



MUHAMMAD NEHAL AZHAR

**01-235171-037**

MUHAMMAD HAMMAD NAWAZ

**01-235171-033**

# **Fitness Community Application With Halal Nutrition Plan**

**Bachelor of Science in Information Technology**

Supervisor: Dr. Moneeb Gohar

Department of Computer Science  
Bahria University, Islamabad

January 2021



# Certificate

We accept the work contained in the report titled “Fitness Community Application With Halal Nutrition Plan”, written by Mr. Muhammad Hammad Nawaz AND Mr. Muhammad Nehal Azhar as a confirmation to the required standard for the partial fulfillment of the degree of Bachelor of Science in Information Technology.

Approved by . . . :

Supervisor: Dr. Moneeb Gohar

Internal Examiner: Name of the Internal Examiner (Title)

---

External Examiner: Name of the External Examiner (Title)

---

Project Coordinator: Mr. Abrar Ahmed

Head of the Department: Dr. Muhammad Muzammal

January 6<sup>th</sup>, 2021



# Abstract

Individuals have been dodging dynamic errands nowadays, mostly because of the realities that an ever increasing number of innovations have been concocted to make our carries on with simpler and less thorough. We drive and work in the workplace, sitting for quite a long time. Machines make our clothing. We engage ourselves with TV programs for irrational hours and a couple of individuals draw in themselves in physical work. We move around less and consume off less vitality than individuals used to. Exploration proposes that numerous grown-ups go through over 5 hours daily plunking down, grinding away and during their relaxation time. Individuals need to engage in some movement to avoid illnesses, improve personal satisfaction, control body weight and stay in shape consistently. It has been demonstrated that eating a fair eating routine alone isn't sufficient for body wellness. Playing out a standard exercise for various pieces of the body would keep the muscles of the body in sound condition and great shape. Halal Fitness application is a task intending to help and fill in as a managing instrument for learners to do practices at home and at the exercise center. The undertaking is an Android Application focused at individuals who like to stays in shape and monitor their exercise errands and sets of exercises done at standard stretch. An enormous number of individuals exercise with no exercise designs, some have designs yet not very much archived. There are numerous wellness applications yet nobody gives a halal nourishment or diet plan, Halal wellness intends to give a halal eating regimen plan to all the clients. Permits client to check the food fixings to confirm it is halal or haram. Additionally furnish them a stage to speak with one another. Halal wellness application intends to plan a superior exercise application with more highlights that make it stand separated among others. Clients can redo their assortment of exercises to their own taste and stay informed concerning errands performed every once in a while. This experience must be served from a portable device and not obstructing the clients from utilizing different applications on their cell phones.



# Acknowledgments

Initially, we want to offer our most profound thanks to our Supervisor, Dr. Muneeb Gohar, a Professor at the Department of Computer Science, Bahria University, and Islamabad. Our most extreme respect likewise goes to our parents, families, and companions for their collaboration, consolation and valuable recommendations for the task finishing, from the earliest starting point till the end. We would likewise prefer to thank our instructors who showed us during the degree in light of the fact that, without their commitment, this task would not have been attainable.

MUHAMMAD NEHAL AZHAR, MUHAMMAD HAMMAD NAWAZ  
Bahria University, Islamabad

November, 2020





***“I hate every minute of training.  
But i said **don’t quit**. Suffer now and live  
the rest of your life **as a champion..”*****

Muhammad Ali  
Professional Boxer.



# Contents

<b>Abstract</b>	<b>i</b>
<b>1 Introduction</b>	<b>1</b>
1.1 Halal Fitness Application . . . . .	1
1.2 Project Background . . . . .	1
1.3 Project Description . . . . .	2
1.4 Project Objective . . . . .	3
1.5 Project Scope . . . . .	3
1.6 The Degree Project Report . . . . .	3
<b>2 Literature Review</b>	<b>5</b>
2.1 Existing System . . . . .	5
2.2 Problems With Existing System . . . . .	5
2.3 Proposed System . . . . .	5
<b>3 Requirement Specifications</b>	<b>7</b>
3.1 Application Prespective . . . . .	7
3.2 Functional Requirements . . . . .	7
3.3 Non-Functional Requirements . . . . .	8
3.4 Use Case Diagrams . . . . .	9
3.5 Use Case Description . . . . .	13
<b>4 Design</b>	<b>17</b>
4.1 System Architecture . . . . .	17
4.2 Current Issue . . . . .	18
4.3 Design Methodology . . . . .	18
4.4 User Flow Diagram . . . . .	19
4.5 Activity Diagrams . . . . .	20
4.5.1 Signup/Login Activity . . . . .	20
4.5.2 Scan Ingredients Activity . . . . .	21
4.5.3 Exercise Activity . . . . .	22
4.5.4 Step Counter Activity . . . . .	22
4.5.5 BMI Activity . . . . .	23
4.5.6 Water Intake Activity . . . . .	23
4.5.7 Community Activity . . . . .	24
4.6 Class Diagram . . . . .	25
4.7 Sequence Diagrams . . . . .	26

4.7.1	Login Sequence . . . . .	26
4.7.2	Scan Ingredients Sequence . . . . .	27
4.7.3	Add Post Sequence . . . . .	28
4.8	GUI Design . . . . .	29
<b>5</b>	<b>System Implementation</b>	<b>31</b>
5.1	System Requirements . . . . .	31
5.2	Innovation Choices . . . . .	32
5.3	Deployment Structure . . . . .	32
5.3.1	Description . . . . .	32
5.3.2	Deployment Design Diagram . . . . .	33
5.3.3	Components . . . . .	33
5.3.4	Relationship Of Components . . . . .	33
5.3.5	Advantages . . . . .	33
5.3.6	Disadvantages . . . . .	33
5.4	Deployment Diagram . . . . .	34
5.5	Conclusion . . . . .	34
<b>6</b>	<b>System Testing and Evaluation</b>	<b>35</b>
6.1	Introduction . . . . .	35
6.2	Reason For Testing . . . . .	36
6.3	Significance of testing . . . . .	36
6.4	Testing Environment . . . . .	36
6.4.1	Android Emulators . . . . .	36
6.4.2	Physical Android Devices . . . . .	37
6.5	Challenges in testing . . . . .	37
6.6	Checklist . . . . .	38
6.7	Test Cases . . . . .	42
6.8	Test Case and Results . . . . .	44
6.9	Maintenance/Updates . . . . .	50
6.10	Beta Tests . . . . .	50
6.11	Interfaces . . . . .	51
<b>7</b>	<b>Conclusions</b>	<b>53</b>
7.1	Description . . . . .	53
7.2	Future Planning . . . . .	53
7.3	Conclusion . . . . .	53
	<b>References</b>	<b>55</b>

# List of Figures

1.1	General Body Fat Percentage . . . . .	2
1.2	Ghant Chart . . . . .	3
3.1	Signup Use Case Diagram . . . . .	9
3.2	login Use Case Diagram . . . . .	9
3.3	Community Use Case Diagram . . . . .	10
3.4	Scan Ingredients Use Case Diagram . . . . .	10
3.5	Exercise Use Case Diagram . . . . .	11
3.6	Step Counter Use Case Diagram . . . . .	11
3.7	BMI Calculator Use Case Diagram . . . . .	12
3.8	Water Intake Use Case Diagram . . . . .	12
4.1	System Architecture Diagram . . . . .	17
4.2	User Flow Diagram . . . . .	19
4.3	Signup/Login Activity Diagram . . . . .	20
4.4	Scan Ingredients Activity Diagram . . . . .	21
4.5	Exercise Activity Diagram . . . . .	22
4.6	Steps Counter Activity Diagram . . . . .	22
4.7	BMI Calculator Activity Diagram . . . . .	23
4.8	BMI Calculator Activity Diagram . . . . .	23
4.9	Community Activity Diagram . . . . .	24
4.10	Class Diagram . . . . .	25
4.11	Login Sequence Diagram . . . . .	26
4.12	Scan Ingredients Sequence Diagram . . . . .	27
4.13	Add Post Sequence Diagram . . . . .	28
4.14	Start Up GUI . . . . .	29
4.15	Welcome screen GUI . . . . .	29
4.16	Dashboard GUI . . . . .	30
5.1	Deployment Design Diagram . . . . .	33
5.2	Deployment Diagram . . . . .	34
6.1	Test Case ID # 1 Result . . . . .	44
6.2	Test Case ID # 2 Result . . . . .	45
6.3	Test Case ID # 3 Result . . . . .	46
6.4	Test Case ID # 4 Result . . . . .	46
6.5	Test Case ID # 5 Result . . . . .	47
6.6	Test Case ID # 6 Result . . . . .	47

6.7	Test Case ID # 7 Result . . . . .	48
6.8	Test Case ID # 8 Result . . . . .	48
6.9	Test Case ID # 9 Result . . . . .	49
6.10	Test Case ID # 10 Result . . . . .	50

# List of Tables

3.1	Signup Use case . . . . .	13
3.2	Log In Use Case . . . . .	13
3.3	Community Platform Use Case . . . . .	13
3.4	Scan Ingredients Use Case . . . . .	14
3.5	Exercise Use Case . . . . .	14
3.6	BMI Calculator Use Case . . . . .	14
3.7	Steps Counter Use Case . . . . .	15
3.8	Water Intake Tracking Use Case . . . . .	15
6.1	Device explicit qualities checks . . . . .	39
6.2	Network explicit checks . . . . .	40
6.3	Application Explicit Checks . . . . .	41
6.4	Test Case no.1 : Opening the application . . . . .	42
6.5	Test case no. 2 : Signup . . . . .	42
6.6	Test case no. 3: Login Using Valid Credentials . . . . .	42
6.7	Test case no.4: Login using invalid credentials . . . . .	42
6.8	Test case no.5: Community Feature . . . . .	43
6.9	Test case no.6: BMI Calculator . . . . .	43
6.10	Test case no.7: Steps Counter . . . . .	43
6.11	Test case no.8: Exercise . . . . .	43
6.12	Test case no.9: Scan Product . . . . .	44
6.13	Water Intake Test Case . . . . .	44
6.14	User Login . . . . .	51
6.15	User Registration . . . . .	51
6.16	User Profile . . . . .	51





# Acronyms and Abbreviations

API	Application Platform Interface
BMI	Body Mass Index
CSS	Cascading Style Sheet
GUI	Graphical User Interface
Html	Hypertext Markup Language
IP	Internet Protocol
JS	JavaScript
Halal	Permissible
Haram	Forbidden



# Chapter 1

## Introduction

### 1.1 Halal Fitness Application

Individuals have been keeping away from dynamic undertakings nowadays, incompletely because of the realities that an ever increasing number of advancements have been designed to make our carries on with simpler and less thorough. We drive and work in the workplace, sitting for quite a long time. We have opted sedentary lifestyle. We engage ourselves with TV programs for nonsensical hours.

- Project Background
- Problem Description
- Project Objectives
- Project Scope

### 1.2 Project Background

Individuals have been keeping away from dynamic undertakings nowadays, incompletely because of the realities that an ever increasing number of advancements have been designed to make our carries on with simpler and less thorough. We drive and work in the workplace, sitting for quite a long time. Machines make our clothing. We engage ourselves with TV programs for nonsensical hours and a couple of individuals draw in themselves in actual work. [1]

We walk less and consume off less energy than individuals used to. Examination proposes that numerous grown-ups go through over 5 hours daily plunking down, grinding away and during their recreation time.[2]

Individuals need to engage in some movement to avoid illnesses, improve personal satisfaction, control body weight and stay in shape consistently. It has been demonstrated that eating a fair eating routine alone isn't sufficient for body wellness. Playing out a standard exercise for various pieces of the body would keep the muscles of the body in solid condition and great shape. [3]

*American Council on Exercise		
Classification	Women (% fat)	Men (% fat)
Essential Fat	10-12%	2-4%
Athletes	14-20%	6-13%
Fitness	21-24%	14-17%
Acceptable	25-31%	18-25%
Obese	32% plus	25% plus

Figure 1.1: General Body Fat Percentage

[4] Halal fitness application is a venture meaning to help and fill in as a managing device for students to do practices at home and at the exercise center. The undertaking is an Android Application focused at individuals who like to stays in shape and monitor their exercise errands and sets of exercises done at ordinary span. A huge number of people workout without any workout plans, some do have plans but not well documented.

There are many fitness apps but no one provides a halal nutrition or diet plan, Halal fitness aims to provide a halal diet plan for all the users. Allows user to scan the food ingredients to verify it is halal or haram. Also provide them a platform to communicate with each other.

Halal fitness app aims to design a better workout application with more features that make it stand isolated among others. Users are able to customize their collection of workouts to their own taste and keep abreast with tasks performed from time to time. This experience could only be served from a mobile gadget and not having to hinder the users from using other apps on their mobile devices.

### 1.3 Project Description

Everyone wants to look fit but for the perfect body we have to do exercises, should follow the perfect diet plan according to our body. Lot of food available but no surety of that which is halal and which one is haram. There are many fitness apps but those apps are not designed according to Muslims. Food nutrition offered in other apps is not halal. The diet

mentioned in those applications are not allowed in our religion. Muslim people cannot follow their diet plan therefore they quits exercise. No diet plan for Muslim people. There is no gym community social platform.

### 1.4 Project Objective

To design a halal fitness app that provides halal diet plan (halal nutrition) for all the users and track their exercise routine. Allows user to scan the food ingredients to verify it is halal or haram. Make diet plan by taking user’s weight and height. Daily Steps count. (Set Daily goals). Also provide them a platform to communicate with each other.

### 1.5 Project Scope

A significant increase in the obese population, changing lifestyles, and increasing health concerns primarily drive the market growth. This project addresses an opportunity to provide a guiding tool which supports exercise and diet plan with the goal being optimization of user’s overall health and wellness. There are many health related applications currently available which provides the functionality of individual elements of this application. This application offers a complete set of features designed to provide an efficient and effective means to achieve optimal health and diet track in the most user friendly format possible.

