

ChefBook's Mobile Application

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Abstract. A popular medium in using the recipe is Facebook post, Twitter and YouTube video. The using of this medium can lead to make a mistake. There are also some of the mobile application did not have an interactive feature. ChefBook's Mobile Application aim to ease the user by guiding the cooking procedure step by step, generate the sholist and share the recipe. The project will use Rational Unified Process (RUP) as project **methodology**. **It consist of four phase that are inception phase, elaboration phase, construction phase** and transition phase. The application has been developed using Android Studio as Integrated Development Environment (IDE), Java as programming language and Firebase as the database. Black Box Testing and User Acceptance Testing has been conducted in transition phase.

Keywords: Recipe, Mobile Application, Android, and Firebase

1. Introduction

Nowadays, people often share their recipe by using recipe book or by posting in social media likes Facebook. It difficult to search among the recipe book what they want to cook and plus, they need to spent money to buy the recipe book. They need to search what recipe to cook, manually check all the ingredient they have and if they did not have the ingredient, they have to list all the ingredient in a piece of paper or remember it. Then, they continue to cooking procedure, they need to indicate where they have done manually and they need to set a timer themselves by using clock alarm or stopwatch if the procedure need to wait for a few minutes or hours.

The earliest recipe known in 1600 BC that come from Akkadian tablet from southern Babylonia (Bottero 1995). The large collection of recipes De re coquinaria or Apicius that was introduced in 4th or 5th century is the only complete surviving recipe book from classical world (Dalby 2003). The book list the course serve in a meal as 'Gustatio' as appetizer, 'Prima Mensae' as main course and 'Secundae Mensae' as dessert.

Modern culinary recipe normally consist of several components that are the name, how much time it will take to prepare the dish, required ingredient with it quantities, necessary equipment, an ordered list of preparation step and techniques, the number of serving, the texture and flavor and a photograph of the finished dish.

2. Project Background

Recipe is a set of instruction that describes how to prepare or make something, especially a culinary dish. It also used in medicine or in information technology. Sharing recipe in social media can became very messy and more difficult to search. They need to search the recipe in the Facebook group that were created for sharing recipe or from Celebrity Chef's Facebook account. If the post of recipe was post for a very long time, they need to scroll down to get the recipe post. They also need to write down the whole recipe to a piece of paper or remember it or open the desktop to follow up the cooking procedure. Other that, video was used to share the recipe. They need to watch and pause the video to follow the cooking procedure and if they miss any step, they need to rewind and search where the procedure in the video.

Recipe Book is a book that contain a bunch of recipe written by an author or chef. It is a traditional way to share recipe or to refer the recipe to cook. Recipe book not interaction and also required the user to buy the recipe book because the book production need a cost. Facebook post is a shared status of someone current activity or interest.

Based on survey, Facebook is most frequently found the shared recipe. Usually, the post has a picture of the meal, recipe name and the basic structure in recipe. YouTube is a place to share the video to all around the world. Some of the YouTube user make their channel as cooking channel, mostly celebrity chef like Anna Olson. Celebrity chef always shared the video of their cooking show in television or the television channel itself has the YouTube channel like Asian Food Channel (AFC). The video describe all the basic recipe structure and show the cooking procedure step by step but not interactive.

So, ChefBook can help user in guide the cooking procedure step by step, generate the sholist and share the recipe among other. It also can sort the search list by popular, trending and favourite. For the sort the list, the apps use the rating that given by the user after they use the recipe. The recipe can be search by chef or recipe itself. This apps use one time only login.

The objective are to identify the requirement of ChefBook' Mobile Application, to design an application that provide a complete guidance of cooking procedure, sharing recipe and searching recipe, to develop an application with modules chef management, recipe management and feedback, and to test all the functionality of the application based on user requirement.

The project significant is to guide the user step by step by cooking procedure, help user in generate the sholist and searching the recipe or the chef that user want. The data use in ChefBook's Mobile Application will be dummy and after the application stable, the user will insert the data. The application only can be use by smartphone Android OS.

