Ingredients Recipe Application

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Abstract: An Ingredients Recipe Application is a mobile application that list out the recipe based, and suggests recipes for cooking simple recipes to users. Nowadays, with the existences of telecommunication devices, mobile devices and the internet, it is easier for the public to find information on the internet. The application is developed to help users find and view different food recipes based on different categories. Other than displaying the picture of the food, name of the food, and list of ingredients needed and the tutorial to make it, this application also have the Youtube video link to serve the users more guide about the recipes. The methodology used in the development is ADDIE model which include analysis, observation, design, testing and evaluation. In terms of time, this application provides a way that can help parents who are busy because of work as this application ingredients and categories used are simple and easily. Due to current situation of pandemic Covid-19, more people will stay at home and even work from home. More people spent their time at home and given this opportunity, this application aims to give easy guides and recipes for daily lives for the community. In conclusion, this application hoped to one of the way to ease parents, students and the community who are new to this field of cuisine or willing to try another cuisine.

Keywords: Cooking , Covid-19, ADDIE Model

1. Introduction

An Ingredients recipe is an application that allows users to browse for recipes based on what they what to eat or what ingredients do they have at home. This application is one of the simple way for users to guide them to cook. Not only appetizing pictures will be display, the list of ingredients needed and written tutorial and even Youtube links will be provide so users can see visually on what and how to cook the recipes. The aim of a recommended system, as the name implies, is to recommend and offer recipes to users based on their preferences. Users either purchase the ingredients depending on the recipe that the application recommend or just find another simple recipe that have all the ingredients needed. Currently, there are a plethora of websites dedicated to cooking recipes, many of which are known as "simple" to prepare. This application it just took a few taps to discover the best formula for people's everyday menu's.

The objectives of this application are to develop a system that gives recommended recipes to users from the available ingredients. Then, to improve and broaden the use of technology in Malaysian communities. This recipe application has a category of recipes that are simple to prepare and serve to the family. This will be able to assist them and use the pressure of the crowd that believes the idea to cook. Following that, the application makes use of free use regardless of the various suitable times and locations.

Users rarely know what ingredients they will use or need to make a dish or a simple meal and they may not even recognize the dish they are looking up to prepare. By following the guidance of the applications, they will get an idea on what to cook where the application can help to recognize the type of dishes, extract ingredients, and suggest food that seem similar even suggest a meal based on its ingredients. It will recommend a proper and simple recipe to make from an existing recipe and it will guide them in proper way to cook the meal.

Several applications that become our guide in making the application was Supercook (**Figure 1**) that is a recipe application and website that includes 350,000 recipes for breakfast, lunch and dinner [1]. It has a simple yet easy to understand demonstration where user just add the names of the ingredients' they have at the search engine. Then, the application will give a new dish suggestion with various types of recipe. However in this applications, there was no variations of the food cuisine [2].
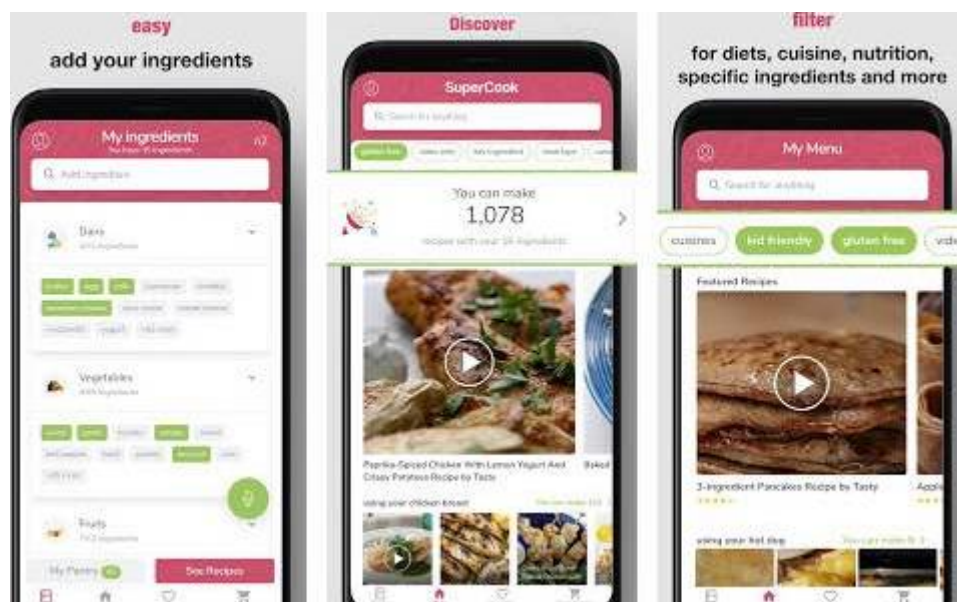

