CS301

Software Engineering

Feasibility Study Report - Meals & Recipe App.

Sem-4, Section-A

Objective : *To conduct the Feasibility Study for the "**Software application Development**" Project selected by our team: Meals and recipes application, App name:* **4epicure**.

❖ Introduction or Executive summary

4epicure is an application that provides tourists, students and travelers to get to know about the rich and cultured food of that particular region. This application also helps them to get to know where that particular dish is available and also if it's available in their locality. This application will help our customers to get to know about the dishes which may have long history in itself and are lost in modern cuisine.

- **Stakeholders including end users of the Application**

1. **State governments:** To promote their regional dishes among other states. State governments will invest in this project to promote their culture and food items in other states and gain further attraction from tourists and travelers to visit that region.
2. **Food and cultural ministry of the Central government:** To regulate and monitor the legal promotion of food items. They will restrict the promotion of consumables that might hurt public sentiments in certain regions.
3. **Prominent restaurant businesses:** To promote their original dishes and recipes that are popular in a locality.
4. **Employees and investors**
5. **End users:** Tourists, travelers and students. Students are the most affected group in this project. Students are the ones that travel in unfamiliar states and have to adjust to that cuisine. This project will give them access to their native food dishes.

- **Problems in the existing system**
    1. Same food item can be called by different names across states. They need to search in google to find all the alternative names for that food and recipes, etc from different websites.
    2. Difficult to prepare a new recipe, by watching a video from any source.
    3. Get the nutritional information of meals with graphical interpretation.
    4. All in one platform to find A-Z about a meal/recipe that is famous in and around our domicile and also to maintain a healthy diet.
    5. Capture the users rating about a meal without physically interacting with the app/mobile.
    6. Identify the feasibility of making a dish at home with available materials and also a feature to search for a unique recipe from youtube without exiting the app.
    7. Personalized recommendations for meals based on the filters chosen by the user.
    8. Find the health benefits of a particular meal.
    9. All the above mentioned minor problem's solution at one place.

❖ **Project scope (Initial understanding of the Project scope)**

This can become an all in one place for epicures. Currently this project is limited to our Country (INDIA) but can be extended across the country, which will help all the travelers, students, common people, diet conscious people, tourists, etc. Find any information related to meals **at one place**. Segregation of meals and A-Z information at one place which will be appreciated by people across INDIA and other countries when extended.The scope of this project to build a **meals and recipe app** that segregates meals according to regions in India and also provides a voice assistant as a step-by-step guide for recipes and has **Google Maps integration** to find famous recipes nearby and across different states in India includes the following features:

1. **Region-based segregation**: The app will allow users to filter and browse meals and recipes based on the state they are associated with, making it easy to discover local cuisine.
2. **Google Maps Integration**: The app will allow users to find famous recipes nearby and across different states in India using Google Maps.

3. **Nutritional Information**: The app will provide nutritional information for each meal, including calorie counts, protein, carbohydrates, and fat content in the form of a chart and graphs(graphical way) which helps health conscious people to select the appropriate meal among the best possible.
4. **Voice assistant**: The app will include a voice assistant that can provide step-by-step guidance for preparing recipes.
5. **Search and filter**: The app will allow users to search for specific meals or filter based on dietary restrictions, allergies, or other preferences.
6. **User reviews**: Users will be able to rate and review meals and recipes, without a **physical** touch to the app or mobile.
7. **Personalized recommendations**: The app will provide personalized recommendations based on the user's search history, ratings, dietary preferences and based on the groceries available with the user.
8. **In-app comments:** Users will be able to comment on recipes created by others.
9. **Multi-language Support :** The app will support multiple languages to cater to the diverse population of India.
10. **Notifications:** If a particular meal is scheduled to be prepared on that day, based on the grocery list updated in the app, it sends notification a day before in order to keep the grocery items ready for the next day.

❖ **Methodology and Tools used for Feasibility Study (Brainstorming, Interview, Focus groups, Survey)**

Methodology and Tools used for Feasibility Study are as follows:

1. Main methods used for our **Generating ideas:** Brainstorming helped us generate a wide range of ideas for the app, such as new features, user interfaces, and ways to monetize the app.
2. **Assessing feasibility:** By discussing and evaluating different ideas in a brainstorming session which was held in person for about 15 minutes for 1 week, we assessed the feasibility of different features and strategies for the app.
3. **Identifying challenges:** Brainstorming also helped identify potential challenges for the app, such as technical limitations or competition in the market and uniqueness in our idea.
4. **Prioritizing:** Brainstorming also helped us prioritize which features and strategies are most important for the app to be successful in the

long run.

5. **Gathering user feedback:** We interviewed some people in our campus, for example: Securities, Hostel Mess, Canteen, Student Mess Committee members, working staff of local hotels and restaurants in Sattur.
6. **Demographic analysis:** It helps gather information about the survey takers preferences and habits of different age groups, gender, or regions.

