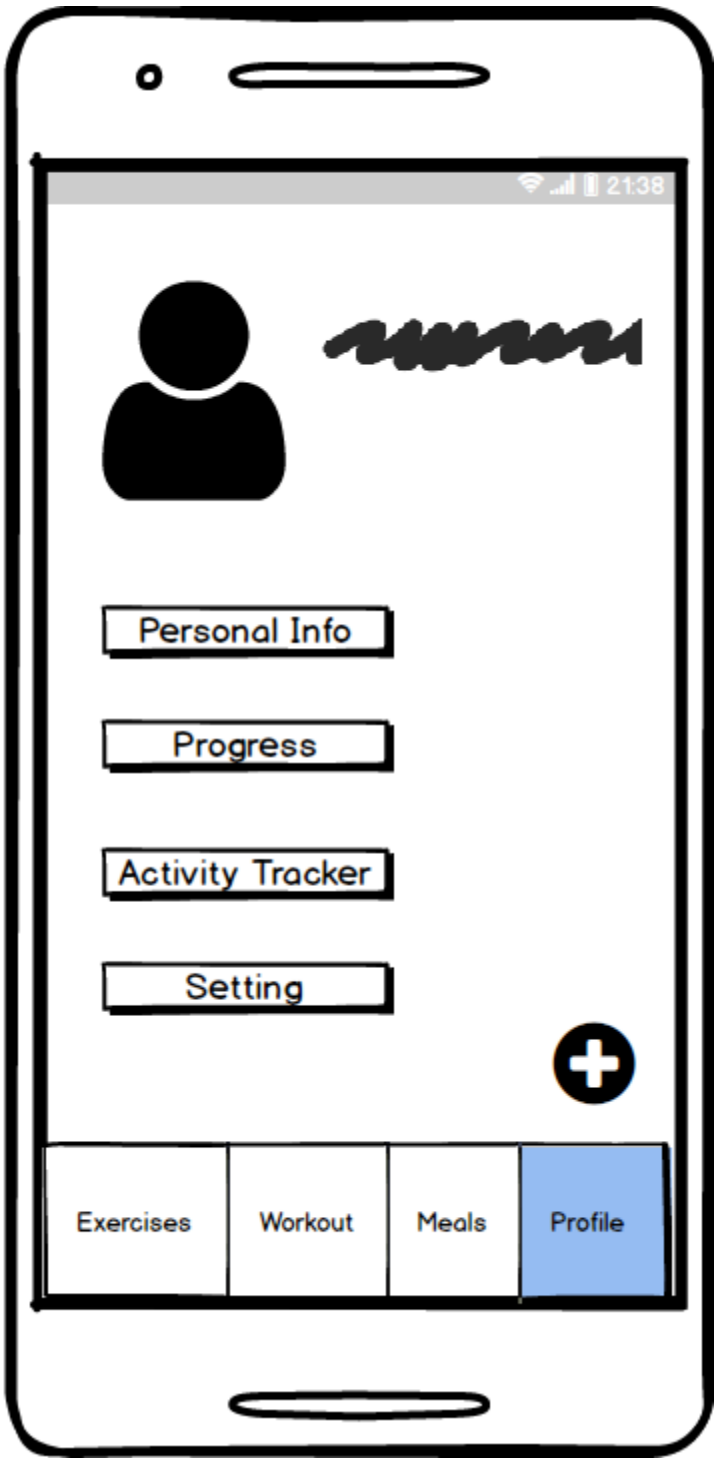

Figure 26: Profile page

3.5. Normalization

1. UNF

1. In Unnormalized form, the table name is defined, and all the attributes of the table are listed.
2. Unique identifier is recognized for the table.
3. The repeating groups are listed within {}.

Exercise-(exercise_id, exercise_name, exercise_part, exercise_descp,{work_id, work_type, work_name, body_type, diet_id, diet_name, diet_calorie, distance, time, speed, calorie}, user_id, user_name)

2. 1NF

1. To convert an unnormalized form to first normal form all the repeating groups are separated.
2. The unique identifier is carried forward to new relation from original relation. This maintains relation between original and new relation.

Exercise-(exercise_id, exercise_name, exercise_part, exercise_desc)

Workout- (exercise_id*, workout_id, workout_name, body_type, diet_id, diet_name, diet_calorie, distance, time, speed, calorie, user_id, user_name)

3. 2NF

1. Partial dependencies are removed from the relation. All non-key attributes are fully functionally dependent on primary key and not on only part of primary key.
2. The relation is already in 2NF if the entity has only one attribute key.

