PROJECT FINAL REPORT

FOR GROUP PROJECT

CST 392-2

Group No: 15

FOOD RECIPE MOBILE APPLICATION

Computer Science and Technology

Department of Computer Science and Informatics

Faculty of Applied Sciences

Uva Wellassa University of Sri Lanka

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Declaration

We do hereby declare that the work reported in this report was exclusively carried out by us under the supervision of Mr. U. E. Ranasooriya and Mr. H.P.D.P. Pathirana It describes the results of our own independent work except where due reference has been made in the text.

GROUP NO: 15

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Acknowledgement

We would like to acknowledge with much appreciation to all those who provided us the possibility to complete this project. We convey thank to our project supervisors, Mr. U. E. Ranasooriya and Mr. H.P.D.P. Pathirana of Computer Science and Technology Department for providing encouragement, constant support and guidance which was of a great help to complete this project successfully. We would also like to thank Mr. U. E. Ranasooriya, our project coordinator. He was always there with his support. We would also like to thank the panel who judged us and gave ideas about the future development of our project.

Abstract

There are a number of applications in Android store for Recipes Search but none of them support interface for creating, searching, saving, and sharing recipes all at once. “Chef Society” is an Android application with image based UI for searching, sharing, creating and saving recipes. This app provides flexibility to user to search variety of recipes from available recipes in the forum. In addition, the app provides the users with distinct features such as smart search filter, calorie calculator, rating function, Q & A forum and service marketing platform. Users can share their problems and idea through Q & A forum and Moderator will answer user's concerns and general questions. Service marketing platform develop the system to provide job opportunity to Users. They can apply for the job by providing their talent in different aspects. Through this application we earn by using advertisement. Mainly advertisements are focus in the hotel industry. Development of our application helps hotel managers to increase their customers.

Also, this is very handy application, which every user can search for recipes, save recipe as favorite, share recipe with friends on social media Facebook. This app is time saver providing recipes in few clicks. Through title search, Chef Society app makes finding recipes easy. With recipes being added daily there will always be something new for user to crave. The project has been implemented using Flutter, firebase and Dart.

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Chapter 1: Introduction

1.1 Title

FOOD RECIPE MOBILE APPLICATION

1.2 Description

Nowadays, it is safe to admit that the world has attained the form of global village, where everything is accessible through technology. The advent of mobile phone has shaped the life of many people. It is hard to pass a day by without checking and rechecking your social network accounts. This can merely assert that mobile applications have already made their ways to our lives. The use of mobile devices such as, smartphone or tablets has increased significantly in the past decade. All these devices use applications that are created for them. These applications can provide many different services including, social media, music streaming, video streaming, ride sharing, online shopping, and video games. Some of these apps need to be constantly connected to the internet to function properly, while others can work offline. This paper presents a food recipe Android application that helps users find and view different food recipes based on different categories, as well as allowing them to add their own recipes to the database. The users can filter the list of recipes based on the food categories such as deserts curries rice. The app aspires to run efficiently, while having an intuitive a simple design that provides the user all the necessary functionalities.

1.3 Background & Motivation

We planned to develop this kind of mobile application, nowadays there are so many recipe apps but we can't use those apps in offline. As a result, we going to develop our project to achieve that target. An important part of this app is we can express our opinion on various kind of recipes. As a result we can sort out the most acceptable one. Next thing is we are going to include the recipe in details as a result customer can use this application. Through this application we earn by using advertisement. Mainly advertisements are focus in the hotel industry. Development of our application helps hotel managers to increase their customers.

1.4 Problem in Brief

There are many good recipe apps which provide thousands of recipes but a good application lacks a small feature that prevents it from making it a great application. We noticed a few things which were missing, for example currently existing applications does not support users to upload their own recipes to the application. Only the developer can add new recipes to the app.

1.5 Proposed Solutions

We are going to develop our project to overcome the problem regarding limited number of recipes.

So we have tried to overcome the limitations of existing systems by giving users the ability to upload their own recipes to the system and they also can get feedback from other users on their uploaded recipes to gain a better experience.

Also we are hoping to implement a rating system to the recipes so the users can rate, like or dislike to the recipes which were uploaded by other users.so the users can filter out recipes based on most liked recipes.

1.6 Objectives

- Our aim is to help users cook great food with the recipes which are easy to understand and even easier to make. Today, users are increasingly drawn towards the idea of cooking meals from the comfort of their homes.
- The important of our application is, we are going add a function which we can calculate the nutrition value of the recipes. Now a day we can't find this kind of option in this kind of application. In this function we going develop to calculate the calories per particular quantity. And we are going calculate BMI value , water intake to our application.
- Finding the proper source for recipes to cook for a beginner is difficult, that's where our app helps.
- Help to find the proper source for recipes to cook for a beginner.
- Provides user flexibility to search and save recipes from a database with an additional capability to maintain personal cook book for creating new recipe, deleting recipe that are no longer required.

- To help save the user money and time by tediously referencing cook books and buying ingredients he does not need.
- Increase better partnerships and cooperation

1.7 Methodology

The development of a mobile application is not as simple as it seems to be. It is a challenging task that requires a lot of expertise and a team of specialists, who can communicate every detail to the client and discuss with them the key objectives to comprehend the requirement of the application as well as the qualities needed. Agile methodology for mobile application development also puts forward the option for clients to improvise and suggest changes in the project before it is completed. Agile methods are one of the few methods used in software development. Agile method is a type of short-term system development that requires rapid adaptation and developers to change in any form. In Agile Software Development interactions and personnel are more important than processes and tools, software that functions more important than complete documentation, collaboration with clients is more important than contract negotiation, and the attitude of responding to change is more important than following the plan. Agile Method can also be interpreted as a group of software development methodologies based on the same principles or short-term system development that requires rapid adaptation of the developer to changes in any form. Agile Method has a way of working close to the client, using this method the client will be able to directly assess the running of the application and what things are missing and need to be added to the application. There is a high return on investment due to the iterative nature of the app and the speedy development process due to the teamwork involved. Due to the teamwork and scope of improvisation at every step, there is a highly reduced risk of any errors or mistakes in the application development process. Responsiveness is increased in this methodology because of the constant customer feedback and the addition of new features instantly according to the requirement and changing preferences of the audience. The process of updating the app serves to be a good practice that enables constant revision and removes any bugs that may be there in it. So we decided to use Agile Methodology to develop our mobile app successfully.

Chapter 2: Requirements Identification

2.2 Functional Requirements

- Register: A user needs to register in order to access the app. The user needs to enter his/her username, password, age, and country. That information will be stored in the database and will serve as the profile info.

- Login: Any app operation requires the user to be registered. Login is the first step before performing an action.

- View Profile: After being successfully registered. The user can view his/her profile, where information of username, age, and country are displayed. Also, View Profile will enable you to view your created recipes as well as the recipes you have marked as favorite. In addition, View Profile will make you check your shopping list for the needed ingredients.

- Edit Profile: The registered user shall be able to edit his/her profile, such as editing the username. Also, he/she shall be able to reset the password if needed.

- View Recipe: The registered user shall be able to see the recipes posted by other users and themselves. In other words, the user shall be able to access the Recipe Forum, where all the user's recipes are posted and ordered by date of creation.

- Create Recipe: Any registered user shall able to create his/her own recipe. The creation of recipe includes entering the title, description, and other information that concerns the recipe, such as the steps and the ingredients.

- Calorie calculator relevant recipes: Users can calculate the nutrition value of each food by using this calculator.

- View Ingredients: The registered user of the app shall be able to view ingredients of a certain recipe. This option will allow him/her to mark those ingredients as needed, and ultimately find them in the shopping list.

- View My Favorite Recipes: Once the user accesses the recipe information, he/she shall be able to mark a recipe as favorite. The user shall be able to access the recipes that he/she marked as favorite.

- Follow/ Unfollow: The user shall be able to follow a user. The follow feature will allow users to keep posted about the posted recipes by their following users. It is like another recipe forum, but this time, is specifically designed to list just the recipes posted by the users followed by the user. Further, the user shall be able to "unfollow" a certain user if necessary; consequently, that user will be dropped from the list of "following".

- Like & Comment: Have the ability to like and comment on the recipes.

- Smart search filters: Users can filter out the favorite from the recipes list And Users can filter out the recipes which they have followed. Any registered user shall able to search for a recipe using the title as a criterion. The search functionality will provide the users with a shortcut to find their targeted recipes if posted before by the users.

- Rating function: Users can rate the recipes via five starts.

- Q & A forum: Users can share their problems and idea through this forum.

- Services marketing platform: Develop the system to provide job opportunity to chefs. They can apply for the job by providing their talent in different aspects.

2.2 Non-functional Requirements

- The application shall be easy to use and intuitive.
- The application shall have a user-friendly interface.
- GUI shall be simple and clear.
- The application shall be fast and robust when loading.
- The application shall not produce an incorrect output.
- The application shall conform to ISO standards.
- The application shall be protected from any external danger or attacks.

2.3 System Requirements

2.3.1 Hardware Requirements

- OS -Windows
- RAM - 8GB minimum (16GB recommended + SSD)
- Disc Space -10GB for Android Studio, at least 1.5GB for Android SDK, emulator system images and caches.
- Mobile Phone - Xiaomi Redmi Note 4 3
- Internet connection - WIFI , Mobile network

2.3.2 Software Requirements

- Flutter - Flutter is an open-source UI software development kit created by Google. It is used to develop cross platform applications for Android, iOS, Linux, Mac, Windows, Google Fuchsia, and the web from a single codebase.

- Firebase - Google Firebase is Google-backed application development software that enables developers to develop iOS, Android and Web apps. Firebase provides tools for tracking analytics, reporting and fixing app crashes, creating marketing and product experiment. The Firebase Real-time Database lets we build rich, collaborative applications by allowing secure access to the database directly from client-side code.

- Dart - Dart is a programming language designed for client development, such as for the web and mobile apps. It is developed by Google and can also be used to build server and desktop applications. Dart is an object-oriented, class-based, garbage-collected language with C-style syntax.

2.4 User Levels

- User
- Admin
- Moderator

2.5 User Roles

- User

  User can add, edit and delete recipes.

  User can search the recipes via category.

  User can comment, like the rate recipes.

  User profile management.

- Admin

  Promote and demote members to/from moderators.

  Manage the rules.

  Create sections and sub-sections, as well as perform any database operations, such as database backup, etc.

  Make forum-wide announcements.

  Change the appearance.

  Delete users and moderator accounts.

- Moderator

  Have access to the posts and threads of all members for the purpose of moderating discussion.

  Keep the forum clean.

  Neutralizing spam and spam bots.

  Answer user's concerns and general questions.

  Common privileges include: ‘deleting, merging, moving, and splitting of posts and threads, locking, renaming, and sticking of threads warning the members, or adding, editing, removing the polls of threads.

2.6 Client Details

Name: R.M.Udara Sampath.

Occupation: Chef (worked in foreign country).

Chapter 3: System Modeling

Systems Analysis and Design (SAD) is an exciting, active field in which analysts continually learn new techniques and approaches to develop systems more effectively and efficiently.

3.1 Use case Diagram

The system's use case shows the user a detailed view of the system and how the actors would interact with each other and with the system.

