

CULINARY TOURISM LOCATION SEARCH APPLICATION USING LOCATION BASED SERVICE METHOD IN JAKARTA CITY AREA BASED ON ANDROID

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ABSTRACT

Culinary diversity causes many types of restaurants and cafes in the city of Jakarta. The increasing number of culinary locations makes it difficult for culinary connoisseurs to find locations and restaurants that match what they want. Therefore we need an application that has functional aspects in finding culinary locations. The application of the Location Based Service (LBS) method in this application can help users to find the nearest culinary so that users can choose a culinary place that is closest to their location. Applications created using Android Studio with the Zomato API can make it easier for people to find culinary locations around the city of Jakarta. By using Android mobile technology as another medium, people don't have to ask other people to find culinary spots. The program is tested to find out possible errors, this test uses Black Box testing and User Testing. Application testing to find culinary places in the city of Jakarta can display detailed information on the restaurants selected by the user and the test results are as expected.

Keywords : *Android Studio, Zomato API, android, culinary locations in the city of Jakarta*

I. INTRODUCTION.

Jakarta is a metropolitan city in Indonesia that is developing rapidly, with many business, industrial and development developments. This culinary diversity has also led to many types of restaurants and cafes in the city of Jakarta which continue to be developed by entrepreneurs in the culinary field. The increasing number of culinary locations makes it difficult for culinary connoisseurs to find locations and restaurants that match what they want. So far, culinary connoisseurs use the manual method to find culinary locations, namely by visiting directly.

Google Map is an application that is easy to use and has complete data with worldwide coverage, so it's no wonder that many people use this application. Smartphones that are already widely popular among the public, namely Android. Android is a subset of software for mobile devices that includes an operating system, middleware and core applications released by Google. Therefore an application is needed that has a functional aspect in searching for the nearest culinary attractions based on the user's location and provides complete information, such as searching for restaurant locations. These aspects are expected to provide added value to the application that will be built so that it can meet user needs in finding locations for culinary attractions in the capital city of Jakarta..

According to the Big Indonesian Dictionary, Third Edition, 2003 Travel is "traveling together (to broaden knowledge, have fun, go on excursions, etc.)". The travel period included in the definition of tourism is not less than 24 hours and not more than three months, and not in the context of looking for work. While Culinary means cooking or food. So it can be concluded that culinary tourism is a trip that takes no less than 24 hours and no more than 3 months that utilizes food and the atmosphere of the environment as a tourist destination.

Android studio is a brand new and fully integrated development environment, which was just released by Google for the Android operating system. Android Studio is designed to be a new tool in application development and also

provide an alternative to Eclipse which is currently the most widely used IDE. Another feature in Android Studio is the new tools for packaging and labeling code. Doing so allows you to stay on top when dealing with a lot of code. The program also uses a drag and drop system to move components through the user interface. The program also helps to localize the application, providing a visual representation to keep programming while controlling the flow of the application.

Location-Based Services or better known as Location-Based Services (LBS) are general terms used to describe the technology used to locate the devices we use. LBS is an information service that can be accessed via a mobile device using a mobile network, which is equipped with the ability to take advantage of the location of the mobile device. There are two main elements in LBS, namely Location Manager (API Maps) and Location Provider (API Location), providing location search technology used by devices. The Location API deals with GPS (Global Positioning System) data and real-time location data.

II. SYSTEM ANALYSIS AND DESIGN

System analysis is a system process that is generally used as a conceptual foundation that has the goal of improving various functions within a particular system. System requirements analysis is a number of material requirements in the system that will be used to add and assist the process of making an object. This section will be divided into two parts, namely functional analysis and non-functional requirements analysis.

From the problem analysis stage it can be seen clearly what problems often arise. Based on the results of the research conducted, the following problems were found:

- a. The process of finding culinary locations takes a long time and there is no detailed information about culinary locations in the city of Jakarta.
- b. It is still difficult for people to find culinary locations around the city of Jakarta.

