

# Recipe Companion: Posting And Sharing Using Recipes Recommendation System

Karan Choudhari<sup>1</sup>, Shreetan Naik<sup>2</sup>, Mayur Bhavsar<sup>3</sup>, Snehal Ahire<sup>4</sup>

Dept. of Computer Engineering, G.E.S R.H. Sapat College of Engineering, Nashik, Maharashtra, India

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**Abstract** - In the whole world, the major attraction point of people is food. People like to cook food of different national cuisines, ethnic cuisines etc. They are eager to taste and to know which authentic ingredients are used to make the same. Many of them opt to know the procedure of making those recipes. Most of the times people don't get proper details of recipes and could not try making them. In the proposed system, people will have detailed information of variety of recipes at a go! The application allows users to post recipes for various dishes with details including from ingredients to make time. Every user can search for recipes, save recipes as favourite, share recipe with friends on social media. By combining the title search and category-wise filtering, the application makes finding recipes easy. Recipes being added daily, people will always have something new to crave. Users will be suggested to checkout new recipes which he may wish to make using recommendation system. The application also provides a feedback and ratings from users for recipes so that others could know to which extent that recipe has been liked. This application is time saver and handy to provide recipes within few clicks.

**Key Words:** Recommendation System, Mobile Application, Web Services, etc

## 1. INTRODUCTION

Proposed application is a very useful mobile android app for people who love to cook and try out new recipes. It will provides user flexibility to post, search, share recipes through client-server interaction with an additional capability to update and delete personal recipes. Our application makes finding recipes easy. Recipes are from authorized users who post their own recipes. Web Services are used for searching recipes from cloud. Recipes ranges from the decadent to the simple for whatever mood user are in. Recipes are being daily added by the users to the app which grows the database and there will always be something new for other user to try. Users are allowed to give the ratings to the recipes according to their liking. The application recommends the user for highly rated recipes to try. The application provides capability to user to search top rated, trending recipes of different regions. Recipes are displayed with recipe image, title, ratings and cooking directions. Category based and sub-category based search is

also provided to user. User is provided with the facility to post video of recipe for guidance to others. This application is a time saver providing recipes in few clicks. The user is given choice to add a recipe to his favourites, remove them from favourites. The interface is made handy to use. The user can search recipes, view added favorite recipe list and all from home screen.

## 2. LITERATURE SURVEY

### 2.1 Content-Based Filtering Algorithm for Mobile Recipe Application

In general people wish to cook food but however they need a plan on what to cook and way to cook. Furthermore, they additionally would like to grasp and try the recipes that suit to their preference. There are a lot of cooking recipes site which provide recipes to the user but fail to provide the recipes in which user seems to be more interested. Current recipe suggestions developed by some researchers are mainly based on the collective interests, demographic information, and ingredients content. The main objective of this proposed application is to suggest a user preferred recipe using content-based filtering algorithm. Content-based filtering algorithm will be applied to identify the recipes that have high rating. This algorithm will be able to recommend recipes based on user ratings given to the recipe.

### 2.2 Adding Weights to User Rating in Recommendation Systems

Recommendation systems are the information filtering system that try to predict the preference that users would give to an item. To predict the preferences, these systems use details of users profile, their opinions and their habits and compare the information to reference characteristics to present the recommendations. Recommender systems are used in a variety of applications and got popular in extremely short time as they provide a decision making power to the administration. There are many recommendation systems developed and used in applications like music, books, news, movies, navigation recommendation.

### 3. PROPOSED SYSTEM

The purpose of project is to design and implement a system which is helpful to post and find various recipes. Depending upon users requirements, system displays recipes based on region category and sub-category. User have to register for using the system. User will also be recommended of other recipes to try them.