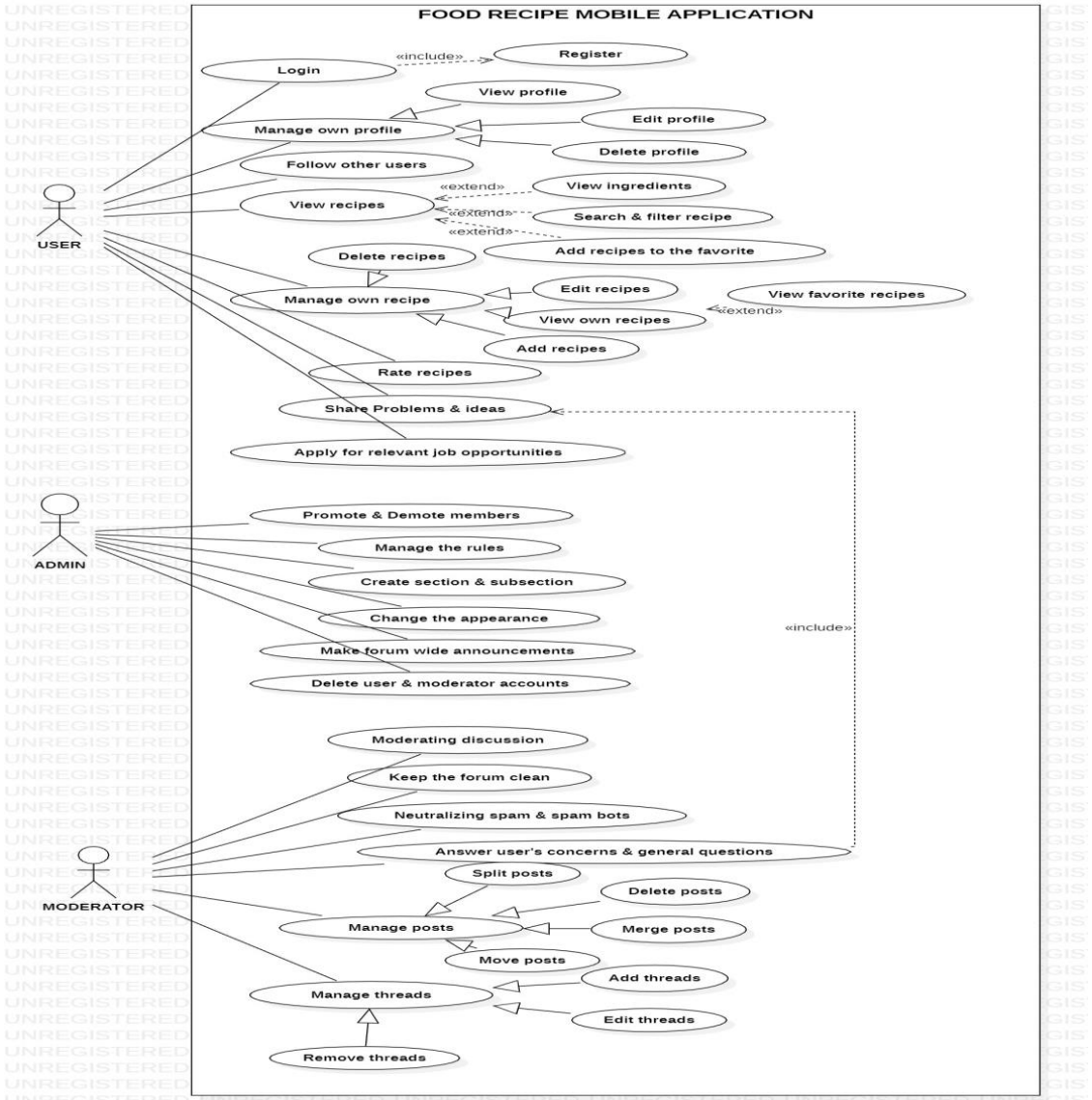

Figure 1: Use case Diagram

3.2 Activity Diagram

This is a graphical representation of workflows of stepwise activities and actions with support for choice, iteration and concurrency.

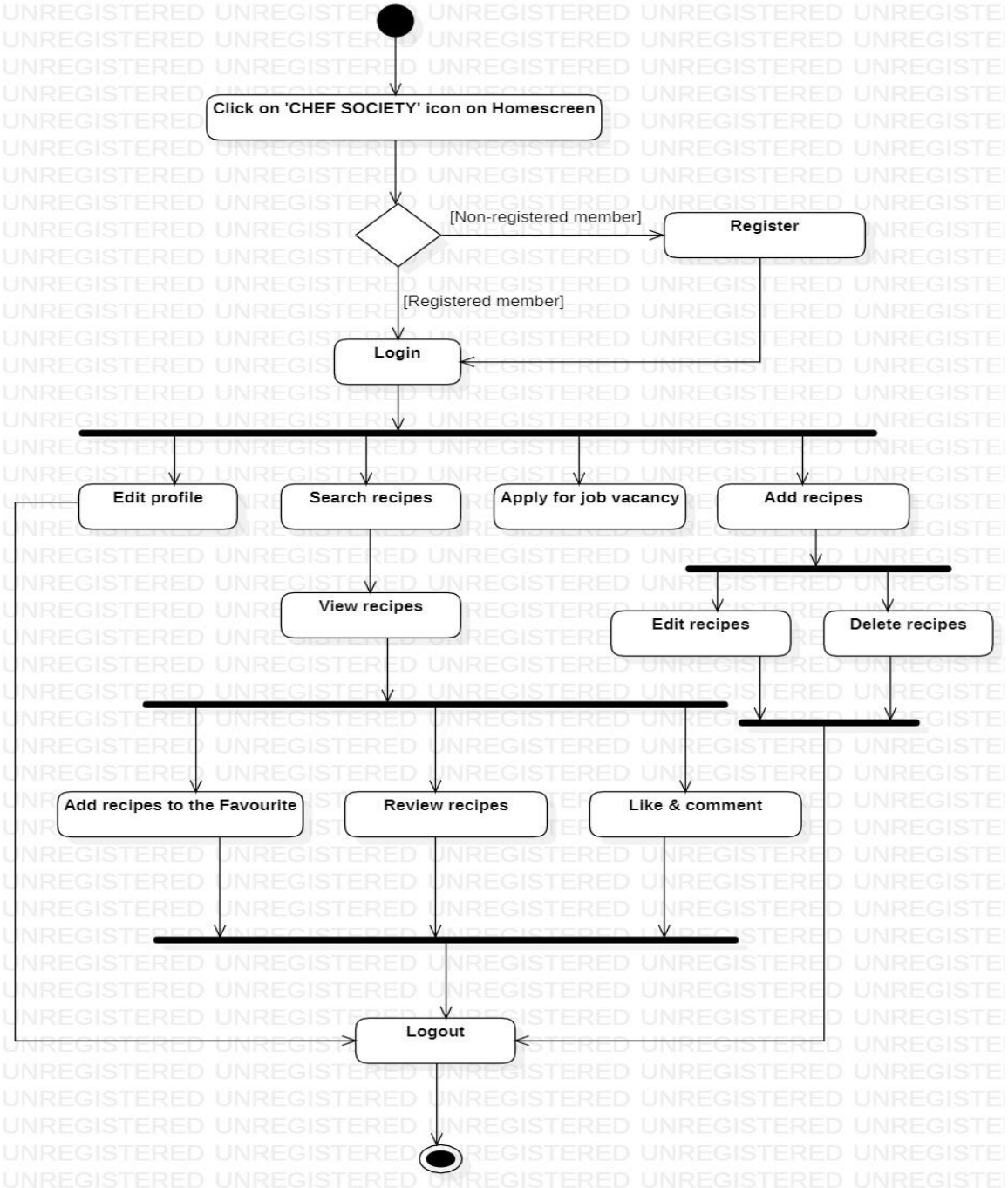

Figure 2: Activity Diagram

3.3 Class Diagram

This is a type of static structure diagram that describes the structure of a system by showing the system's classes, their attributes, operations/methods and the relationships between the classes.

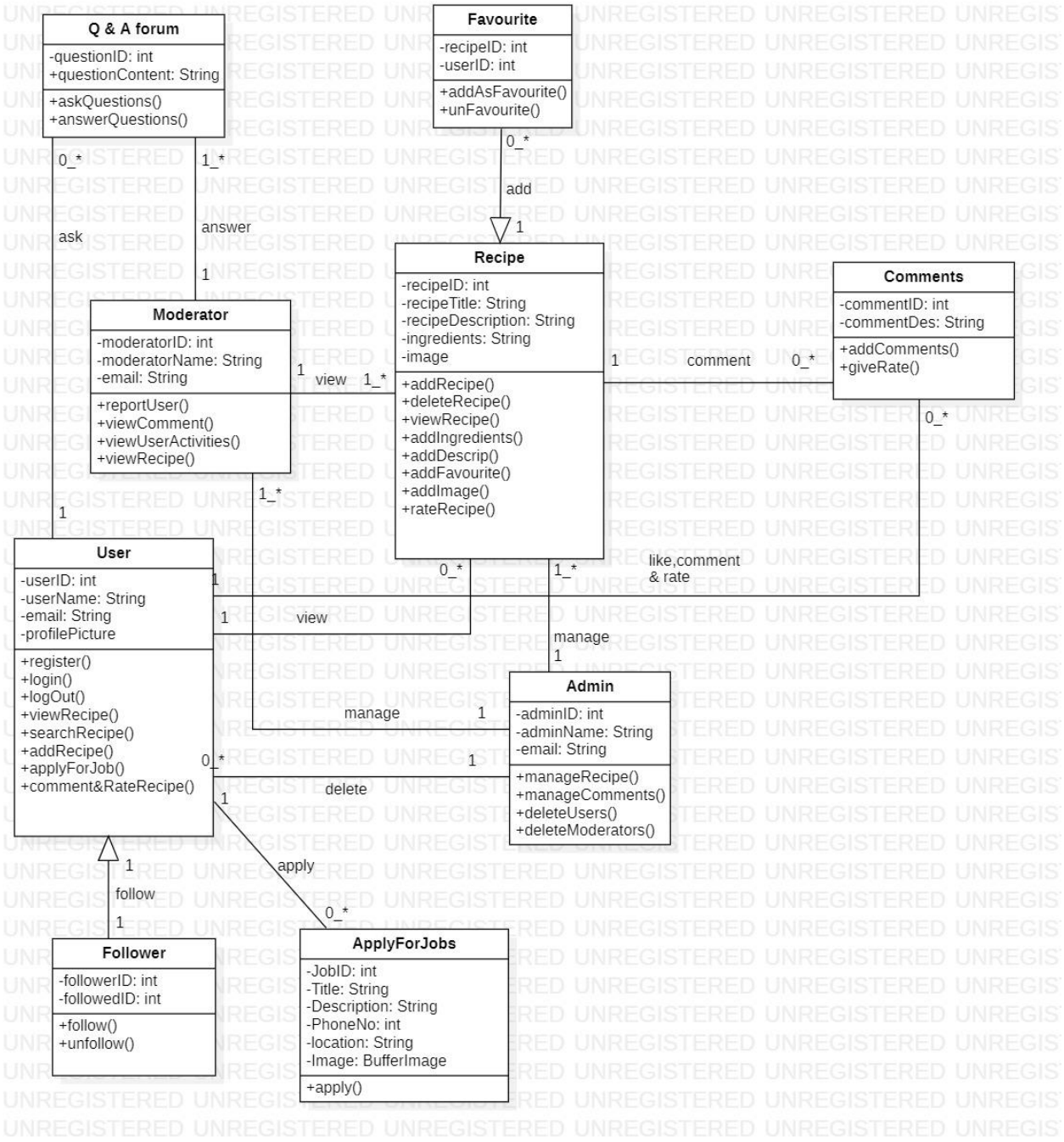

Figure 3: Class Diagram

Chapter 4: System Diagram

4.1 ER Diagram

An entity relationship diagram (ERD) shows the relationships of entity sets stored in a database. By defining the entities, their attributes, and showing the relationships between them, an ER diagram illustrates the logical structure of databases. ER diagrams are used to sketch out the design of a database.