### 1.6 The Degree Project Report

The project will be developed in a series of stages. Upon completion of one stage, another stage will be brought under the development. These stages are as follows:

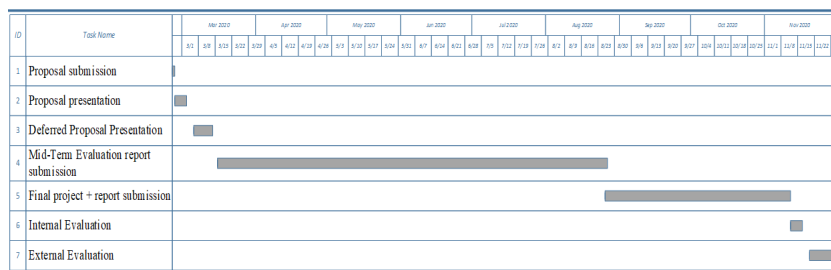


Figure 1.2: Gantt Chart



## **Chapter 2**

# **Literature Review**

### **2.1 Existing System**

As we know There are a lot of fitness application available, in the market right now, basically what fitness apps do is that they provide guidelines for workout and set diet plans based on the information provided by the user, but one of the problems In these applications is none of the app lets you analyze the ingredients of the diet plan it is suggesting you, hence many of the diet plans suggested by these apps contain haram ingredients.

Also none of the existing applications provide a platform to interact with other users, which is very important for motivation and learning purposes. [5]

### **2.2 Problems With Existing System**

Everybody needs to look fit yet for the ideal body we need to do works out, ought to follow the ideal eating regimen plan as indicated by our body. Part of food accessible yet no guarantee of that which is halal and which one is haram. There are numerous wellness applications yet those applications are not planned by Muslims. Food nourishment offered in different applications isn't halal. The eating routine referenced in those applications are not permitted in our religion. Muslim individuals can't follow their eating regimen plan accordingly they stops work out. No eating routine arrangement for Muslim individuals. There is no rec center network social stage.[6]

### **2.3 Proposed System**

The System we propose comprises of the apparent multitude of existing highlights, for example, wellness schedule, diet plans, Steps counter, wellness tracker, adjustable client profile and some extra highlights which will improve the client experience, the highlights we are being incorporated is one that this framework will permit client to filter the elements

of the any item which is recommended by the application to pick up nourishment , by utilizing the camera of the telephone , the application will discover that the fixings referenced on the items are either halal or haram, besides the other new element is that the application will permit clients to impart and cooperate with different clients of the application, this will improve the client experience and furthermore roused the client to turn out to be surprisingly better and furthermore help them to gain from different clients.[7]



## Chapter 3

# Requirement Specifications

### 3.1 Application Prespective

The application will utilize a data base that can be gotten to with any android gadget interface with Wi-Fi association. The clients who can utilize this application are simply the enlisted clients and have username and Passcode. In the wake of enlisting, clients can alter profile subtleties, share post, remark, follow up different clients and view posts.

### 3.2 Functional Requirements

- Provide practice plan.
- Daily Steps check. (Set Daily objectives)
- Helps client in Weight misfortune
- Tracking nourishment
- Improve in general wellness
- Better dozing propensity
- Tracking nourishment and furthermore give alarms/admonitions.
- Calculates the quantity of calories consumed.
- Allows client to choose the feast or (halal) food that he/she expend in a day. Breakfast, Lunch, Snacks, Dinner
- At the day's end application will gives the insights of that day
- Also Show theirs best and most noticeably terrible exhibitions of that specific week.
- Allows client to speak with different clients.

- User can visit with one another through our talk include.
- Users can share their change involvement in others.

### 3.3 Non-Functional Requirements

Non-functional requirements are given below.

- **Availability**  
The system is online and provides maximum availability to users.
- **Efficiency**  
The system should be efficient and perform all required user tasks
- **Usability**  
The system should provide and user friendly interface which will allow all the user to interact with the system even if they just basic knowledge of using a smart phone
- **Reliability**  
The system should be reliable
- **Adaptability**  
The system should be complete customizable which will allow the user to customize the application according to their preferences
- **Security**  
The information of the users such as Email, Name and Passwords should not be compromised hence our system will provide a secure gateway for users to interact with the system

