Mobile Devices Project Proposal

CSCI 4100U: Mobile Devices

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Project Overview:

Application Name: FoodFit Plus
FoodFit Plus is a comprehensive and user-friendly mobile application designed to empower users in their journey towards a healthier lifestyle. This all-in-one app combines diet management, fitness tracking, and goal setting to provide a holistic approach to health and well-being. With a vast recipe database and the ability to create custom recipes, FoodFit Plus ensures users can tailor their dietary choices to their individual preferences and requirements.

Benefits:

- **Healthier Lifestyle**: FoodFit Plus empowers users to make healthier food choices and stay active, ultimately leading to a healthier lifestyle.
- **Convenience**: Access to a vast recipe database and easy meal planning simplifies diet management.
- **Motivation**: Goal setting, fitness tracking, and community support keep users motivated to achieve their health and fitness goals.
- **Personalization**: The app adapts to individual preferences, making it a truly personalized experience.

Group Members and their Responsibilities

- Justin Marsh
    - Created uml diagrams
    - Created uml descriptions and explanations
- Thomas Chiarello
    - Ensured that the proposal is free of grammatical errors.
    - Added information to complete any missed tasks
    - Formatted proposal to be clear and well structured.
- Saawi Baloch
    - Project proposal
        - - Manage and Maintain Document
        - - Completed requirements for proposal (ensured all sections meet the proposal requirements)
    - Requirements gathering
        - - Brainstorm ideas and use cases for FoodFit Plus application
    - Mockup of User interface
        - -Logo
        - -Mock-ups

Key Features and Functional Requirements

Key Features:

- **Recipe Management:**
    - Recipe Management includes access to an extensive database of recipes spanning a wide range of cuisines and accommodating various dietary preferences, making it easy for users to discover new dishes and meal ideas.

    - In addition, users can create their own custom recipes and save them within the system, ensuring they have quick and convenient access to their favorite homemade dishes or unique creations.

    - Furthermore, the inclusion of detailed nutritional information for each recipe empowers users to make informed choices about their meals, helping them align their food choices with their health and dietary goals, whether they are counting calories, monitoring macronutrients, or addressing specific dietary requirements.This feature enhances the overall utility of the recipe management system.

    - For the users convenience saved recipes are always accessible in the navigational bar represented as the heart icon. The user may also use the search bar to find any recipe they saved at a moments notice.

- **Fitness Tracking:**
    Fitness tracking is seamlessly integrated into the user experience, allowing individuals to keep tabs on their physical activity by counting their steps. This feature not only tracks steps but also monitors daily activity levels, providing users with insightful data to gauge their fitness progress. Users can set personalized step goals, enabling them to stay motivated and consistently active. For easy access, the fitness tracking feature is conveniently located on the home page, in the top right corner, ensuring that users can effortlessly check their progress and stay on top of their health and wellness goals.

- **User Profile and Preferences:**
    - The User Profile and Preferences feature allows users to create a personalized profile by inputting various personal details, including their name, age, gender, and location. In addition to basic information, users can also specify their dietary preferences, such as vegetarian, vegan, or omnivore, and outline their fitness goals, like weight loss, muscle gain, or maintaining overall health.

    - Moreover, this feature includes an option for users to mention any dietary restrictions or food allergies they may have, ensuring that the platform can provide relevant content and recommendations while avoiding potential health

risks. For example, a user with a gluten allergy would receive information and recipes that are gluten-free.

- To enhance user accessibility, the User Profile can be easily accessed in the bottom-right corner of the navigation bar, offering a convenient and quick way for users to review and modify their personal information, dietary preferences, and fitness goals at any time. This user-centric approach helps tailor the platform's content and services to suit the individual needs and preferences of each user.

- **Goal Setting:**
  - To assist users in achieving their health objectives, FoodFit Plus allows them to set specific fitness and dietary goals that are tailored to their individual needs and preferences. As stated before the goals will be accessible in the right-most option in the navigation bar.

- **Recipes Database**:
  - The Recipes Database is a robust and extensive collection of culinary resources, featuring a wide range of recipes encompassing different cuisines, dietary preferences, and meal types. Users can explore an array of dishes, from appetizers to desserts, and discover new cooking ideas.