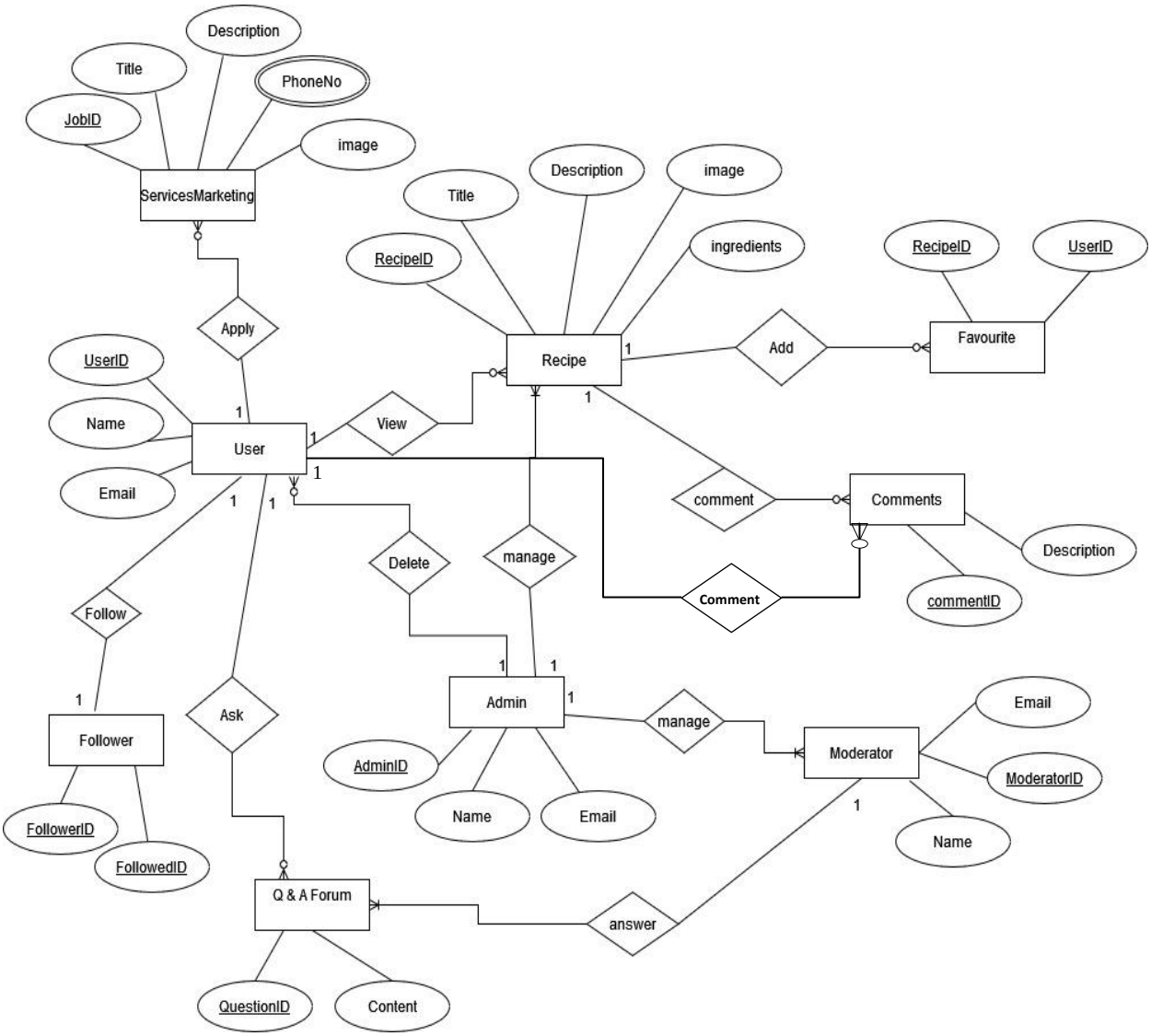

Figure 4: ER Diagram

Chapter 5: Implementation

5.1 User Interface Design & Implementation

This is one of the main task of the developer to design a graphical user interface that user attracts to and can use easily, in one word it should be user friendly. So for this we should have better understanding of customers likes and dislikes and the features that are in trend and mesmerize the public easily, initially we need to locate the targeting people that what kind of application do they need. After getting all this information we should start to design the application. After checking all the information than design this project interfaces. From page 22 - 46 shows the user interface screen shots of this project.