Figure 1: Supercook application

In recent decades, people are keen to learning something new with more visualize techniques as well as in term of developing cooking skills. Perceptions of video technology become more favourably perceived because it helps and assist people in understanding the cooking method, at the same time offer a reassurance to complete the cooking process and support in the acquisition of new cooking skills even adding the motivational spirits of enjoyment in every cooking process [2].

Video implementation in the application could help user to understand the cooking preparations more effectively and easier for them to follow it up. Not only that, video is also the stimulation of higher order learning where many teachers found it more useful to grab student attention as it stimulates the cognitive process of thinking, problem-solving, creating, and decision making. Then, many food manufacturers or food businesses marketing found it useful to grab audience or consumers attention and using the illustration to promote their products also as an easy way to keep them up to date. This type of innovative approach is the most attractive way to get public attention [3].

The Covid-19 pandemic has create a new wave or habits in food industry. Stay at home cooking trends have spread throughout the world which starts from social media where consumers keep whipping up the recipes they saw and start to make it their own. Not only that, the viral recipe on social media have flooded the internet during the early quarantine days as people spend most of their time at

home and develop the cooking skill by trying new recipe. The most notable trends are thr community try to make the popular recipe named as Dalgona Coffee, fluffy Japanese pancakes or mini pancake cereal and this trend have develop their interest on cooking or baking any recipes by themselves [4].

2. Materials and Methods

This study used ADDIE (**Figure 2**) which is Analysis, Design, Development, Implementation and Evaluation. This type of model follows a 5-step linear and waterfall model. Each step taken in the ADDIE training process model needed to be completed before move forward to the next step to ensure the effective training content [5]. It outlines the processes or techniques employed throughout the project production process depending on the declared project objectives and scope, results and discussion section presents data and analysis of the study.
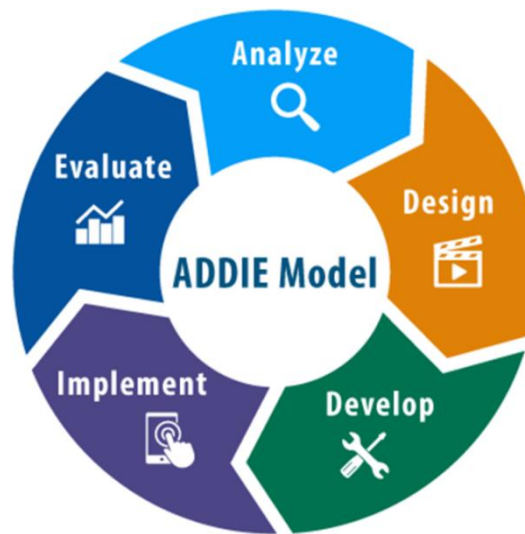
Figure 2: ADDIE model [5]

The analysis phase helps in focusing on target audience. This is to ensure that the idea itself is not duplicate any sources [6]. In this phase, google form were given to ask the opinion of the users and audience about the idea of the project either it will become a good impact towards the society. This also allowed to variate the idea to become more independent and useful application.

The design phase is where the focus on learning, objectives, content, subject matter analysis, palnning and resources [6]. During this phase, the homepage of the application aims to be neat and organize. After finish designing the homepage, every screen in the application will use the same format so that the output will become more neat and same. The total of the screen used in making this application are 8 in total. Using the Mit App Inventor platform, the design phase have become a success. Mit App Inventor only can be used on android mobile devices either tablets and mobile phones which is smartphone.