A. USE CASE DIAGRAM

1. The main menu use case diagram description is as follows:
 - a) Users see a collection of restaurant recommendations.
 - b) Users can select the nearest restaurants/culinary options listed in the restaurants nearby option, which is the restaurant option that is the closest distance from the user's position.
 - c) Users can perform restaurant searches.
2. The description of the use case diagram Nearby is in accordance with the method used, namely Location Based Service. The system will display the nearest restaurant around the user according to the lat&long position at the user's android location at that time
3. Description of the use case diagram Search for restaurants users can search for the restaurant they want by searching for restaurant keywords which then the system can display restaurants according to the search keywords automatically, with the restaurant search function users can do it more effectively & efficiently than doing a restaurant search manually manuals.
4. Description of the use case diagram Restaurant Details, on the restaurant detail page the user can see restaurant details in the application such as restaurant menus, restaurant location info such as addresses and routes on Google maps, restaurant telephone numbers, restaurant opening hours, average price and restaurant rating.

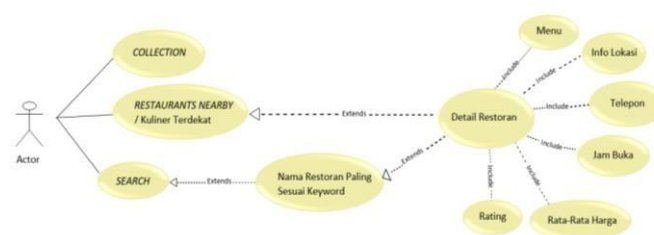


Figure 1. Use Case Diagram

B. SYSTEM CHART

explain the sequence of procedures that exist in the system. For example, the Internet will connect this application to the restaurant search input process which is connected to the restaurant database on the Zomato API which will display detailed restaurant information such as restaurant images, restaurant ratings, restaurant addresses, average restaurant prices, restaurant opening hours, route to the restaurant, restaurant phone, restaurant menu and app show details of that restaurant as output.

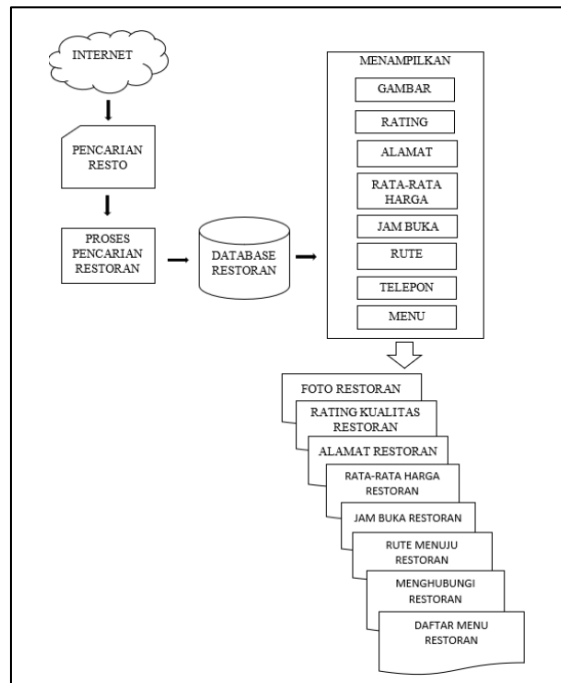


Figure 2 System Chart

III. RESULTS AND DISCUSSION

The result for database of restaurants on Zomato Api in this application, testing the culinary location search application in the city of Jakarta uses the black box testing method. The full test plan can be seen in the following table:

a. Main Menu Black Box Testing

The Main Menu application of black box testing will display the menu selected by the user and the test results are as expected.

Table 1. The Main Menu Black Box Testing

| No | Skenario | Hasil yang diharapkan | Hasil pengujian | Kesimpulan |
|----|--|---|--|------------|
| 1 | Membuka/ menjalankan aplikasi pencarian lokasi kuliner | Menampilkan halaman | Sesuai yang diharapkan  | Valid |
| 2 | Menekan restoran pada list Restaurants Nearby | Menampilkan informasi restoran yang terdekat dengan jarak pengguna | Sesuai yang diharapkan  | Valid |
| 3 | Menekan button pencarian | Menampilkan hasil pencarian restoran sesuai dengan keyword yang di input pada pencarian | Sesuai yang diharapkan  | Valid |

b. Restaurant Search Black box Testing

The Restaurant Search black box testing will display the menu selected by the user and the test results are as expected.


