iOS Development (COSC2657)

Assignment 3 – Foodbook's Document

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ABSTRACT

Have you ever wished for a more straightforward way to develop and store recipes? Are you weary of fiddling with programs that make it difficult to define ingredients or directions for all of your delicious, precious texts? Would you rather take matters into your own hands by writing recipes with nothing more than a plain-text editor?

Meet the FoodBook! You may write your delectable tomes in a loosely opinionated style that reads precisely like your grandmother's (or grandfather's!) recipes using just markdown. Even better, you can parse recipe-flavored markdown documents in Dart and utilize them as you like! Let's get started!

APPLICATION DESCRIPTION

Project Background & Problem Statement

One of the most basic human needs is food. The source of energy received is from eating. Food, throughout its evolution, has become more than just a source of energy; it has also become an art form with added value. A vast range of creative cuisine innovations have been made and extensively disseminated. Many of them simply employ the bare necessities to make an innovative recipe. A recipe is a series of instructions that tells you how to prepare and cook food, as well as a list of what food is required [1]. A cooking recipe includes numerous elements such as the name, procedure, equipment and ingredients, time, and amount of food.

Not everyone is good at memorizing recipes. Their substance is also an impediment to cooking. Limited ingredients are also one of the causes of limited cooking inventions, particularly for those who do not enjoy cooking.

In this app that we build, the user is required to download the own ingredients, then the app will search for recipes using ingredients that are near to the ingredients that the user owns. This app will allow users to create new recipes, store existing recipes, retrieve saved recipe data from the Firebase database, add recipes to favorites, and share recipes.

Scope of Work

The project's goal is to visualize and optimize a "Discovery" - Recipe Application. The features should be highlighted:

- Sign up, sign in for user
- Browse and filter recipes list
- View recipe detail and user profile
- Comment and Favorites of recipe
- Chat system
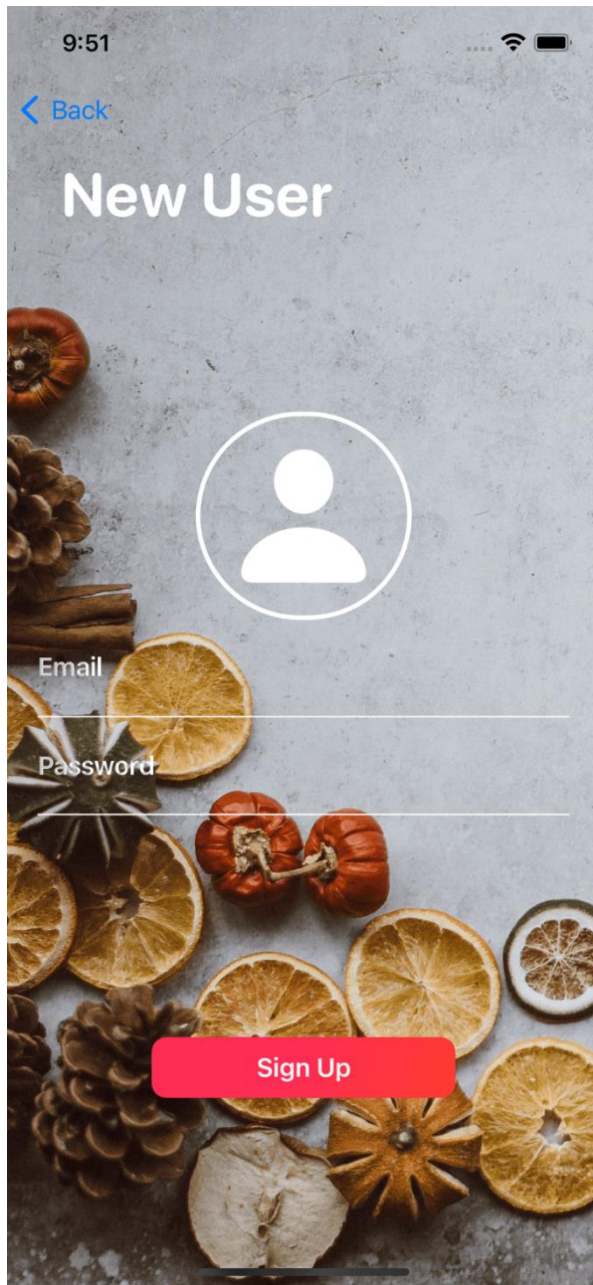- Recipe management system for users (CRUD Recipe, Categories, Favorite List)