  - Within this database, users have the convenience of saving their favorite foods and meals. This feature allows individuals to create a personalized collection of go-to recipes, making it easier to access and reference their preferred dishes for future cooking endeavors

- **User-Designed Diet Generation:**
  - In the Diet Generation feature, users have the flexibility to design personalized meal plans according to their dietary preferences and requirements. This includes specifying their food preferences, allergies, and nutritional goals. Once these preferences are saved within the app, the system leverages this information to automatically generate daily meal plans.

  - These daily diets are tailored to meet the user's specific dietary needs, ensuring they receive a balanced and nutritious selection of meals that align with their health and fitness goals.

- **Nutritional Tracking**:
  - The app offers users a comprehensive platform where they can meticulously monitor their daily food intake and calories, enabling them to make informed dietary choices.

Basic Functional Requirements:

- **Dialogs and pickers:**
    - **Unsaved Changes Dialog:** A dialog that appears when users attempt to leave without saving
    - **Date Picker:** Used for selecting specific dates when planning meals or setting fitness goals.
    - **Confirmation Dialogs:** Displayed when performing critical actions like deleting and saving

- **Multiple screens and navigation:**
    - **Welcome Screen:** The Welcome Screen features the application's logo, a friendly welcome message, and a brief description of the application, providing users with an initial introduction to its purpose and features
    - **User Sign-up:** This functionality allows users to create an account within the application, providing their necessary information to get started, including a username, email, and password. This account creation process ensures that users can personalize their experience and access their data.
    - **User Login:** Users can log into their accounts using their credentials, such as their username and password. This secure login process grants access to their personalized data and preferences.
    - **User Profile:** In the User Profile section, users can not only view their existing profile information but also edit and update it as needed. This feature ensures that users can maintain accurate and current details within their profiles.
    - **Dashboard/Home:** The Dashboard or Home screen serves as the central hub of the application, offering an overview of daily diet information and step tracking data. It provides users with a quick and convenient way to monitor their daily progress and health-related metrics.
    - **Search Recipes:** This screen allows users to search for and explore a wide variety of recipes. Users can select recipes to add to their meal plans, enhancing their meal planning and cooking experience**.**
    - **Stats:** The Stats section offers a detailed display of fitness-related data, which includes step counts and walking activity. This feature enables users to monitor their physical activity and assess their progress towards their fitness goals.
    - **View Recipe:** Users can access detailed information about specific recipes in this section, including ingredients, preparation steps, and nutritional information. This feature aids users in making informed decisions about their meal planning and dietary choices.
    - **Add Your Own Recipe:** This functionality empowers users to create and share their own recipes. Users can input recipe details, including ingredients, cooking instructions, and nutritional information, allowing them to contribute to the community and explore new culinary creations.
    - **Nutritional Preferences/Goals:** In this section, users can track their daily nutritional intake and set personal dietary goals. This feature helps users manage

their diet effectively, ensuring they meet their nutritional targets and maintain a healthy lifestyle.

- **Snack bars:**
  - **Snackbar Notifications:** Show brief messages at the bottom of the screen to confirm actions, like saving a meal plan or successfully reaching a fitness goal.
  - **Error Messages:** Display snack bars to inform users of errors or issues, such as failed login attempts or network connectivity problems.

- **Notifications:**
  - **Push Notifications:** Send notifications to users' devices for reminders, achievements

- **Local storage (SQLite):**
  - **User Preferences: Store user preferences,** dietary restrictions, and profile information locally for quick access.
  - **Meal Plans:** Save the user's current meal plans and dietary data on the device.

- **Cloud storage (Firestore or other):**
  - **User Accounts:** Store user account information securely in the cloud.
  - **Food Database:** Host the extensive food database in the cloud for efficient retrieval.

- **HTTP requests:**
  - **User Authentication:** Authenticate users when they log in or access sensitive data using HTTP requests to the server.

Code design (e.g. UML)

User:

- This class represents the user of the system.
- Attributes typically include user-related information such as username, email, and password.
- Users interact with the system by creating, editing, and saving recipes, setting nutritional goals, and generating diet plans.