### 3.4 Use Case Diagrams



Figure 3.1: Signup Use Case Diagram

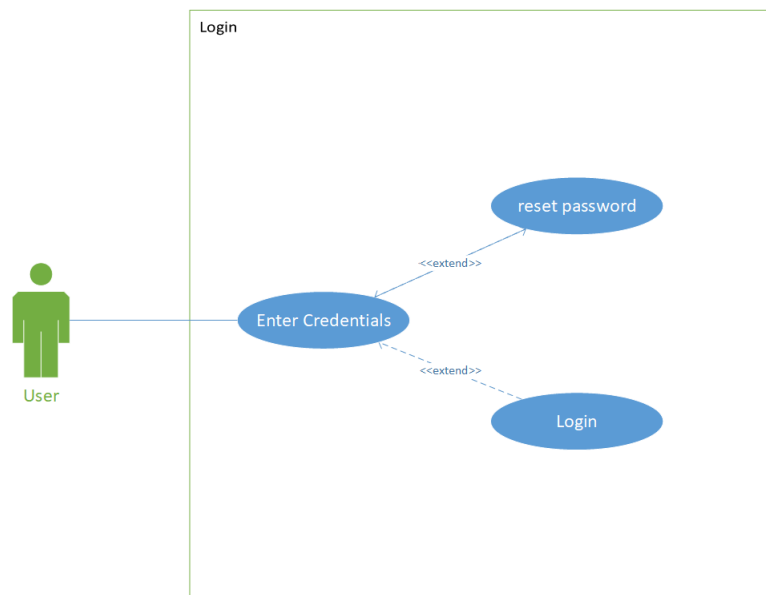


Figure 3.2: login Use Case Diagram

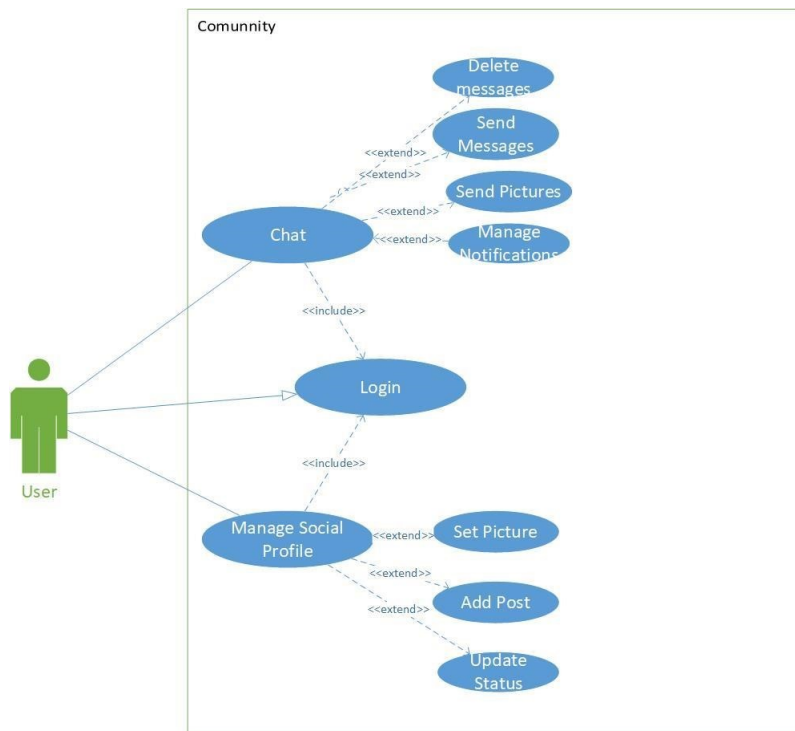


Figure 3.3: Community Use Case Diagram

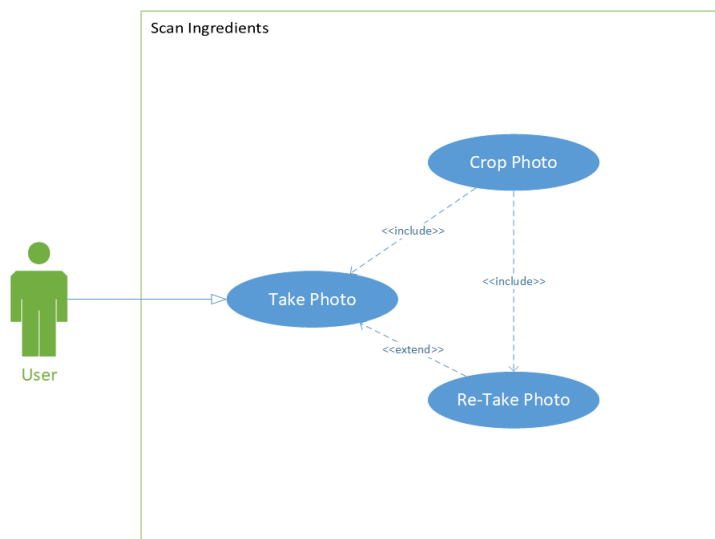


Figure 3.4: Scan Ingredients Use Case Diagram

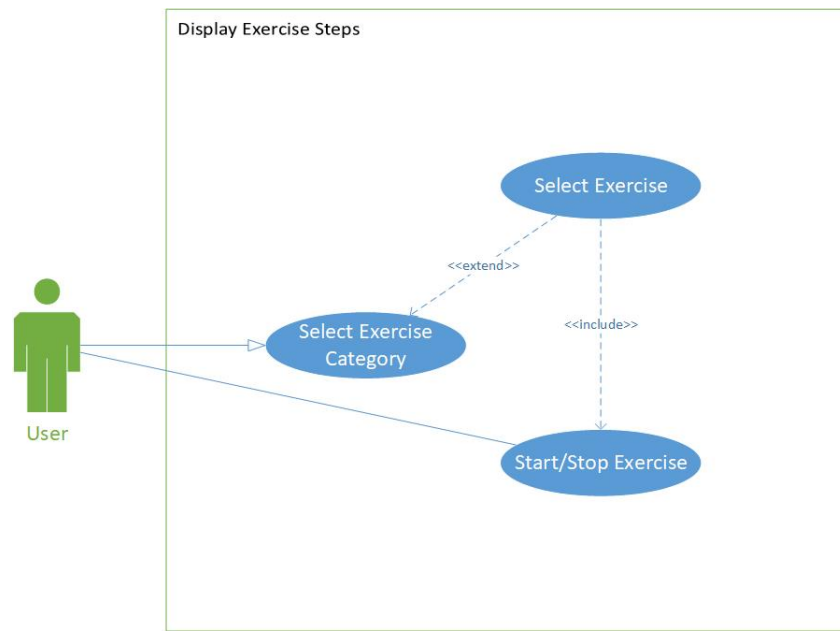


Figure 3.5: Exercise Use Case Diagram

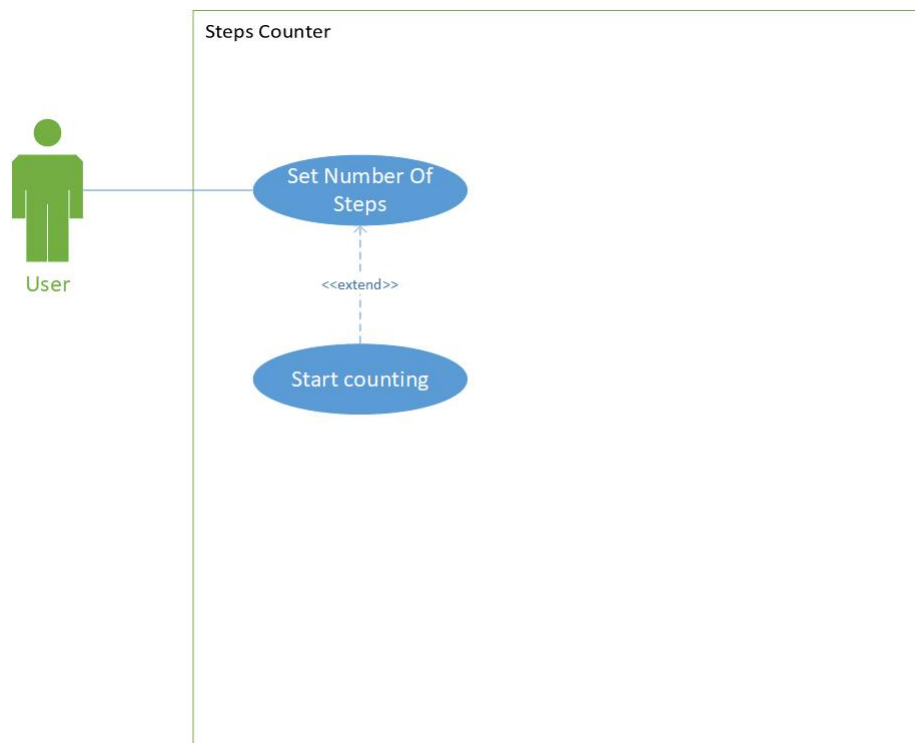


Figure 3.6: Step Counter Use Case Diagram

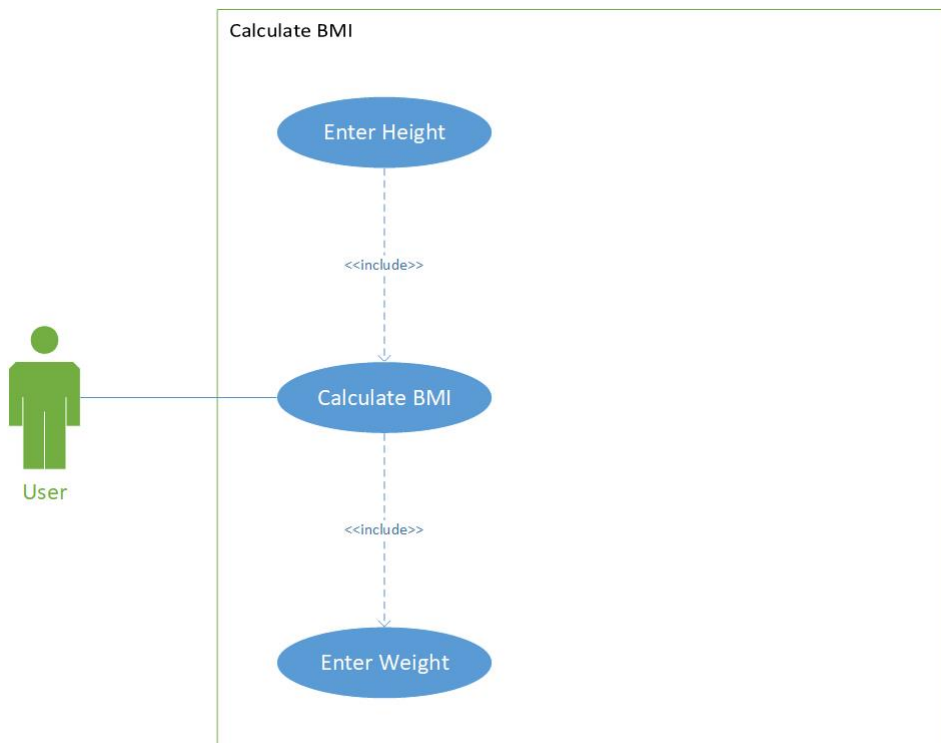


Figure 3.7: BMI Calculator Use Case Diagram

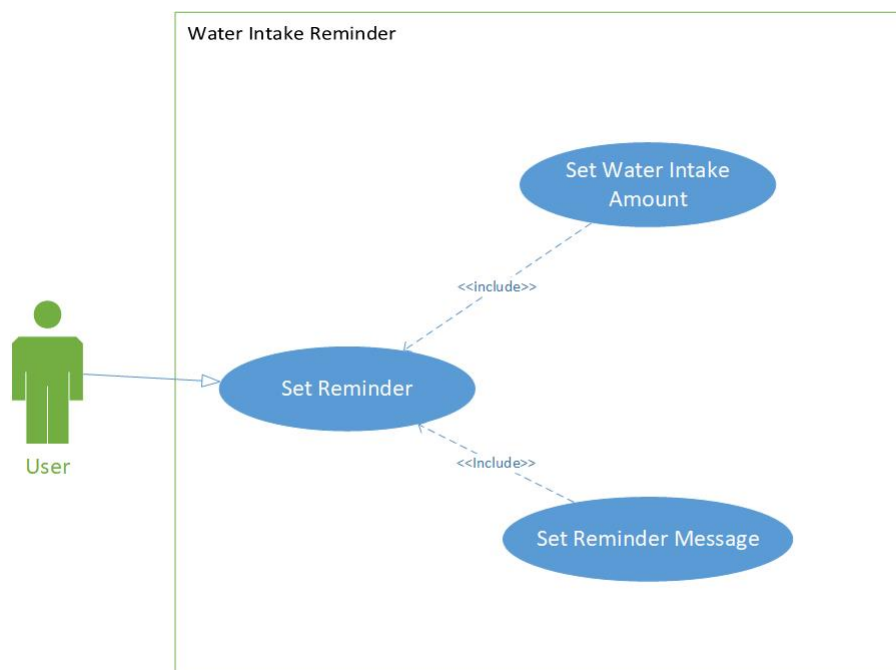


Figure 3.8: Water Intake Use Case Diagram

### 3.5 Use Case Description

Table 3.1: Signup Use case

Use case 1	Signup
Actor	New User
Description	A new user uses the signup method to create an account on the application and then log in using the account and continue to use the application
Pre-Condition	User should have installed the application and clicked signup button
Post- condition	User has successfully registered and now can access the user dashboard
Basic flow	First enter personal details , then enter body info , then enter fitness requirements
Data	Email , Name , New Password, DOB
Stimulus	Click on Signup Button
Response	The User is navigated to dashboard of the application
Comments	User is registered in the application using this use case

Table 3.2: Log In Use Case

Use case 2	log in
Actor	User
Description	In order to utilize the application the use will need to login to the application
Pre-Condition	Signup must be completed
Post- condition	user can access all the features i.e fitness features, community feature, scan items etc
Basic flow	Open the application, Enter credentials , Click login
Data	Email. Password
Stimulus	Click on Login Button
Response	User is navigated to the application dashboard
Comments	To keep the user account secure user must login to the application using password and email to utilize the application

Table 3.3: Community Platform Use Case

Use case 3	Access Community Platform
Actor	User
Description	User can interact with other users using the community feature
Pre-Condition	Login/signup required
Post- condition	User can interact with other users
Data	User profile, Friend Profile
Basic flow	In the wake of enlisting, clients can alter profile subtleties, share post, remark, follow up different clients and view posts.
Stimulus	Click on Community Icon
Response	The user is navigated to the news feed of the application
Comments	User can use this feature to chat , post , like and comment

Table 3.4: Scan Ingredients Use Case

Use case 4	Scan Ingredients
Actor	User
Description	This is sub feature of the nutrition tab , which allows users to scan the ingredients of a product to determine whether it is halal or haram.
Pre-Condition	Login required
Post- condition	Item Scanned and result shown whether scanned item is halal or haram
Basic Flow	Open application, Click Scan Items, Camera opened, Take Picture, Receive result
Data	Ingredients
Stimulus	Click Scan Item button
Response	User is notified if the product is Halal or haram
Comments	This feature is very useful for the diet conscious users who are skeptical about the ingredients of the product being halal or haram.

Table 3.5: Exercise Use Case

Use case 5	Display Exercise Steps
Actor	User
Description	This feature provides with instructions about different exercises
Pre-Condition	User should be logged in
Post- condition	Finish Workout
Basic flow	Click on exercise tab, select exercise type, start workout , finish workout.
Data	N/A
Stimulus	Click on exercise button
Response	User is notified with instruction and timer
Comments	The exercise feature is very useful when the user does not know how to do a certain exercise.

Table 3.6: BMI Calculator Use Case

Use case 6	Calculate BMI Use Case
Actor	User
Description	This feature calculates the Body to mass index of the user
Pre-Condition	User should be logged in
Post- condition	Body To Mass index result
Basic flow	Click in BMI tab, enter weight, enter height, click calculate, view BMI
Data	Height, Weight
Stimulus	Click on Body to Mass index button
Response	User is notified with their BMI
Comments	The exercise feature is very useful when the user need to calculate their BMI to select a proper workout plan.



Table 3.7: Steps Counter Use Case

Use case 7	Steps Counter
Actor	User
Description	In order to keep track of the distance covered during a walk steps counter is used
Pre-Condition	User must be logged in
Post- condition	Application start counting steps as the user moves
Basic flow	Click on Steps Counter tab, set step goals, click start, click finish
Data	Number of steps
Stimulus	Click on Step counter Button
Response	User is notified with the total steps travelled
Comments	It is great feature to keep track of the steps cover during the jog or walk session

Table 3.8: Water Intake Tracking Use Case

Use case 8	Water Intake Tracking
Actor	User
Description	In order to keep track of the water intake during the day Water Intake feature is used
Pre-Condition	User must be logged in
Post- condition	Application pops up a notification to the user as reminder
Basic flow	Click on Stay Hydrated tab, set water amount, set reminder message, application pops up notification
Data	Amount of water, reminder message
Stimulus	Time interval set by user
Response	System pops up notification at the set time
Comments	It is great feature to keep track of the water intake during day and workout.



# Chapter 4

## Design

### 4.1 System Architecture

The system is based on a three tier architecture, 1st layer is the data layer which is basically our database which will host all the data of the user and the application can utilize it whenever needed, Secondly the second tier is the application layer , which will host the GUI interface and perform the processing according the user's input. The third Layer is the control layer which helps the 1st and 2nd layer to interact with each other and performs the middle processing

- Application Layer.
- Business Layer.
- Data Layer.

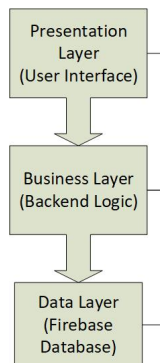


Figure 4.1: System Architecture Diagram

## 4.2 Current Issue

As we probably are aware There are a great deal of wellness application accessible, in the market at this moment, fundamentally what wellness applications do is that they give rules to exercise and set eating regimen plans dependent on the data gave by the client, however one of the issues In these applications is none of the application lets you examine the elements of the eating routine arrangement it is proposing you, thus a large number of the eating routine plans recommended by these applications contain haram fixings. Additionally none of the current applications furnish a stage to cooperate with different clients, which is significant for inspiration and learning purposes.

## 4.3 Design Methodology

The endeavor can realized by two methodologies; each strategy contains set of stages. The prototyping method is model consolidates essentials gathering stage, smart design stage, manufacture model stage, customer appraisal stage and model refinement stage. The subsequent technique is Spiral model consolidate iterative times of plan, utilization, testing additionally, uphold. We utilize model considering the way that the essential of the assignment isn't careful and we need to proposition and responsibility into the errand in detail to complete all possible value of HFP venture. Besides, prototyping model should be used to need system needs to have a bundle of association with the end-customers, sensible with Android applications, diminished risk of frustration additionally, better fit to customer essentials. We use twisting model to complete the progression stages on the structure ensuing to showing up at the last model to show up at an incredible thing and serves the customer's requirements.

## 4.4 User Flow Diagram



Figure 4.2: User Flow Diagram

## 4.5 Activity Diagrams

### 4.5.1 Signup/Login Activity

This activity diagram shows the process of user/client signing up or logging in if they have already signed up.

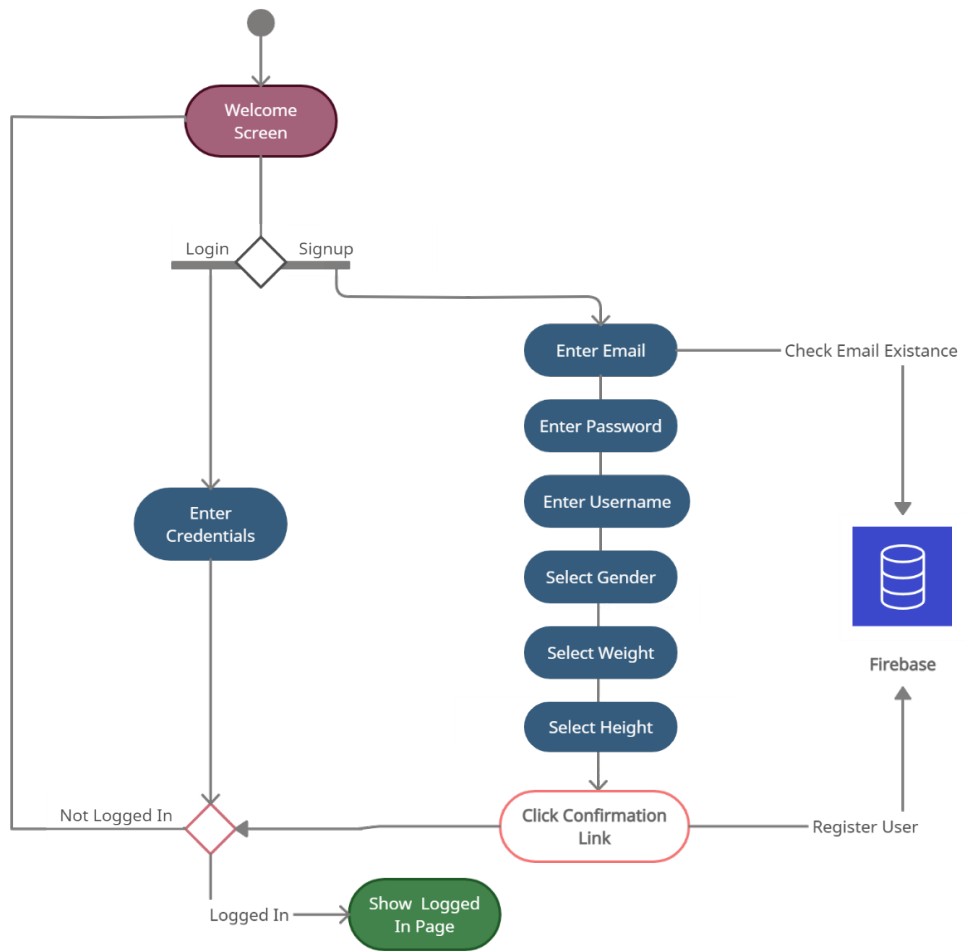


Figure 4.3: Signup/Login Activity Diagram

### 4.5.2 Scan Ingredients Activity

This activity diagram shows the process of user/client scanning ingredients of a product.

