Cookipidia

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***Abstract*— The era of technology today has become a bridge that connects people with all freedom. Many of activities performed by people using technology as a media support, from address searching, buying. Technology is getting smaller things that are always included in our daily lives, such as an example of cooking. This study uses a smartphone an app called Cookipidia. Cookipidia is an application that helps us to provide recipes of dishes. It provides shopping for required veggie. In this application there is a chat feature so that viewers can directly connect to chefs and get their doubts solved. It has intelligent dish recommendation based on timing of the day. It also has a creator's panel where a person can post blog/photo of self-made things.**

1. Introduction

In today's world a person can prepare a dish either by asking another person who has acquired such knowledge of cooking or by reading certain cooking recipe books, and gaining self-knowledge by owning such books. Another way of making delicious recipes is by searching for the recipes over the internet, read the instructions and prepare it. In most of the cases every person visiting a website, already know a name, by which he searches the website for the dish. We have come up with this unique idea of preparing meals. Cookipidia is an application that helps us to provide recipes of dishes. It provides shopping for required veggie. In this application there is a chat feature so that viewers can directly connect to chefs and get their doubts solved. It has intelligent dish recommendation based on timing of the day. It also has a creator's panel where a person can post blog/photo of self-made things. We're all about good recipes, and about quality home cooking that everyone can enjoy. If you have a little gourmand at home, let him try his hand at making dinner with these simple methods to prepare a meal. It is like having a TV cooking show 'MasterChef"' with you in the kitchen who always knows what to make. With such a system in place, Cookipidia would be more competitive and adaptive to all types of users. The goal of this project is to create an Android software application that is accessible to everyone. The app will be easy to use with a variety of features available. These features will include a hierarchy of how different foods are related to one another and a recipe generator.

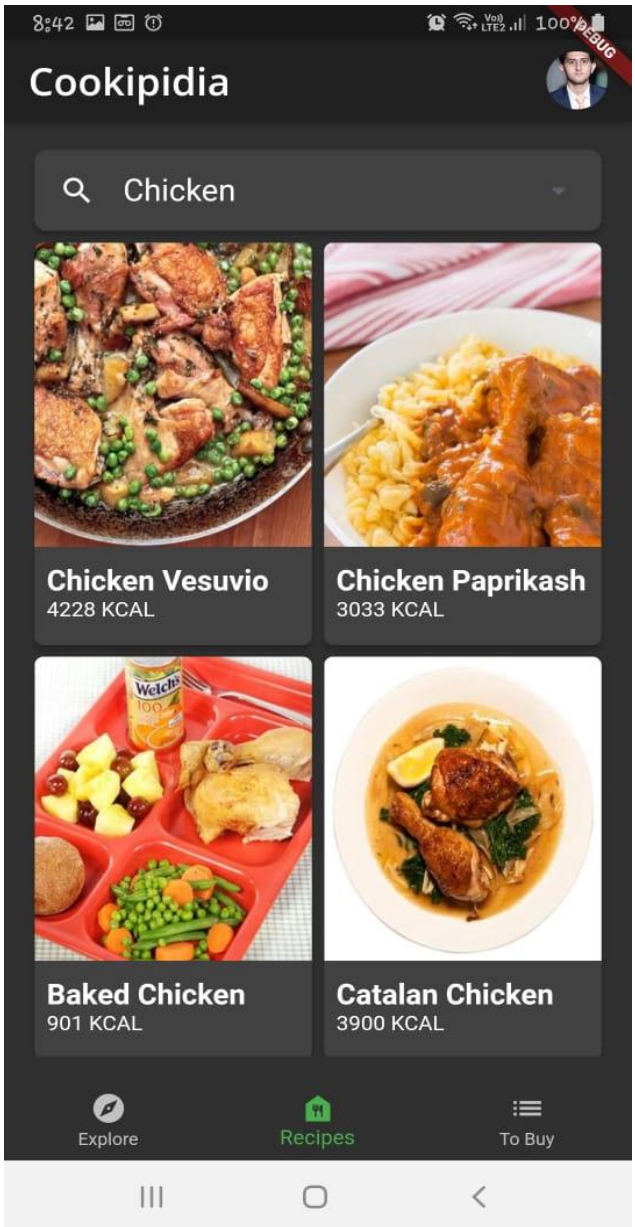

Fig 1.