Exercise-(exercise_id, exercise_name, exercise_part, exercise_desc)

Workout-(workout_id, workout_type, workout_name, exercise_id*, track_id, distance, time, speed, calorie)

User-(user_id, user_name)

Diet-(diet_id, diet_name, diet_calorie)

4. **3NF**
    1. All the transitive dependencies in the table are uprooted. The table is said to have transitive dependencies if any non-key attribute depends on another non-key attribute. Suppose A -> B and B-> C, then A-> B-> C has transitive dependencies (where A, B and C are the attributes).

Workout_id -> track_id-> distance, time, speed, calorie

Exercise- (exercise_id, exercise_name, exercise_part, exercise_desc)

Workout-(workout_id, workout_type, workout_name, exercise_id*)

Track-(track_id, distance, time, speed, calorie, workout_id*, user_id*)

User-(user_id, user_name)

Diet-(diet_id, diet_name, diet_calorie)

3.6.ERD

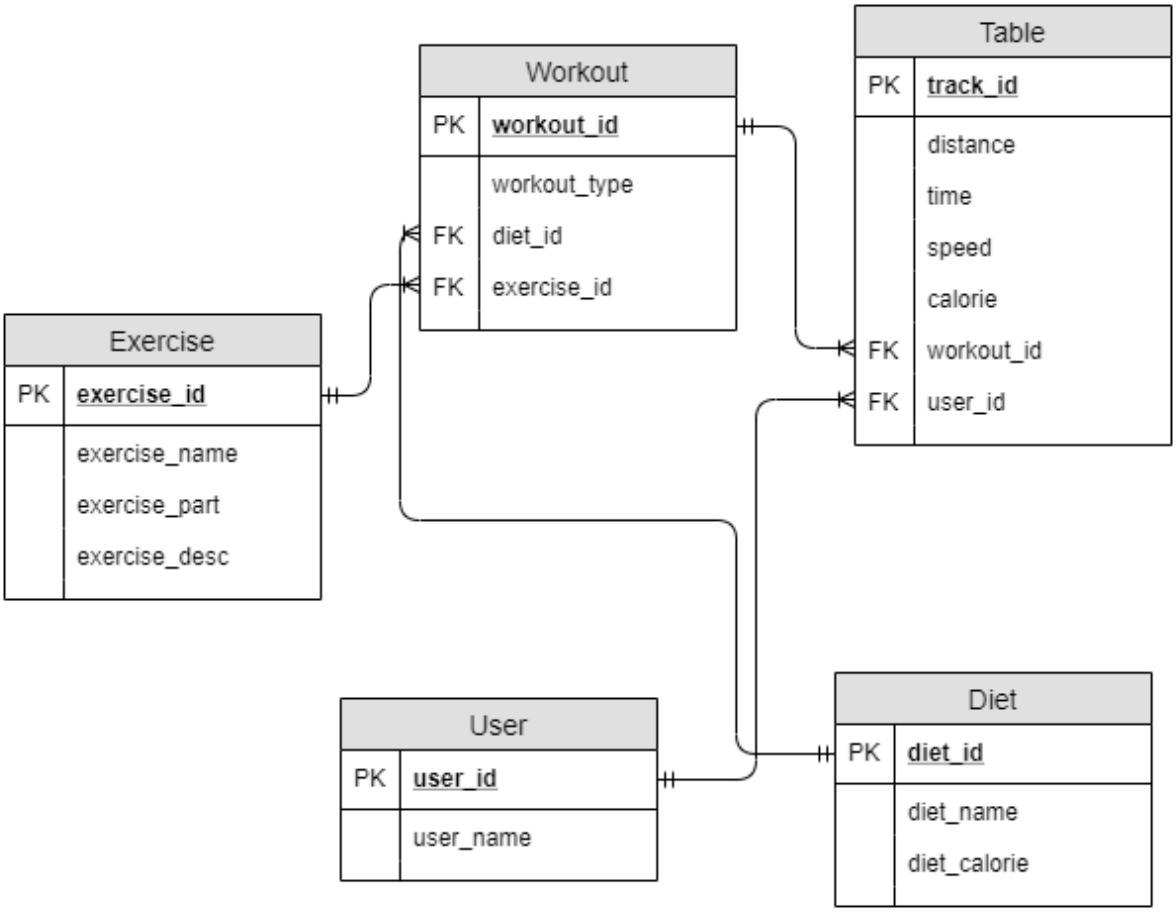

Figure 27: ERD

Chapter 4: Analysis of Progress

4.1 Works completed (Reference Appendix-A).

Requirement Gathering:

The stage of gathering requirements and analysis has been successfully completed. The requirement is properly discussed and planned through the steady meeting with the respected teachers and supervisors.