Food:

- The food class represents recipes stored in the system's database.
- Attributes may include recipe name, ingredients, preparation steps, and nutritional information.
- Users can create custom recipes, view recipe details, and save recipes for future use.

MealPlan:

- The MealPlan class represents a user's diet plan generated by the system.
- It may include details such as meal schedules, recommended recipes, and nutritional goals.
- Users can generate diet plans based on their preferences, track nutritional intake, and modify diet plans.

FitnessTracker:

- The FitnessTracker class represents the fitness tracking functionality of the system.
- It includes attributes for tracking steps, physical activity, and fitness progress.
- Users can set fitness goals and view their fitness statistics through this class.

App:

- Represents the application itself, responsible for managing system functionality and user interactions.
- Includes methods for initializing the application, handling user requests, and coordinating interactions between components.

UI:

- Represents the user interface component of the system.
- Manages the presentation of information to users and the capture of user inputs.
- Interacts with the "App" class to display information and receive user commands.

Database:

- This class represents the system's database, which contains recipes, user profiles, and diet plans.
- It serves as a data store for recipes and user-related information.

UserAuthentication:

- This class handles user authentication and authorization.
- It ensures secure access to user data and system functionality.

Associations:

- Users can create, edit, and save recipes, view recipe details, set nutritional goals, generate diet plans, and track nutritional intake. These associations represent user actions within the system.
- Meal plans are generated based on user preferences and can be modified by users.
- User profiles include information about dietary preferences and fitness goals.
- The FitnessTracker class is associated with the User class to manage fitness tracking and goal setting.
- The UserAuthentication class handles user authentication for secure access to the system.
- The "App" class manages the core application logic, including user authentication, recipe management, diet plan generation, and fitness tracking.

- The "UI" class is responsible for presenting information to users, receiving user inputs, and ensuring a seamless user experience.
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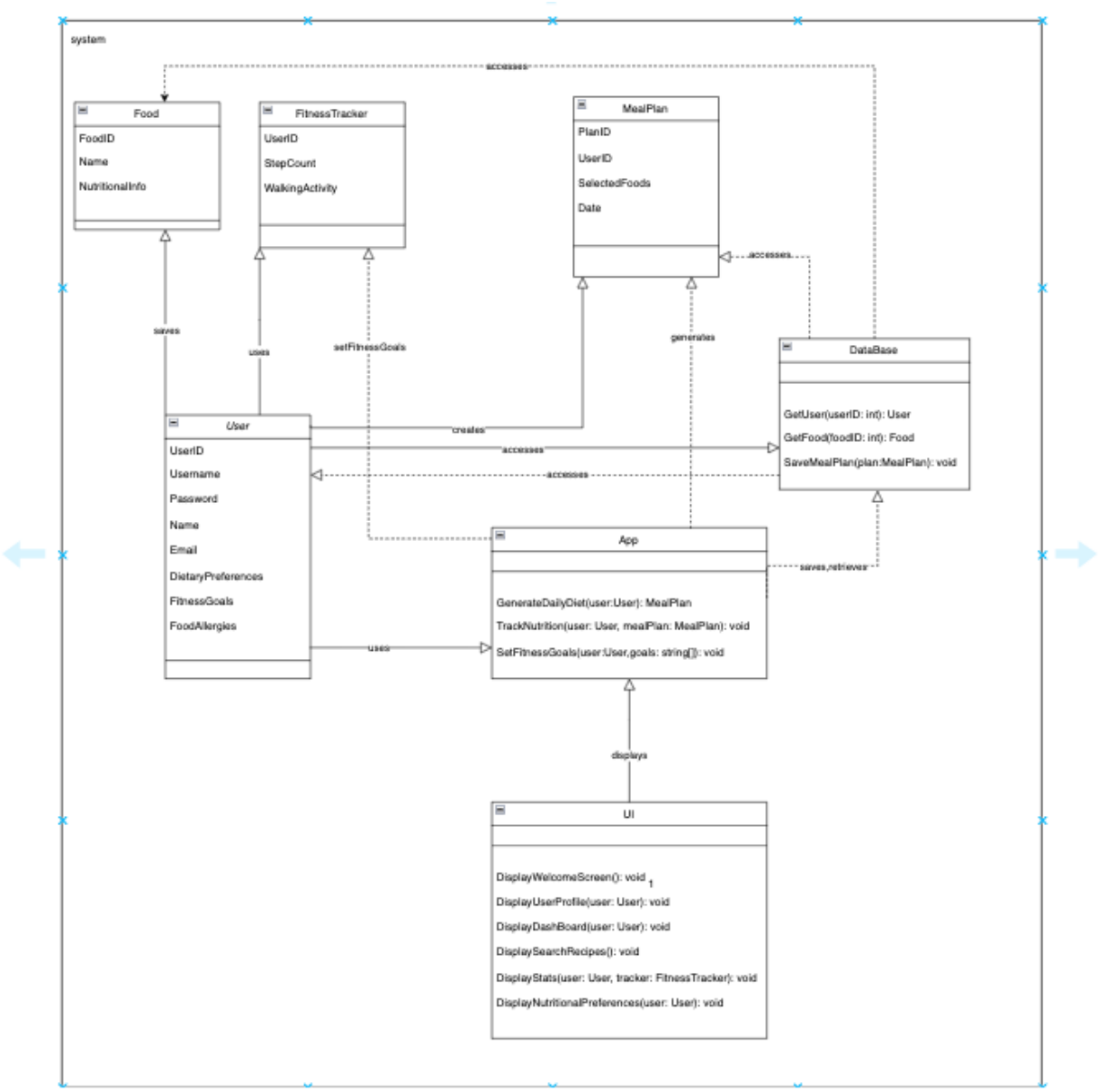