Sign In Page

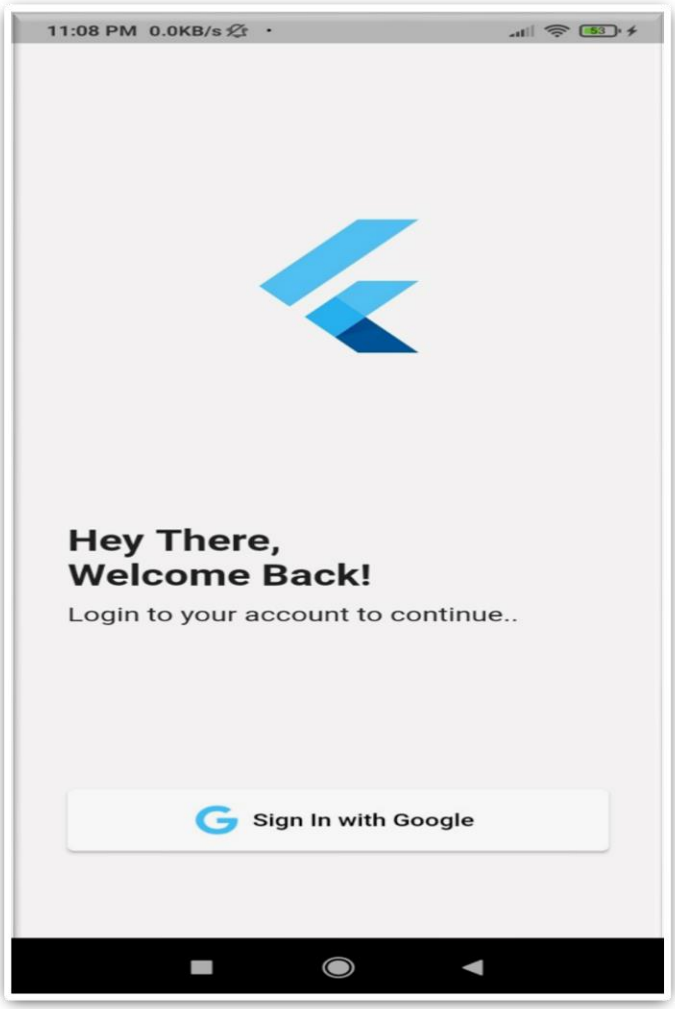

Figure 5: Screenshot of Sign In page

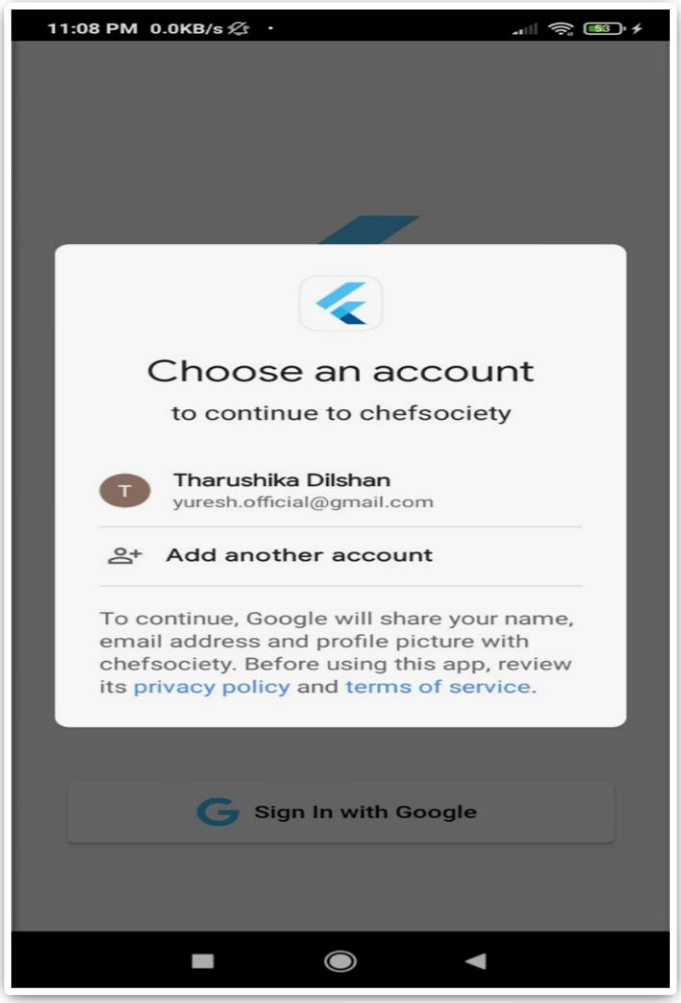

Figure 6: Screenshot of Sign In page

Home Page

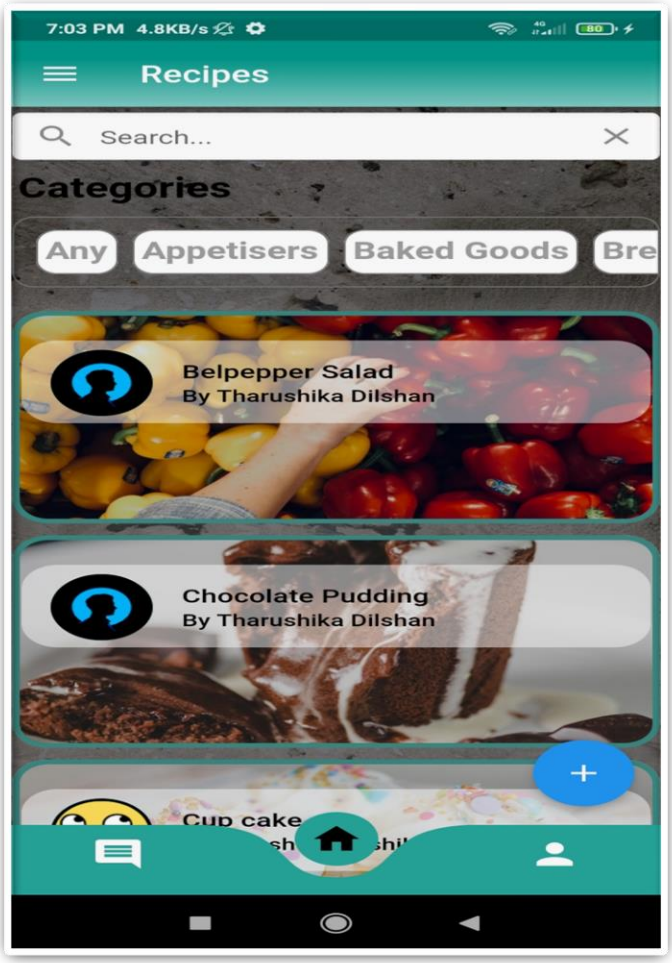

Figure 7: Screenshot of Home Page

View Recipe

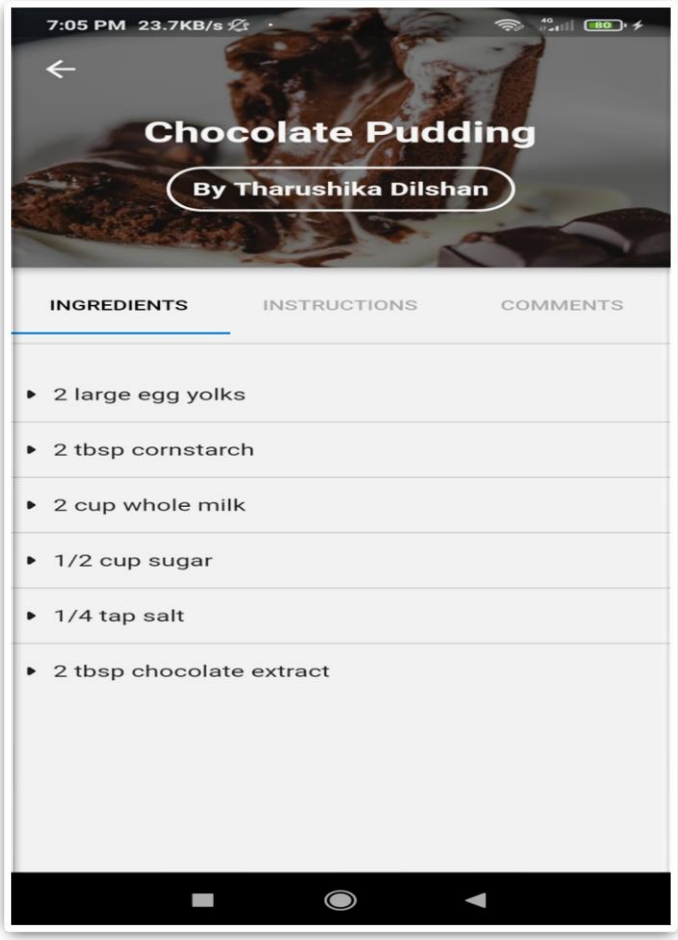

Figure 8: Screenshot of view Recipe Page

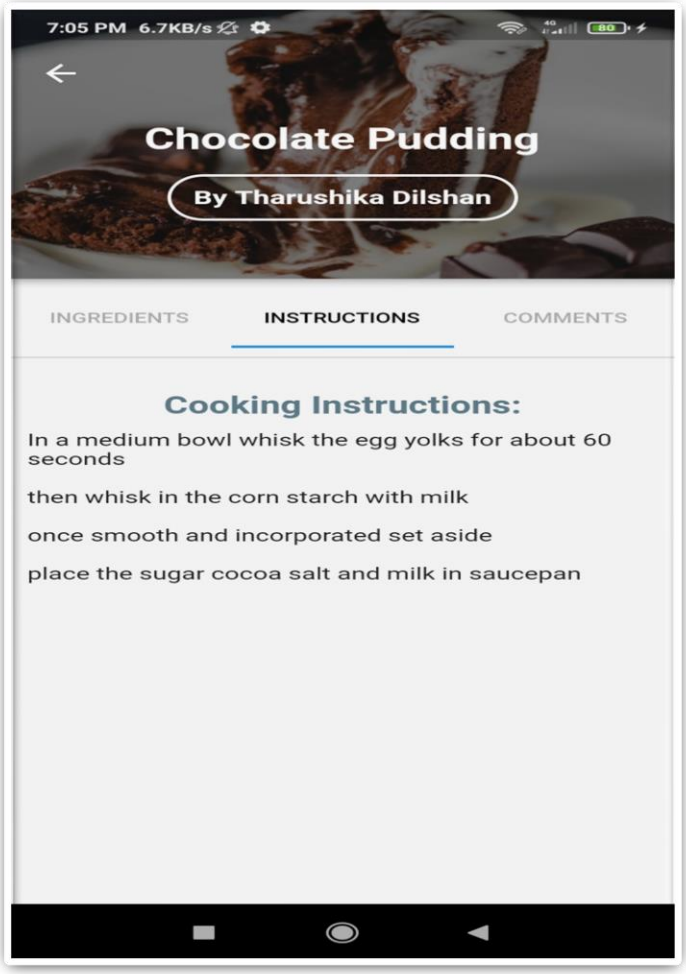

Figure 9: Screenshot of view Recipe Page

Smart search filter

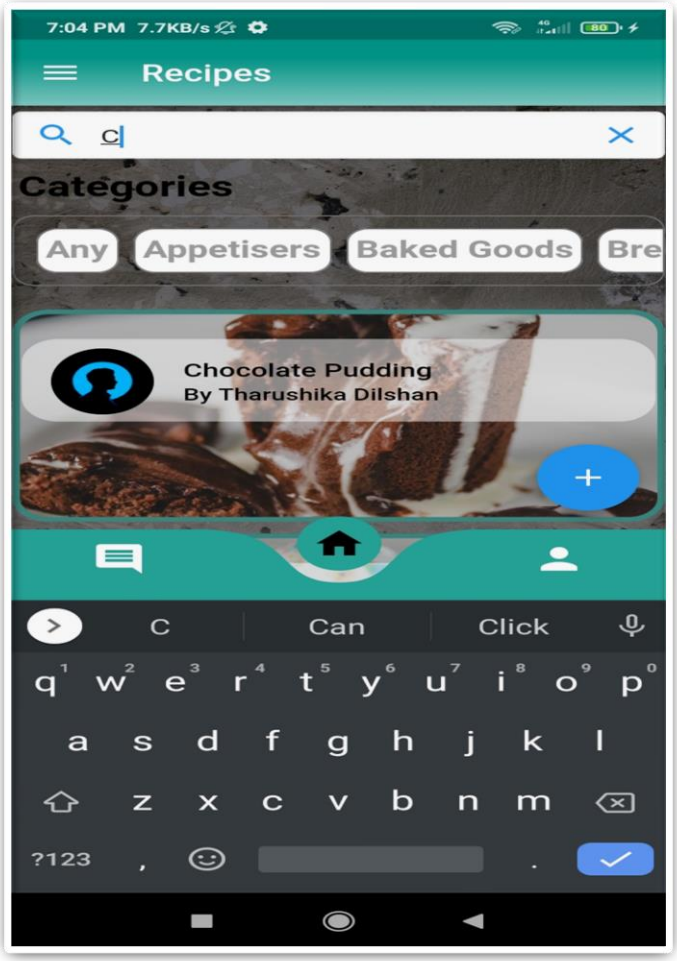

Figure 10: Screenshot of Search filter

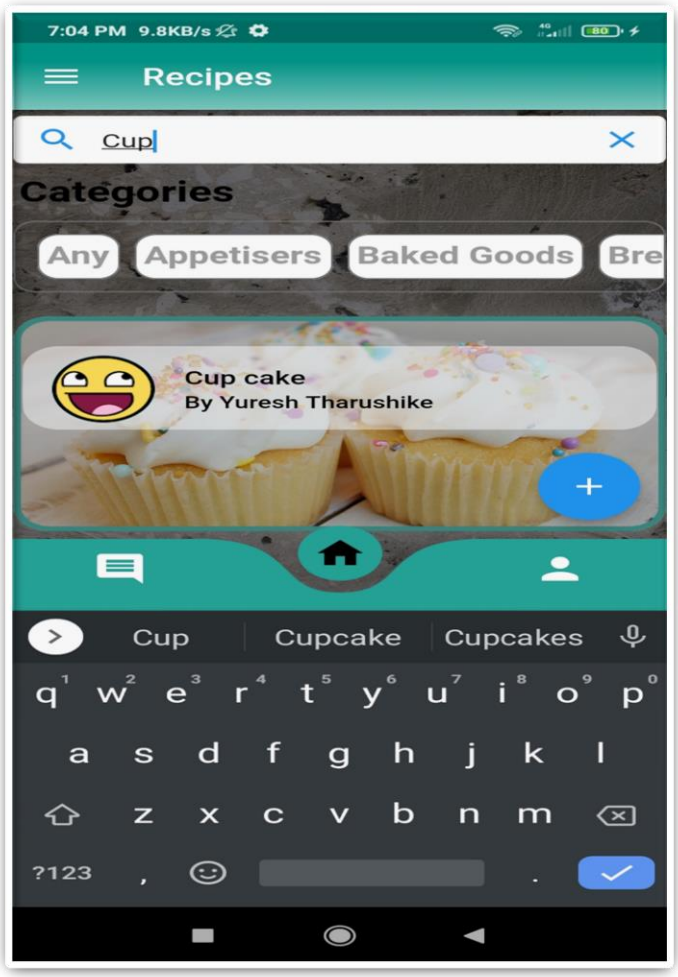

Figure 11: Screenshot of Search filter

Add New Recipe

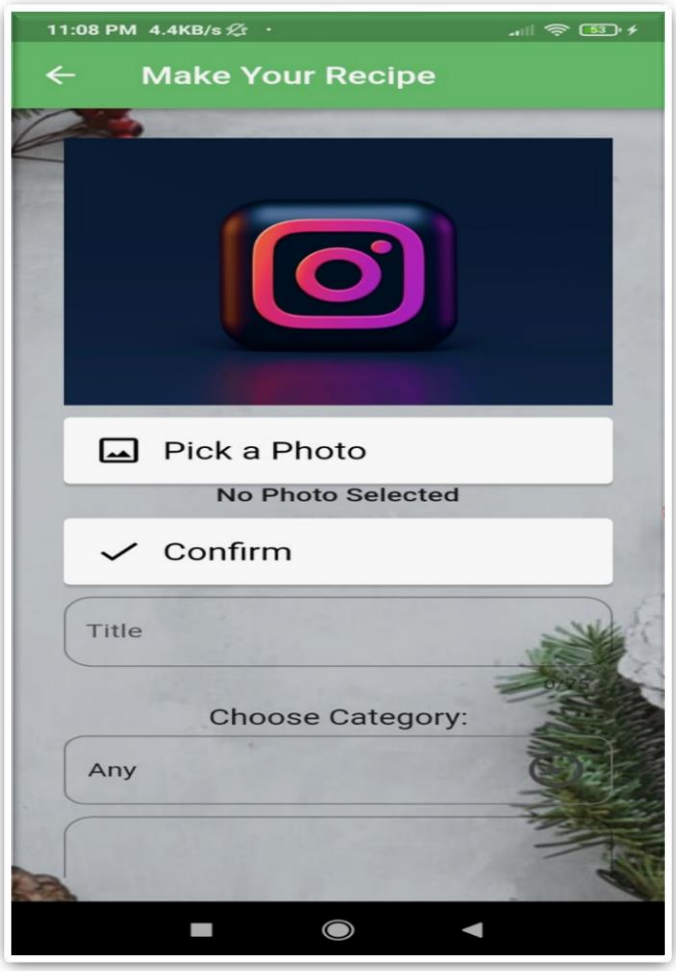

Figure 12: Screenshot of Add New Recipe Page

Figure 13: Screenshot of Add New Recipe Page