#### 3.1 System Architecture

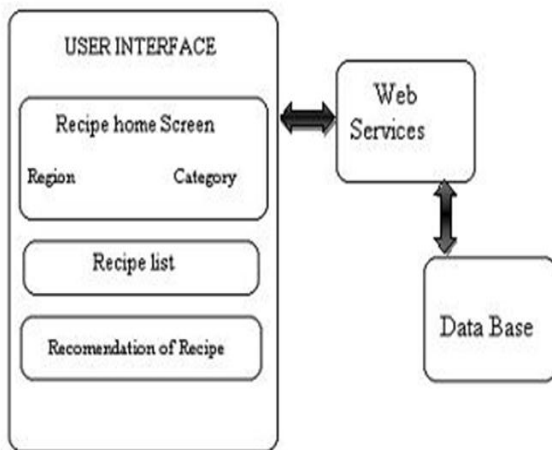


Fig -1: Architecture diagram of proposed system

The system complies of android mobile app, web-services, and the database. The app is used to interface with the users for the purpose of searching, posting, sharing the recipes and performs navigation to different modules made available within it. Database stores the data of recipes like title, procedure, making time, ingredients, author of the recipes etc. The web services are used to interpret the data from the database and bind it to the different modules in the app. JSON was used as the data-interchange between the client and server side.

#### 3.2 Recommendation Techniques

##### 3.2.1 Collaborative information filtering

Collaborative filtering is the method which calculates average rating of users choice on items/products and by using this historical data recommendation is carried out. This method also shares its rating information between different users which helps the other users to find the relevant data of their interest. Consider an example two users gives similar rating to item or have similar behavior like purchasing, watching videos etc. Then they may have same area of interest, thus a system can suggest items to first user which are previously referred by second user or vice versa. There are two ways of algorithms which are used for

collaborative filtering first is memory based and second one is the model based algorithm. Memory based algorithms are based on total number of ratings given by the user on database. This is further divided into two type user based rating and item based ratings. In user based rating algorithm, the users having same area of interest are considered. In item based rating algorithm, it calculates similarity between two items/products and according to that it creates a bunch of it.

##### 3.2.2 Content-based information filtering

Content-based filtering system considers historical data that means recommend those items/product that are similar to the ones that the user preferred in the past history. Here, content means a web object. This system finds similar items/products by comparing their features or matching the attributes of user profile which contain information related to users choice. For example, if in past user purchase a book that belongs to the food genre, then the system can learn to recommend other books from same genre.

##### 3.2.3 Comparative analysis between the filtering algorithms

Each of the filtering algorithms have their own strengths and drawbacks. Content Based Filtering Algorithm solely depends on ratings provided by the active user to learn the user's preference. However, a collaborative filtering algorithm depends on other users to rate the same item to collect the users' choices. In our System we are going to take the positives of both the techniques and recommend the recipes with highest rating in a specific category.

#### 3.3 System Development and Framework

The mobile recipe application was developed using Android SDK development environment and user interface. This is a client server application, MS-SQL server was used at the server side. Microsoft Visual Studio was used for database designing and defining web services.

#### 3.4 Authentication

The proposed system requires authentication. The user needs to register himself to access the recipes and different functionalities of the app. The user needs to provide the basic information to get himself registered and can then easily take the benefits offered in the application. Once registers himself he must login with the email id and password.