APPLICATON SCREENSHOTS/GIF/VIDEO

LoginView:
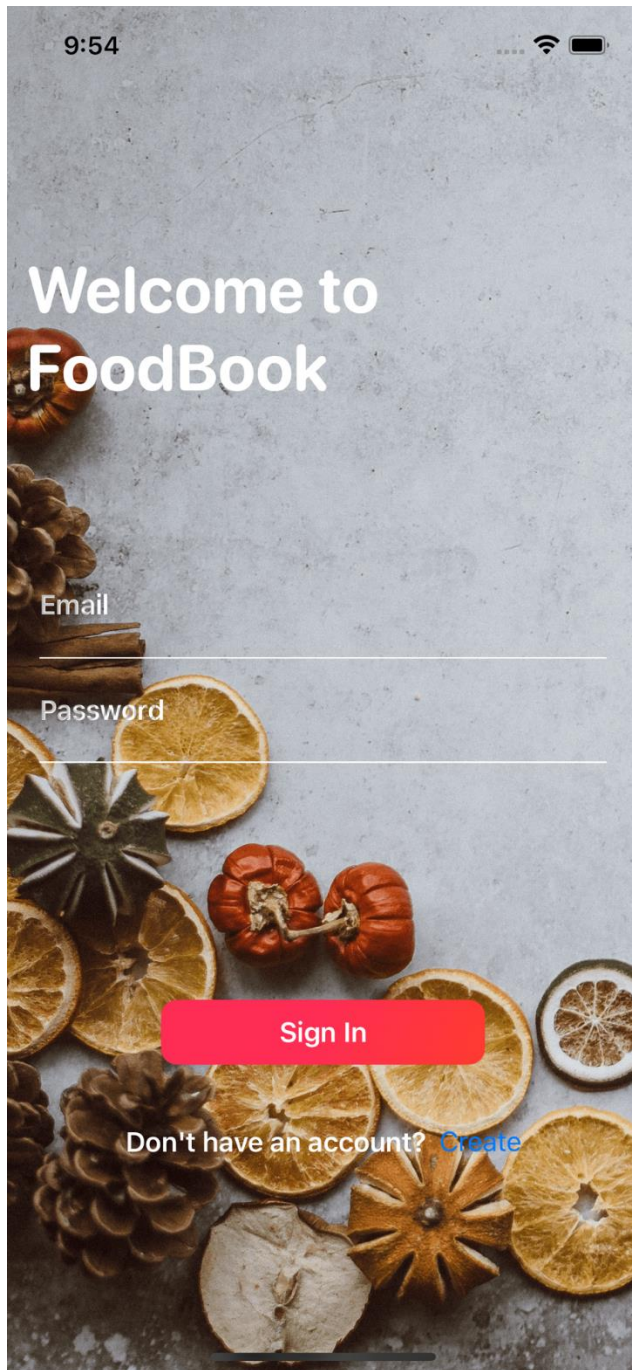
In the Sign in View, users can use their Email and Password that they already signed up to sign in the app. Or if they do not have an account they can Click on the" Create" button to navigate to Sign up page.

SignUpView

In the Sign-Up View, users can Choose an image from their computer to use as an avatar, and then fill in the email and password to sign up. If Email and password already exist, you cannot create a new account.
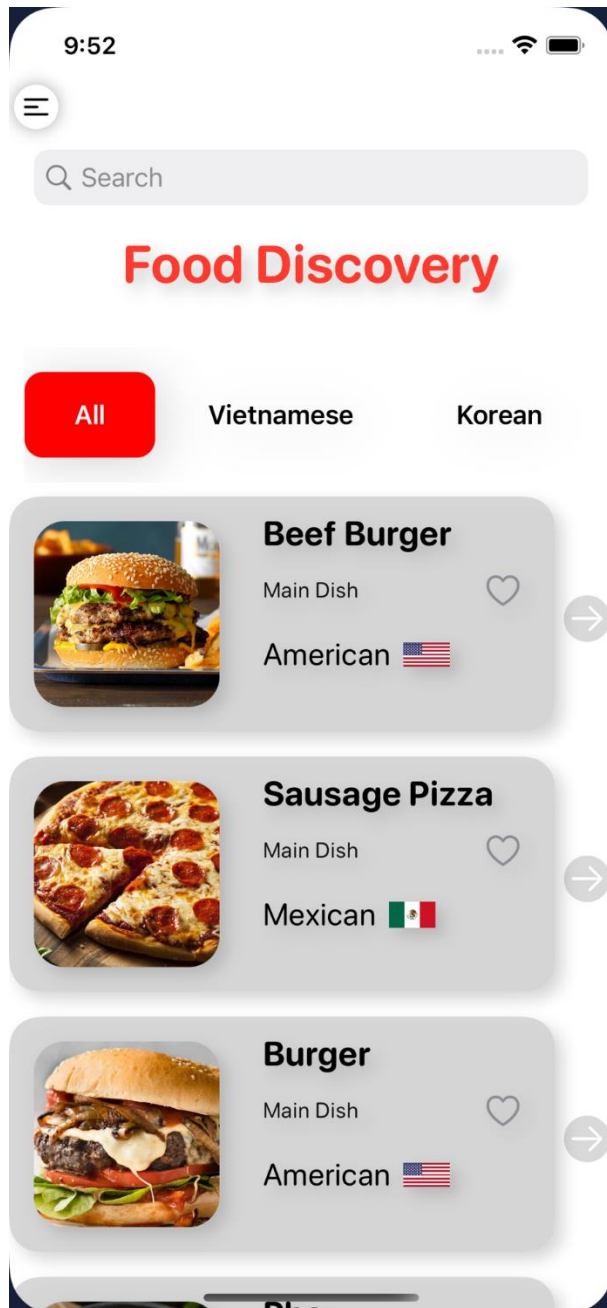
Loading screen