Actors:

- **User:** The primary actor who interacts with the system. Users can browse recipes, create custom recipes, view recipe details, set nutritional goals, edit recipes, save recipes, track nutritional intake, manage their user profile, view fitness statistics, set

fitness goals, sign up, enter personal information, modify diet plans, and authenticate themselves in the system.

- **System:** The software system responsible for managing recipes, generating diets, and user interactions. The system generates diet plans and authenticates users.

Use Cases:

Browse Recipes: Allows users to explore and search for recipes within the system's extensive recipe database.

Create Custom Recipe: Permits users to create their custom recipes and save them within the system for easy access.

View Recipe Details: Enables users to access detailed information about a specific recipe, including ingredients and preparation steps.

Set Nutritional Goals: Provides users with the capability to specify their nutritional goals and dietary preferences.

Generate Diet Plan: The system generates a diet plan based on the user's nutritional goals and preferences.

Edit Recipe: Allows users to modify and edit existing recipes.

Save Recipe: Permits users to save recipes, including custom ones, for quick access in the future.

View Fitness Stats: Provides users with detailed information about their fitness progress, including step counts and walking activity.

Set Fitness Goals: Allows users to set and track personalized fitness goals to help them achieve their desired level of physical activity.

User Authentication: The system authenticates users, ensuring secure access to their personalized data.

Sign-Up: Enables new users to create accounts and provide their initial information, such as username, email, and password.

Enter Personal Information: New users enter their personal details during the sign-up process to create a user profile.

Modify Diet Plan: Permits users to make changes and adjustments to their generated diet plans based on changing preferences and dietary needs.