Comment

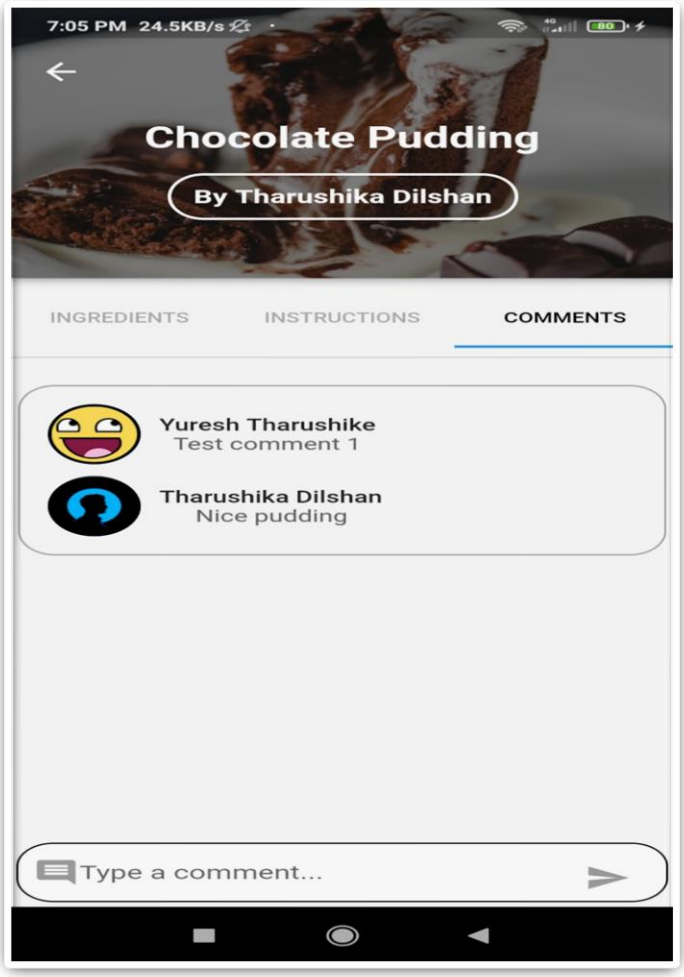

Figure 14: Screenshot of Comment Page

Q & A Forum page

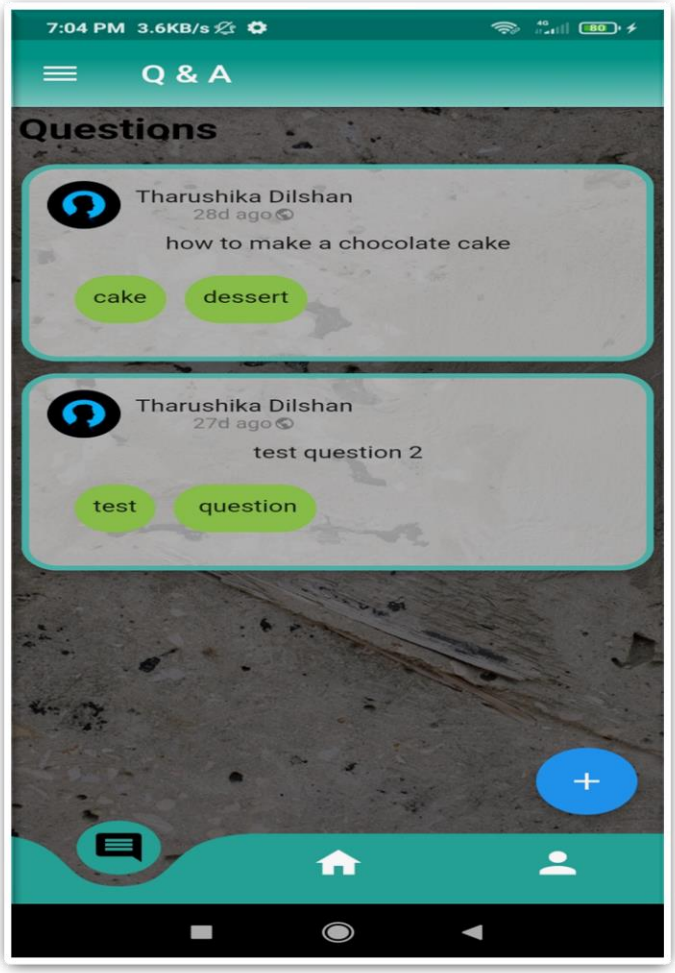

Figure 15: Screenshot of Q & A Forum Page

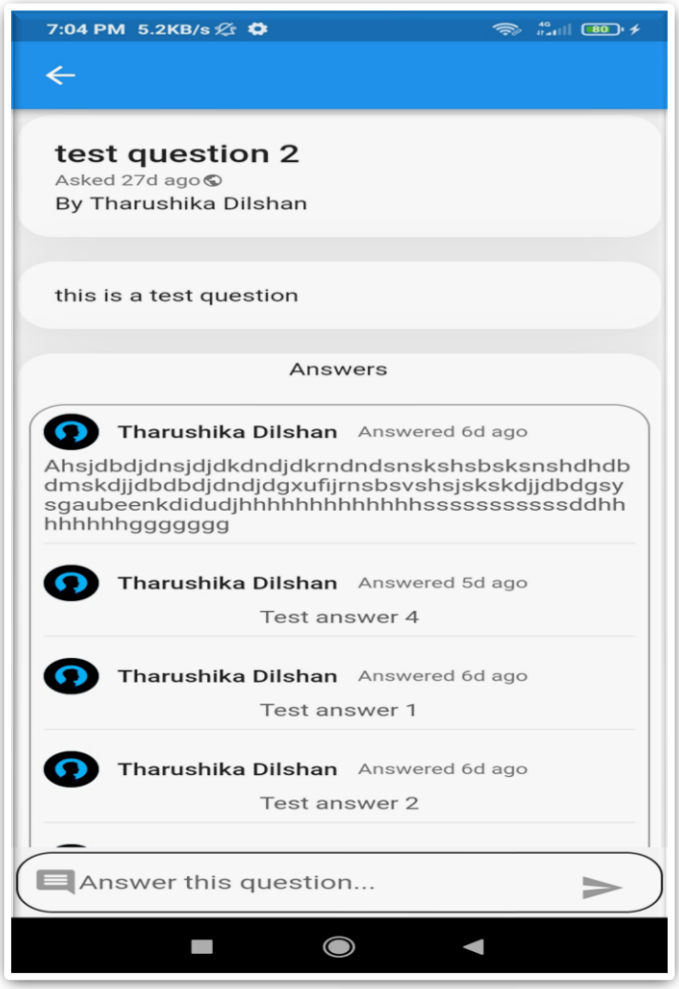

Figure 16: Screenshot of Q & A Forum Page

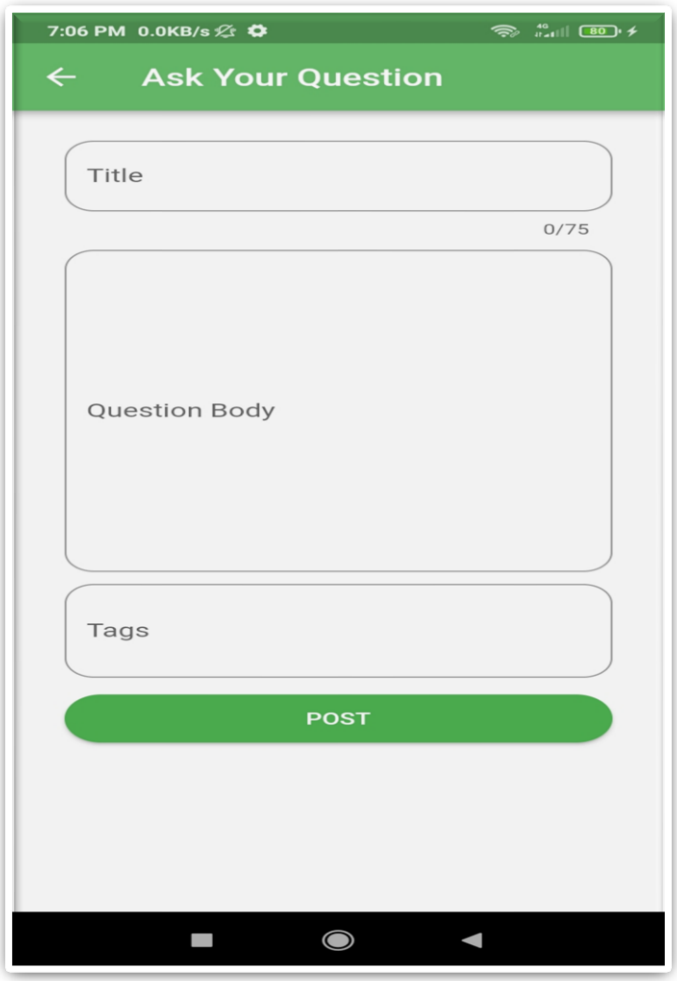

Figure 17: Screenshot of Q & A Forum Page

Services Marketing Platform page

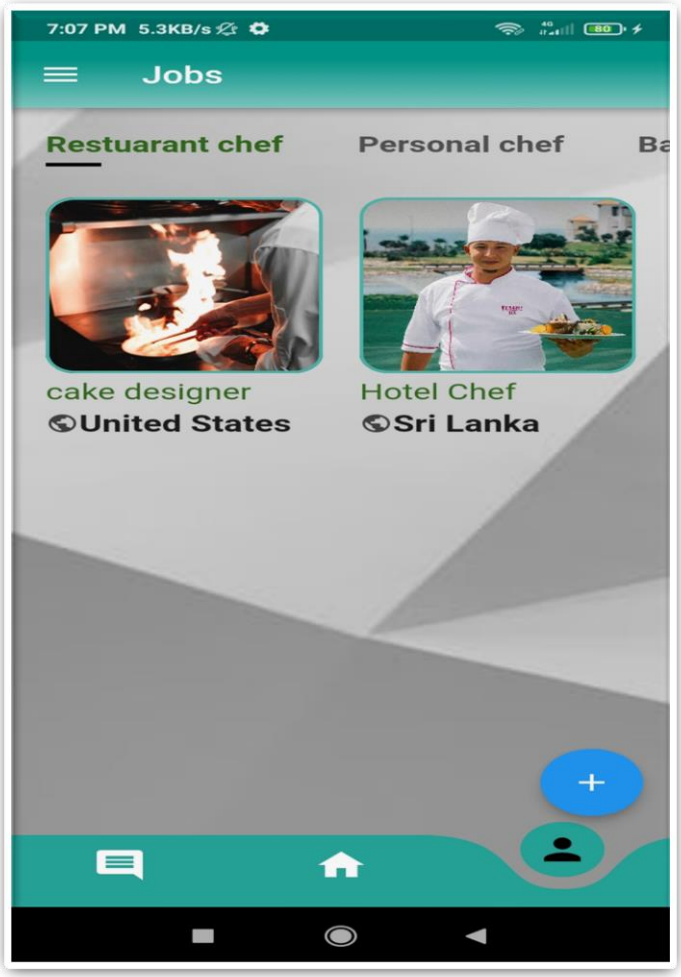

Figure 18: Screenshot of Services Marketing platform (Job Vacancies) Page

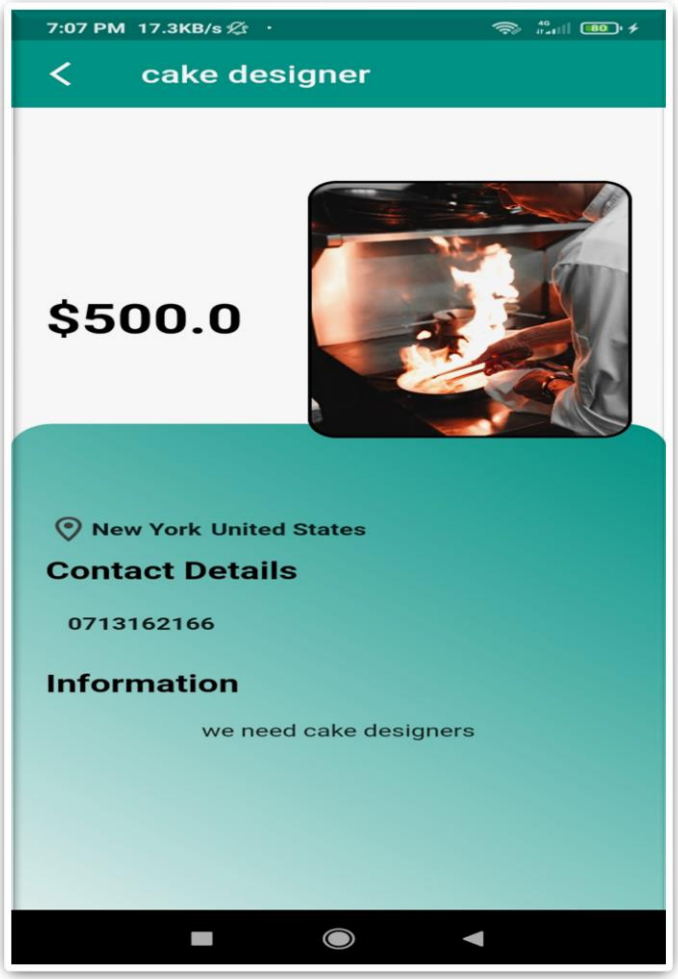

Figure 19: Screenshot of Services Marketing platform (Job Vacancies) Page

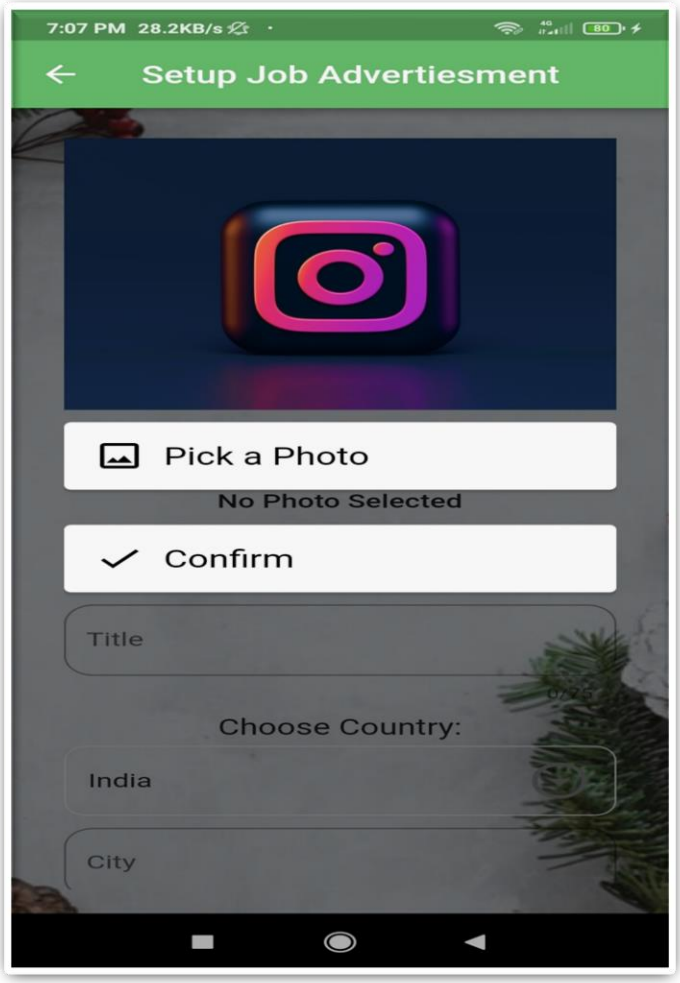

Figure 20: Screenshot of Services Marketing platform
(Job Vacancies) setup job advertisement Page