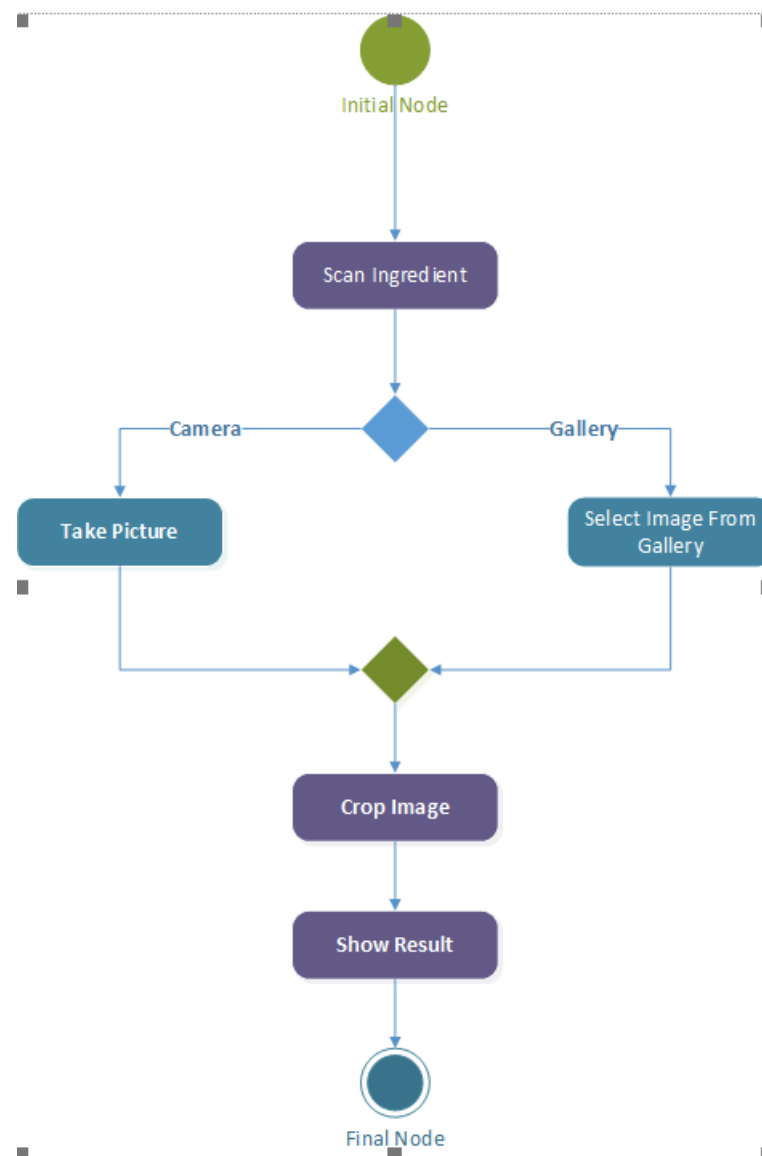


Figure 4.4: Scan Ingredients Activity Diagram

### 4.5.3 Exercise Activity

This activity diagram shows the process of exercise feature.



Figure 4.5: Exercise Activity Diagram

### 4.5.4 Step Counter Activity

This activity diagram shows the process of steps counter feature.

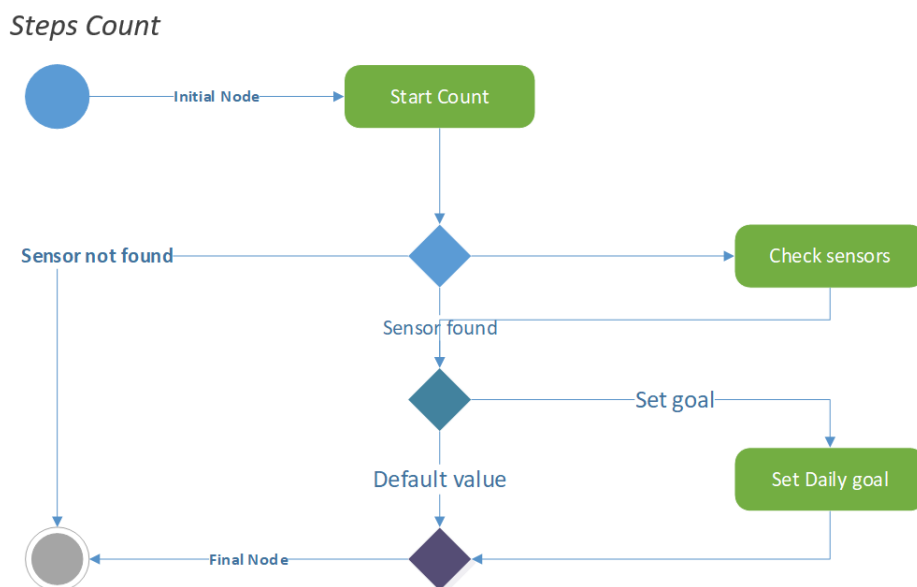


Figure 4.6: Steps Counter Activity Diagram



### 4.5.5 BMI Activity

This activity diagram shows the process of BMI Calculator feature.



Figure 4.7: BMI Calculator Activity Diagram

### 4.5.6 Water Intake Activity

This activity diagram shows the process of Water Intake feature.

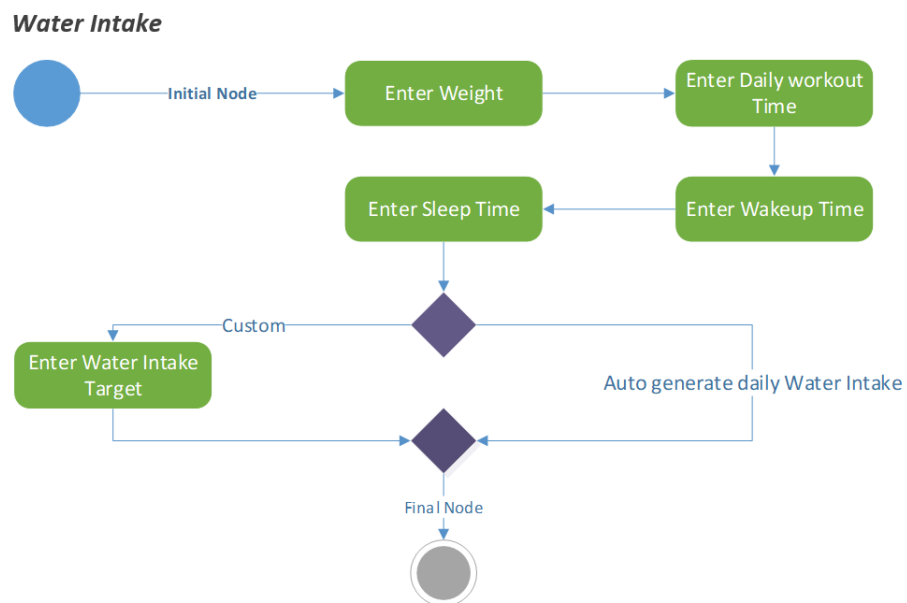


Figure 4.8: BMI Calculator Activity Diagram

### 4.5.7 Community Activity

This activity diagram shows the process of adding a new post in Community feature.