Loading screen of the app, this screen will run as the user login into the application, while the app fetch the data from the database.
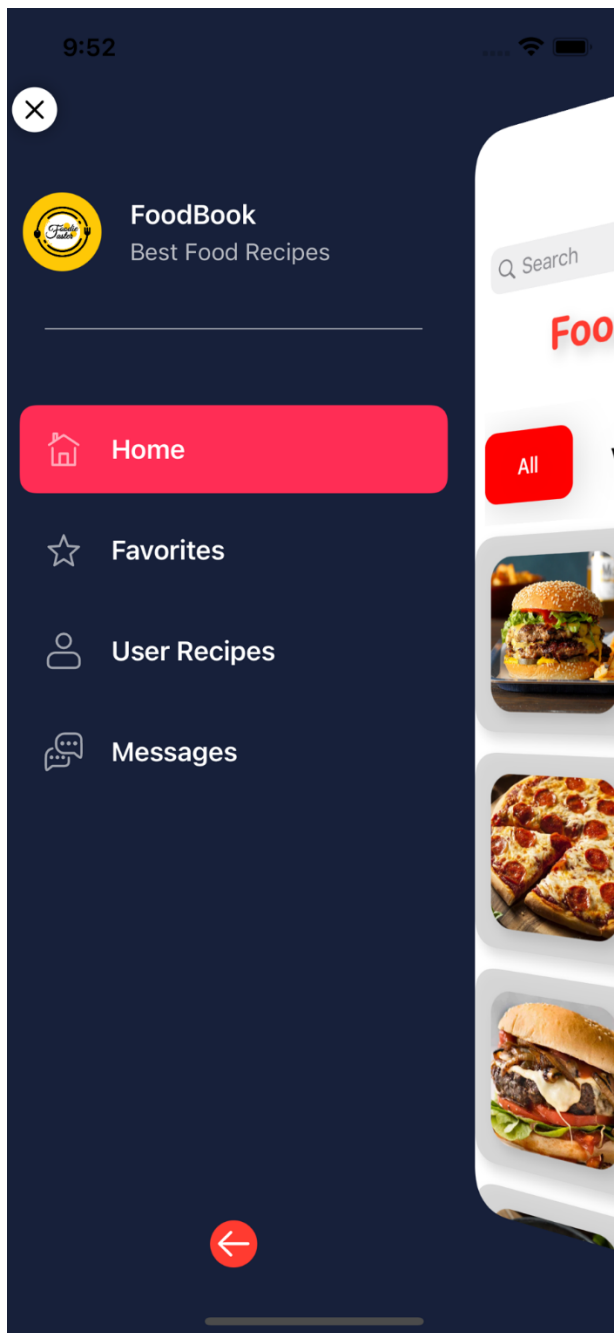
Homepage

The homepage view of the app, this will be shown after the user login into the application. This app will show the user all of the food recipes which is stored in the app's database. The user can click on the heart icon of a food that they like to store it into the favorite list, they can click on it again to toggle the heart, deleting it from the favorite list. The user can click on the arrow to traverse to Detail views of the recipe.

Moreover, the user can click on the top left button to traverse to the menu view of the application.

