

# Relish: The Cooking Application

Fiza Shaikh, Prajakta Malpote, Mukta Tanksale.

Department of Computer Engineering,

Pune Vidyarthi Griha's College of Engineering and Technology Pune.

**Abstract**—General search for food recipes on various recipe recommending websites does not take into account the food ingredients that are currently present with the user. In such cases, the problem arises to find out recipes by the user himself with the current present ingredients. This paper provides a simple but robust solution to this problem, saves user's valuable time and enjoy cooking food [1]. In this paper we propose a software for quick and easy recipes. It is a software installed on phone which provides the recipes just by browsing or by searching, giving certain ingredients (e.g. mushroom, salt) and displays recipe details and video guidance. It retrieves the data from the server app [6].

**Index Terms**—Browse, Search, Database, Ingredient Selector, Android.

## I. INTRODUCTION

Android is an open mobile platform developed by the Open Handset Alliance (OHA) led by Google, Inc. Its platform consists of several layers: the Linux kernel, native libraries, the Dalvik virtual machine (VM), and an application framework. Native libraries support the miscellaneous functionalities of browsing, multimedia data processing, database access, and Searching ingredients optimized. At the top of the layers, Android provides a component-based programming framework so that users can easily build their own applications.

An Android application is written with new and reusable application building blocks (example: activity); broadcast intent receiver, service, and content provider. After an application is written, it is deployed as .apk file (Android package file). .apk file contains codes, resources, and a special XML file called the Android Manifest file. This contains basic information about an application such as the package name, component descriptions, and permission declarations. Relish application provides recipes for available ingredients, which works on real-time system. It provides faster access to a variety of cuisines. The user can select recipes based on the available ingredients with them. Based on the ingredient type suitable recipe is provided here.

The system has the following requirements. Easy to implement and add functions, able to manage many recipes efficiently, Adaptive for mobility of user and Low cost. To satisfy the above requirements, the proposed system adopts 3G/4G communication function. In addition, real-time database technique is adopted for storing and retrieving the recipe details such as ingredients, procedures and videos. This

system consists of search mechanism (Ingredient Selector) for searching specific ingredients the user wishes for and displays the list of recipes and provides detailed information which each user holds, and server which

stores the information. When the user clicks browse button it provides a list of already existing data/recipes. The search is designed with ingredient selector in which the user is able to enter ingredients available with them and fetch recipes on the basis of ingredients. With this application it is possible for us to choose within a variety of cuisines. This application is made in such a way that its interface is extremely user friendly and adaptable. firebase database is extremely flexible and stores data in cloud as well as in real-time system. Android Studio is a software stack for mobile devices with its operating system, middleware and key applications. SDK provides tools and APIs necessary to be used in developing applications on the Android platform using the Java programming language.

### A. Android Architecture



Android relies on Linux version 2.6 for core system services. The kernel also acts as an abstraction layer between the hardware and the rest of the software stack. Every Android application runs in its own process, with its own instance of the Dalvik Virtual machine. The VM is register-based, and runs classes compiled by a Java language compiler that have been transformed into the dex format by the included 'dx' tool. Android uses Firebase which is a powerful real-time database engine available to all applications. The development environment includes a device emulator, api's, tools for debugging, memory and performance profiling.

## II. EXISTING SYSTEM

In the existing applications the recipes provided consists of fixed ingredients which cannot be changed or selected by the user or cannot be added as per the

needs. Formally all the previous software applications developed are based on the recipes required by the user, irrespective of the availability of ingredients in the kitchen. The android application does not provide an ingredient selector mechanism for ease and convenience of the user [1][4]. The proposed system has no boundary limits. The existing system provides only list of existing recipes and does not provide the functionality of choosing ingredients of the user's choice. The interfaces are more complex and it is not reliable. Also, the videos may not be useful and may contain additional or less information.