The development phase is where the authors used all the data collection from the previous phase to create an application that will relay all the messages and the desired function from the society. This phase mostly involves creating and testing the application either it work well or not [6]. In this phase, all the designs of the homepage and screen will be created and at the same time, live testing (**Figure 3**) will be conducted so that the basic and desired output will come out better on the size of the screen itself compare to the emulator's screen.
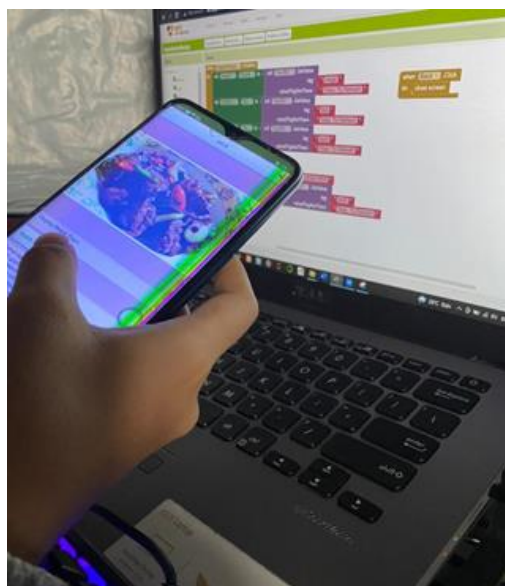
Figure 3: Live testing of the application

The implementation phase reflects the continuous creating and modifying to make sure that the application will have maximum efficiency and positive results will be obtain. In this phase any redesign, update, edit and reconstruct will conducted if needed. This to make sure that the application can delivered perfectly in category of function and design. The keyword in this phase is "procedure" as many real work will be done in this session. The developer need to redesign any mistake that can be seen purely on eyes. To make this phase successfull, the developer may needed to test new tools or any other tools to make the application runs smoothly [6]. During this phase, blocks (**Figure 4**) have been used for this application process in order to make this application work properly. Some examples that can be found on the internet are also used as resources and examples to help in this process.

Figure 4: Blocks used in one of the based ingredients

The evaluation phase is the last phase of ADDIE method. Testing and evaluation will be conducted in this phase to know either the output match the functions that have been listed down. To conduct this phase, 5W 1H become the guides to make sure this application can be considered as accomplished. Even some parts have been evaluated in the development phase, this phase is solely to make sure that the application is ready to move forward towards launching and success rate of the project [6]. In this phase, the application will be tested to make sure no error will arise and if it have ones, then the error will be solved before the evaluation. The evaluation will be conducted with person that may or not become the future users of this application [7].

The Ingredients Recipe application was started with planning and designing each screen that going was going to be built. Following the ADDIE method, each stages will be conducted. After identifying the problem, requirements and functions have been listed down.

Started with the homepage of the application, pastel color based was used as the picture of the food itself used bright and colorful theme. Two button was made to guide user to the next screen which is the list of based ingredients. Due to many menus that needed to bring to each screen, we used mini database that have been provided which is TinyDb. All the recipes will be stored here.

Moving to the next screen, based ingredients screen is where user can choose what the cuisine or the main ingredients that they want to use like chicken, fish, beef, prawn and other. In this screen, block used was button and when user clicked on it, it will directed to specific screen as each button have their own menus and recipes so each button will directed user to different screen.

In each screen, the TinyDb will be installed. In each based's screen, all the picture were clickable so user will be clicked on the picture of the recipes. The TinyDb played the part of storing the name, picture, ingredients and tutorial and also the embed Youtube link (Figure 4) and after user clicked at the picture, it will directed user to the DisplayRecipe screen to display the recipe. Here, user will see the picture, name, ingredients and tutorial of the recipe along with a button that will directed to the youtube.