2. Literature Survey

In the survey we identified the following problems with current applications of recipe providers:

Apps like Cookpad, BigOven, magic Fridge etc. Recipes Provider apps that provide recipes, ingredients, and reviews. The available applications do not provide active user interface with the app.

In the conducted survey we learned that, to make the app more user-friendly and efficient. Also, it will show different types of dishes and their preparation time.

A. Tools Used

So, we chose to develop this android application which is very much cost effective and dynamic, affordable by every end user who wants to schedule his daily meals with whatever ingredients he has at hand. The system would be two-way integration with the user and the database in the system. The platform used for the development of the system application is Android Studio, VS Code, Firebase which is open source and contains both Dart and flutter for code compilation.

1. **Firebase:** Firebase is a backend service provided by Google that offers many useful features for mobile and web apps. Some of the features provided by Firebase are as followed:

   i. Realtime Database – It allows data to be stored and synced between users and devices in a MYSQL database. The updated data is synced with all connected devices very quickly, and the data remains after the app goes offline.

   ii. Authentication – It provides a simple and secure way to manage users using the app. It provides multiple methods of authentication such as, email and password, third-party providers like Google or Facebook, and using your existing account system directly.

   iii. Cloud Functions – It allows the developer to extend the app using custom backend code without the need to manage one's own servers. The functions can be triggered by events, which are produced by Firebase, Google Cloud services, and other third-party services.

   iv. Cloud Storage – It can be used to store user-generated content like images, audio, and video with object storage built for Google scale. The Firebase SDKs for Cloud Storage add Google security to file uploads and downloads for your Firebase.

2. **Android Studio:** Android Studio is Google's integrated development platform (IDE). Android operating system. Built on the basis of JetBrains' IntelliJ IDEA Community. Edition, and specially designed to create apps on Android devices. Some of the key features of Android Studio are as follows:

   i. Instant Run – a feature that pushes code changes and applications in the operating system. Allows changes to the application without the need to restart the app, either rebuild the APK, so that the results are visible immediately.

   ii. An Emulator – A feature that pushes code changes and applications in the operating system. Allows changes to the application without the need to restart the app, either rebuild the APK, so that the results are visible immediately.

   iii. Testing Tools and Frameworks – Extensive testing tools such as JUnit 4 and functional UI test frameworks are included with Android Studio. Espresso Test Recorder can generate a UI test code by recording the engineer's interaction with the app on the device or emulator. Testing can be done on a device, emulator, Firebase Test Lab, or in a continuous integration area.

B. Why Android?

As our primary goal is to provide a request to the user, which can be accessed by him by all means, Android phones used by almost everyone. Therefore, choosing to do a project on Android is a necessity for hour. Android supports gradle (this allows you to control the layout, create a taste for different, unique apps signing configuration etc). In Layout View you have the option to view both real and xml layouts at the same time, while in Eclipse you should choose between two tabs. Sounds better. From redesign (such as renaming a path, to taking out a class) to looking at a Log. Refactoring it looks very strong and cat Logi "doesn't disappear" as it did in Eclipse.

C. Usage Scenario

Cookipidia will be designed as a single user application that can be useful to anyone in a position to make food preparation decisions based on known food recipes. The system will primarily support these decisions, which are guided by the user interaction in order to gather enough data to provide relevant Recipes.

D. Software Context

Targeted use of this application for daily purposes. The app must meet the needs of the average android mobile user. Cookipidia will attract a much wider audience as both professional staff, experienced chefs, students, and those who wish to cook more but have no knowledge of recipes can benefit from this app.

E. How Is Cookipidia Different from Regular Recipe Apps?

The Cookipidia returns recipes you can actually make right now with the ingredients you have. You can search the web for the recipes which is an inbuilt search engine provided in cookipidia. The API is provided by a site known as Edamam you can search different types of recipes and then at the same time you can bookmark them which also tells

the user what ingredients are used to make this dish and the quantity too. Users can also mark a list of ingredients that they have to buy from the market and also the due date up to which they can store the ingredients using inbuilt calendar. Users can see different types of tutorials in Cookipidia which they can use to enhance their knowledge. Cookipidia also provides a common chat room where all users can ask their queries regarding the dishes by sending text messages or by sending images of the dishes.

