**DOUGLAS COLLEGE**

**CSIS-3175-001**

**MOBILE APPLICATION DEVELOPMENT**

**PROJECT PROPOSAL**

**Project Name: WhatAFridge - Pantry & Nutrition App**

**GROUP 10**

**Team Members:**

Thiago Lyra Ganem - Student ID: 300370930

Jaycee Kim - Student ID: 300357917

Dilan Temel - Student ID: 300368635

**Instructor:** Padmapriya Arasanipalai Kandhadai

**Fall-2023**

**1. Project Overview:**

The "WhatAFridge" app is a comprehensive mobile application that aims to provide users with the convenience of meal planning, recipe selection, nutrition tracking, and pantry management. Users can effortlessly plan their meals based on the ingredients they have in their pantry and fridge, receive nutrition information, and even generate shopping lists for missing items. The app is designed to promote healthy eating habits and simplify the cooking process.

**2. Key Features:**

The application will encompass the following pivotal functionalities:

**User Profile (View 1):** Users will have the capability to record personal data, encompassing age, weight, allergies, and dietary preferences (e.g., vegetarian).

**Pantry/Fridge Registration (View 2):** Users will be empowered to input and administer their inventory of food items stored within their pantry and refrigerator.

**Search Recipes (View 3):** Users will possess the ability to inquire for culinary recipes based on the constituents available within their pantry/fridge or seek any preferred recipe at their discretion.

**Recipes Description (View 4):** Elaborate details shall be presented for selected recipes, encompassing comprehensive information regarding ingredients, nutritional statistics, and step-by-step cooking instructions.

**Dashboard/Nutrition & Health Tracker (View 5):** Users will have access to a dashboard displaying nutrition-related data, inclusive of caloric content, protein quantities, carbohydrate levels, and more, contingent upon their recipe selections.

**Shopping List View (View 6):** An automated shopping list will be generated predicated upon meal planning and the identification of missing items within the pantry. Users can seamlessly monitor their shopping requirements.

**Meal Planning Calendar (View 7):** Users will be capable of scheduling their meal routines on an interactive calendar, facilitating efficient meal planning and the organization of dietary habits.

**3. Potential Extensions:**

In conjunction with the fundamental features, prospective extensions for the application encompass:

**API Integration:** The integration of the Retrofit package will facilitate the retrieval of data from the Spoonacular API, encompassing recipe details and ingredient information.

**Asynchronous Data Handling:** Implementation of asynchronous programming techniques, such as async/await/promises, will optimize the management of data retrieved from API calls, enhancing responsiveness.

**JSON Handling:** Utilization of the GSON package will facilitate the conversion of JSON responses from the Spoonacular API into Java objects for streamlined data manipulation.

**Dynamic Images:** Integration of dynamic image processing using the Picasso package will enable the rendering of images based on external links, enhancing the visual appeal.

**UI Enhancements:** Incorporation of a bottom drawer and navigation bar will augment the application's user interface, improving navigation efficiency and overall user experience.

**Dashboard Widgets:** Deployment of AnyCharts will allow for the creation of interactive widgets within the dashboard, such as charts and progress trackers, enhancing data visualization.

**User-Uploaded Content:** Users will be granted the privilege of uploading their culinary creations, including recipes, images, or videos, for community sharing and engagement.

**Animations:** Integration of animations will serve to enrich the application's visual aesthetics and interactivity, providing a more engaging user experience.

**Calendar Integration:** Seamless integration with device calendars will empower users to synchronize meal planning with their daily schedules, fostering efficient time management.

**Slide Show:** Implementation of a slideshow feature will enable the captivating presentation of recipes and cooking tips, enhancing user engagement.

**Reminders:** Incorporation of reminder functionality will serve as a valuable tool for users, aiding in meal planning and shopping organization.

**Social Sharing:** Users will be equipped to share their favorite recipes with others via email or various communication platforms, fostering a sense of community.

**Location Services:** Utilization of location-based services will facilitate the identification of nearby grocery stores and shops, simplifying ingredient acquisition for users.

**User Authentication and Social Login Integration Extension:**

We propose enhancing user authentication by integrating Freebase and OAuth into the WhatAFridge app. This extension enables users to log in securely using their existing Freebase accounts via OAuth 2.0, simplifying registration and ensuring data privacy compliance.

**Social Login Options**

Users will have the option to log in using their existing Facebook or Google accounts.

**Freebase Authentication:**

Users can log in using their Freebase credentials, enhancing user convenience.

**OAuth 2.0 Integration:**

OAuth 2.0 protocol ensures secure authentication and data access during the login process. OAuth 2.0 will be used to securely authenticate users with Freebase.

**API Integration:**

API calls will connect with Freebase and OAuth to request user data and verify identity.

**4. Project Timeline:**

The estimated timeline for the project is 2 months. A detailed project plan with milestones and deadlines will be created during the project initiation phase.

We look forward to working on this project and creating a valuable app that simplifies meal planning and nutrition tracking for users.