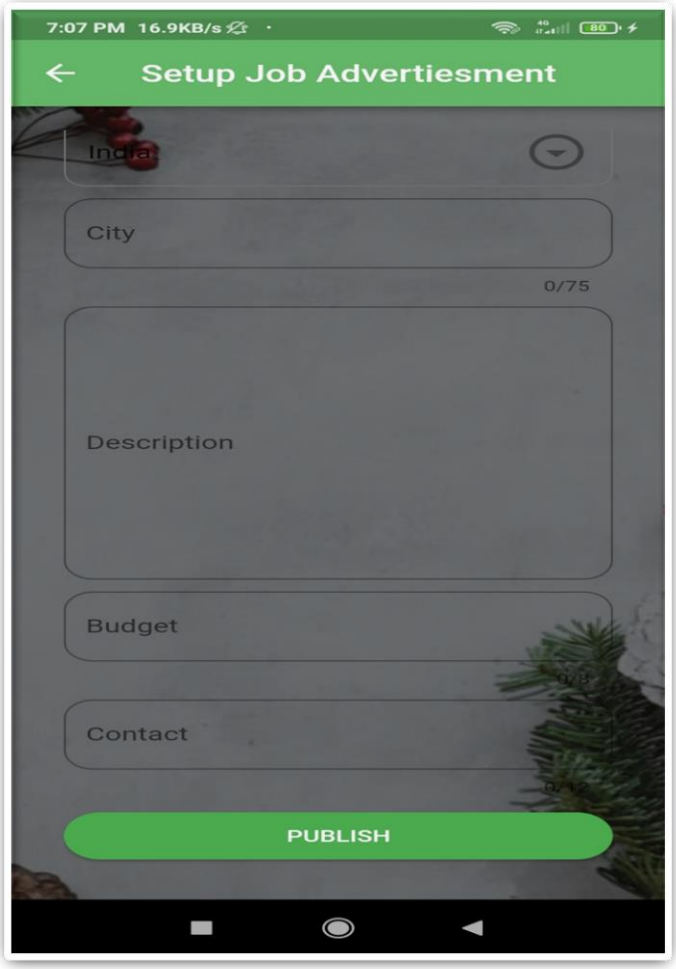

Figure 21: Screenshot of Services Marketing platform (Job Vacancies) setup job advertisement Page