3. Problem Formulation

During software development, the main problem with existing app is:

i. No existing system gives interactive learning on cooking.

ii. Most app available are just cook books or video Library that too un maintained.

iii. Current apps have adware.

iv. There is no app which has collaborative chat feature.

v. No app contains video + text recipes.

The Problems were tackled by:

i. App made will be totally free.

ii. No subscription fees or Ad-ware in the app.

iii. Unlimited Members can be added to the chat room.

iv. No limit on Number of queries per user.

v. Easy to use clutter free UI.

4. Research Objectives

The proposed research is aimed to carry out work leading to the development of an approach for cross platform app for learning cooking through written and videos method assisted with chat interface. The proposed aim will be achieved by dividing the work into following objectives:

i. The main aim of Cookipidia is to give people who are not very aware how to cook properly a guidance to tackle their everyday problem.

ii. Since the pandemic people prefer to stay in home and eat something tasty and nutritious.

iii. Current system was tested.

iv. Flaws of current system were detected.

v. Wishlist of requested features was made.

vi. New app with ironed flaws and new features was created and tested.

5. Proposed System

Cookipidia will require minimal user input, yet still provide substantial information regarding the desired output. A database will be used to keep track of all the foods owned. From this database, ingredients will be searched when the user decides what kind of dish they wish to cook. The app will feature direct integration with the user's input ingredients, so it will know what ingredients you have so you can cook great meals. The system will show all kinds of food vegetarian as well as non-vegetarian cuisines. It will provide different types of dishes ranging from Indian, Chinese, Italian, Mexican, etc. depending on type of ingredients provided. Recipe information will include details about a recipe, ingredients and quantity.

The App begins with a homepage where you need to login. If you've not registered in the app, then you will have to do the registration process first. Once you login you can avail features of the App.

The system then lets you either to find a recipe by giving its name or by providing input of ingredients into the search field to make a custom search as shown in **Fig 2.**

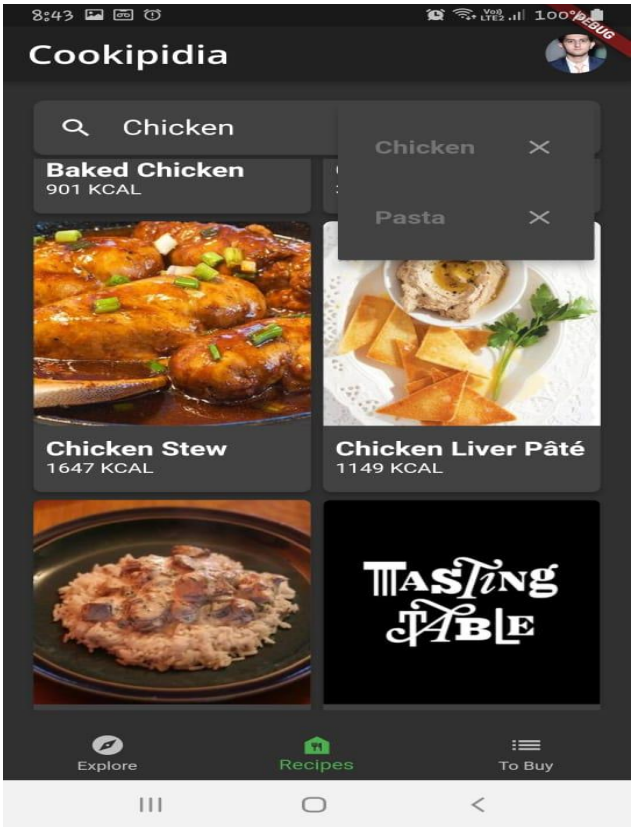

Fig 2.

If text is chosen as input, you will have to enter as much as ingredients you want in the search box query. It cranks out a list of potential recipes you can make using just what you have or with the addition of another item. Lastly when image is chosen user can click pictures of ingredients and post it in search box. Accordingly, results will be provided. The App also allows saving your favorite recipes for further referral.