Menu view

This is the menu view, it will help the user traverse between 4 main views, which are the home page view, Favorites view, User Recipes views and the message view. All the Icons have been custom made by RiveAnimation to make the UI (User Interface) more interactable.
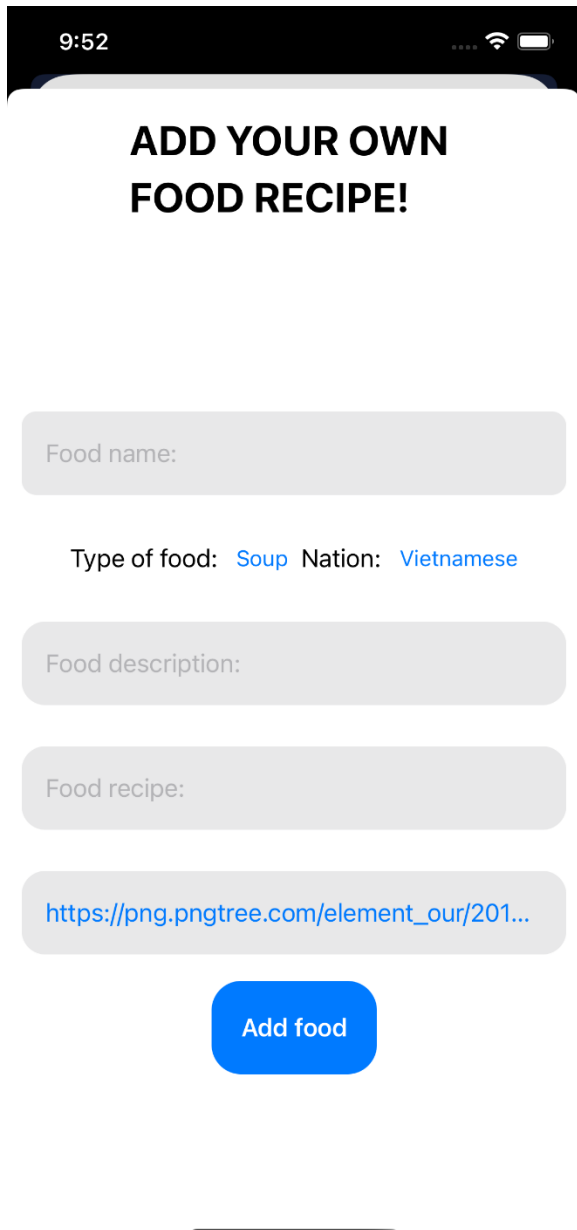
Favorite View
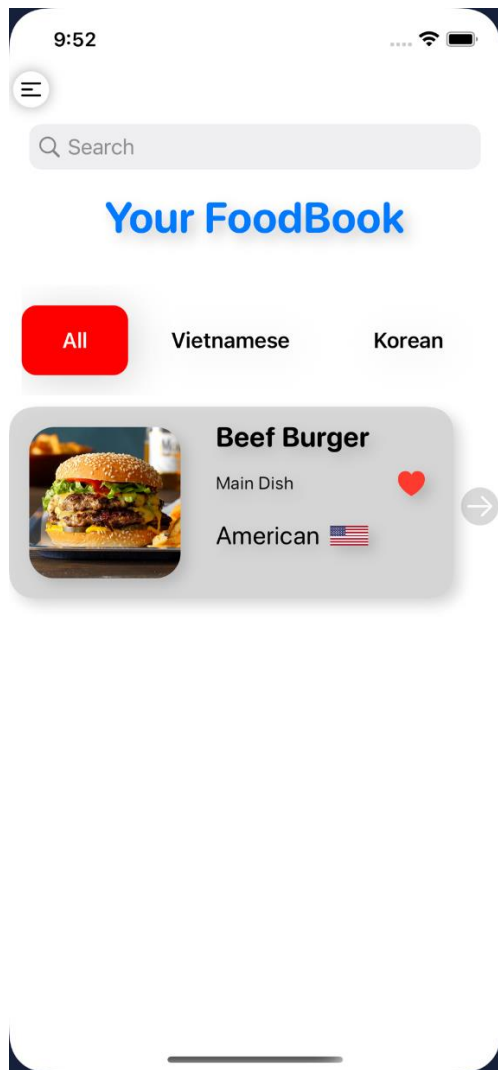
User's favorite list of foods, this view will store the list of food that the user liked in the homepage view. The user can click on the arrow to traverse to Detail views of the recipe.

My Recipes View
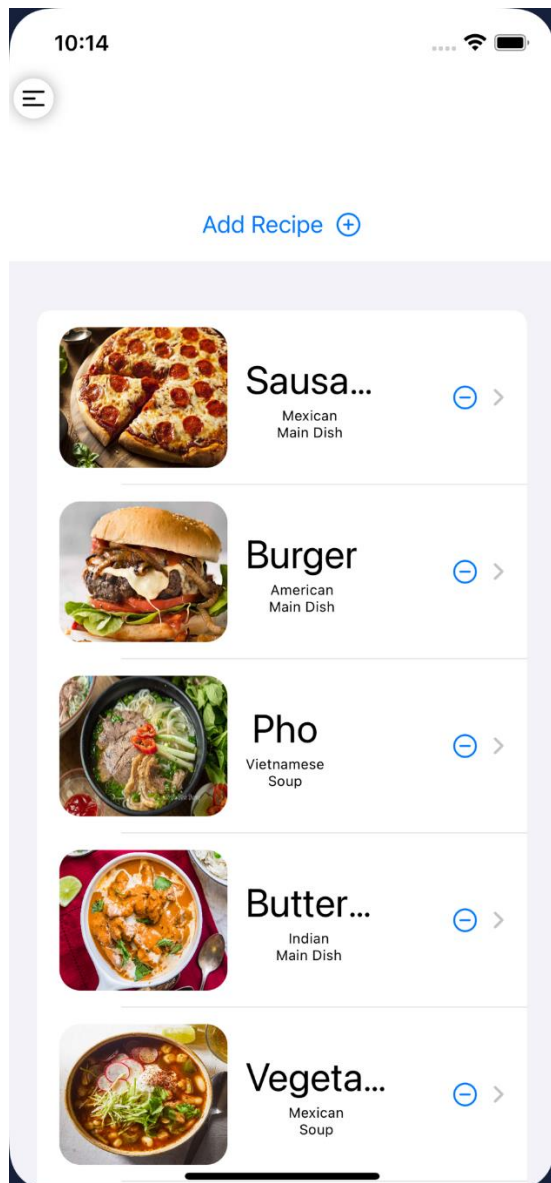
A list of foods recipe that the user created and saved into the database. The user can add new recipe that they like into the application database through the add recipe button. Or the user can delete the food that they don't like from their list, which will also delete the food's information from the app's database.