Wireframes:

With the help of the software 'Balsamic', I have developed an initial wireframe for my project. These wireframes would help me to finalize my design and help to visualize the different pages of the mobile app.

UML Diagrams:

With the completion of requirement gathering, I started working on creating UML diagrams. It includes Use Case Diagram, ERD. Normalization was done in order to achieve ERD which would help proper development database design of the project effectively.

Additional work:

Along with the tasks, I am spending time getting familiar with Flutter and Laravel and I am still in the process of learning. Therefore, in future I would be focusing more on understanding and learning Flutter and Laravel, the development process can move forward.

Review of Progress:

S.N.	Task	Status
1.	Discussion of Topic and approval.	Completed
2.	Study on Similar system.	Completed
3.	Research on project features and requirement collection.	Completed
4.	Wireframe and UML Diagrams (Use Case, ERD).	Completed
5.	Accomplishment of Interim Report	Completed
6.	Development	Still in progress

Table 9: Review of Progress.

4.2. Justification to lagging pace in development

According to the proposed plan, the project is not moving on time. Since, the process of development of an entire android application is totally a new experience for me, I have been very overpowered by the knowledge gain. It was definitely a difficult task to collect the requirements and then analyze them along with the researches and the discussion with related people. The learning time of Flutter and Dart as well as Laravel took longer than expected, the development of the project could not move forward as planned. After getting familiar with Flutter and Laravel, the development process can move forward with few changes to the plan.

According to the Gantt chart provided below in the appendix, the development process of the project should have been started. However, I have been facing many problems regarding starting of the project.

So, to bring the project on time, the length of testing phase is decreased to 30. In the extra 10 days, the project is to be brought on time. Then the project can then be finished accordingly. (Reference Appendix-A).

Chapter 5: Further Work

The main tasks that I have to perform are:

- Server creation and web design for the application.
- Build APIs for mobile database integration applications.
- Mobile application and network authentication.
- Build interactive mobile user interface.
- Complete all the functionality of the project
- Render the program interactive and fully functional.

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Appendix

Appendix 1:

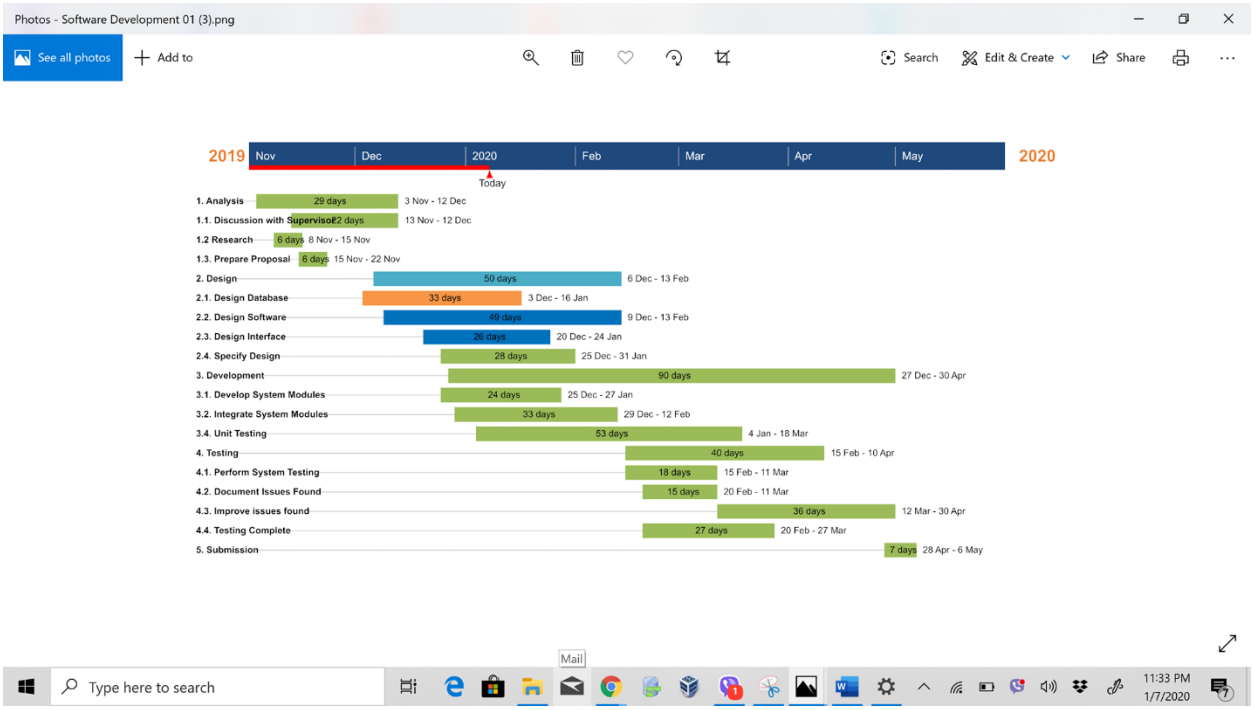

Figure 28: Gannt Chart

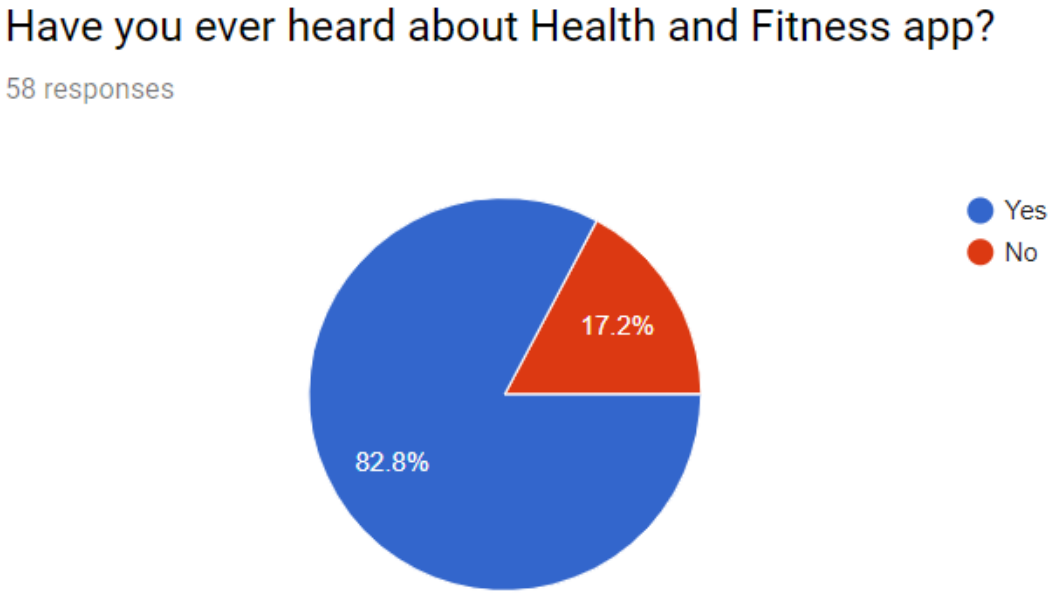

Figure 29 Survey Response