Tools that can be used for a feasibility study of a android application project based on recipes include:

1. **Project management tools:** Jira is used in this project which is designed to help teams organize, track, and manage their work.
2. **Integrated Development Environments (IDEs):** IDEs such as Android Studio, Visual Studio Code, provide a complete development environment for creating Flutter applications.
3. **Flutter SDK:** The Flutter SDK is the main tool used for developing this Flutter applications, it includes the framework, widgets, and command-line tools necessary to build and run the app.
4. **Dart programming language:** Dart is the programming language used to develop Flutter applications, it is an object-oriented language with a syntax similar to Java or JavaScript.
5. **Flutter plugins and packages:** There are thousands of plugins and packages available for Flutter, which are used to add functionality to the app such as push notifications, analytics, and integration with other services.
6. **Testing and debugging tools:** tools such as Flutter Driver and Flutter Inspector are used for writing automated tests and debugging the application
7. **Version Control tools:** Tools like Git and GitHub can be used to manage the source code and collaborate with other developers.

❖ Observations or findings from the feasibility study

➢ Technical feasibility:

1. **Map integration**: The application would need to integrate with a mapping service, such as Google Maps, to display the location data on a

map. This would require knowledge of the mapping service's API and the ability to properly integrate it into the application.

2. **Computer Vision:** To recognize food, the application would need to utilize an AI model that has been trained on a dataset of images of food. This model would need to be able to accurately identify and classify different types of food.
3. **Image recognition**: The application would need to have the capability to capture images of food and process them through the AI model. This would require knowledge of image processing techniques and the ability to integrate them into the application.
4. **Database integration**: The application would need to integrate with a database that contains nutritional information for different types of food. This would require knowledge of database management and the ability to properly integrate it into the application. ex;
5. **Flutter** : Develop cross platform from application with single codebase to deploy it on both Android and IOS devices.
6. **Personalized Recommendation algorithm**: To give meal recommendations, the application would need to utilize a recommendation algorithm that takes into account the user's favorite recipes and provides suggestions for similar or complementary meals and this feature can be implemented using ML algorithms.

➢ **Economical feasibility**

1. **Development costs:** In this project we use Flutter which is an open-source UI software development kit created by Google.
2. **Marketing expenses:** To attract users and generate revenue, the application would need to be marketed through various channels such as LinkedIn, Instagram and other social media platforms.
3. **Scalability:** The application needs paid subscription of APIs as the number of APIs calls exceed a particular limit when the number of users increase. Similarly, for databases.

➢ **Operational feasibility**

1. 4epicure will require a database of local dishes and their descriptions, as well as information about where they can be purchased. This information will need to be regularly updated to ensure accuracy and relevance.

2. The application will also need to integrate with maps and location services to provide users with information about nearby food vendors.
3. Marketing and promotion will also be required to reach and attract customers.
4. The development and maintenance of the database, as well as the development of the application itself, will require a significant investment of time and resources.

➢ **Legal feasibility**

1. **Promotion of banned food** items in a region with intolerant consumers may hurt religious sentiments: Section 295A: For instance, it would be legally challenging to promote beef based dishes in the northern belt.
2. Legal disputes relating to **intellectual property**: patent, trademarks and copyrights. The criteria for patentability of an invention are novelty, inventive step and industrial applicability.
3. Fair **distribution of wages** to the employees to avoid disputes with workers union

❖ **ANALYSIS OF DIFFERENT FEASIBILITIES:**

In conclusion, The 4epicure project appears to be technically, economically, legally and operationally feasible. The application can be developed using modern technologies, such as Flutter, NodeJS, ExpressJS, MongoDB frameworks, and can be integrated with existing systems, such as Google Maps.

❖ **Challenges and assumptions considered for the project study**

➢ **Challenges:**

1. Make it a user-driven(Verify the information provided by user) or web-driven (limited info available for local meals)
2. Integrating all the unique features at one place.
3. Image recognition of a particular meal in different forms across different regions.

➢ **Assumptions:**

1. All the restaurants are mentioned on the maps.
2. User inputs the details in a civilized manner.

❖ **Recommendations**

- ➢ Region-based Segregation of meals (higher level: State-based).
- ➢ Maps integration to find the nearest famous meal.
- ➢ Graphical Interpretation of nutritional values of meals.
- ➢ Image recognition using computer vision to identify meals and food products.
- ➢ Voice assistant to guide us through recipes with voice recognition.
- ➢ Multi-language(Indian) app.
- ➢ Single code-base for both Android and IOS devices using Flutter.
- ➢ Recipe recommendation using personalized model and depending on groceries available with the user, with notifications.
- ➢ Reviews and comments from other users about a particular meal in a region.
- ➢ Filter out the meals based on various Nutritional values and the type of food.

❖ **Team Name: Team 4 Epicures**

Team:

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❖ **Glossary/References**

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