Create Recipes View:

Create your own recipe with this CRUD view. The user will need to add the food name, choose the type of food, the nation that it came from and some other information like description and recipes. The user can also include a URL string path to display an image for the food.

Recipes Details View:
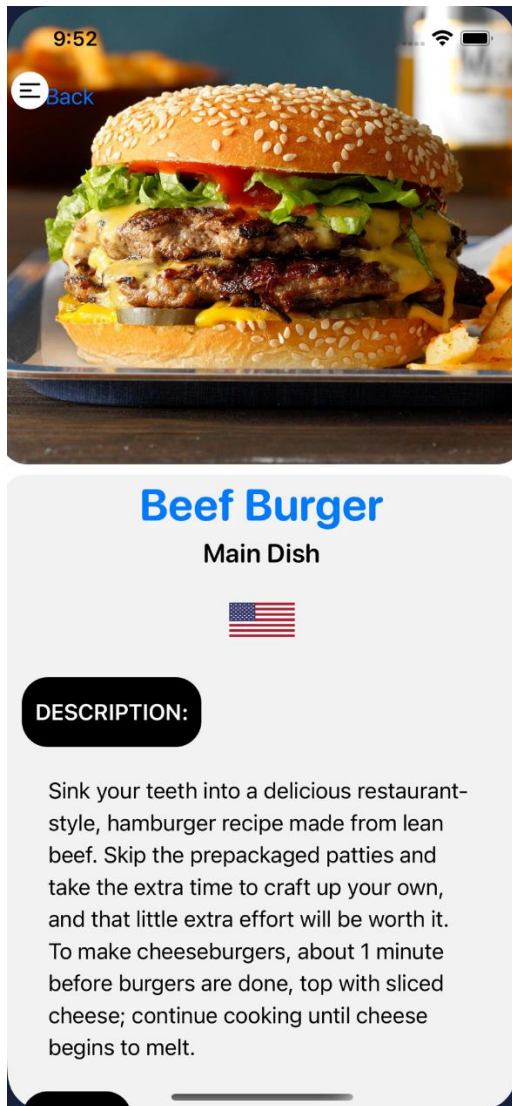
The food's detail view, here we will show a more detailed view of the food, which will include description, and the recipe of the food.

Messages View:

9:53

admin
● online

viznem@gmail.com
Hello

khang@gmail.com
Hello

royng@gmail.com
Hello
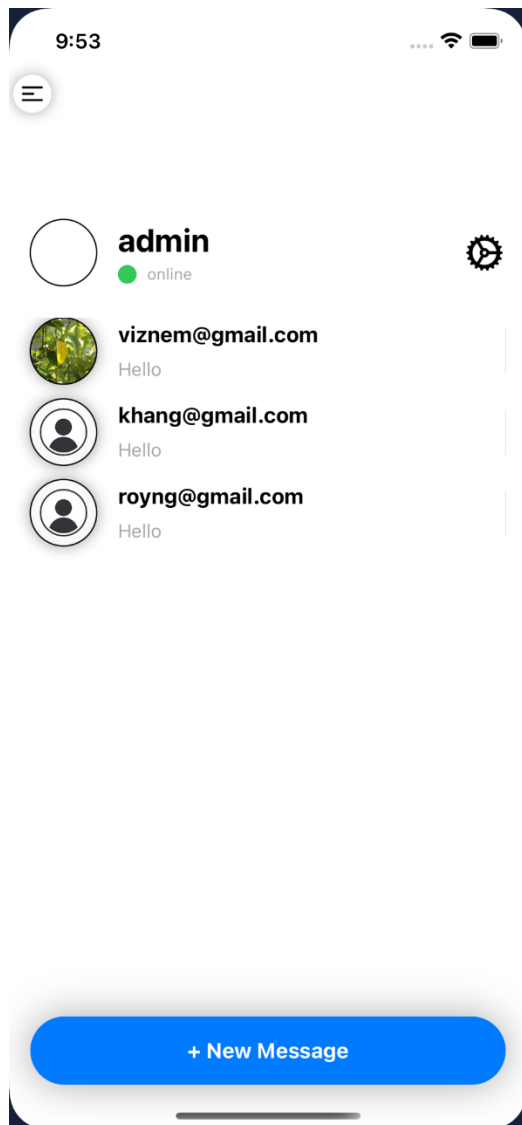
+ New Message

In Message View, all new messages from users will be notified and order based on time stamp. Users can click on the Icon or the "New Message button" to navigate to Chat View. There is also a button on top left for you to sign out your account.