BMI & Calorie Calculator

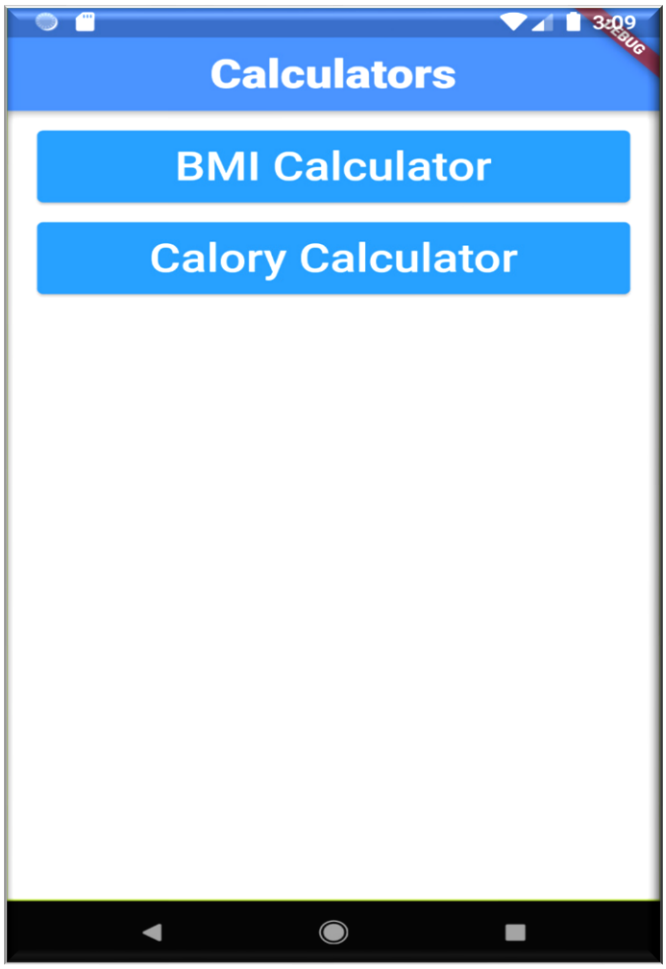

Figure 22: Screenshot of BMI & Calorie Calculator page

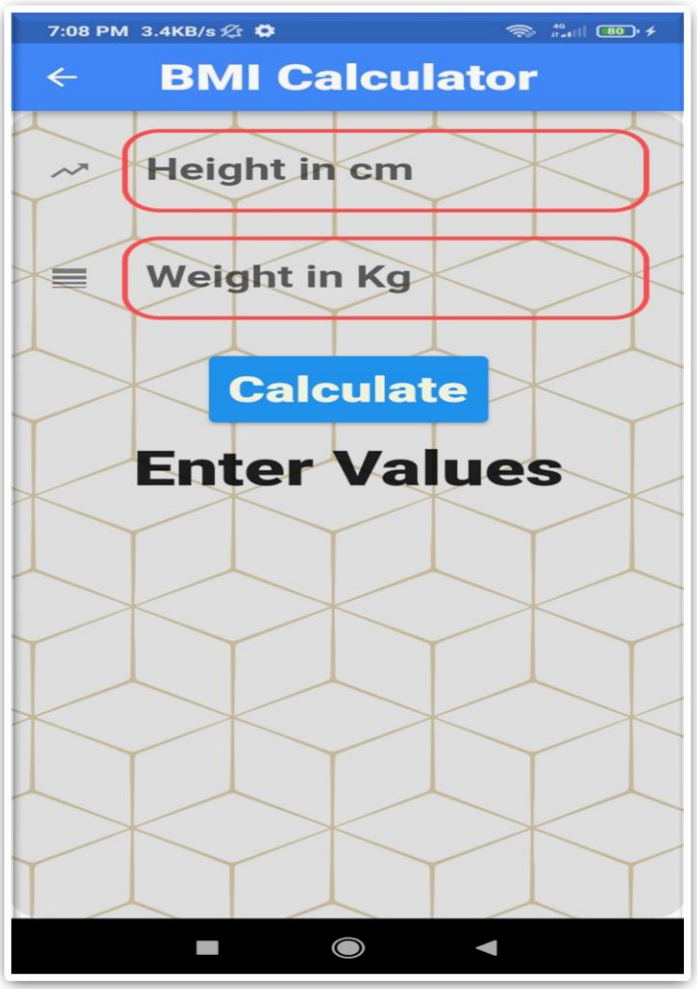

Figure 23: Screenshot of BMI Calculator

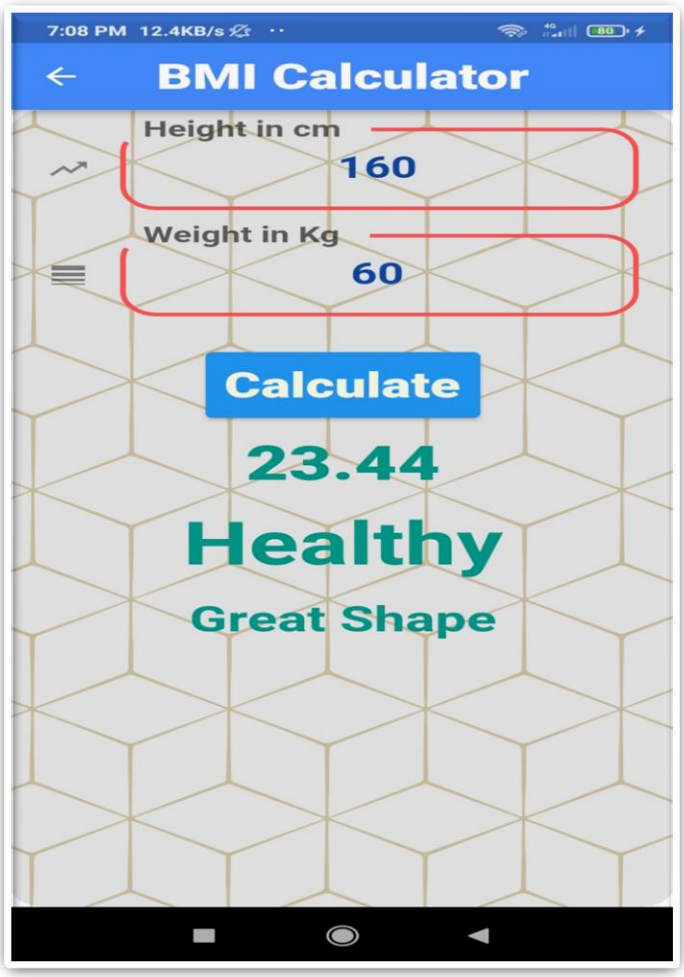

Figure 24: Screenshot of BMI Calculator

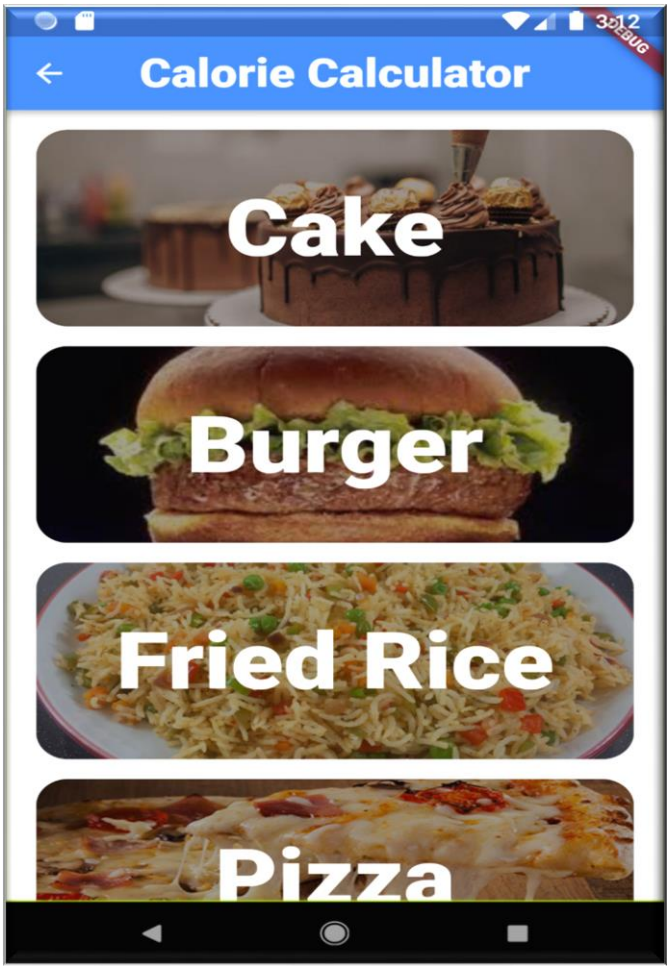

Figure 25: Screenshot of Calorie Calculator

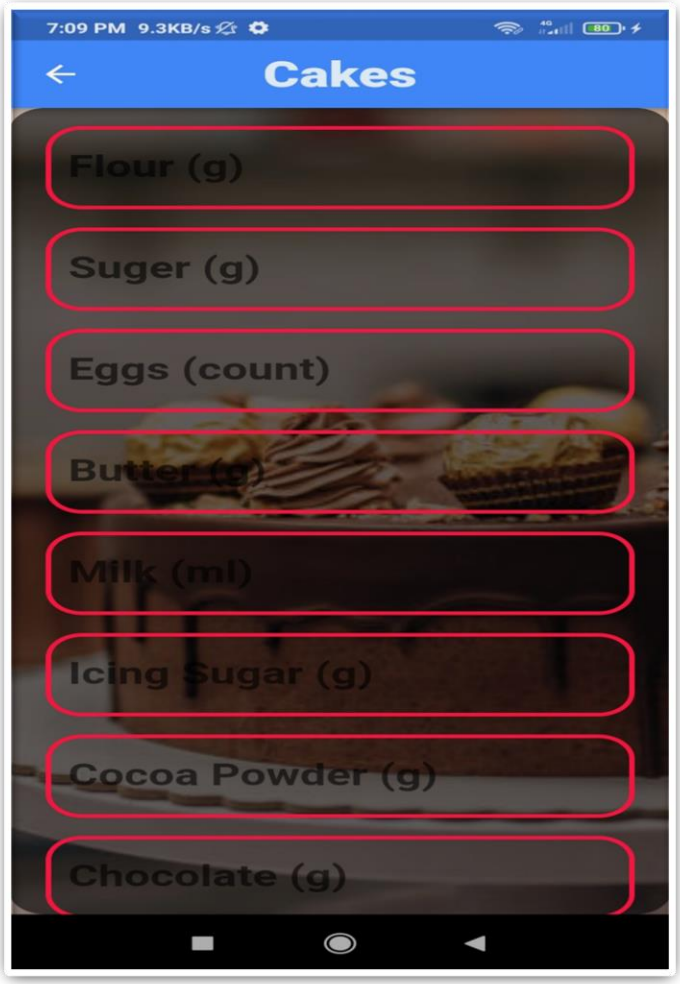

Figure 26: Screenshot of Calorie Calculator

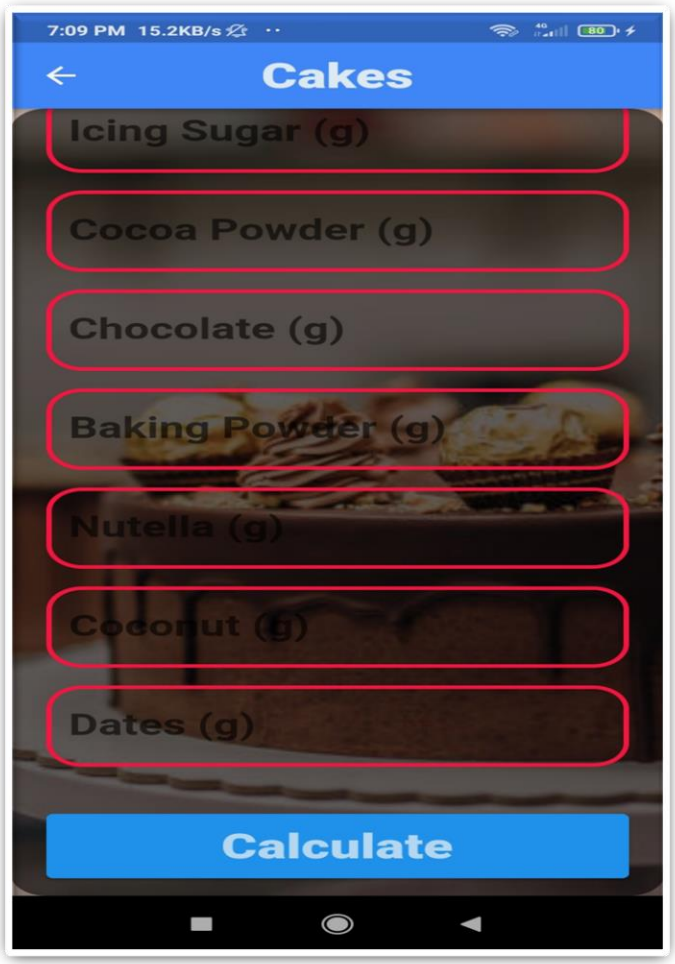

Figure 27: Screenshot of Calorie Calculator

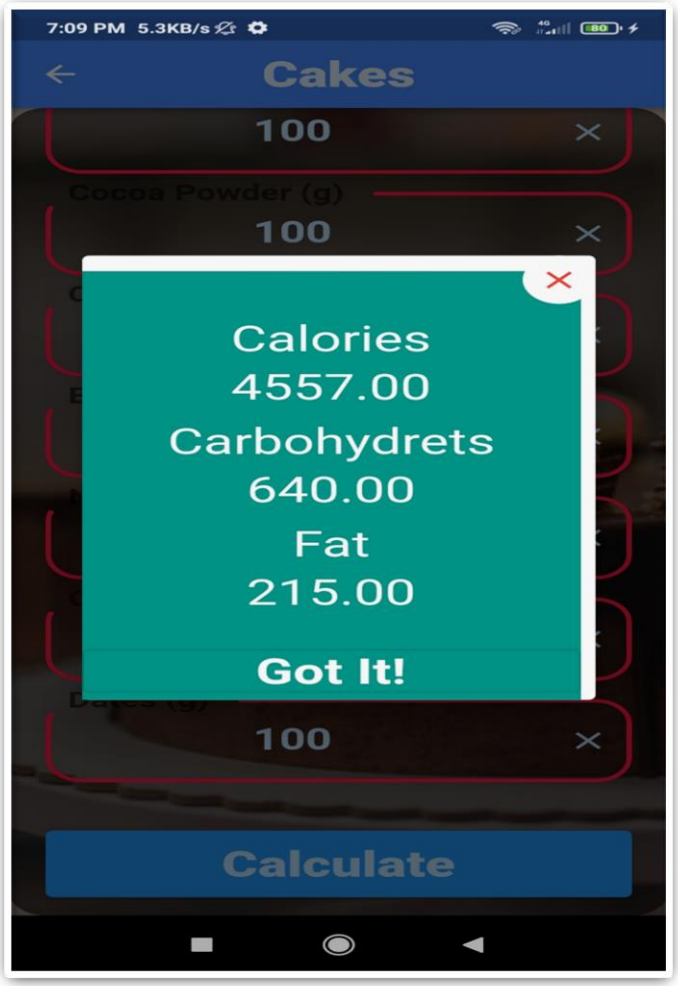

Figure 28: Screenshot of Calorie Calculator

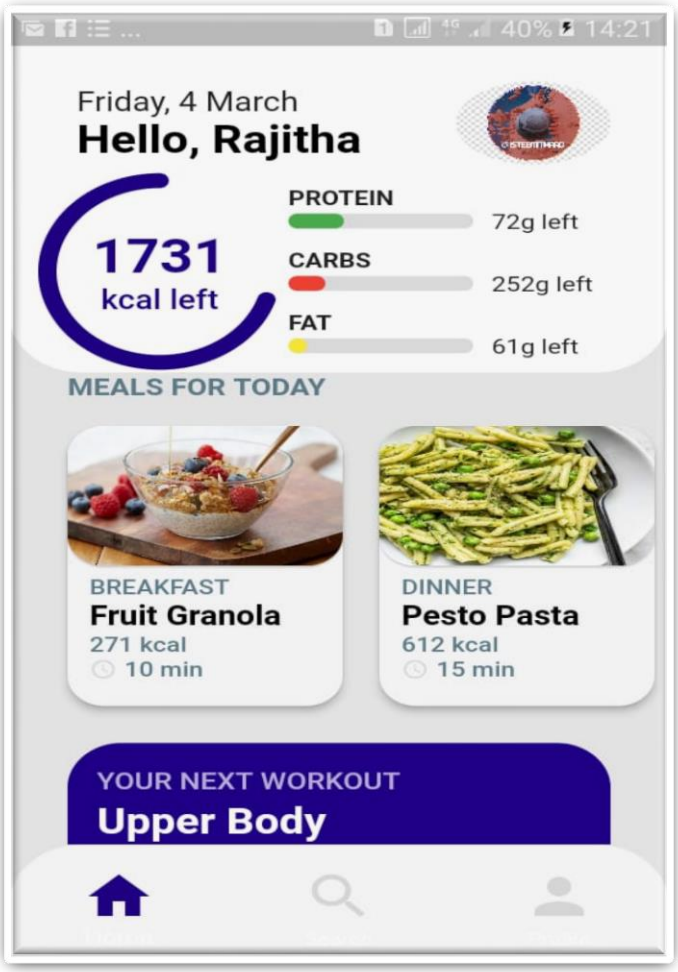

Figure 29: Screenshot of Calorie Calculator

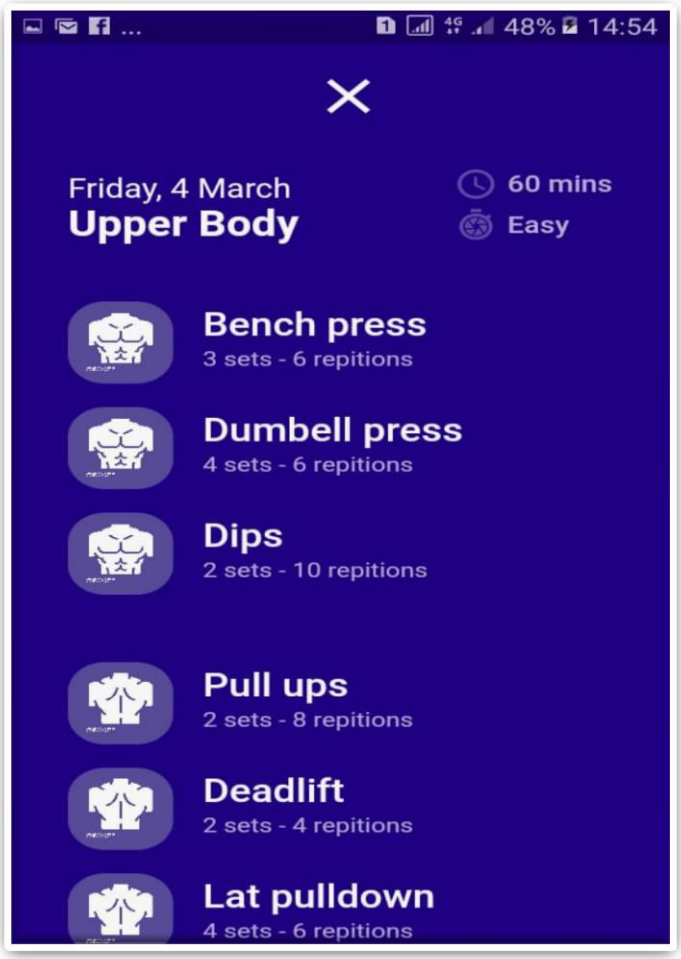

Figure 30: Screenshot of Calorie Calculator

User profile management

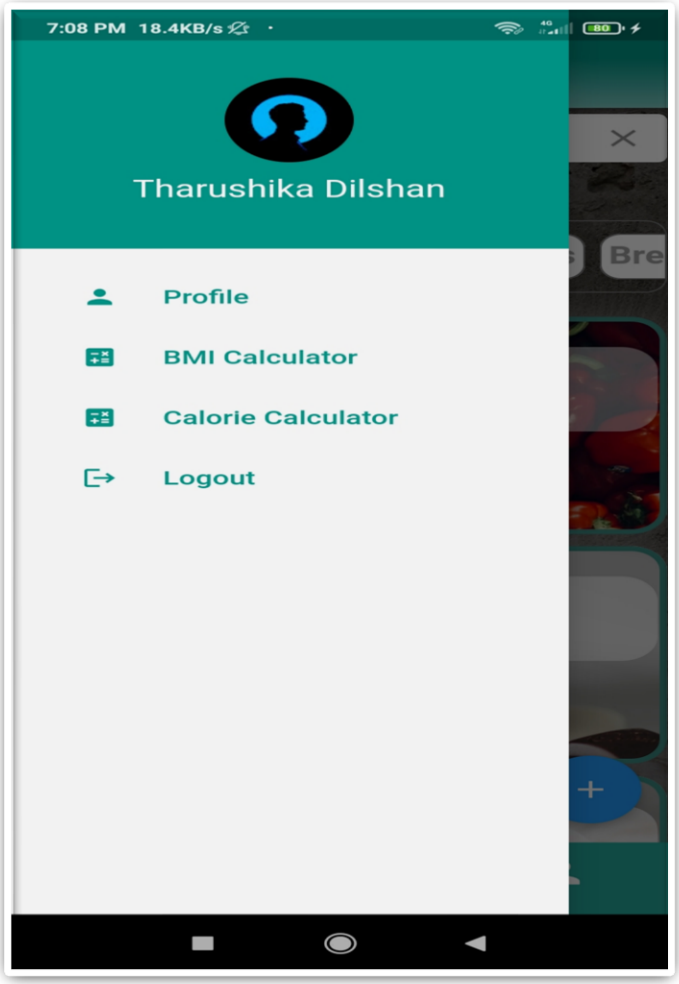

Figure 31: Screenshot of User profile

Chapter 6: Testing & Evaluation

Software testing is a process of running with intent of finding errors in software. Software testing assures the quality of software and represents final review of other phases of software like specification, design, code generation etc. In our project we used agile approach as our methodology. So we used a software testing practice that follows the principles of agile software development called Agile Testing. Agile testing process is a continuous process rather than being sequential. The testing begins at the start of the project and there is ongoing integration between testing and development, therefore errors can be fixed in the middle of the project. In this approach, every iteration has its own testing phase. The regression tests can be run every time new functions are released.

6.1 Testing Methodologies

6.1.1 Unit Testing

Unit testing aims to verify each part of the software by isolating it and then perform tests to demonstrate that each individual component is correct in terms of fulfilling requirements and the desired functionality. Unit testing is a way of testing the smallest piece of code referred to as a unit that can be logically isolated in a system. A unit is the smallest testable part of any software that has one or more inputs and a single output. Each unit is tested to validate that the software performs as desired. Unit testing is mainly focused on the functional correctness of standalone modules. Unit testing should focus on testing the functionality of objects or methods. In our project, we have tested each component of the application individually. As the components were built up testing was carried out simultaneously, tracking out each and every kind of input and checking the corresponding output until component is working correctly. The functionality of the components was also tested as separate units.

6.1.2 Integration testing

Integration testing aims to test different parts of the system in combination in order to assess if they work correctly together. By testing the units in groups, any faults in the way they interact together can be identified. It focuses on the construction and design of the software.

6.1.3 System testing

The next level of testing is system testing. All the components of the software are tested as a whole in order to ensure that the overall product meets the requirements specified. In our project, we create a complete version of the system by integrating components of the system and then test the system for its correct functioning. All the components of the system were combined together to create the complete version of the system and all the functions were tested and verified after combining the system as a whole system. System testing verified that the correct data is transferred to and from the database to the system.

6.1.4 Acceptance testing

