BUSINESS CASE	
Proposed Project	The proposed application, "Cookify," will allow users to input a list of ingredients they have and receive a list of recipes that can be made using those ingredients. This application is designed for individuals seeking meal inspiration and looking to improve their cooking skills, particularly young adults and university students. By encouraging users to cook at home and make full use of their ingredients, the app aims to help users save money and reduce food waste. Additionally, it will cater to dietary restrictions, offering personalized meal suggestions that align with users' specific needs.
Date Produced	Sept. 28, 2024
Background	This project aims to create a web-based application that allows users to input a list of ingredients they have at home and receive recipe suggestions based on those ingredients. The target audience includes young adults, single professionals, and university students who are looking for meal inspiration, learning to cook, or trying to save money by minimizing food waste. The application will help users make better use of their groceries and tailor meals to dietary restrictions.
Business Need/ Opportunity	Busy lifestyles often take a toll on both personal health and finances. For many working individuals, finding the time to cook and making the most of expensive groceries is a challenge. Globally, about 30% of all food produced is wasted, with a significant portion coming from households. While cooking at home is preferred for its health benefits and cost savings, many recipes demand specific ingredients or kitchen tools, making meal preparation difficult. Cookify bridges this gap by enabling users to input their available ingredients and receive personalized recipe suggestions, helping reduce food waste, save time, and cut grocery costs. Objective: The objective of this project is to develop a web-based recipe suggestion platform that uses a combination of an external API for dynamic recipe data and a local database for user-specific preferences, saved recipes, and dietary filters. The platform will provide a seamless and personalized user experience that helps users discover new meal ideas, improve their cooking skills, and reduce food waste by efficiently utilizing ingredients they already have. This project aims to be user-friendly, scalable, and adaptable for future expansions, including the ability to integrate additional APIs or new user-centric features.o

Options

1) **Develop a Web-Based Recipe Finder App (Using a Local Database)**
   This option involves creating a web-based application that uses a local database (e.g., SQL or MySQL) to store recipes, ingredients, and user data. The application will be accessible via a web browser and will not rely on any external services to retrieve recipe information.

2) **Develop a Mobile Recipe Finder App (Using a Local Database)**
   This option involves creating a mobile application (for iOS or Android) that stores data locally on the user's device or on a cloud-based service. Users will interact with the app via their smartphones, and the app will provide recipes based on locally stored data.

3) **Develop a Mobile Recipe Finder App (Using an External API)**
   In this option, the mobile app fetches recipes from external APIs rather than storing a local database. The app will interact with an API to provide real-time recipe suggestions and dietary filter options.
4) **Web-Based App with Both External API and Local Database**
   This option involves creating a web-based application that uses an external API for retrieving recipes and a local database for storing user-specific information such as saved recipes, personal preferences, and dietary restrictions. The application will allow for seamless integration of real-time recipe data from the API while storing long-term user-specific data locally.

5) **Do Nothing**
   This option involves taking no action, which means continuing to rely on general recipe websites or apps that do not cater specifically to ingredient-based searches or target the desired demographic. The opportunity to reduce food waste and help users save money will remain unmet.

Cost-Benefit Analysis

1) **Web-Based App with Local Database**
   Costs:
   i. Development time for creating the database and recipe storage logic
   ii. Hosting costs for the web server and database management
   iii. Maintenance costs for updating the database with new recipes and managing server uptime
   Benefits:
   i. Full control over the data and how it is stored
   ii. No dependence on third-party APIs, reducing reliance on external services
   iii. Can scale to include user-specific data such as saved recipes or personal preferences

2) **Mobile App with Local Database**
   Costs:
   i. Development costs for creating a mobile-specific interface and local storage
   ii. Mobile app maintenance and updates
   iii. Requires a backend if cloud sync functionality is desired
   Benefits:

i. Full control over recipe data and storage
ii. Users can access the app offline without internet dependency
iii. Monetization opportunities through app store purchases or in-app ads

3) **Mobile App with External API**

Costs:

i. Development time for building mobile-specific user interfaces and integrating the external API
ii. Subscription or usage costs for the external API
iii. Requires internet connection for usage (no offline functionality)

Benefits:

i. Quick implementation as there's no need to develop or manage a local database
ii. Access to a large dataset of recipes through the API
iii. Possible cross-platform compatibility (iOS, Android)

4) **Web-Based App with Both External API and Local Database**

Costs:

i. Development time for integrating both the external API and building the local database for user data storage
ii. Hosting and database management costs for maintaining the local database
iii. Possible subscription costs for accessing the external API, depending on usage
iv. Potential increase in complexity during development and testing phases due to dual data sources

Benefits:

i. Real-time access to a large repository of recipes through the API, providing a dynamic and up-to-date user experience
ii. The ability to store user-specific data locally, enabling personalized suggestions, saved recipes, and customized dietary filters
iii. Balanced approach with flexibility, where data retrieval is outsourced but user-specific information remains under the app's control

5) **Do Nothing**

Costs

i. No development costs

Benefits

i. Cannot capitalize on growing trends of home cooking
ii. Will forgo the opportunity to promote sustainability

Recommendation

After evaluating the different options, it is recommended to proceed with the Web-Based Recipe Finder App that uses both an External API and a Local Database. This option strikes a balance between accessing a large, up-to-date repository of recipes via the external API while maintaining control over user-specific information such as saved recipes, dietary preferences, and custom filters in a local database.

This approach offers the following advantages:

- Scalability: The external API provides access to a vast array of recipes, ensuring that users always have fresh and diverse options without the need to manually update a local recipe database.

- Personalization: The local database allows for the storage of user-specific data, enabling personalized suggestions, saved recipes, and dietary preferences, enhancing the overall user experience.
- Efficiency: Leveraging the API reduces the need to maintain a large local recipe database, keeping the app lightweight and reducing server resource consumption.
- Cost-Effectiveness: While there are costs associated with API subscriptions and database hosting, this option offers a cost-effective solution compared to developing and maintaining a comprehensive local recipe database.
- Futureproofing: This hybrid architecture allows for future expansions, such as adding more APIs or enhancing the local database with additional user features.

Overall, this option provides a flexible, scalable, and user-centric solution, making it the best fit for the project's goals and target audience. The combination of real-time data access with personalized user control makes it both practical and efficient for long-term growth and usability.