Chat View:
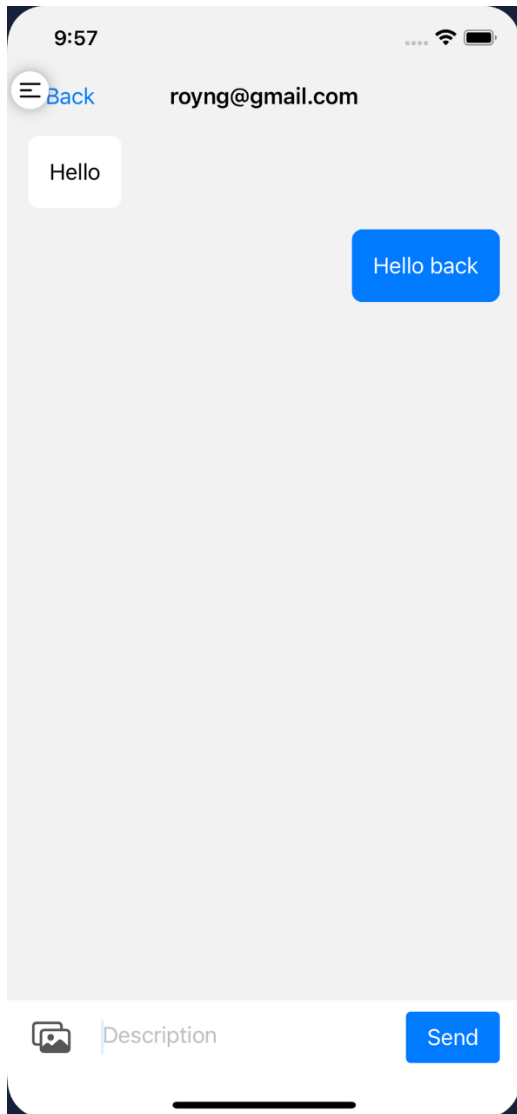
In Chat View, Users can send and receive messages to each other. It works just like every Chat app such as Messengers or Zalo. Whenever there is a new message, the chat view will also automatically move to the very last message.

APPLICATION FLOW (DIAGRAM)
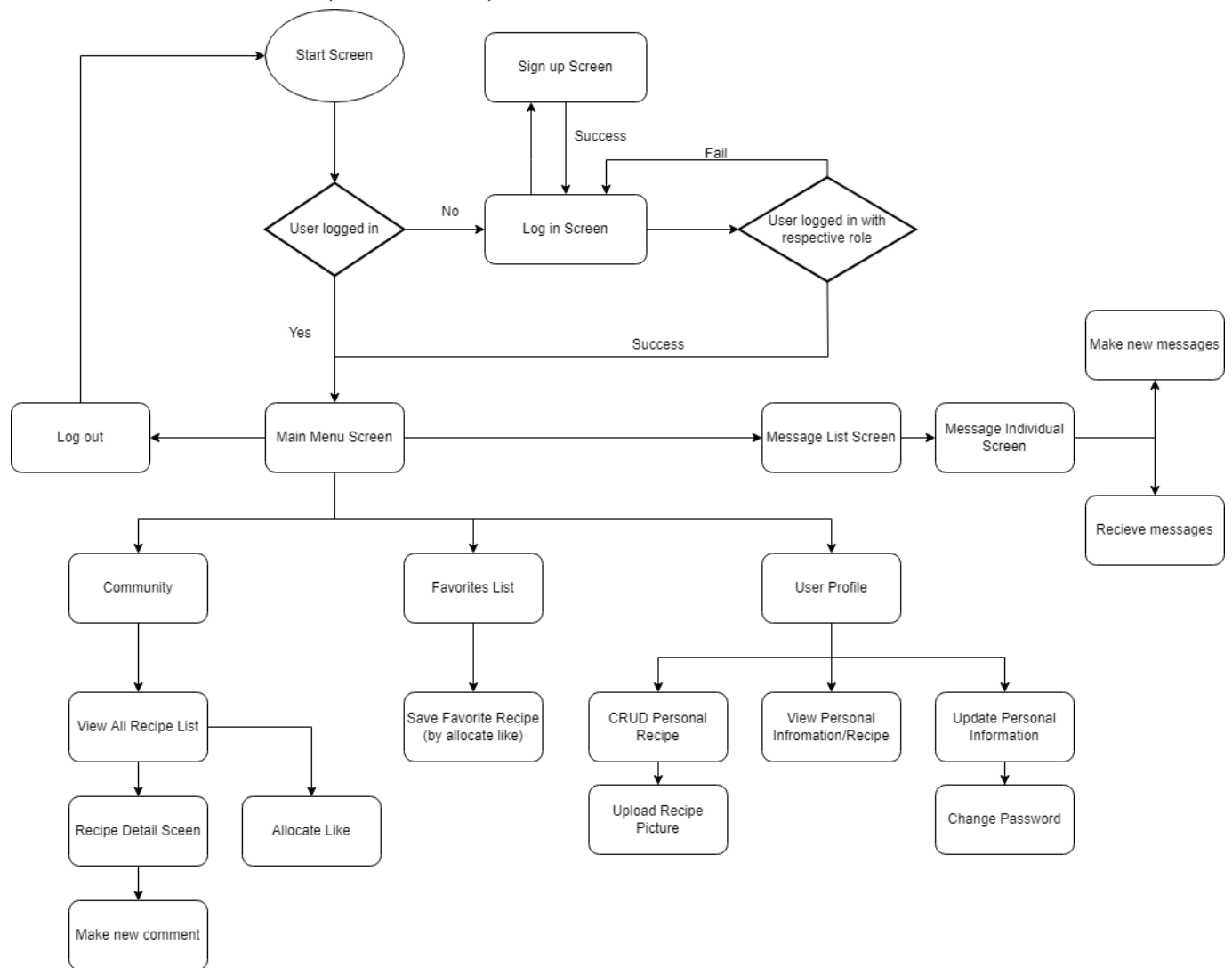
Figure1: Flow Diagram of FoodBooK
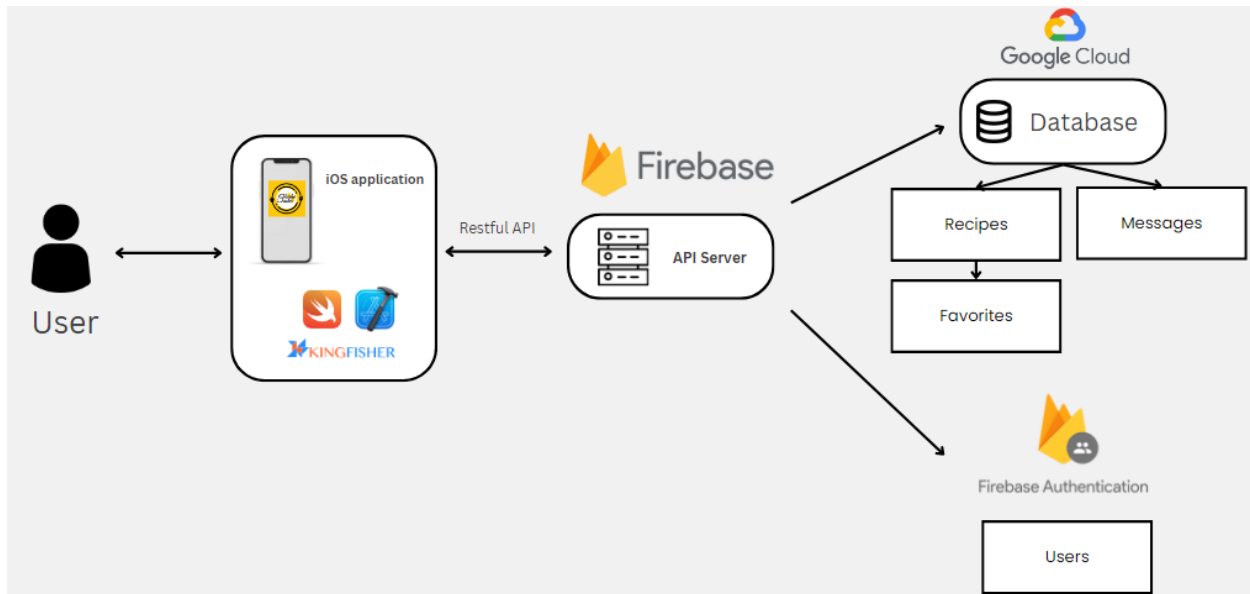
Figure2: Software Workflow of FoobBooK