In DisplayRecipe screen, ActivityStarter and TinyDb were installed. In this screen, TinyDb will be called to display all the stored information of the recipe and the ActivityStarter will the one that connect the application and the Youtube. The embedded YouTube links will be called in a button, so when the user clicked the button, ActivityStarter will play the part and connect application with YouTube (**Figure 5**).
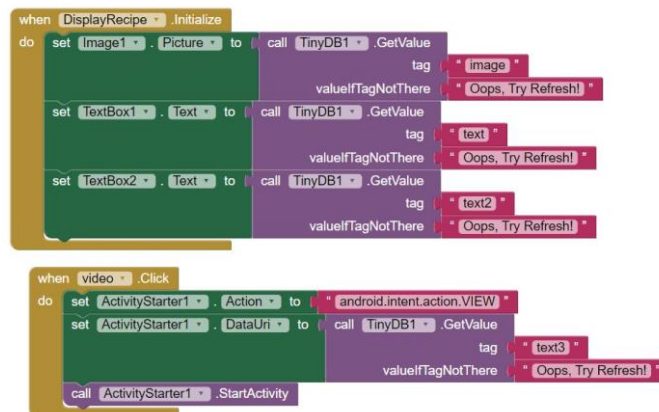

Figure 5: Blocks used in DisplayRecipe

3. Results and Discussion

The study had conducted an evaluation that consists of 33 respondents through Google Form. It can be seen that almost 69.7% respondents were female and almost 84.8% were student. From the 33 respondents, 84.8% like cooking and out of 33 respondents, 28 do like to try different and new recipes. Most of them likes to try new recipe as it can be one of the way to try variety types of food and at the same time they can enhance their cooking skills. When trying new recipes, 57.6% loves using Youtube as their platform as they can see visually on how it being cooked while 30.3% respondents likes using Google as their platform as they usually can just read the tutporial without having a hard time to pause the video. People always have a hard time in choosing a recipe as they want to try the best and cook delicious food without wasting their money as they were scared and also have no idea on how to cook the recipe. If they counter a problem like one of the ingredient is missing or do not have, 36.4% will change to another recipe, 33.3% will willingly go out and buy the ingredients and 21.2% will just ditch the ingredients while the remaining will just replace with other available ingredients. This shows that mostly, respondnts will just change to other recipes instead of just replacing the ingredients. In this study, we also asked respondents what are their next-to-go cuisine that they want to try. 51.5% like to explore more about the traditionl malay cuisine, 30.3% do want to try Korean cuisine while the remaining want to try chiniese, Indian and western food. This can be seen that mostly, people likes to cook their nature food which is traditional malay food. People also wants to try Korean cuisine as during

this MCO, many people stayed at home and watch Korean Drama, so they little by little wanting to try their food.

Table 1: Results of testing

Feature	Comment
Different cuisine	Perfect way to learn variation food
Based ingredient's categorized	Easy to identify what recipe should be cooked
Youtube links tutorial	Really helps in making sure how to cook the recipes.

Testing phase is the most important stage in making sure that all the features can work well. Due to MCO, testing will be conducted with relationed people in family. Refer **Table 1** for results.

4. Conclusion

In conclusion, objectives were achieved which is to develop a system that give recommendation recipe to users from the available ingredients and to improve and broaden the use of technology in Malaysian communities. The first objectives achieved through the collection of questions in Google Form. With the helps of Mit App Inventor and some tutorials in Youtube, the project development achieved successfully. The second objectives achieved through Google Form as the authors can seen that all the respondents mostly search information and watching tutorial at the Internet.

During this development of the project, many obstacles and problems that the authors faced. Some major problems faced such as the authors did not exposed deeper in the visual programming so when authors first encounter problems, the problems takes days to solve and this resulted the project takes up time longer than supposed.The next major constraints is that the application itself cannot be launched as apk file as the application too heavy that the maximum limit of an application. In results, the pictures size adjusted and the total of the recipes needed to revise. In the future, with another allowed platform, some adjustments towards the application that can be done. Mainly like, added more recipes so that all the recipes can become more up to date or any registration so the user can views an add their own recipes in the application. Some ratings also can be done as users can sees either the recipes were good and worth for time or not.

Acknowledgement

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