The app also provides a feature where you can make list of ingredients for which you have to buy for the dish and also a due date for which that ingredient lasts as shown in **Fig 3.**

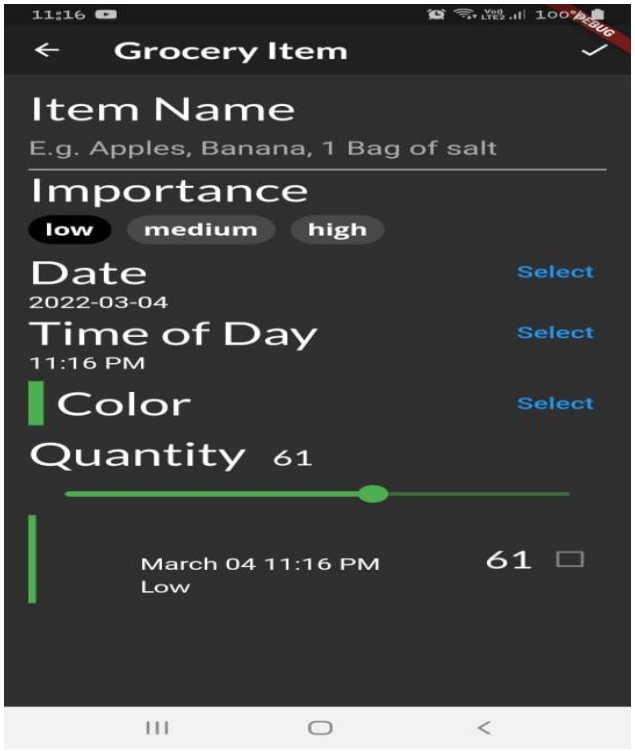

Fig 3.

There is also a common chat room where users can chat with each other regarding their queries about the dishes as shown in **Fig 4.**

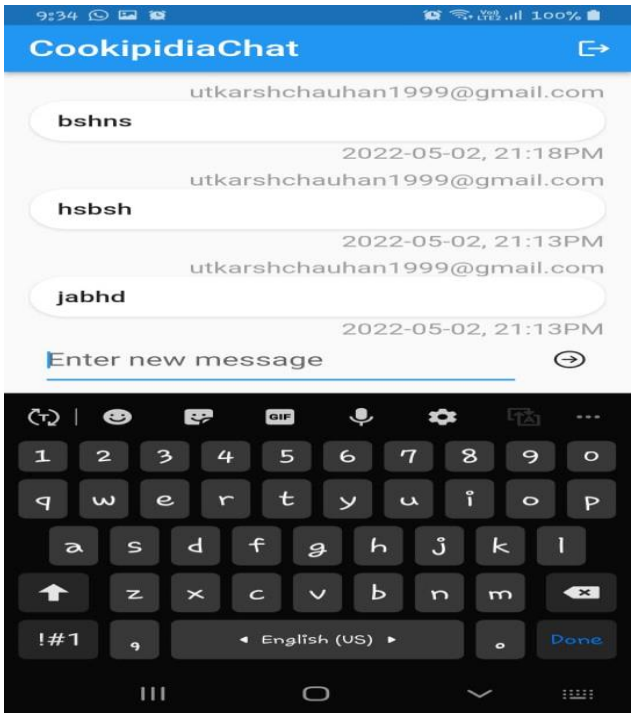

Fig 4.

6. Methodology

The following methodology will be followed to achieve the objectives defined for proposed research work:

i. Client-Server Architecture Pattern is used for designing the App.

ii. New features will be implemented to enhance user experience.

iii. Various parameters will be identified to evaluate the proposed system.

iv. Comparison of new implemented approach with existing approaches will be done.

v. Feedback will be taken from research.

vi. New ideas will be implemented to eliminate cons.

vii. New features will be implemented to enhance user experience.

viii. It focuses on providing users with basic idea of cooking ingredients.

ix. App using following tools was created:

- Flutter toolkit
- Base language dart
- Cloud database: Firebase
- VS Code
- Android Studio
- Few Flutter widgets

7. Conclusion

This project is designed to allow users to add and discover food recipes using intuitive and easy to use mobile application. The app allows users to discover recipes based on various factors such as, course, diet, and type of diet. It also gives a filter system that can be used to filter a list of recipes based on the ingredients used for each recipe, the time it takes to make food, and the amount of feed. Application and allows users to add their own recipes using the provided interface. The feature I would like to use is some kind of measurement system recipe to add. Using this app, the recipes added by users will be checked to see if they work, and any comments or incorrect words. If the recipe does not pass the check will succeed can be added to the website, and users will be given an explanation of why the recipe was not added. A set of guidelines will be displayed to users to help them add their recipes in the database.

Finally, the ultimate goal of this mobile app is to provide a platform for that allows anyone to share and discover recipes with ease.

Fig 5.

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