TECHNOLOGIES

We propose to utilize the following technologies in our project to effectively develop the application:

Swift 12 - XCode

- Listview and adapter for displaying data fetched from the server (Firebase)
- Other basic components such as Button, Textview, etc for the app's user interface

Firebase

- Cloud messaging for messaging feature
- Firestore for storing data
- Firebase authentication on iOS for authentication
- OTP message

Libraries Used in Project

Foundation - Components for core system capabilities, Swift extensions, and support for multidex and automated testing

Architecture - A collection of libraries that help you design robust, testable, and maintainable apps. Start with classes for managing your UI component lifecycle and handling data persistence.

- ViewModel - Store UI-related data that is not destroyed on app rotations. Easily schedule asynchronous tasks for optimal execution.

UI - Details on why and how to use UI Components in your apps - together or separate

- Animations & Transitions - Move widgets and transition between screens.
- Fragment - A basic unit of composable UI.

- Layout - Lay out widgets using different algorithms.

Third party and miscellaneous libraries

- Glide for image loading
- Kingfisher is a powerful, pure-Swift library for downloading and caching images from the web. It provides you a chance to use a pure-Swift way to work with remote images in your next app
- RiveAnimation: Allow you to customize and import your own animated object into the app.
- SDWebImage: Asynchronous image downloader with cache support as a UIImageView category.
- Lottie: SwiftUI Animation

Installation package:

In Xcode, go to File > Add Package, and insert the link to install the package:

Firebase: https://github.com/firebase/firebase-ios-sdk.git

King fisher installation guide: https://github.com/onevcat/Kingfisher

SDWebImageSwiftUI: https://github.com/SDWebImage/SDWebImageSwiftUI.git

RiveAnimation: https://github.com/rive-app/rive-ios

SDWebImageSwiftUI: https://github.com/SDWebImage/SDWebImageSwiftUI.git

RiveAnimation: https://github.com/rive-app/rive-ios

Lottie: https://github.com/airbnb/lottie-ios

KNOWN BUGS/PROBLEMS

For our project, since we had to include a lot of libraries and packages like King Fisher, RiveAnimation, SDWebimage, … Therefore, it is recommended that the program when is built on a new device, you should go to Files -> Packages -> Reset packages.