Sign up
<<includes>>
Enter Personal Information
<<includes>>
User Authentication
Browse Recipes
<<extends>>
View Recipe Details
<<includes>>
Edit Recipe
Create Custom Recipe
<<includes>>
Save Recipe
Set Nutritional Goals
<<includes>>
Generate Diet Plan
<<includes>>
<<extends>>
Modify Diet Plan
Set Fitness Goals
<<extends>>
View Fitness Stats
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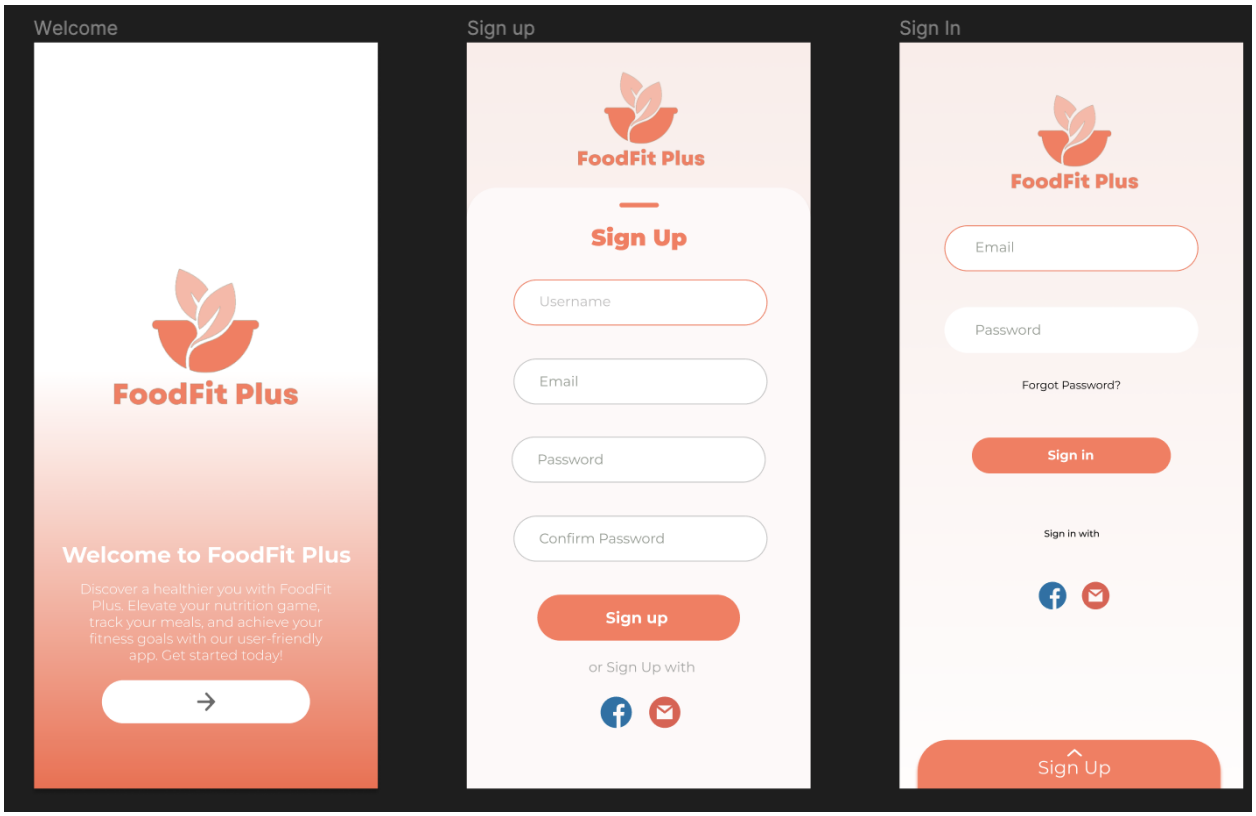
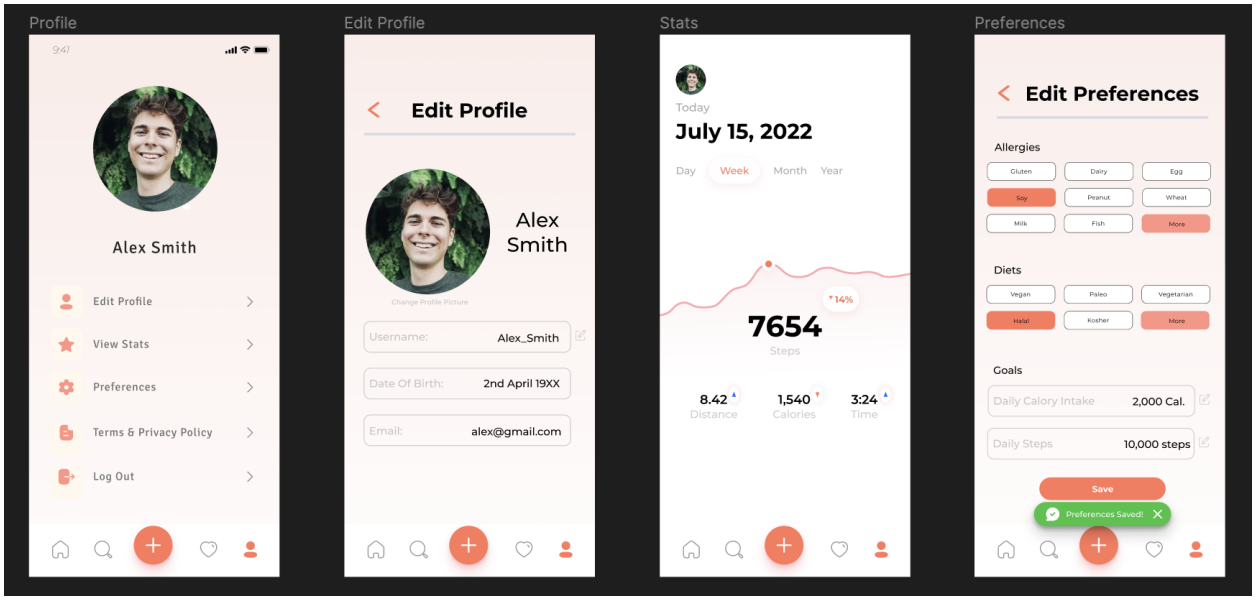
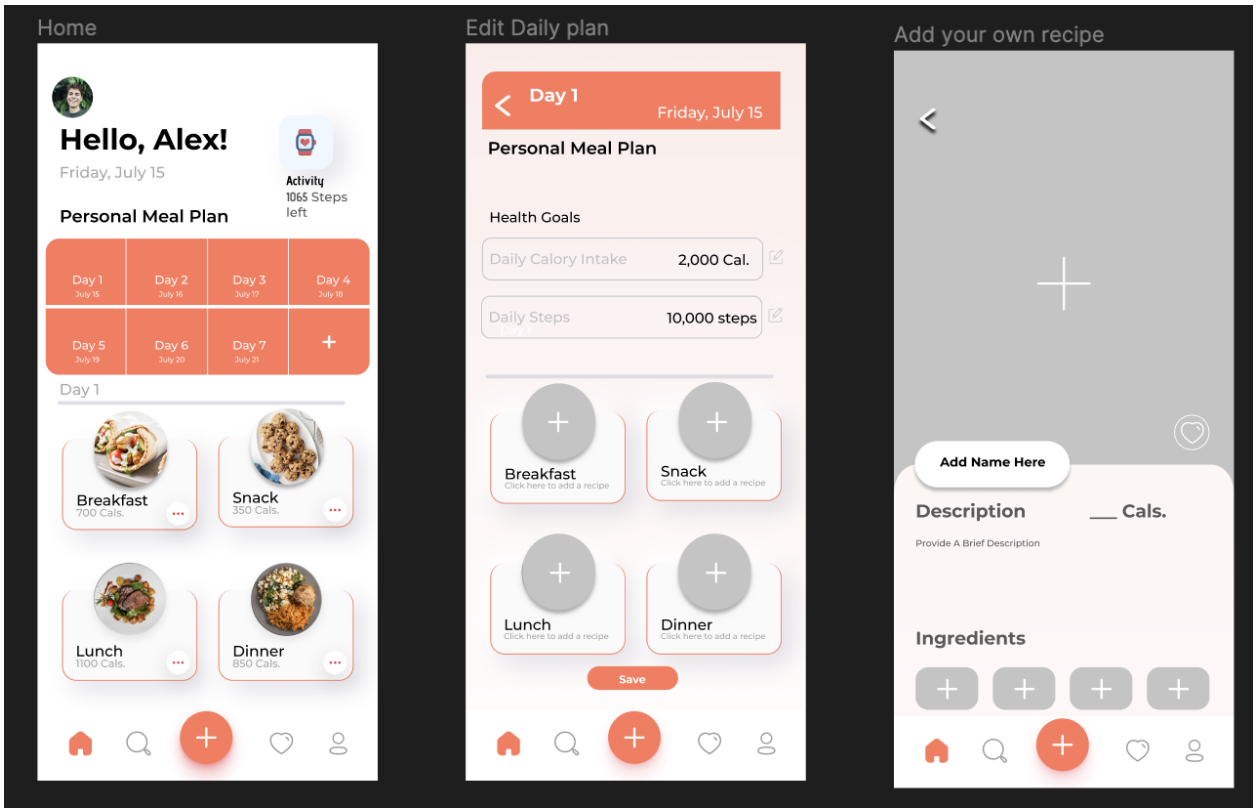
View Fitness Goals
User
<<service>>
system
<<service>>
database