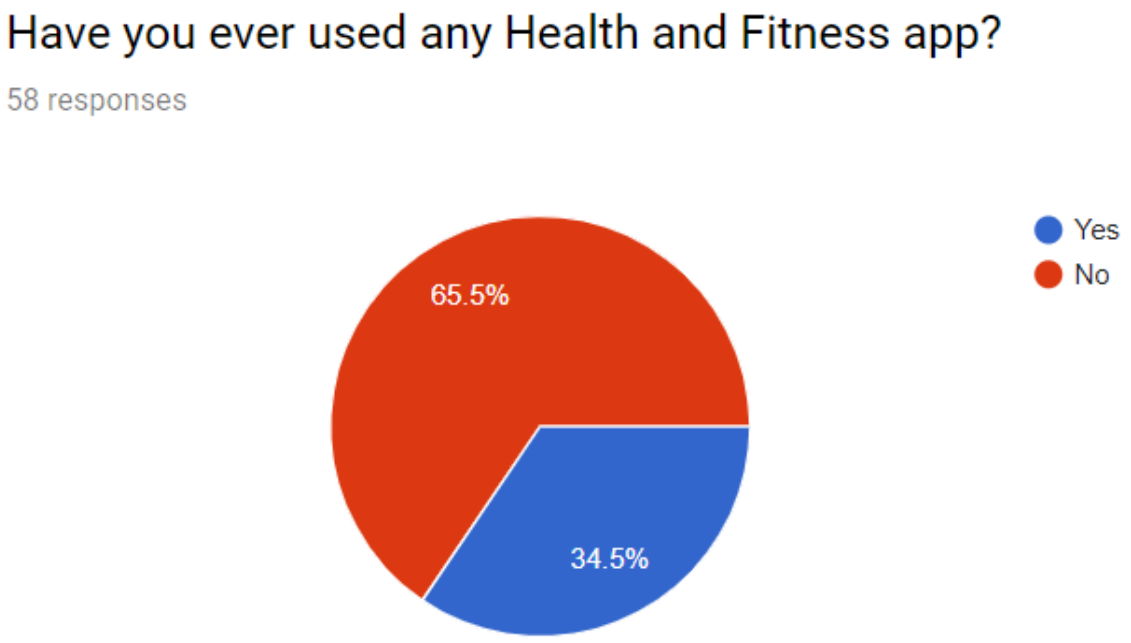

Figure 30 Survey response 1

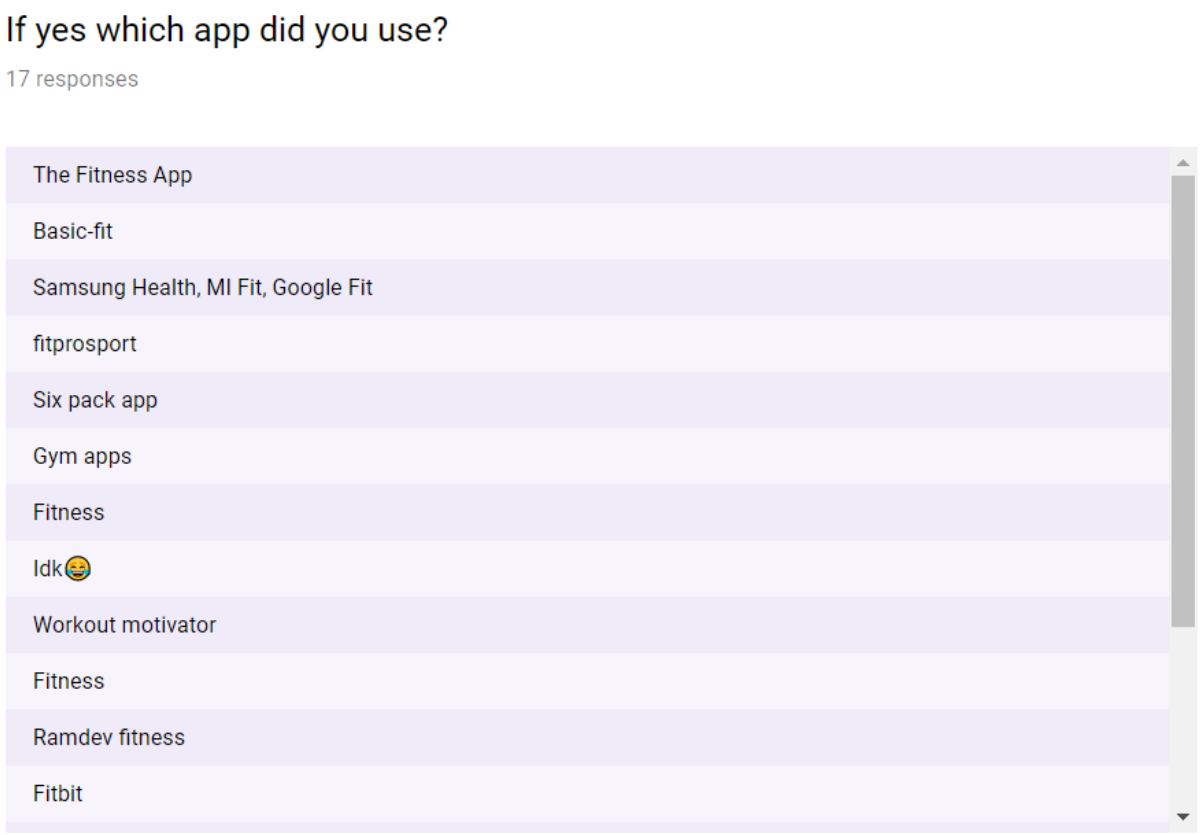

Figure 31 Survey response 2