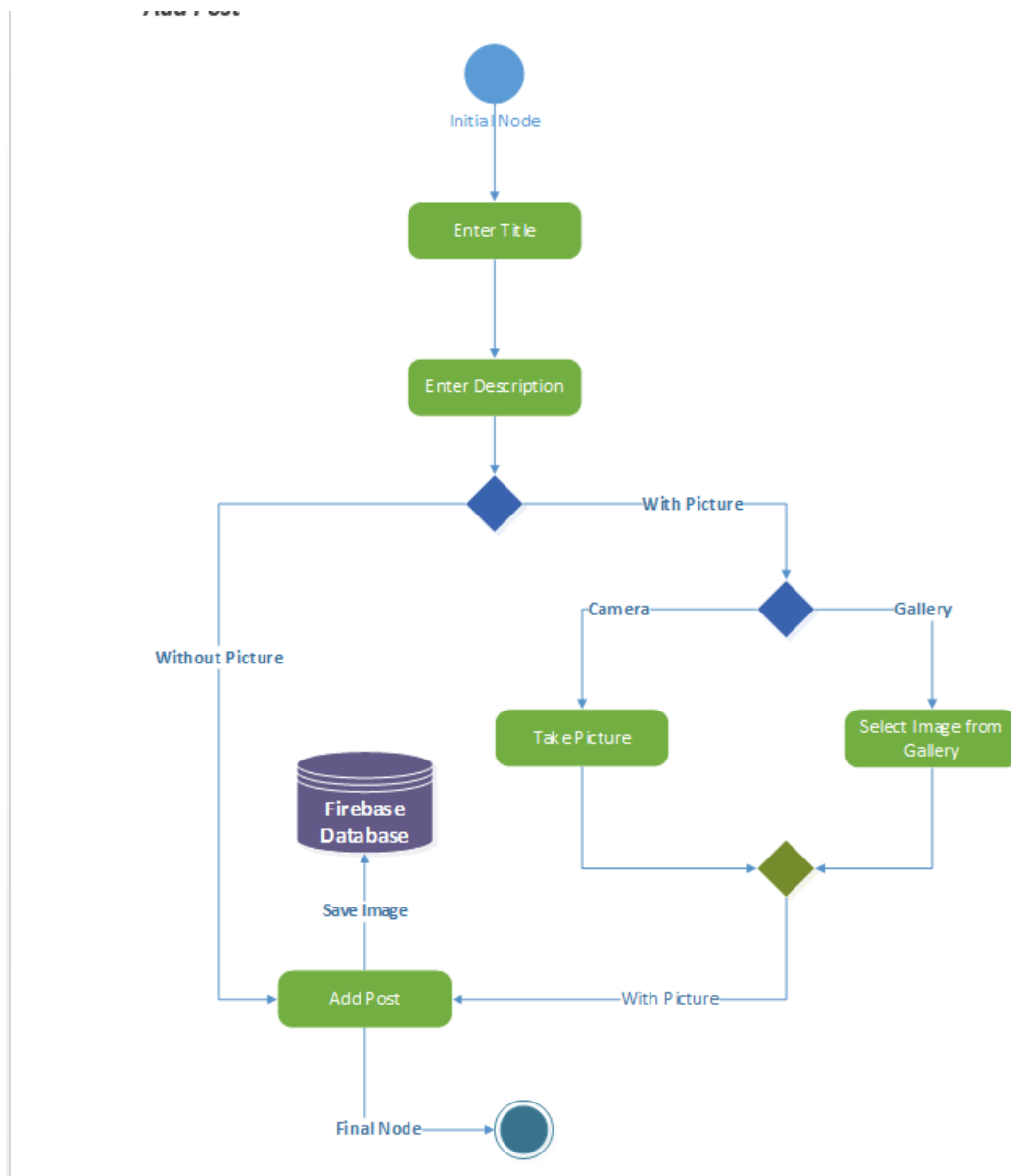


Figure 4.9: Community Activity Diagram

## 4.6 Class Diagram

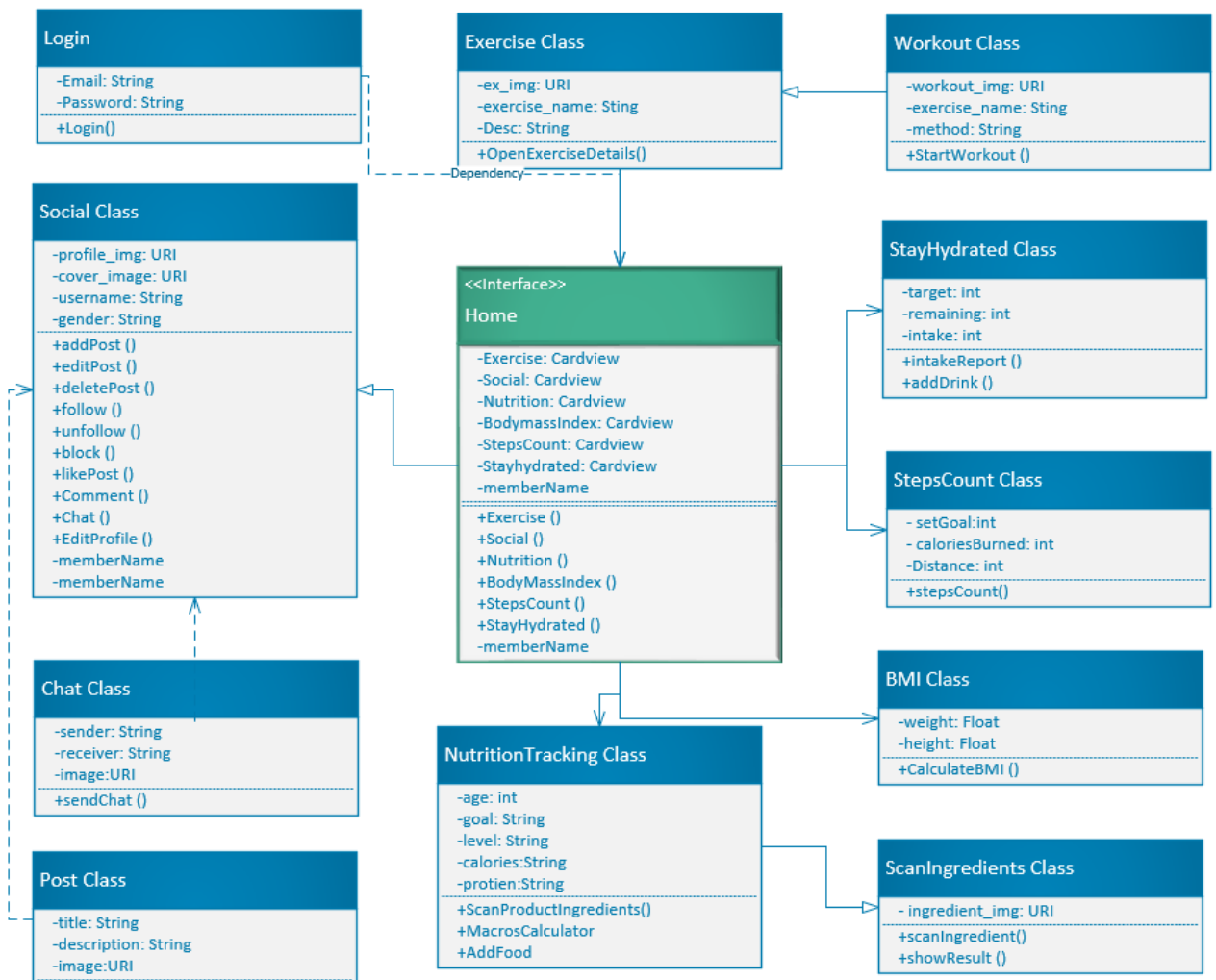


Figure 4.10: Class Diagram

## 4.7 Sequence Diagrams

### 4.7.1 Login Sequence

This sequence diagram shows the process of User logging in

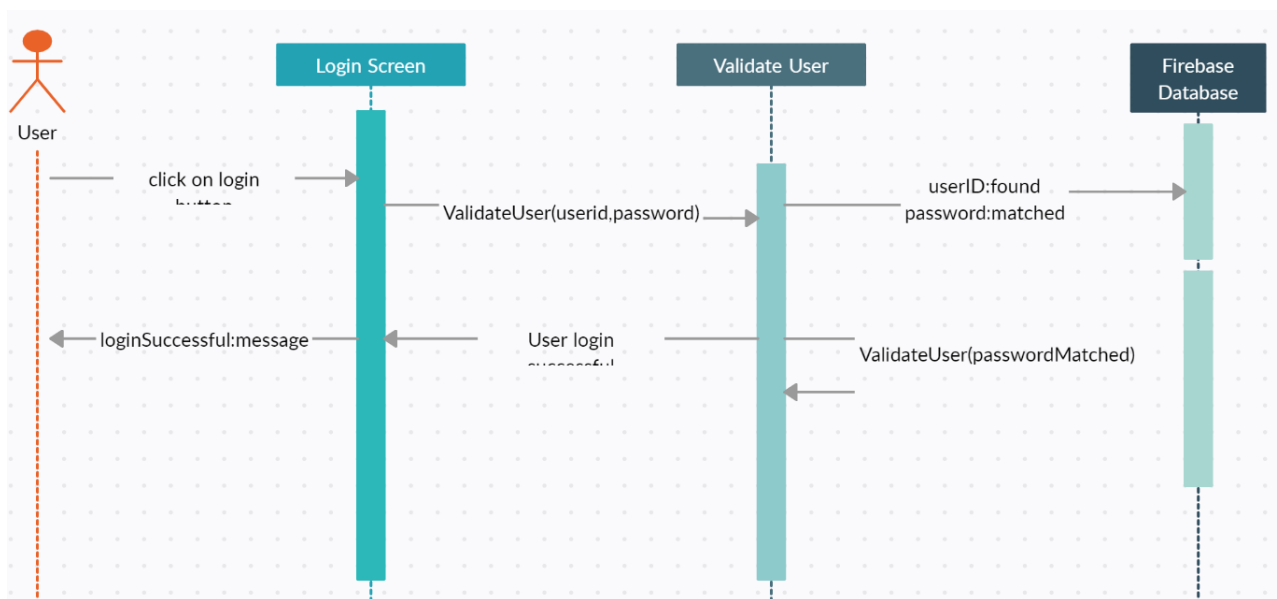


Figure 4.11: Login Sequence Diagram

### 4.7.2 Scan Ingredients Sequence

This sequence diagram shows the process of scanning ingredients

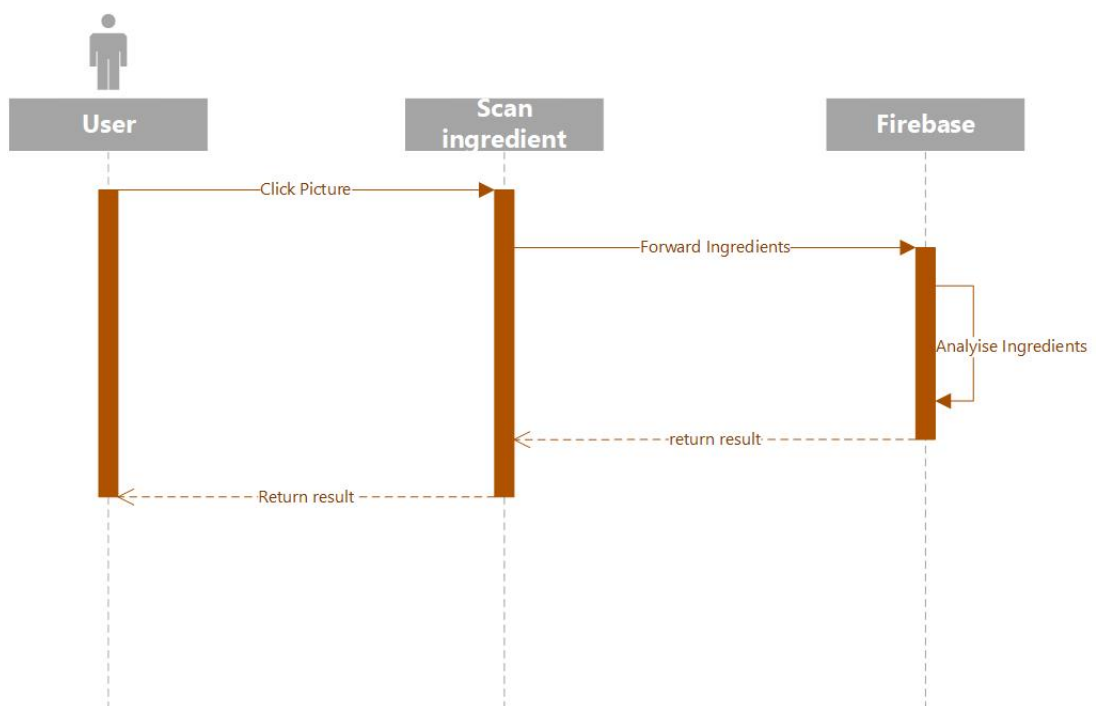


Figure 4.12: Scan Ingredients Sequence Diagram

### 4.7.3 Add Post Sequence

This sequence diagram shows the process of scanning ingredients

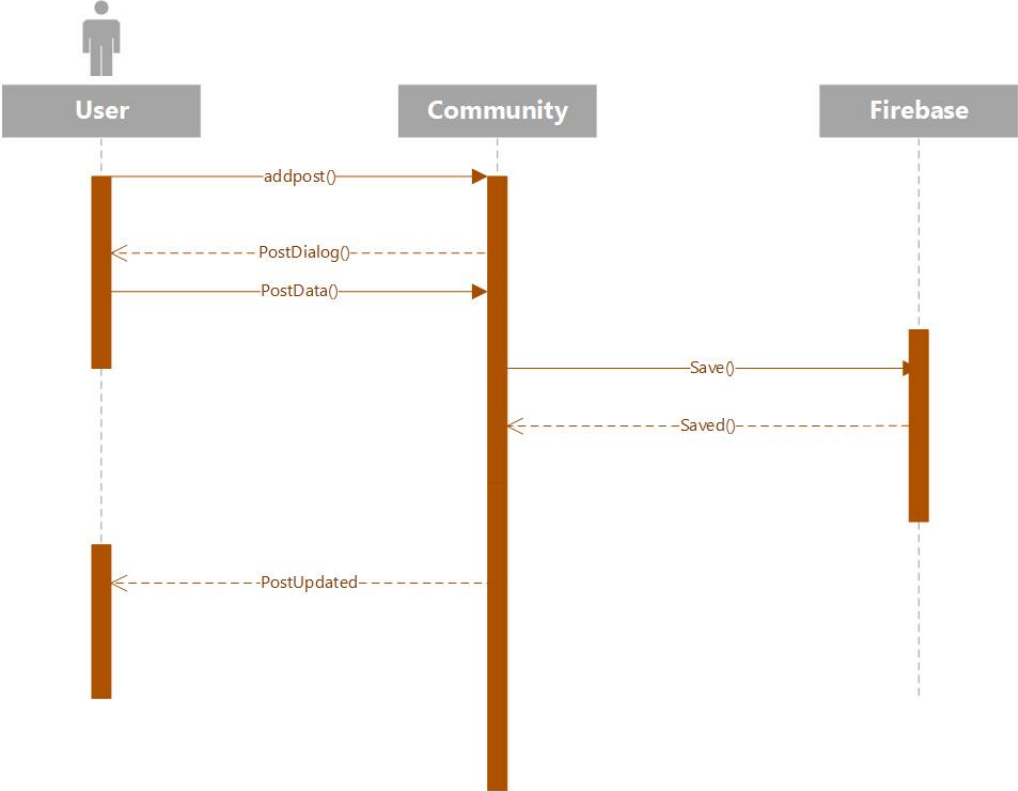


Figure 4.13: Add Post Sequence Diagram

## 4.8 GUI Design

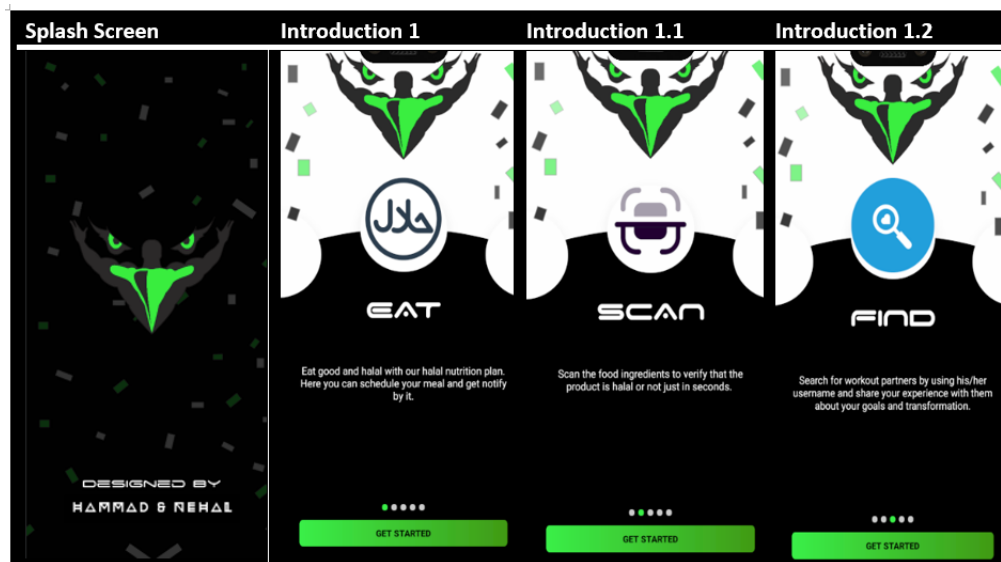


Figure 4.14: Start Up GUI

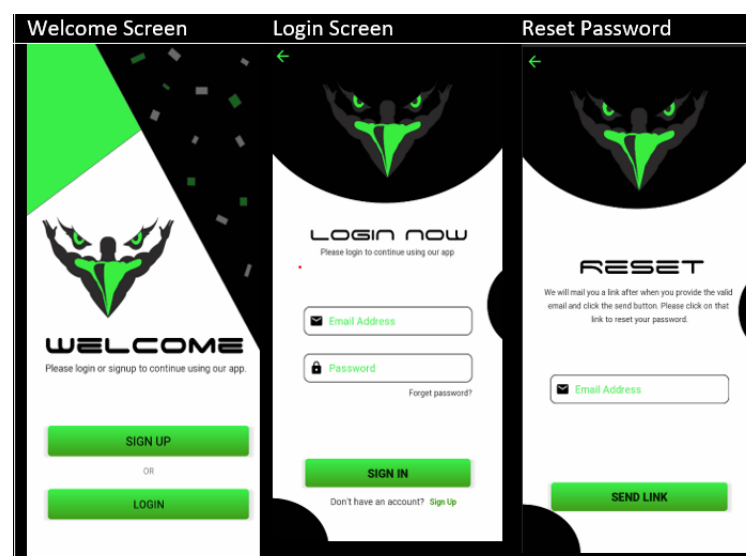


Figure 4.15: Welcome screen GUI

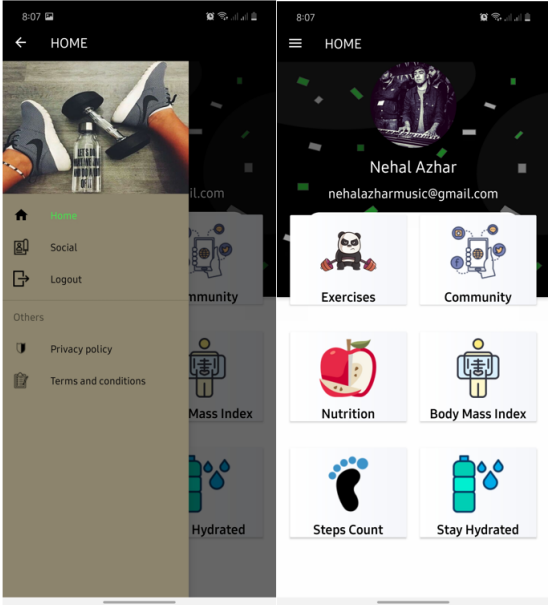


Figure 4.16: Dashboard GUI



## Chapter 5

# System Implementation

The implementation stage takes the requirements and design stage item and actualizes them utilizing fitting advancements. On account of approval testing, it is during this stage that experiments are finished and robotized in anticipation of approval testing. Regularly, a great deal of testing on the early framework renditions is additionally performed during this stage, not just to approve the framework, yet to approve that there are no issues with the experiments themselves.

A program will compose dependent on the calculation planned in the last stage (design). A bit of code is composed for each module and checked for the yield. We will utilize the Java for android to build up the product. At this stages must match between the requirements and the yield of the application to decide the confirmation for it. As referenced, the execution language will be Java in light of the fact that generally Android applications are written in it.