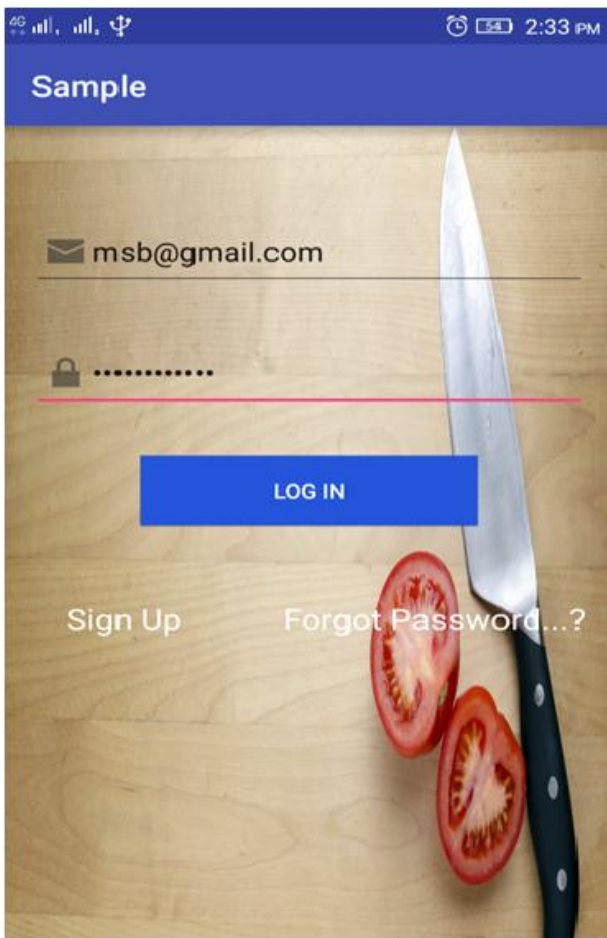


Fig -2: Login window in application

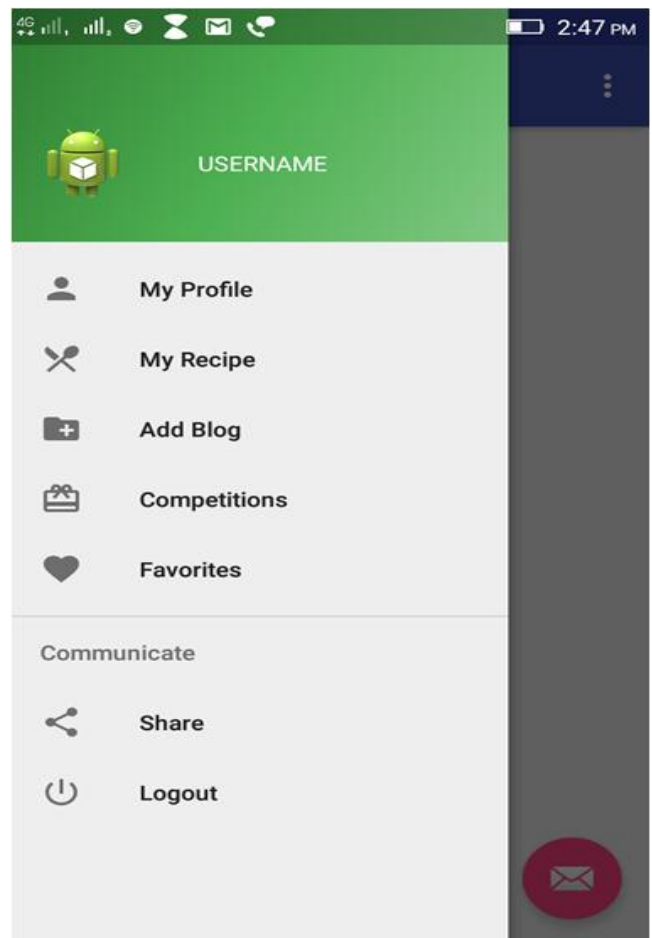


Fig -3: Navigation pane in the application

### 3.5 Functionalities

Following fig 3, represents navigation panel from the app. In that there are multiple options among which user can chose to navigate to different functionalities like my profile in which user can access about his own profile, my recipes in which user can have the record of the recipes posted by him, user can add blog regarding a recipe, in competitions he can get notifications about the various competitions going to happen and apply for the same. User is provided with the functionality called favourites where he can bookmark the recipes which he liked the most among the number of recipes so as to save time required in searching same recipe next time.

### 3. CONCLUSIONS

This application is extremely handy and useful for cooking variety of recipe with minimum search effort from internet. This app also provides ability to user to create recipe and save it for later reference. It will help people to save their time and energy in finding recipes for daily routine as well as for special occasions. And since this is a mobile application, users have the luxury to check for recipes wherever they are and save them for later. The application can be used by a broad range of users which may include parents trying to cook new recipe for kids, people who are fond of desserts, restaurants owner trying to add new item to their menu and for regular cooking. It will help to make the lives of people simpler.

### REFERENCES

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## BIOGRAPHIES



**Karan Choudhari** is currently a student of GESRHSCOE, Nashik from the University of Savitribai Phule Pune.



**Shreetan Naik** is currently a student of GESRHSCOE, Nashik from the University of Savitribai Phule Pune.



**Mayur Bhavsar** is currently a student of GESRHSCOE, Nashik from the University of Savitribai Phule Pune.



**Snehal Ahire** is currently a student of GESRHSCOE, Nashik from the University of Savitribai Phule Pune.