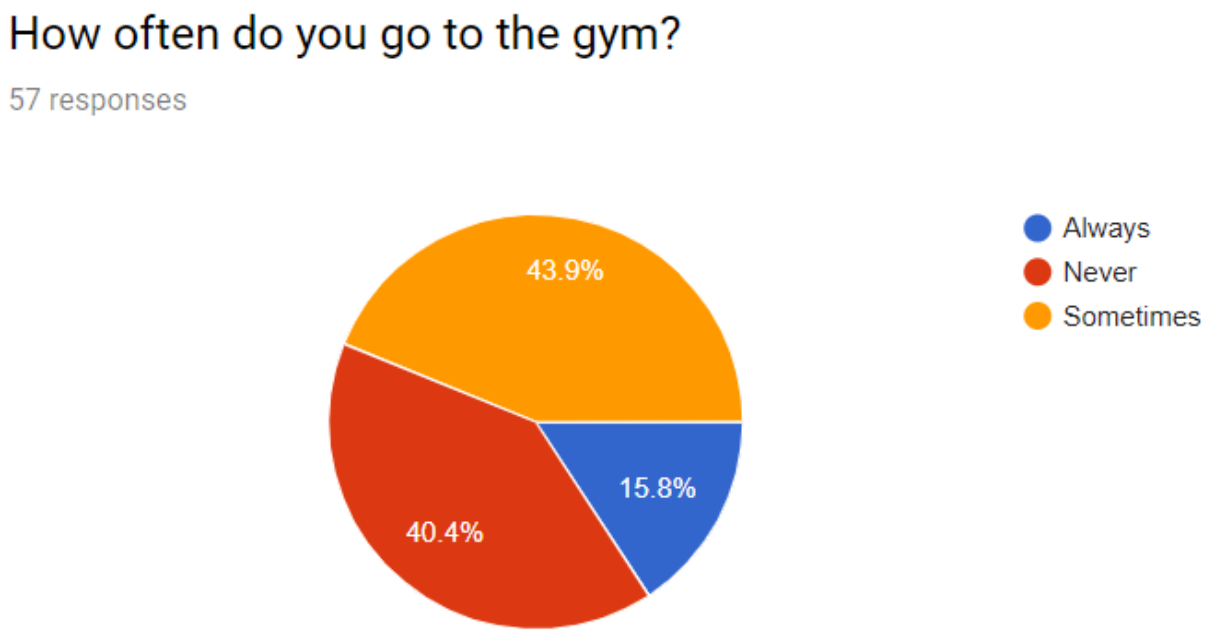

Figure 32 Survey response 3

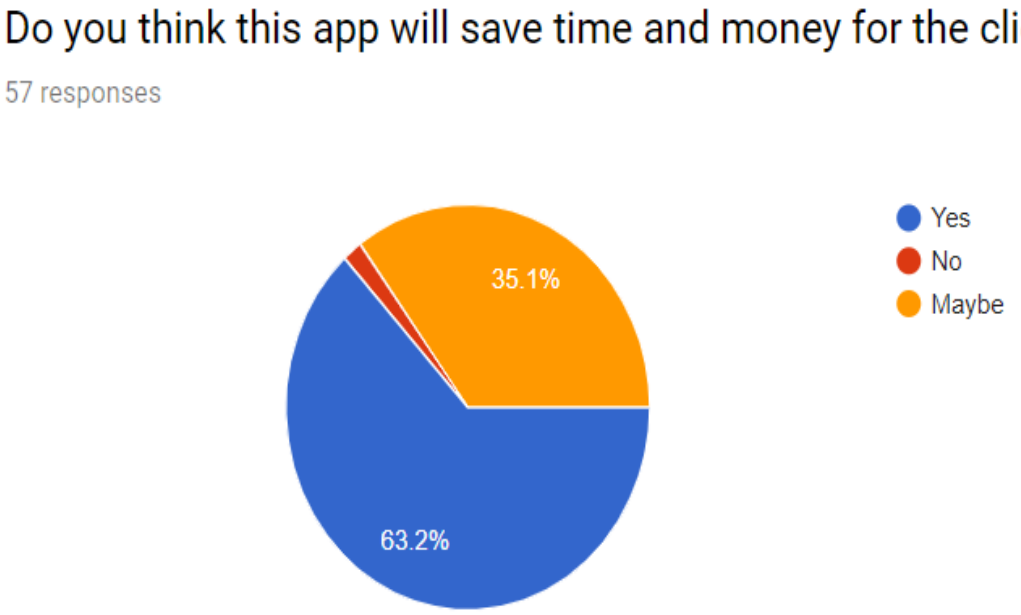

Figure 33 Survey response 4