### 5.1 System Requirements

For both the application and external dynamic database we need separate hardware and software requirements

- **Activity Requirements**  
Computer OS( Windows or Mac)  
Android OS  
Database: Firebase.
- **Hardware Requirements**  
Android OS mobile device.

- **Software Requirements**

- Android Studio

- Photoshop CC

- Adobe XD

- Adobe Illustrator.

## 5.2 Innovation Choices

From the start the customer should introduce an Android application so they can admittance to Share .Experience application, for the versatile application android gives an assortment of preassemble UI segments, for example, organized design articles and UI controls that permit you to fabricate the graphical UI for your application.

Android additionally gives other UI modules to exceptional interfaces, for example, dis-coursed, warnings, and menus. Likewise we will utilize XML to fabricate an intuitive interface for the clients, with a viable form for the portable clients as well

## 5.3 Deployment Structure

### 5.3.1 Description

The fundamental thought is that the center of the application would live in the network layer. The interface to the network and server layers would remain consistent, the customer layer comprises of things like, on Android exercises. The server layer would extract highlights of the device like information base access, network access and so forth for the network and customer layers. It would not exclusively be a covering on the device explicit API however it could likewise rearrange admittance to the element so the network layer can focus on the application logic.

### 5.3.2 Deployment Design Diagram

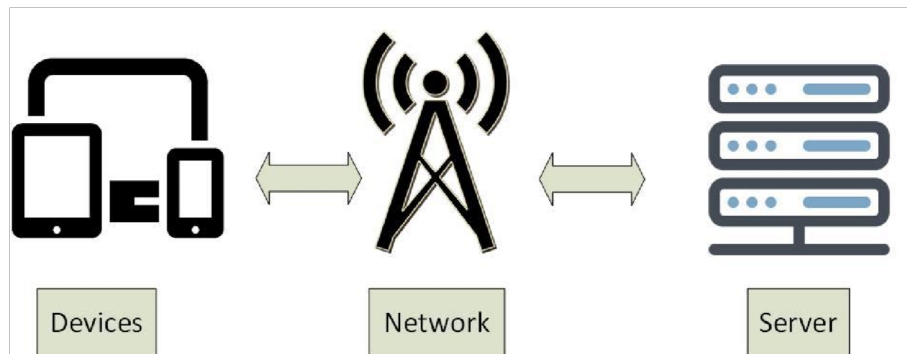


Figure 5.1: Deployment Design Diagram

### 5.3.3 Components

- User/Client.
- Server.
- Network.

### 5.3.4 Relationship Of Components

- Network is used to connect the client with the server.
- Services are requested by the client from the server.
- Multiple clients can receive services from the server.

### 5.3.5 Advantages

The advantages are that the client-server networks bear the cost of the capacity to make a unified area for the entirety of your files. The benefits of having a spot to store files are various.

The client devices (cell phones, tablet, and so on) all will remain clean, as there is no compelling reason to hinder them with records. This at last improves the involvement in customers

### 5.3.6 Disadvantages

The only disadvantage is that the files are in a single location, which implies that, if the server is offline, the services all stop.

## 5.4 Deployment Diagram

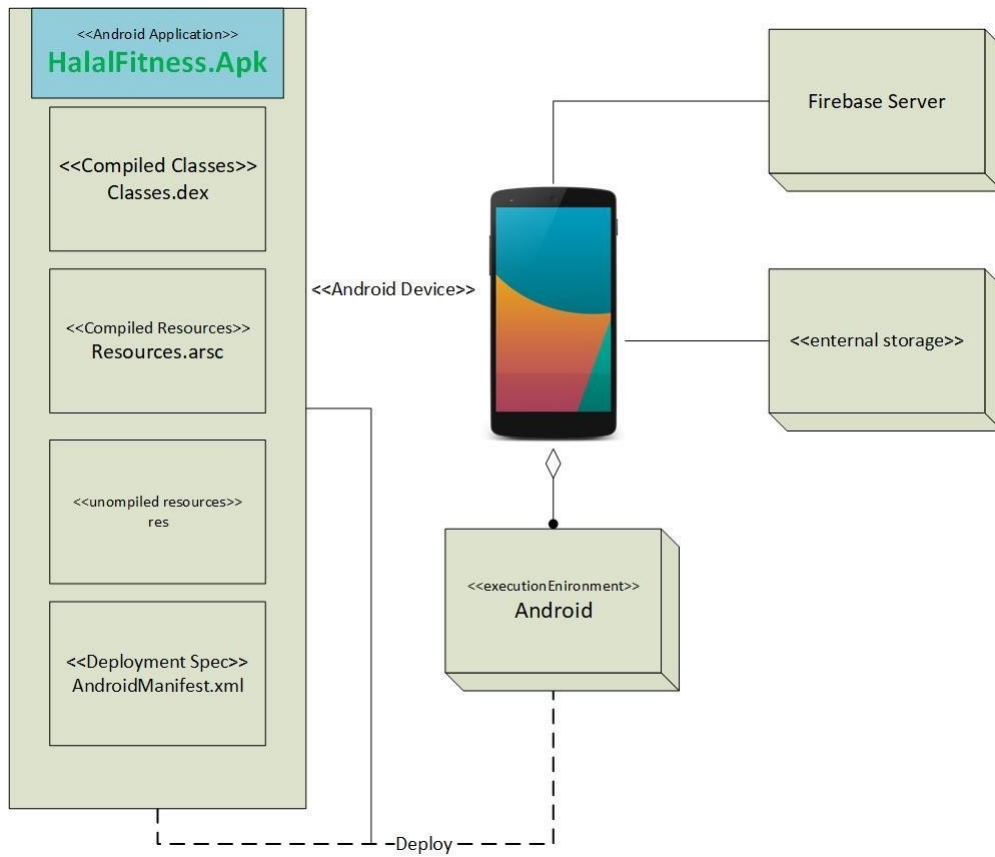


Figure 5.2: Deployment Diagram

## 5.5 Conclusion

We start by presenting the framework design which is utilized in the task, trailed by the product and apparatuses which are utilized in the execution stage .

## Chapter 6

# System Testing and Evaluation

### 6.1 Introduction

Framework testing is something past misstep ID. Testing writing computer programs is working the programming under controlled conditions to watch that it demonstrations "as shown"; to perceive botches, and to affirm that what has been shown is what the customer truly needed. Programming testing is an assessment coordinated to give accomplices information about the idea of the thing or organization under test. Framework testing can in like manner give an objective, free point of view on the item to allow the business to recognize and grasp the risks of programming use.

Test strategies consolidate, yet are not confined to, the path toward executing a program or application with the objective of finding programming bugs (bungles or various enormities). Affirmation is the checking or testing of things, including programming, for conformance and consistency by surveying the results against pre-shown necessities. Confirmation: Are we assembling the circumstance right?

Error Detection: Testing should intentionally try to make things turn out gravely to choose whether things happen when they shouldn't, or if things don't happen when they should. Endorsement looks at the system precision – for instance is the route toward watching that what has been resolved is what the customer truly required. Approval: Are we amassing the advantage framework? All things considered, endorsement checks whether we are building what the customer needs/necessities, and affirmation confirms whether we are building that structure successfully. Both affirmation and endorsement are fundamental, yet different pieces of any testing development.

## 6.2 Reason For Testing

There are two main purposes behind testing

1. Acquisition subtleties and regulating dangers. In the first place, testing is connected to affirming that what was resolved is what was passed on it watches that the thing (structure) meets the down to earth, execution, plan, and use requirements recognized in the acquisition subtleties.
2. Second, testing is connected to administering danger for both the getting office and the system's vender/originator/Integrator. The testing program is used to recognize when the work has been "done" with the objective that the arrangement can be closed, the dealer paid, and the structure moved by the workplace into the assurance and backing time of the endeavor.

## 6.3 Significance of testing

Framework testing is really expected to raise the disfigurements and botches that were made during the improvement stages. Its principal since it guarantees the Customer's resolute quality and their satisfaction in the application. It is basic to ensure the idea of the thing. A quality thing passed on to customers helps in getting their sureness.

Testing is fundamental to offer workplaces to the customers, for instance, the movement of extraordinary things or programming applications, which requires lower upkeep costs moreover, thusly achieves more exact, consistent and trustworthy results. Testing is required for a convincing display of programming applications or things. It's basic to ensure that the application should not achieve any failure since it can be over the top costly later on or in the later periods of the unforeseen development. It's expected to stay in the business.

## 6.4 Testing Environment

Android applications are first tried inside the improvement climate utilizing emulators also, later exposed to genuine device testing. Emulators give a modest method to test applications on cell phones. The following devices were utilized for test environment **Halal Fitness Android Application.**

### 6.4.1 Android Emulators

Android emulators help us to test Halal Fitness Application on various devices without having to all things considered have them available. These advances fill in as virtual bits

of equipment that work on a PC or PC. By emulator, we can pick the sizes and OS forms, or even modules to test. What's more, check certain usefulness that isn't explicit to any device, transporter or working framework.

#### 6.4.2 Physical Android Devices

We run application on physical devices like Huawei, Samsung, Oppo and Vivo. Also, testing on physical handsets gives dependable and precise outcomes, gives interoperability testing on the grounds that performed on a live arrange and give UX client experience by end user.

### 6.5 Challenges in testing

**HalalFitness Application** needs to deal with a scope of devices, meet client desire to ensure nature of venture and accomplished client prerequisites and non-functional requirements .

#### 1. Orientation

The principal variant of HalalFitness application uphold just vertical orientation and not upheld Landscape orientation on the grounds that these direction require plan explicit design for landscape orientation.

#### 2. Notifications

**HalalFitness application** should be ready to get push notifications, open relating article and error dealing with.

#### 3. Gestures

Gestures permit clients to collaborate with **HalalFitness application** by controlling the screen objects. Like touch, swipe and other. By test the motions on genuine gadgets we can see that is work in high productive way.

#### 4. Network Connection

**HalalFitness application** exchanging between mobile data and Wi-Fi network, ready to managing request/response measures. Furthermore, transfer/download/stop/drop information.

#### 5. User Experience

User experience (UX) includes an individual's practices, perspectives, and feelings about utilizing a framework. User experience incorporates the pragmatic, experiential, full of feeling, significant and important parts of human-PC communication. **HalalFitness application** meet to user experience in light of the fact that have effortlessness, setting, great navigation, and great text dimensions and catch sizes .

## 6.6 Checklist

This checklist is explicitly intended to test the attributes of **HalalFitness Application**. Clearly, it tests just conventional task qualities and not the usefulness of the undertaking. For this, a different test approach and test content must be made. The equivalent goes obviously for execution testing, ease of use testing, security testing and other important testing exercises.

**This checklist is further divided into four categories.**

- Device explicit qualities. These are qualities that are identified with the device on which the application is installed.
- Network explicit checks.
- Application checks. These are things to watch that have to do with usefulness that is much of the time utilized in an application.
- Application UI checks.



## 1. Device explicit qualities

Table 6.1: Device explicit qualities checks

No.	Description	Yes/No	SCORE
1	Is the system ready to install on the device?	Yes	A
2	Weather if the application respond as planned when there is an incoming call?	Yes	A
3	Weather if the application respond as wanted if there is an approaching SMS?	Yes	A
4	Weather if the application respond as planned/wanted if the charger is connected to the device?	Yes	A
5	Weather if the application respond as planned/wanted if the charger is separated from the smartphone?	Yes	A
6	Weather if the application respond as planned/wanted if the smart phone goes to sleep mode?	Yes	A
7	Weather if the application respond as planned/wanted if the smartphone resumes from sleep mode?	Yes	A
8	Weather if the application respond as planned/wanted if the smartphone resumes from lock screen?	Yes	A
9	Weather if the application respond as planned/wanted if the smartphone is inclined?	Yes	A
10	Weather if the application carry on as planned/wanted if the gadget is shaken?	Yes	A
11	Weather if the application respond as planned/wanted if a nearby message is coming from another application (consider: schedule updates, to-do task and so forth)?	Yes	A
12	Weather if the application act as planned/wanted if a push message is coming from another application (consider: twitter makes reference to, whatsapp message, wordfeud greeting, and so forth)?	Yes	A
13	Weather if the application connect with the GPS sensor correctly (turn on/off, retrieve GPS information)?	Yes	A
14	Weather if the usage of the apparent multitude of catches /keys on the smartphone optimum for this application?	Yes	A
15	in the event that there's a valid "back" button accessible on the smartphone does the "back" button take the client to the past screen?	Yes	A
16	in the event that there's a genuine "menu" button accessible on the smartphone, does the menu button show the application's menu?	Yes	A

17	on the off chance that there's a genuine "home" button accessible on the gadget, does the home catch get the client back to the home screen of the smartphone?	Yes	A
18	in the event that there's a genuine "search" button accessible on the smartphone, does this get the client to some type of search inside the application?	Yes	A
19	Weather if the application respond as/wanted if the "Battery low" message is pushed?	Yes	A
20	Weather if the application respond as planned/wanted if the sound on the smartphone is muted?	Yes	A
21	Does the application carry on as planned/wanted if the smartphone is in standalone mode?	Yes	A
22	Is the application able to be un-installed from the smartphone?	Yes	A
23	Does the application work normal after reinstallation?	Yes	A
24	Is the application available to be found in the application store?	Yes	A
25	Can the application switch to various applications on the smartphone through performing various tasks as planned/wanted?	Yes	A

## 2. Network explicit checks

Table 6.2: Network explicit checks

No.	Description	Yes/No	SCORE
1	Weather if the application act as per decided whenever connected with the web using Wi-Fi?	Yes	A
2	Does the application act as indicated by detail whenever associated with the web through Mobile Data?	Yes	A
3	Does the application respond according to detail of the application is out of network reach?	Yes	A
4	Does the application continue working when it gets once more into network reach from outside reach of the network?	Yes	A
5	Update transactions are prepared effectively subsequent to restoring association.	Yes	A
6	Does the application actually work effectively while primary smartphone associated with another smartphone??	Yes	A
7	What occurs if the application switches between networks?	Yes	A
8	Does the application utilize standard network port to connect with distant administrations, as certain suppliers block certain ports?	Yes	A