Mockup of user interface

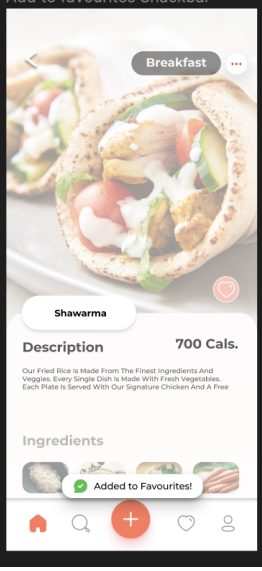



Profile
Alex Smith
Edit Profile
View Stats
Preferences
Terms & Privacy Policy
Log Out
Edit Profile
Edit Profile
Alex Smith
Username:
Alex_Smith
Date Of Birth:
2nd April 19XX
Email:
alex@gmail.com
Stats
Today
July 15, 2022
Day
Week
Month
Year
7654
Steps
8.42
Distance
1,540
Calories
3:24
Time
Preferences
Edit Preferences
Allergies
Gluten
Dairy
Egg
Soy
Peanut
Wheat
Milk
Fish
More
Diets
Vegan
Paleo
Vegetarian
Halal
Kosher
More
Goals
Daily Calory Intake
2,000 Cal.
Daily Steps
10,000 steps
Save
Preferences Saved!

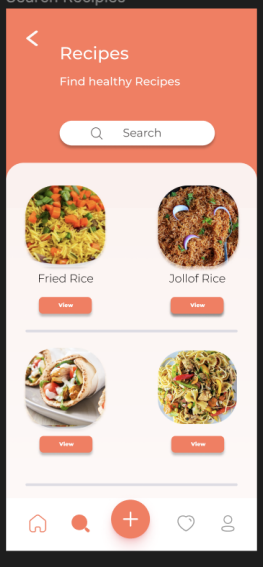

Home
Hello, Alex!
Friday, July 15
Activity
1065 Steps left
Personal Meal Plan
Day 1
Day 2
Day 3
Day 4
Day 5
Day 6
Day 7
Day 1
Breakfast
700 Cals.
Snack
350 Cals.
Lunch
1100 Cals.
Dinner
850 Cals.
Edit Daily plan
Day 1
Friday, July 15
Personal Meal Plan
Health Goals
Daily Calory Intake
2,000 Cal.
Daily Steps
10,000 steps
Breakfast
Click here to add a recipe
Snack
Click here to add a recipe
Lunch
Click here to add a recipe
Dinner
Click here to add a recipe
Save
Add your own recipe
Add Name Here
Description
___ Cals.
Provide A Brief Description
Ingredients