*A. Drawbacks of Existing System* A person cannot choose ingredients of their choice. There is a possibility of inappropriate data (e.g.: videos, recipes) displayed after searching and it may not satisfy user's requirements. There is a lag in data transfer due to 2G network or slow net connection. The user may not achieve the appropriate recipe needed.

### III. PROPOSED SYSTEM

Different functions have been implemented for the new generation android application such as ingredient selector, browse to select ingredients as per one's choice and fetch list of recipes with their videos respectively. Android mobile terminal is connected to high speed 3G network for effective data abstracting. This proposed system makes use of the real-time technology to store and retrieve recipe information using the search mechanism. The application is linked to the management/developer app and is managed by real-time database. The admin app which can be accessed only by the developers consists a add button through which the data (e.g.: recipe name, procedure, video, ingredients) is added in database. Whereas, the user does not consist the add button, since they can only fetch the information and cannot add any data. The admin app acts as a mediator between the user app and the firebase database. The browse provides the function of displaying a list of ingredients when no specific ingredients are required. On contrary, the search consists of ingredient selector when the user needs recipes related with some specific ingredients. Due to the usage of 3G network the data is retrieved and stored in the server at a very high speed.

*FIREBASE:* firebase is a mobile and web application development platform developed by Firebase, INC. in 2011, then acquired by google in 2014. Firebase provides a real-time database and backend as a service. The service provides application developers an API that allows application data to be synchronized across clients. Firebase Storage provides secure file uploads and downloads for Firebase apps, regardless of network quality. The developer can use it to store images, audio, video, or other user-generated content. Firebase is more efficient as compared to other

databases since it does not require any queries to add, update, delete data. Also, it does needs additional servlets which makes the code more optimized and efficient as well.

*ADD MODULE:* The add module is a part of admin/server application i.e. it is only accessible to the admin or the developers of the software. As the database does not contain instruction-based transfer of data, we have included the add button to add/input data into the database.

*BROWSE MODULE:* this module is the part of the user application. Browse module fetches its data from the database All the recipes that are available in the database are listed in an alphabetical order in the browse area. The user can fetch any recipe they wish and can get the details (e.g.: procedure, ingredients, videos).

*SEARCH MODULE:* search module contains an ingredient selector function where the user enters the ingredient(s) and they will be provided with the recipe accordingly. However, no list will be displayed if any invalid input is given (e.g.: pizza).

#### A. Features of the Proposed System

Relish is a software that takes up an authority to manage the kitchen upon the ingredients available in the kitchen and provides recipes accordingly i.e. according to the ingredients available. It helps to manage the dishes as per user's convenience and not according to the recipe. It works on real-time system. The proposed system provides a brief written description along with a video guidance for that particular recipe for actually visualizing the recipe. The application is proved to be very useful for the beginners. Also, while selecting the ingredients using the ingredient selector the basic ingredients (e.g.: salt, water, etc) are selected/considered by default. It proves efficient for health conscious and diet following people since they can directly search for those particular ingredients (e.g.: broccoli, salt) The firebase database is more efficient and easier-to-use database since it does not require any queries to insert or store the data. (see fig. 1).

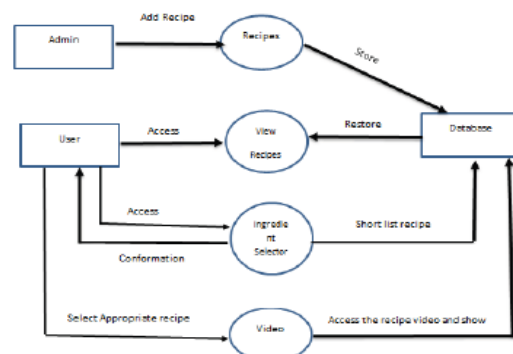


Fig. 1. Architecture of proposed system.