### 3. Application Explicit Checks

Table 6.3: Application Explicit Checks

No.	Description	Yes/No	SCORE
1	To save controls as inconspicuous as feasible for example by blurring them out in the event that they are not utilized for some time.	Yes	A
2	Make it workable for user to return to a past screen for case by adding a back or drop button.	Yes	A
3	The fundamental capacity of the application ought to be evident right away. It ought to represent itself with no issue.	Yes	A
4	Use all things considered one activity on the screen that is featured as the most probable for the user.	Yes	A
5	Minimize user activities by utilizing a picker or a table view where clients can choose a specific decision over an information section field where user need to type a decision.	Yes	A
6	In an application, the client ought not have the option to store documents locally, outside the application sandbox.	Yes	A
7	In an application, the client ought not be presented to the consents of a particular document	Yes	A
8	If there is an extensive rundown of information to look through, give a search alternative over the rundown.	Yes	A
9	If execution is moderate, demonstrate an advancement status symbol, ideally with explicit message.	Yes	A
10	In the event of 'live' separating of information while the user enters his search inquiry, confirm the presentation	Yes	A
11	Do not utilize standard catches for different capacities then that they are ordinarily utilized for.	Yes	A
12	The application ought to react to all adjustments in gadget direction, according to the plan.	Yes	A
13	Tap-able components should be about 7x7 mm in size, utilizing the pixel thickness of the objective smartphone you can compute the measure of pixels.	Yes	A
14	Do not reclassify signals in your application that have a norm which means swiping start to finish triggers the notification panel.	Yes	A
15	Requirement to login is deferred in the application as long as conceivable.	Yes	A
16	If the application is halted at an unforeseen time, user information ought to be saved locally and accessible at start up.	Yes	A
17	Users ought to be cautioned of the results of erasing a record.	Yes	A
18	Keyboard changes with anticipated inputs (for example numbers/letters when anticipated).	Yes	A

## 6.7 Test Cases

Table 6.4: Test Case no.1 : Opening the application

<b>Test Case ID</b>	1
<b>Function to be tested</b>	Opening the Application
<b>Initial State</b>	Application should be already installed
<b>Input</b>	Click on application icon
<b>Expected Result</b>	Application Launches Successfully
<b>Result</b>	Application Launched Successfully
<b>Status</b>	Pass

Table 6.5: Test case no. 2 : Signup

<b>Test Case ID</b>	2
<b>Function to be tested</b>	Signup
<b>Initial State</b>	Application is opened
<b>Input</b>	User Data(name, email, password, DOB ,etc.)
<b>Expected Result</b>	Successfully signup the user and navigate to dashboard
<b>Result</b>	User successfully signed up and navigated to dashboard
<b>Status</b>	Pass

Table 6.6: Test case no. 3: Login Using Valid Credentials

<b>Test Case ID</b>	3
<b>Function to be tested</b>	Log In using valid credentials
<b>Initial State</b>	Application should be open and account must exist
<b>Input</b>	Login Credentials i.e. Username/email password
<b>Expected Result</b>	User is navigated to application dashboard
<b>Result</b>	User is successfully navigated to dashboard
<b>Status</b>	Pass

Table 6.7: Test case no.4: Login using invalid credentials

<b>Test Case ID</b>	4
<b>Function to be tested</b>	Login using invalid credentials
<b>Initial State</b>	Application should be open and account must exist
<b>Input</b>	Invalid Login Credentials i.e. Username/email & password
<b>Expected Result</b>	User is prompted “ Username or password incorrect”
<b>Result</b>	User is prompted “ Username or password incorrect”
<b>Status</b>	Pass

Table 6.8: Test case no.5: Community Feature

<b>Test Case ID</b>	5
<b>Function to be tested</b>	Community feature
<b>Initial State</b>	User is logged in to the application
<b>Input</b>	Click on community icon
<b>Expected Result</b>	User to be navigated to news feed and posts displayed
<b>Result</b>	User is navigated to news feed and posts are displayed
<b>Status</b>	Pass

Table 6.9: Test case no.6: BMI Calculator

<b>Test Case ID</b>	6
<b>Function to be tested</b>	BMI calculator
<b>Initial State</b>	BMI calculator feature is opened
<b>Input</b>	User height weight
<b>Expected Result</b>	Body to mass index displayed
<b>Result</b>	Body to mass index is displayed
<b>Status</b>	Pass

Table 6.10: Test case no.7: Steps Counter

<b>Test Case ID</b>	7
<b>Function to be tested</b>	Steps counter
<b>Initial State</b>	Step counter must be opened
<b>Input</b>	Click on start counting button
<b>Expected Result</b>	Steps to be counted as user start walking
<b>Result</b>	Steps are being counted as the user started walking
<b>Status</b>	Pass

Table 6.11: Test case no.8: Exercise

<b>Test Case ID</b>	8
<b>Function to be tested</b>	Exercise
<b>Initial State</b>	Exercise menu is opened
<b>Input</b>	Select Exercise and click start
<b>Expected Result</b>	Exercise information is displayed and timer starts
<b>Result</b>	Exercise information is displayed and timer starts
<b>Status</b>	Pass

Table 6.12: Test case no.9: Scan Product

<b>Test Case ID</b>	9
<b>Function to be tested</b>	Scan Product
<b>Initial State</b>	Nutrition Menu opened
<b>Input</b>	Click Scan product capture image
<b>Expected Result</b>	Application to extract text from image and display either product is Halal or Haram
<b>Result</b>	Application extracts text from image and display either product is Halal or Haram
<b>Status</b>	Pass

Table 6.13: Water Intake Test Case

<b>Test Case ID</b>	10
<b>Function to be tested</b>	Water Intake Tracking
<b>Initial State</b>	Water Intake menu opened
<b>Input</b>	Water Amount, Reminder message, time interval
<b>Expected Result</b>	Notification Pops up at given time intervals
<b>Result</b>	Notification Pops up at given time intervals
<b>Status</b>	Pass