Breakfast

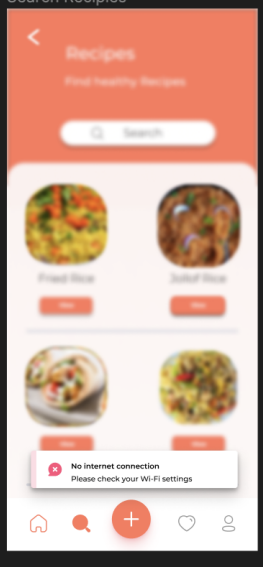
Add to favourites Snackbar



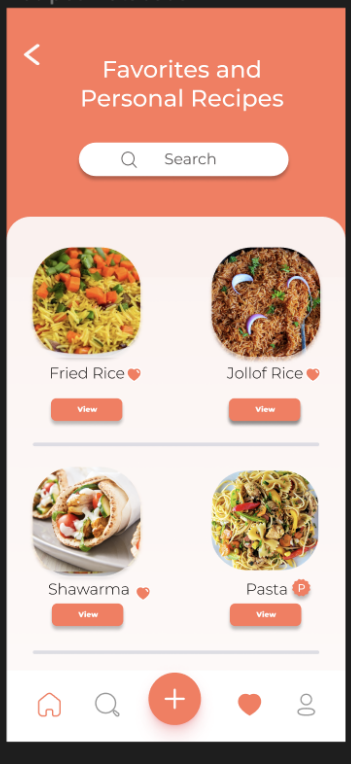
Search Recipies



Search Recipies

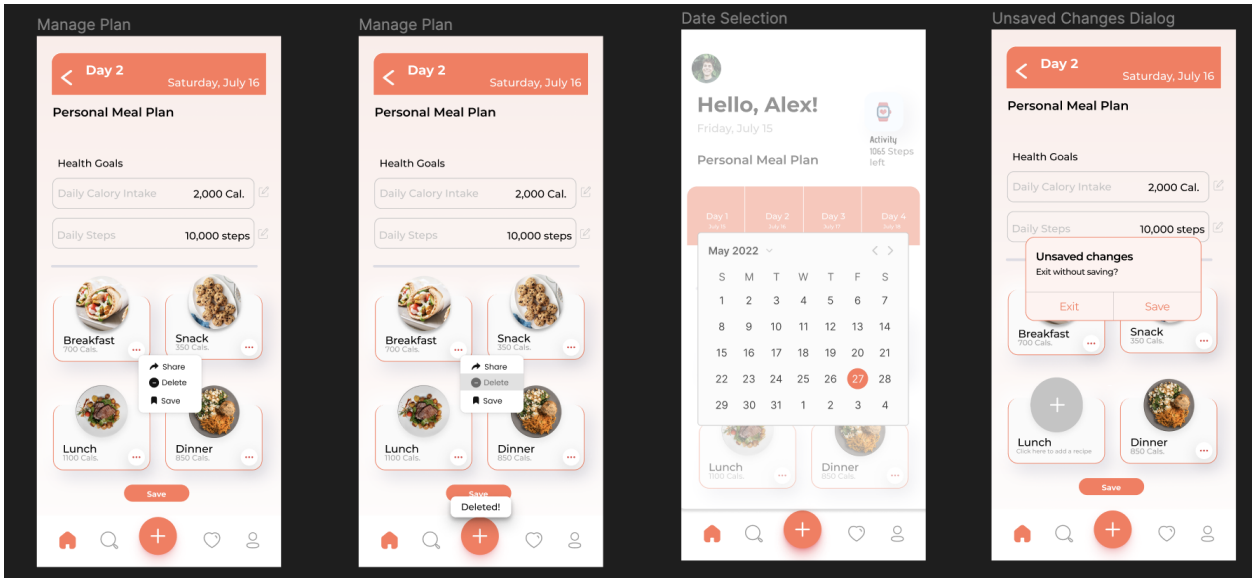


Recipes Database



Notification

Reminder


Manage Plan
Day 2
Saturday, July 16
Personal Meal Plan
Health Goals
Daily Calory Intake
2,000 Cal.
Daily Steps
10,000 steps
Breakfast
Snack
Lunch
Dinner
Share
Delete
Save
Save
Manage Plan
Day 2
Saturday, July 16
Personal Meal Plan
Health Goals
Daily Calory Intake
2,000 Cal.
Daily Steps
10,000 steps
Breakfast
Snack
Lunch
Dinner
Share
Delete
Save
Deleted!
Date Selection
Hello, Alex!
Friday, July 15
Activity
1065 Steps left
Personal Meal Plan
May 2022
S M T W T F S
1 2 3 4 5 6 7
8 9 10 11 12 13 14
15 16 17 18 19 20 21
22 23 24 25 26 27 28
29 30 31 1 2 3 4
Lunch
Dinner
Unsaved Changes Dialog
Day 2
Saturday, July 16
Personal Meal Plan
Health Goals
Daily Calory Intake
2,000 Cal.
Daily Steps
10,000 steps
Unsaved changes
Exit without saving?
Exit
Save
Breakfast
Snack
Lunch
Dinner
Save