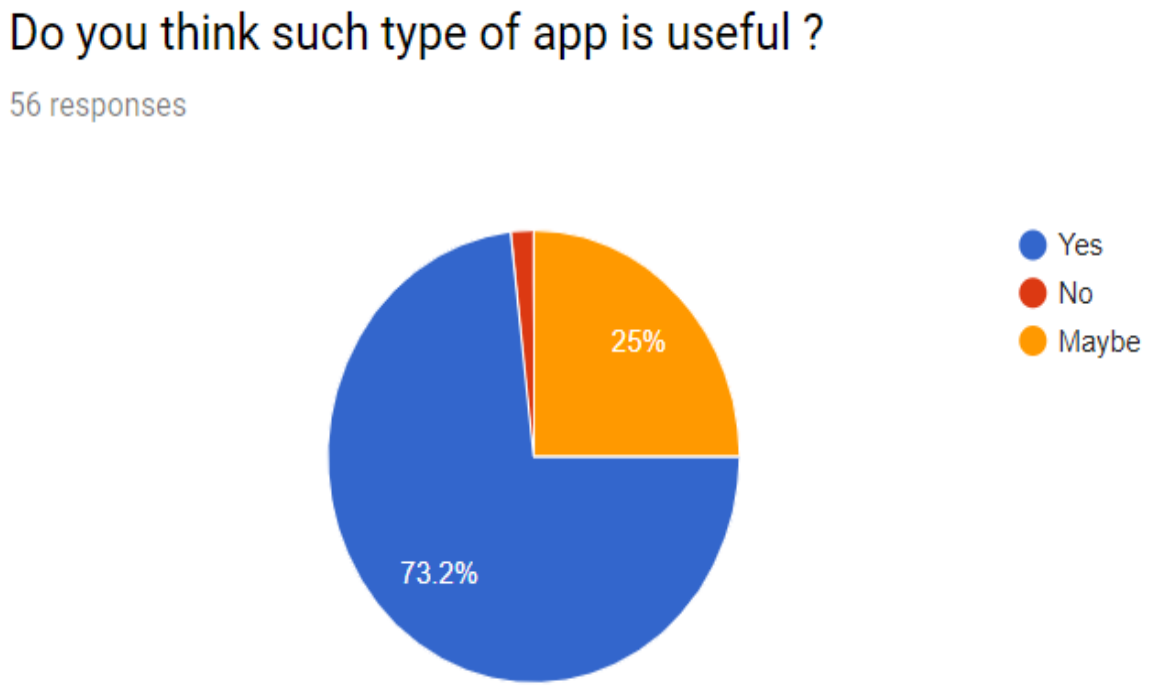

Figure 34 Survey response 5

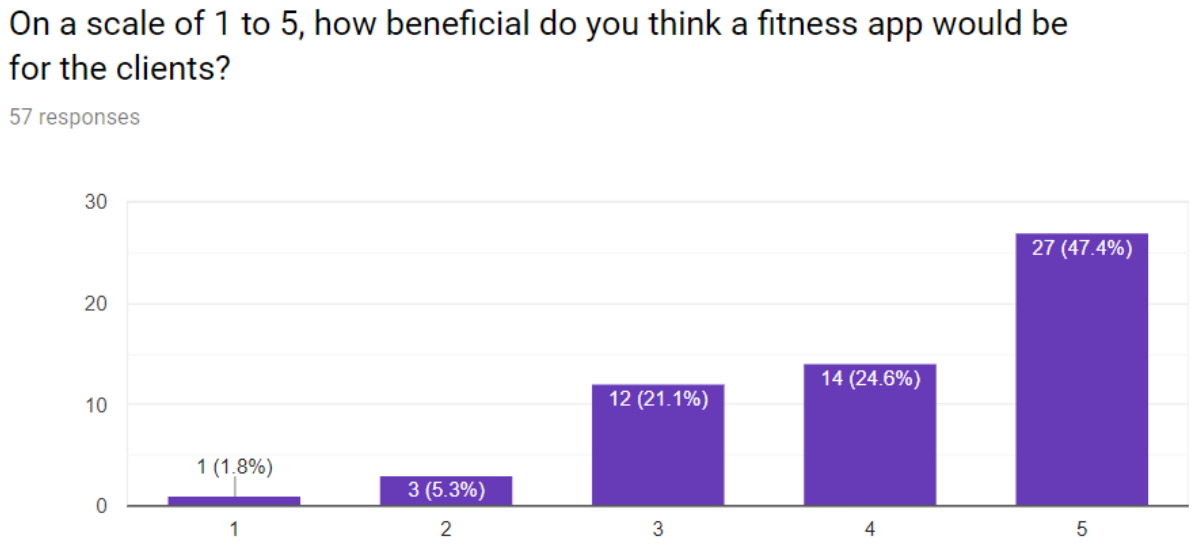

Figure 35 Survey response 6