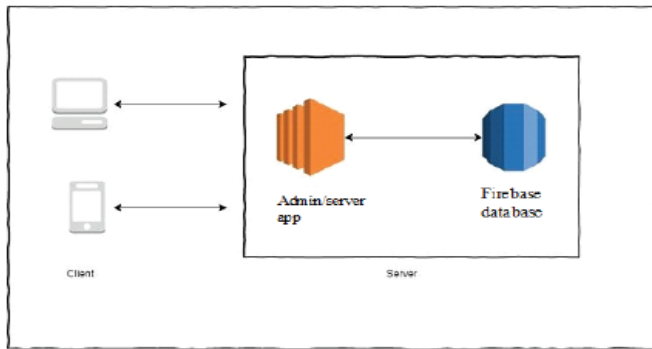


Fig.2 client-server transfer of data

#### IV. RESULTS

This new generation system is software for android phone. The user can select a recipe from the browse directly. When the user tries to search an ingredient, he/she will get a recipe related to that particular ingredient. Once the satisfied loop for searching an ingredient gets executed the user can obtain the specific recipe. The firebase makes storing of data easier and simpler. This increases the efficiency of the software. Once, the recipe is selected the user can play the video for visualizing the recipe. The application needs a strong internet connection. Flow chart of the software execution is shown in Fig. 3.

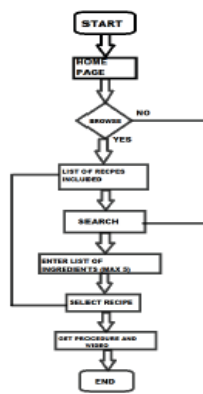


Fig. 3. Flowchart of software execution.

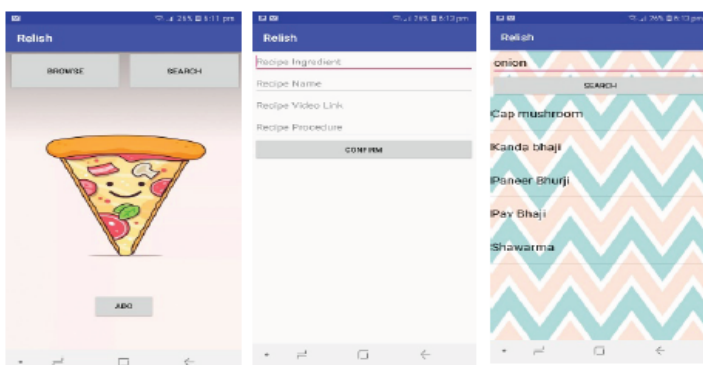


Fig. 4. Snapshots of execution.

The following snapshots in the Fig. 4 show the software execution on an actual android phone with outputs. The first snapshot represents the home page which contains 3 buttons (admin app) Browse, Search, Add respectively. The second snapshot (admin app) displays the GUI of the add button, this is how the data will be entered and stored in the database. The third snapshot contains function of the search button, 'Ingredient Selector', where one searches for specific ingredients and receives the outcome accordingly.

#### V. FUTURE SCOPE

Though there are many functionalities provided along with this app, there are still some more additional features we are planning to add in future. We are planning to provide a 'favourites' option so that the user can save their favourite recipes. Also provide widgets containing different types of dishes/cuisines before searching the recipe or ingredients. Provide a voice recognition feature so that the user can start or stop any video using voice commands. The next version of the app may also contain ratings for each recipe, so that it would give suggestions to other user about any popular recipe.

#### VI. CONCLUSION

Considering the daily problems faced by people in the kitchen we have implemented the new generation Relish cooking app. Relish is an android app that showcases various recipes as uploaded by the administrator. We have proposed a multi-keyword ranked search scheme for accurate, efficient and secure search using mobile data. Proposed scheme can effectively achieve user's requirements and provide recipes accordingly. Each recipe contains detailed description of the ingredients, as well as the recipe itself. The video makes the system more enhanced by actually visualizing the recipe. The recipes provided or the ingredients selected are stored in the Firebase database. The algorithm helps in achieving better efficiency on the basis of extensive performance evaluations shown in terms of functionality.

#### REFERENCES:

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