COMPETITORS

Tandoor Recipes

Overview: This software is designed for users who have a collection of recipes they wish to share with family and friends or just preserve in a neatly organized manner [2]. There is a rudimentary permission system in place, but this application is not intended to be hosted as a public page.

Technologies: Powerful & customizable search with fulltext support and TrigramSimilarity. Easy to import recipes from thousands of websites supporting ld+json or microdata, plus support for fractions

or decimals. Easy setup with Docker and included examples for Kubernetes, Unraid and Synology. Sync files with Dropbox and Nextcloud using the built-in Nextcloud sync tool.

Cookpad

Overview: a mobile-based program that allows users to search for recipes by name [3]. However, there are times when the user has a restricted number of culinary items. Previously available programs did not have this feature.

Technologies: Using jQuery and NGINX to store database. In addition, operate server resources on AWS. GitHub has been used by machine learning to store all Terraform configurations in one location. Use Kubernetes as a container orchestrator.

FoodBooK Decision

Firebase Development approaches will be implemented using an authentication user and manual dataset of Recipe list.

A visualization application is required in the recipe, as specified in the Application Description section. FoodBooK was picked as the preferred app because of the following significance over the other feature:

- **Ease of Use:** Because people tend to use the app with the least action, there is no need to spend time on how to use the application.
- **Versatile and Customizable:** FoodBooK is an iOS application that can be tailored to meet specific needs.
- **Integrate with other Google products:** FoodBooK relies heavily on Google tools such as Google Cloud, which Firebase integrates well with**.**
- **Popular:** Recipes are a popular topic that many people really care about, making it easier for you to share with friends and the community.
- **Cost-effective:** FoodBook is completely free, which makes many other apps pay to learn recipes.

PROJECT RESPONSIBILITIES

In our opinion, the team has worked well together. The team was working together frequently where everyone sat and worked on the project, thus steps needed to be done to improve communication and comprehension. This may happen in person or online, but it's best to do it in person. This will enable team members to address any issues or dispel any misunderstandings as they arise. Everyone must hold one another responsible by keeping track of their work on an Excel sheet, as well as by recording their accomplishments, problems, and plans for the day on Teams every morning. A team member will be in charge of monitoring this and ensuring that they receive the right information.

Despite all the drawbacks, the team will get valuable work experience as the first project with the customer is typically the most challenging. The team will know what to do and thrive for goals now that they have experience from the previous two months.

Please refer to table 1 for better visualization of the timeline of the project.

NUMBER	TASK TITLE	TASK OWNER	START DATE	DUE DATE	DURATION	PCT OF TASK COMPLETE
1	Set up Firebase Database	Thinh	4-Sep-2022	5-Sep-2022	1 Days	100%
2	Save and retrieve User Avatar	Thinh	5-Sep-2022	5-Sep-2022	1 Days	100%
3	Using Firebase Authenrication to create feature Sign up, Sign in	Quang	5-Sep-2022	9-Sep-2022	4 Days	100%
4	Create JSON Data of Recipe	Quang	6-Sep-2022	10-Sep-2022	1 Days	100%
5	Fetch Recipes Data from Firebase	Khang	6-Sep-2022	13-Sep-2022	2 Days	100%
6	Food view model function for CRUD	An	8-Sep-2022	12-Sep-2022	5 Days	100%
7	Menu View, Menu navigate animation.	Thinh	6-Sep-2022	9-Sep-2022	3 Days	100%
8	Send messages, Recieve messages, Chat system	Thinh	10-Sep-2022	15-Sep-2022	5 Days	100%
9	Query Data from Firebase	Khang	5-Sep-2022	7-Sep-2022	2 Days	100%
10	UI/UX + Animation Designs	Khang, An, Thinh	6-Sep-2022	16-Sep-2022	10 Days	100%
11	Test Sample Data For Food CRUD	An	13-Sep-2022	17-Sep-2022	1 days	100%
12	Details view, food list view	An	14-Sep-2022	18-Sep-2022	4 days	100%
13	Application testing, debuging	Thinh, An, Khang	16-Sep-2022	18-Sep-2022	2 Days	100%
14	Draw Flowchart, Software Overflow	Quang	17-Sep-2022	18-Sep-2022	1 Days	100%
15	Write Report, Make Slide	Quang	16-Sep-2022	18-Sep-2022	2 Days	100%

Table 1: Timeline Project Schedule

REFERENCES

[1] A. Kirkness, "Review: Cambridge Advanced Learner's Dictionary," ELT J., vol. 58, no. 3, pp. 294–300, 2004.

[2] Tandoor Recipes n.d, "The recipe manager that allows you to manage your ever growing collection of digital recipes", viewed on 17 September 2022, Available at:

[3] Jo at Cookpad 27 Jul 2018, "The story behind Cookpad: how the platform used by 100 million people got started", Medium, viewed on 17 September 2022, Available at: https://medium.com/cookpadteam/cookpad-the-story-behind-the-platform-used-by-100-million-people-7060f7fa4833