3. Methodology

Methodology used in this project is Rational Unified Process (RUP) which are consist of inception phase, **elaboration phase, construction phase and transition phase. In inception phase**, the objective is to build a business case for the system, definition of scope and aim for the project. In elaboration phase, the objective is to mitigate the **key risk items identified by analysis up to the end of this phase. In construction phase**, the objective is to build the **software system. In transition phase**, the objective is to **ensure the application is ready and available for the end user.**

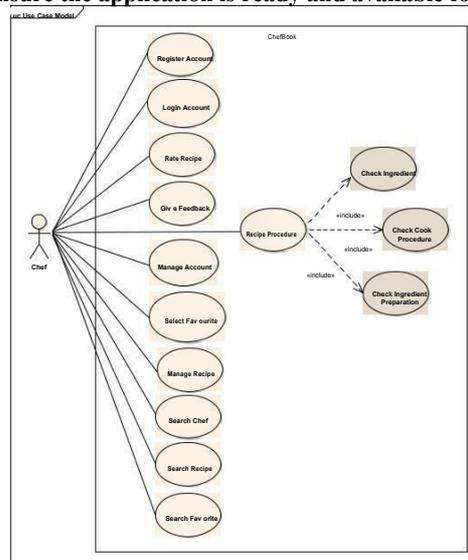


FIGURE 8: Use Case Diagram of ChefBook's Mobile Application

Table 5:Description of ChefBook's Mobile Application Use Case

Use Case	Description
Register Account	This use case describes how actor register themselves into the system.
Login Account	This use case describe how registered actor login to the system.

Rate Recipe	This use case describe how actor rating the recipe of other chef recipe.
Give Feedback	This use case describe how actor give back the feedback to the administrator to report or improvement suggestion to the Administrator.
Recipe Procedure	This use case describe how actor proceed the cooking procedure.
Check Ingredient	This use case describe how actor checking the ingredient before start ingredient preparation.
Check Ingredient Preparation	This use case describe how actor do the checklist of ingredient preparation before proceed to the cook procedure.
Check Cook Procedure	This use case describe how actor cook the meal and guided step by step according to the recipe in order.
Manage Account	This use case describe how actor manage their account by updating information or deleting their account.
Select Favorite	This use case describe how actor selecting their favorite chef or favorite recipe.
Manage Recipe	This use case describe how actor managing their recipe by adding, editing, update or deleting their recipe.
Search Chef	This use case describe how actor search the list of trending chef, popular chef based on rating and default.
Search Recipe	This use case describe how actor search the list of trending recipe and popular recipe based on rating and default.
Search Favorite	This use case describe how actor search their favorite recipe or chef after they select their favorite.

Figure 1 shows the use case of the ChefBook's Mobile Application that consist of 14 use case. Each use have **been describe in Table 1. It involve only one actor as user that called as chef in the application because they use and contribute the recipe.** The system architecture of this application is Model-View-Controller (MVC) as shown in Figure 2. Figure 3 shows the system database structure in table structure even the implementation of system is in tree structure.

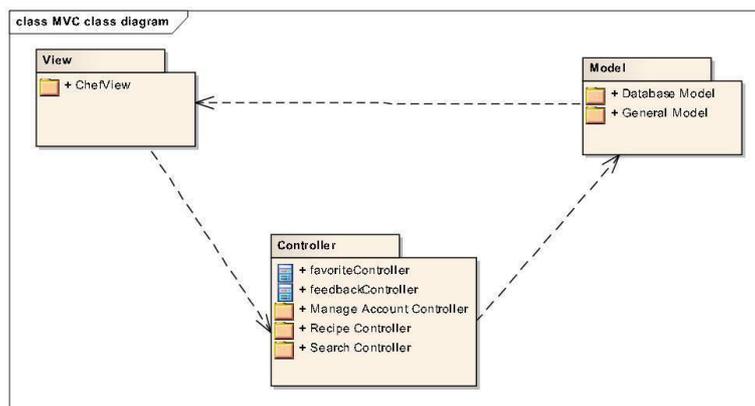


FIGURE 9: System Architecture of ChefBook's Mobile Application

4. Requirement and System Design

The analysis of the system requirement has identify the system functional requirement, non-functional requirement and use case diagram. The functional requirement must in the application are one time login, update information, add,delete and edit the recipe, rate recipe, check ingredient, check preparation, guidance of cooking procedure, search the recipe or chef and search recipe through the chef profile.

The non-functional requirement are the application are enable to operate without internet connection, database update in real time, friendly user interface and the capable of application to expend in term of it functionality in future. Table 1 shows the description of each use case of ChefBook's Mobile Application.