Finally, acceptance testing is the level in the software testing process where a product is given the green light or not. The aim of this type of testing is to evaluate whether the system complies with the enduser requirements and if it is ready for deployment. As the last phase of the testing process, following system testing, acceptance testing determines whether given software is acceptable for delivery or not. In a more agile approach, acceptance testing can be carried out as often as every 2-3 weeks, as a part of the sprint demo.

6.2 Performance Evaluation

In “Chef Society “android application system, system is able to meet the established goals and deadlines related to our project. We developed our project with learning how to solve problems and doing self-learning with good collaboration of team.

Project Plan

Task	Time (Weeks)														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Groups & Identify topic															
Introductory session															
Create proposal															
proposal submission															
proposal presentation															
Progress Report 01															
Progress presentation															
Progress Report 02															
Interim Report Submission															
Interim Presentation															
Progress Report 03															
Progress Report 04															
Progress Report 05															
Final report submission															
Final Presentation															

Chapter 7: References

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- Flutter Tutorial-Javatpoint. Available at: https://www.javatpoint.com/flutter

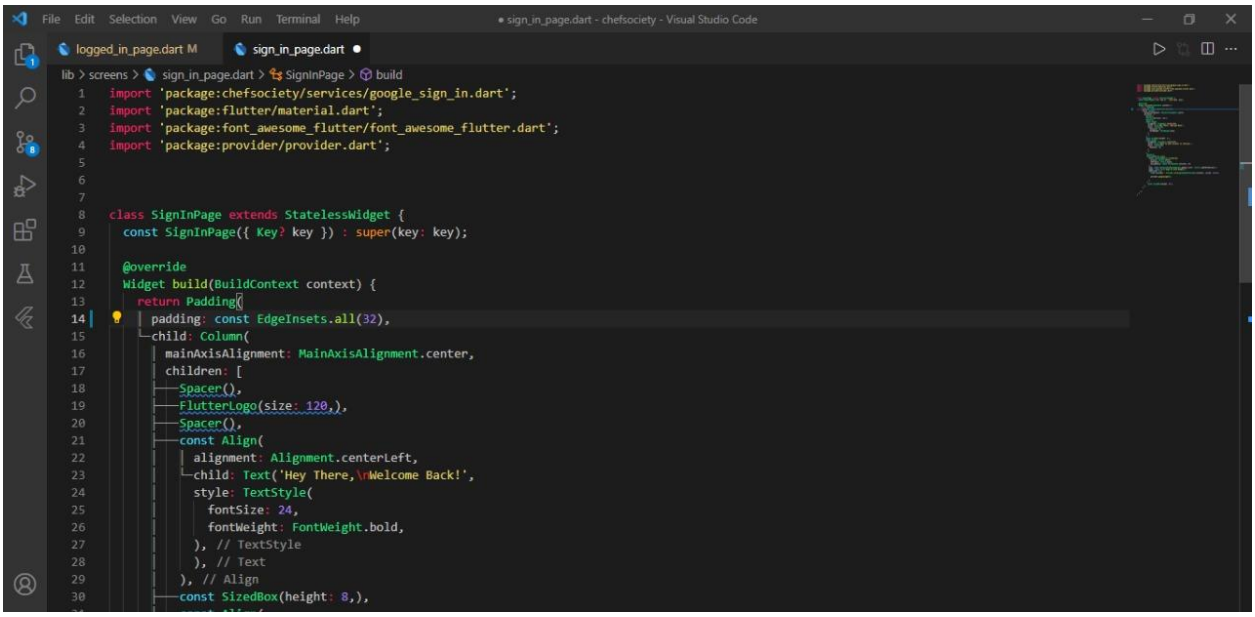
Individual Contribution

Registration Number	Member Name	Contribution
UWU/CST/18/012	Dilshan K.Y.T	Home Page Add New Recipe View Recipe Q & A forum UI designing
UWU/CST/18/035	Bandara C.J.M.H	BMI Calculator Calorie Calculator Admin Management UI designing
UWU/CST/18/049	Sewwandi M.G.S.I	Documentation Register & Login Page Smart search filter in recipes UI designing
UWU/CST/18/054	Kumara R.M.R.S.C	Services Marketing Platform Smart search filter in Service marketing platform User profile management UI desingning

Appendixes

Appendix A

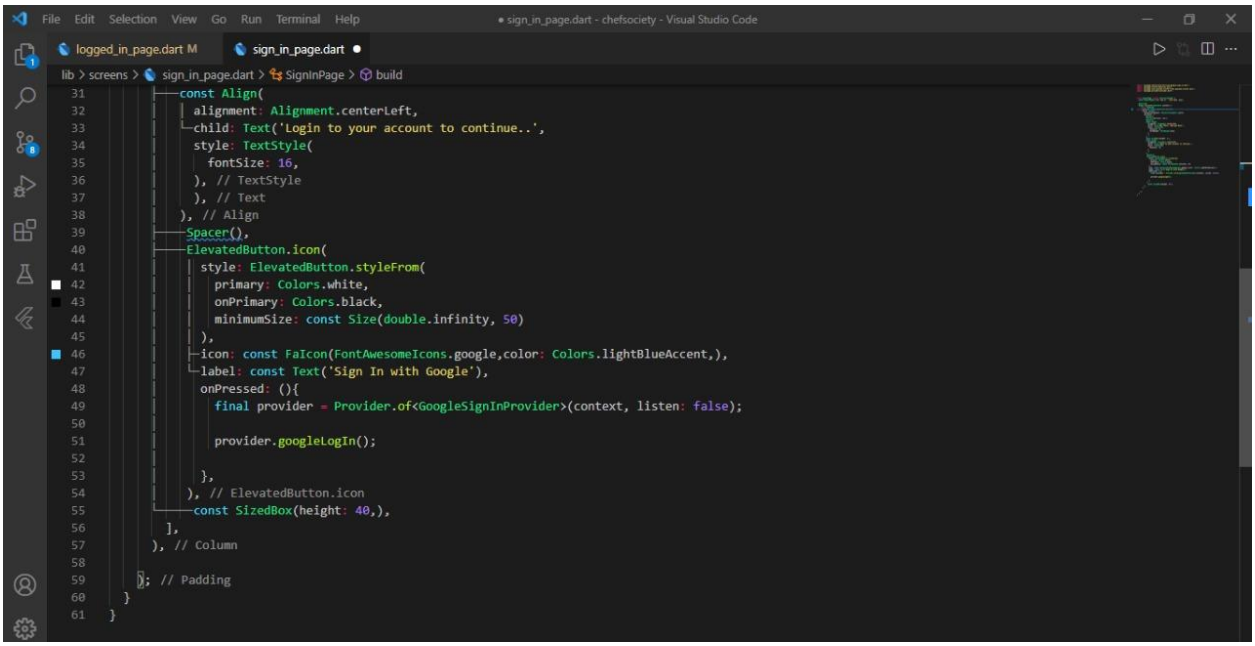
Sign In



```dart
import 'package:chefsociety/services/google_sign_in.dart';
import 'package:flutter/material.dart';
import 'package:font_awesome_flutter/font_awesome_flutter.dart';
import 'package:provider/provider.dart';


class SignInPage extends StatelessWidget {
  const SignInPage({ Key? key }) : super(key: key);

  @override
  Widget build(BuildContext context) {
    return Padding(
      padding: const EdgeInsets.all(32),
      child: Column(
        mainAxisAlignment: MainAxisAlignment.center,
        children: [
          Spacer(),
          FlutterLogo(size: 120,),
          Spacer(),
          const Align(
            alignment: Alignment.centerLeft,
            child: Text('Hey There,\nWelcome Back!',
              style: TextStyle(
                fontSize: 24,
                fontWeight: FontWeight.bold,
              ), // TextStyle
              ), // Text
            ), // Align
          const SizedBox(height: 8,),
```



```dart
          const Align(
            alignment: Alignment.centerLeft,
            child: Text('Login to your account to continue..',
              style: TextStyle(
                fontSize: 16,
              ), // TextStyle
              ), // Text
            ), // Align
          Spacer(),
          ElevatedButton.icon(
            style: ElevatedButton.styleFrom(
              primary: Colors.white,
              onPrimary: Colors.black,
              minimumSize: const Size(double.infinity, 50)
            ),
            icon: const FaIcon(FontAwesomeIcons.google,color: Colors.lightBlueAccent,),
            label: const Text('Sign In with Google'),
            onPressed: (){
              final provider = Provider.of<GoogleSignInProvider>(context, listen: false);

              provider.googleLogIn();

            },
          ), // ElevatedButton.icon
          const SizedBox(height: 40,),
        ],
      ), // Column

    ); // Padding
  }
}
```

Appendix B

Google Sign In