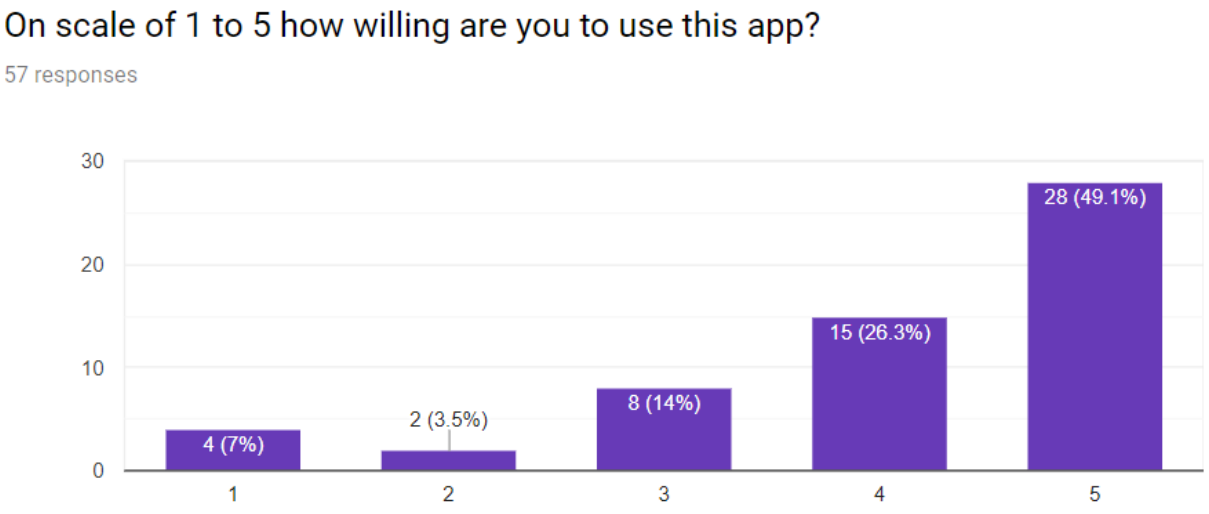

Figure 36 Survey response 7

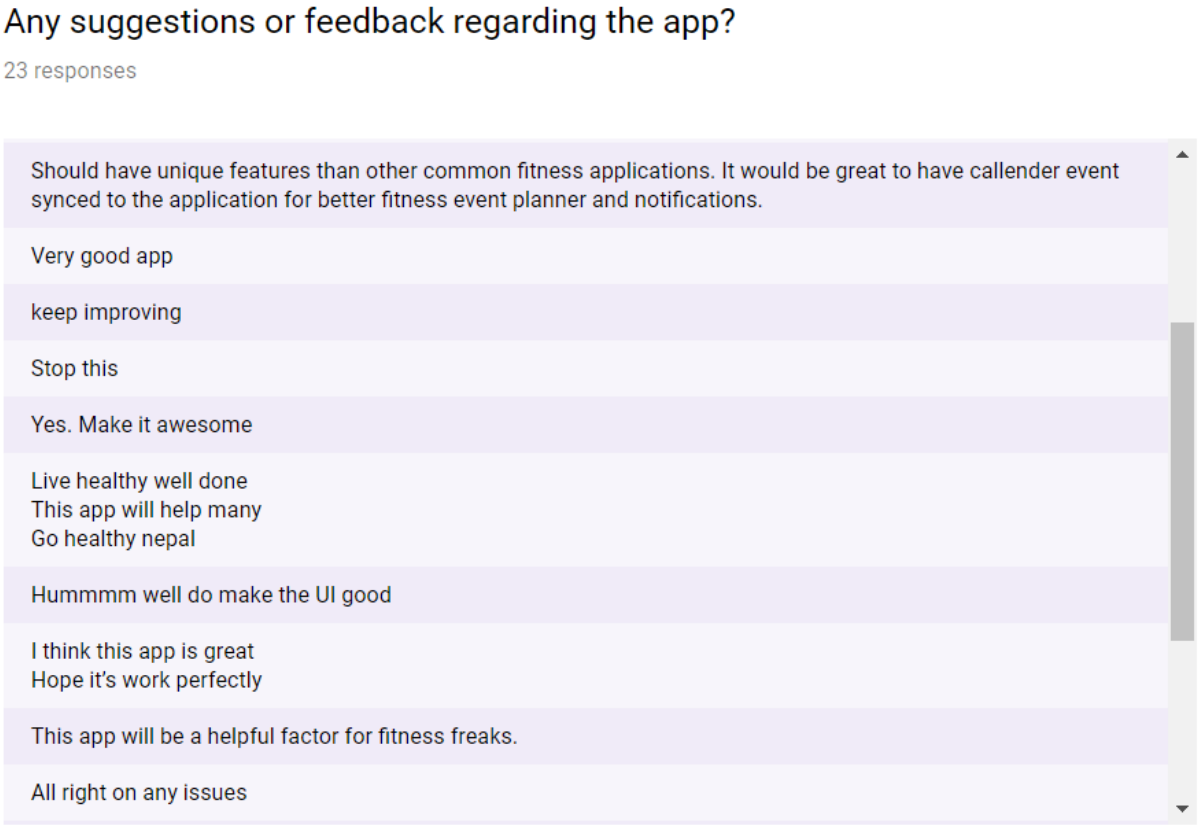

Figure 37 Survey response 8