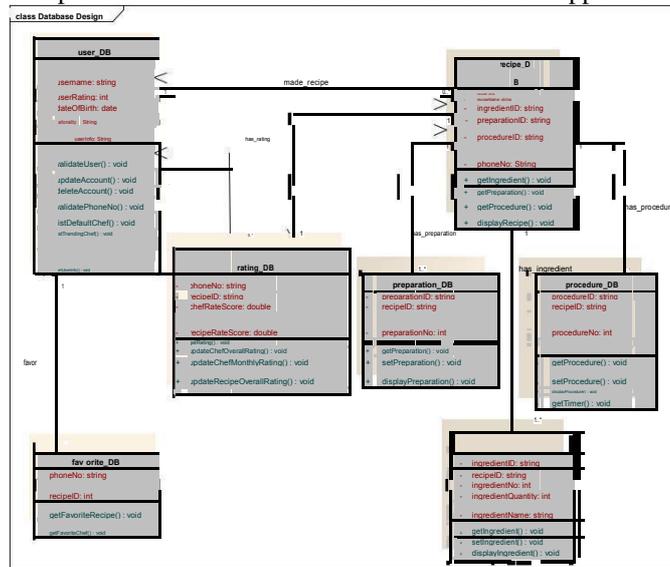


FIGURE 10: Database Structure of ChefBook's Mobile Application

The system was developed by referring to the Software Requirement Specification (SRS) document. Android Studio is used as an Integrated Development Environment (IDE) that offers the feature of drag and drop to design the interface other than coding. The interface will be more user-friendly and ease-to-use. The database for the system is Firebase, which offers a real-time database. Another feature of Firebase is an authentication function. It enables developers to develop an application that can be logged in by using Gmail accounts, Facebook, Twitter, and others. It also offers the security of the database, which can be set in data rules. The structure of the Firebase data is in a tree structure because Firebase is a non-relational database. The data must be in flat data for more efficient writing and reading of data. The site navigation of the system is shown in Figure 4 below.

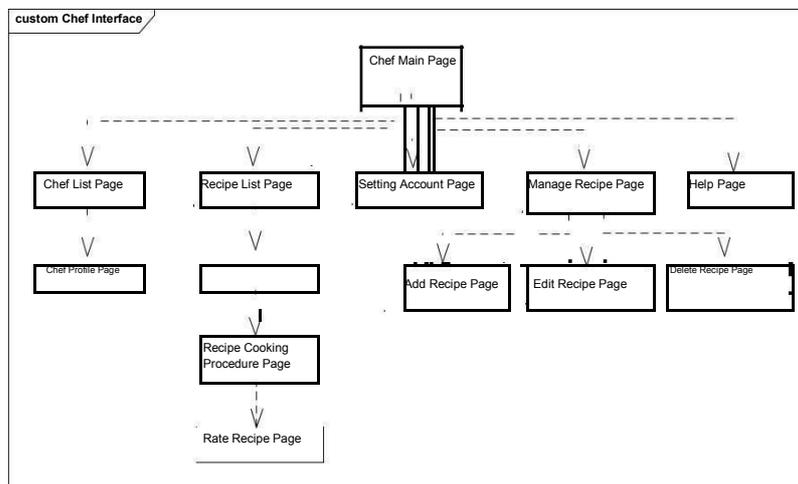


FIGURE 11: Site Navigation of ChefBook's Mobile Application

5. Discussion

The testing was conducted after the application is finished developed. The testing involved are Black Box Testing

and User Acceptance Testing. Black Box Testing is use the Decision Table to identify its condition and expected result. The testing was conducted during the implementation and all error detected can be corrected.

User Acceptance Testing was conducted by the student of Universiti Teknologi Malaysia. The feedback has been submitted and improvement of the application can be implement in the future. After the application is stable and more user friendly, the application can be release to the Google Play Store to be used by user worldwide.

This application can be use by Android user and in future, it can be expend to iOS and Windows user. Another feature that can be develop in the future are online order for ingredient,edit recipe of other chef recipe and real chef guiding by using video.

6. Conclusion

In the nutshell, ChefBook's Mobile Application is a mobile application that ease the user to cook with the recipe and guide them step by step. Some recipe mobile application may have an advantages in the market because of its offers more interesting feature but I hope ChefBook's Mobile Application can be in the same level with other mobile application in the market and generating the money. In the limited time and work force, the ChefBook's Mobile Application still finish developing its basic function and meet the requirement.

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