## 6.8 Test Case and Results

### Test Case ID # 1

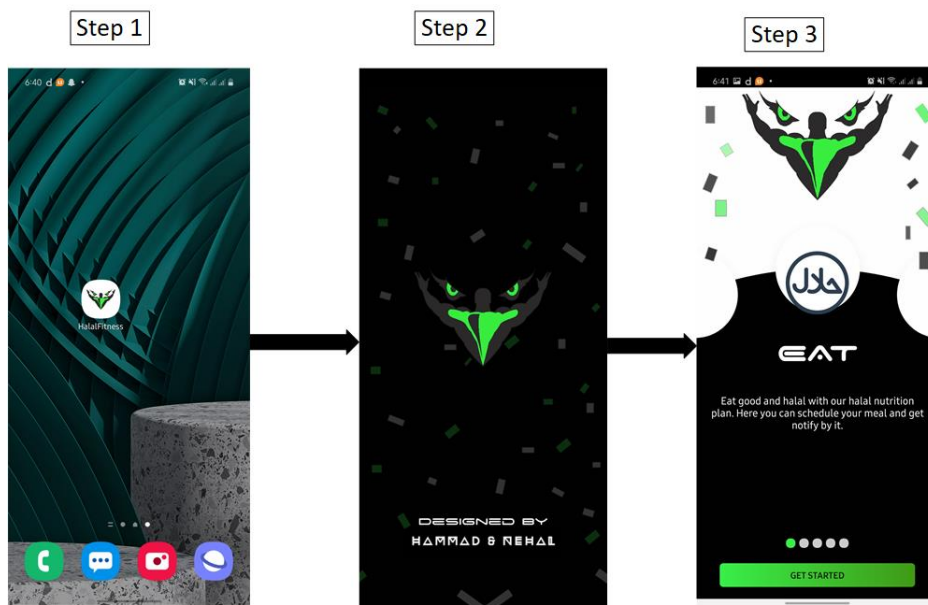


Figure 6.1: Test Case ID # 1 Result

Test Case ID # 2



Figure 6.2: Test Case ID # 2 Result

### Test Case ID # 3

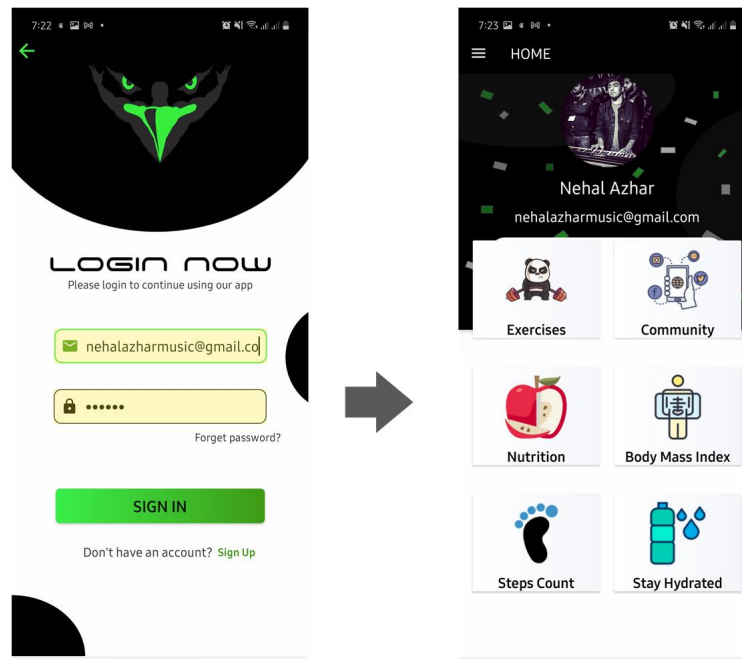


Figure 6.3: Test Case ID # 3 Result

### Test Case ID # 4

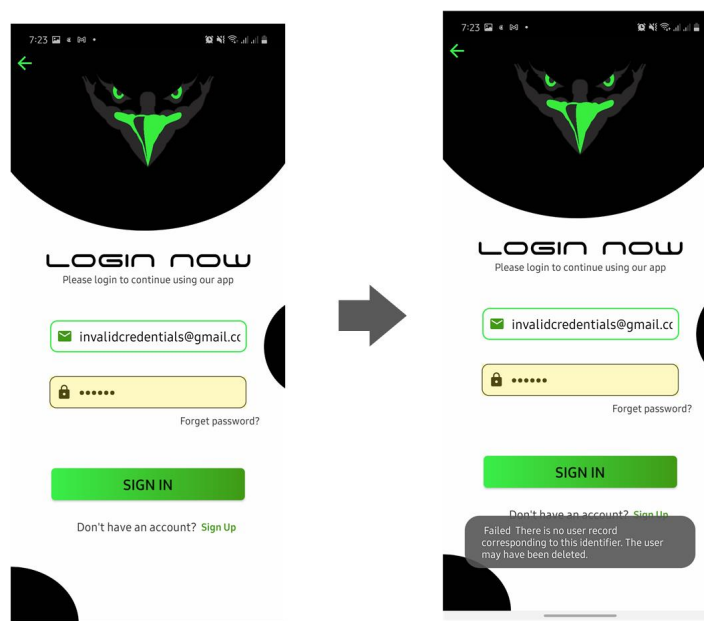


Figure 6.4: Test Case ID # 4 Result



Test Case ID # 5

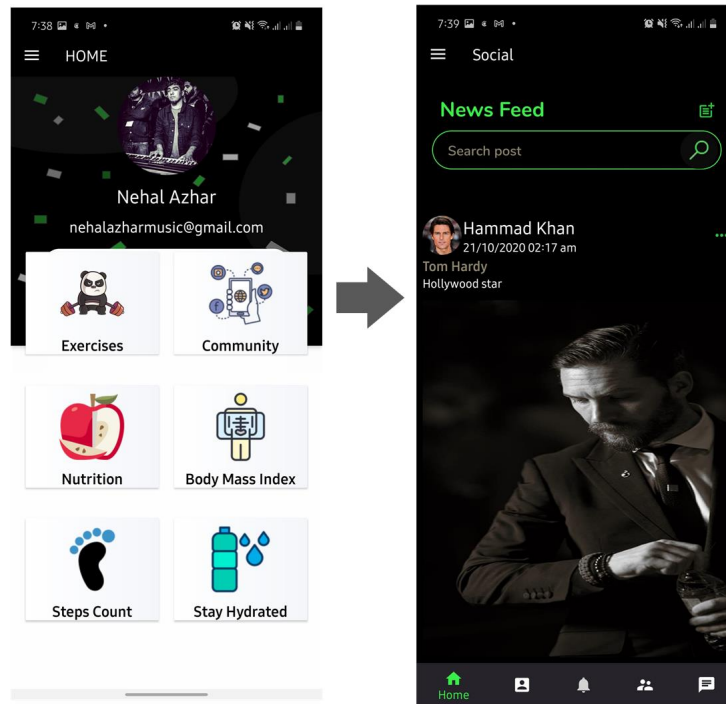


Figure 6.5: Test Case ID # 5 Result

Test Case ID # 6

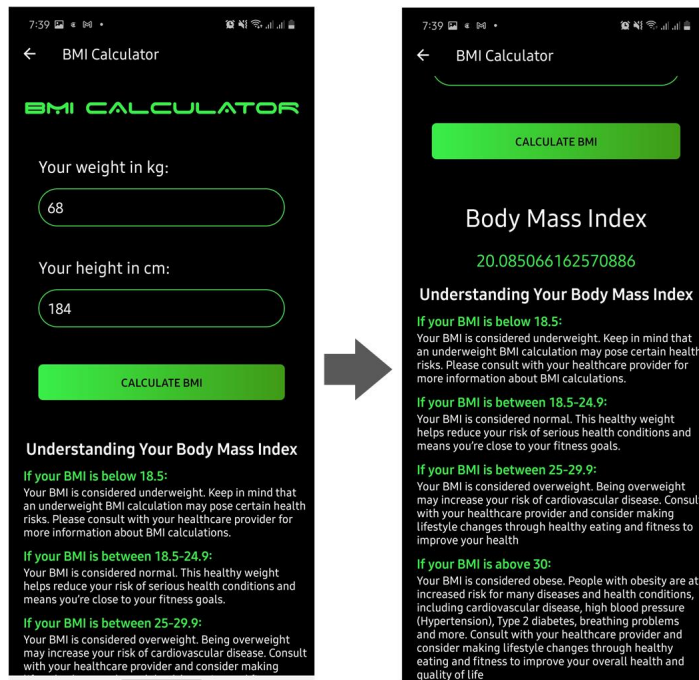


Figure 6.6: Test Case ID # 6 Result

Test Case ID # 7

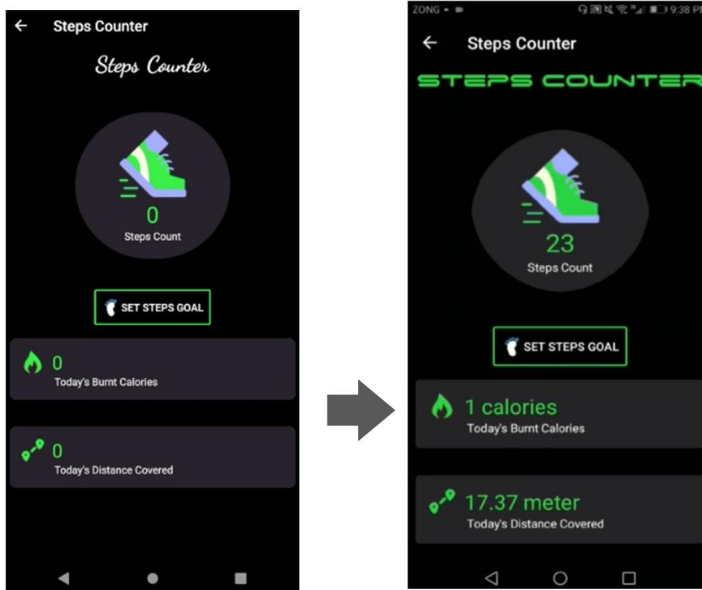


Figure 6.7: Test Case ID # 7 Result

Test Case ID # 8

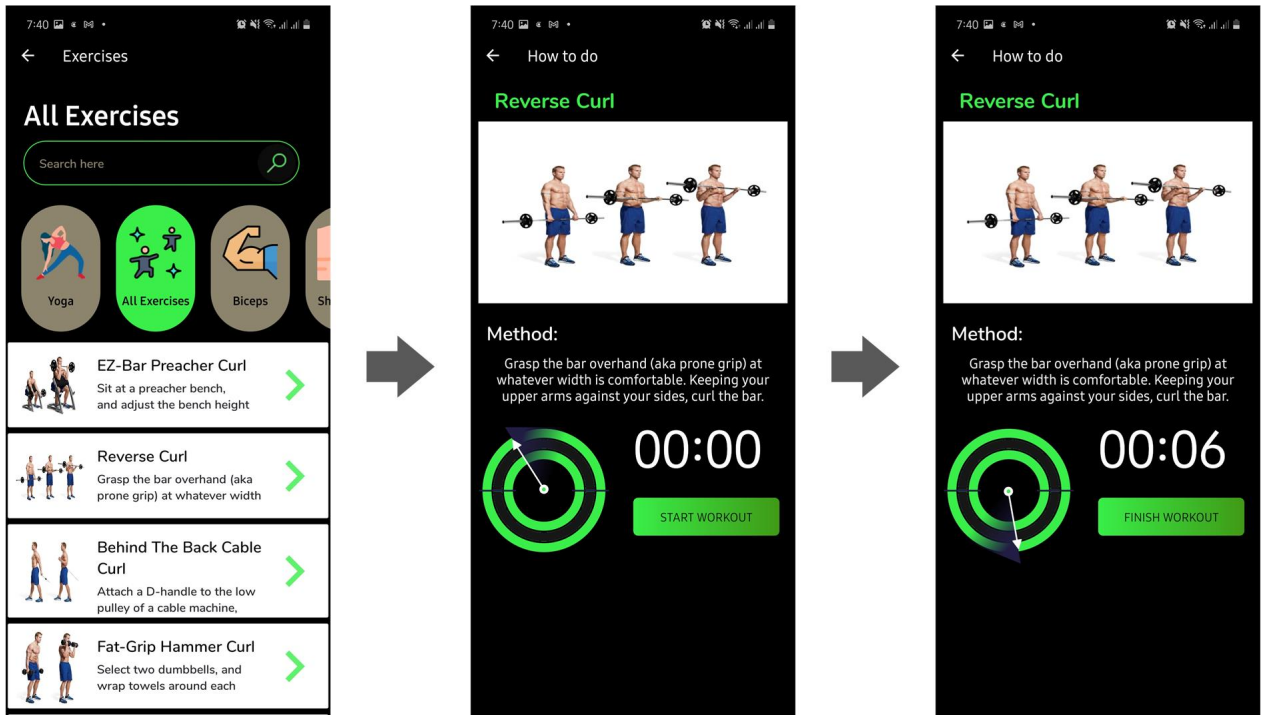


Figure 6.8: Test Case ID # 8 Result

Test Case ID # 9

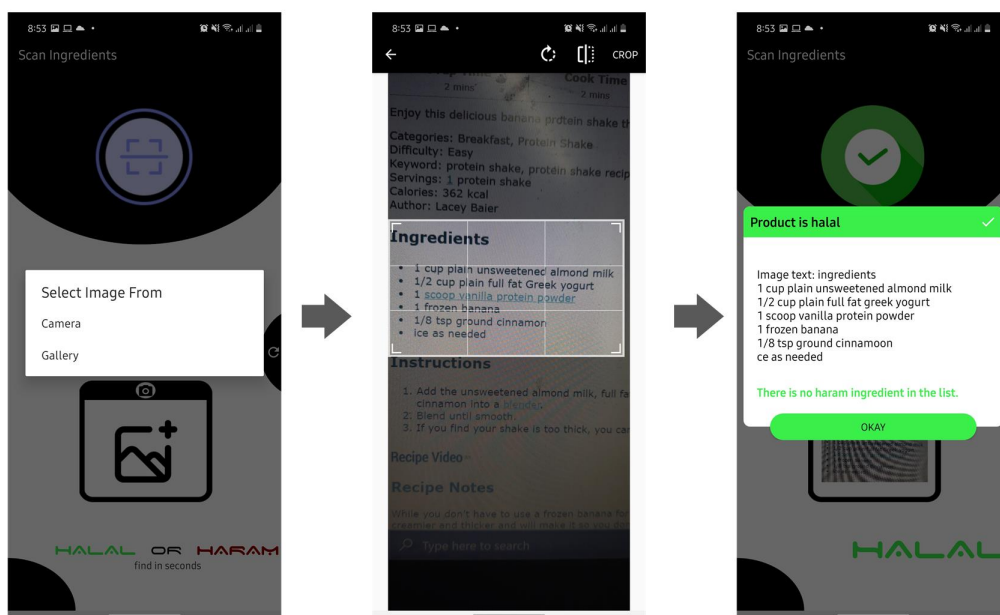
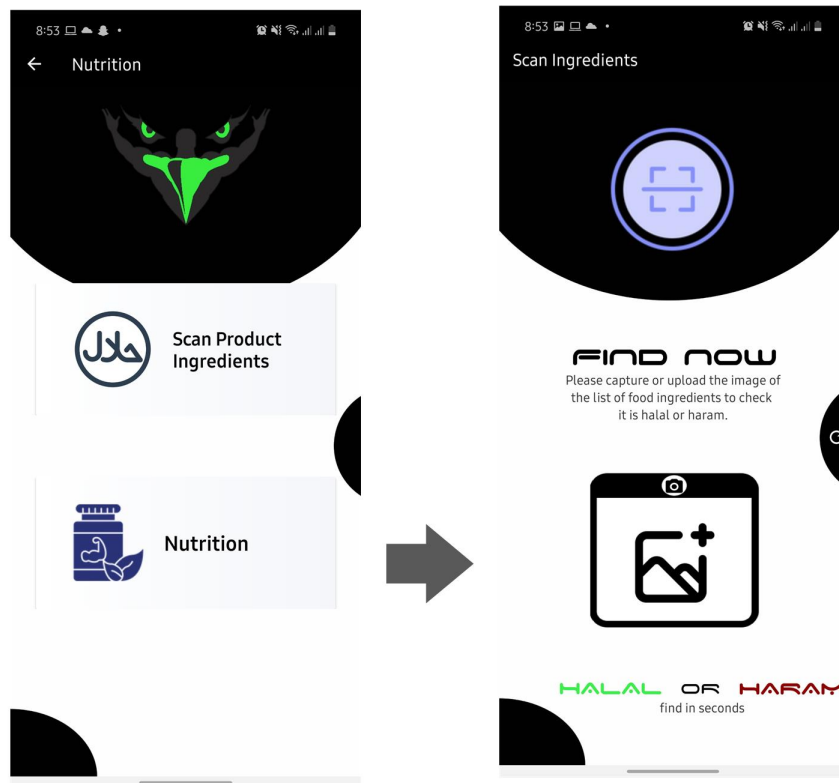


Figure 6.9: Test Case ID # 9 Result

### Test Case ID # 10

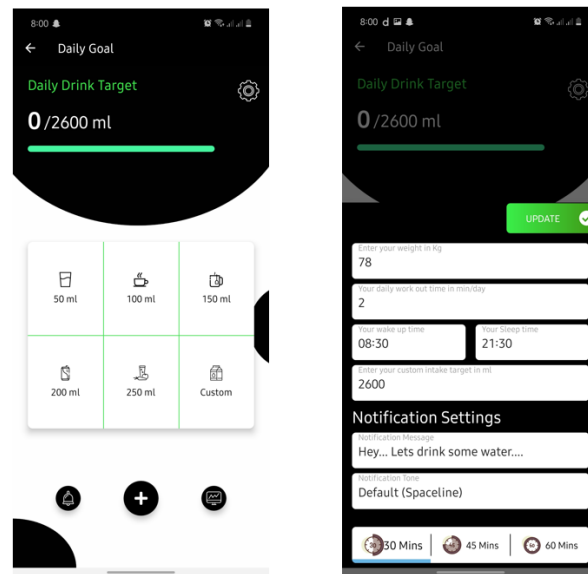


Figure 6.10: Test Case ID # 10 Result

## 6.9 Maintenance/Updates

Application maintenance is done to this framework to address flaws, improving execution or adjusting the framework to another climate and the automatically actualized programming module is tried for the right yield. Bugs, blunders are eliminated at this stage. During the time spent testing, a progression of tests and experiments are performed to check the module for bugs, flaw and different blunders. Wrong codes are composed and tried again until wanted yield is accomplished. Framework can be kept up when required or required such: When another usefulness is added, when a reality the product models change and Software must be refreshed to run on improved equipment or with improved programming.

## 6.10 Beta Tests

Application beta tests normally center around quality, user acknowledgment, and execution. **HalalFitness application** is uploaded on **Play Store** in beta form for users to assess. The clients downloaded **HalalFitness Application** on their devices.

The outcomes were wonderful with numerous supports and different sorts of criticism. Focusing on real users to attempt the application was a proficient strategy for assessment.

## 6.11 Interfaces

- **Interface**

The application is available from android working framework utilizing android smartphone association with the web worker. Required exceptional equipment "android smartphone". In the event that a problem gathers during a solicitation, the user ought to get a specified error message.

- **Interface Layouts.**

Table 6.14: User Login

1.1 User Login	
Username	Password

Table 6.15: User Registration

1.2 User Registration	
Name	Username
E-mail	New Password
Height	Weight
Gender	Age

Table 6.16: User Profile

1.2 User Profile	
First Name	Last name
E-mail	New Password
Height	Weight
Gender	Age
Picture	Date of birth



# Chapter 7

## Conclusions

### 7.1 Description

This section sums up conversation about the project and exhibits plans for future work. Toward the end, it gives an end for the undertaking with results achieved. It gives some significant proposals for designers on the framework later on. // // The new framework has been sent with so much consideration that it is liberated from errors and simultaneously effective and less tedious. The framework is hearty. Likewise arrangement is accommodated future turns of events in the framework.

### 7.2 Future Planning

1. We will develop a web application for the halalFitness application
2. Adding the Urdu language to the application.
3. Halalfitness Application is currently only on android , we plan on making an iOS version of the application in the future.
4. Show inspirational notification that will encourage the user to workout.
5. Adding the feature to register in a nearby gym using the HalalFitness Application.

### 7.3 Conclusion

The final year project report named "Halal Fitness Application" has come to its decision. The new application has been created with so much consideration and at the equivalent time effective and less tedious. Framework is hearty. Likewise arrangement is accommodated future advancements in the application.





# References

- [1] Emis Group. Physical activity for health. 2020. Cited on p. 1.
- [2] Upwork. Health and fitness. 2020. Cited on p. 1.
- [3] Body bulding. Finding a plan. 2020. Cited on p. 2.
- [4] Fitness tools online. 2018. Cited on p. 2.
- [5] Abdul rahamon. . muftautunde. 2020. Cited on p. 5.
- [6] Origion Tech Dave, Siege. Healthcaresoftware. 2015. Cited on p. 5.
- [7] Fitness app market. 2018. Cited on p. 6.