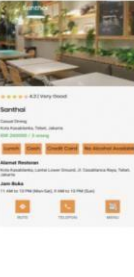



Table 2. Restaurant Search Black box Testing

| No | Skenario | Hasil yang diharapkan | Hasil pengujian | Kesimpulan |
|----|-----------------------------------|---|---|------------|
| 1. | Menekan button Pencarian Restoran | Dapat menginput keyword/ nama restoran sesuai | Sesuai yang diharapkan | Valid |
| | | dengan yang diinginkan |  | |
| 2. | Menekan button cari | Menampilkan pilihan-pilihan restoran sesuai keyword | Sesuai yang diharapkan | Valid |
| | | |  | |
| 3. | Menekan Restoran yang dipilih | Menampilkan informasi detail restoran | Sesuai yang diharapkan | Valid |
| | | |  | |

c. Restaurant Detail Black Box Testing

In black box testing, the application restaurant details will display all information about where to eat and the test results are as expected.

Table 3. Restaurant Detail Black Box Testing

| No | Skenario | Hasil yang diharapkan | Hasil pengujian | Kesimpulan |
|----|----------------------------|--|--|------------|
| 1. | Menekan button Restoran | Menampilkan Detail informasi Restoran | Sesuai yang diharapkan | Valid |
| | | |  | |
| 2. | Melihat Informasi Restoran | Menampilkan gambar, rating, alamat, rata-rata harga, jam buka restoran | Sesuai yang diharapkan | Valid |
| | | |  | |
| 3. | Menekan button Rate | Menampilkan rate restoran | Sesuai yang diharapkan | Valid |
| | | |  | |
| 4. | Menekan button Telepon | Menampilkan telepon restoran | Sesuai yang diharapkan | Valid |
| | | |  | |
| 5. | Menekan button Menu | Menampilkan menu restoran | Sesuai yang diharapkan | Valid |
| | | |  | |

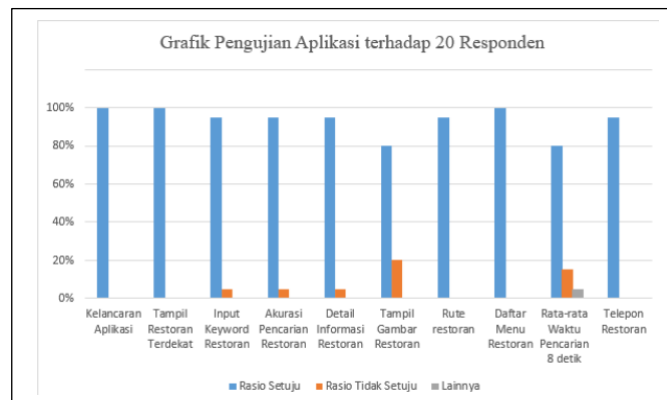


Figure 3. Respondent Test Ratio Graph

The result is creating an android application that makes it easier for people to determine the nearest culinary location around them with a good choice of recommendations based on restaurant ratings, places, distances, and other user reviews.

An Android-based application that was previously designed can efficiently search for culinary tourism locations so that it can make it easier for users to find culinary places. Culinary tourism location search applications made using the Location Based Service method in the Jakarta city area can be applied to find the closest culinary delights based on the user's position

IV. CONCLUSION

The based on the implementation and testing in the previous chapters, conclusions can be drawn from the culinary location search application in the city of Jakarta in the following:

- a. In this research, an android application for searching culinary tourism locations has been designed. Applications created using Android Studio with the Zamato API can make it easier for people to find culinary locations around the city of Jakarta. By using Android mobile technology as another medium, people don't have to ask other people to find culinary spots. The program is tested to find out possible errors, this test uses Black Box testing and User Testing. Application testing to find culinary places in the city of Jakarta can display detailed information on the restaurants selected by the user and the test results are as expected.
- b. The application of the Location Based Service (LBS) method in this application can help users find the nearest culinary. So that users can choose a culinary place that is located closest to their location point. In addition, this application can also display restaurant information such as restaurant ratings, average prices, restaurant pictures, restaurant opening hours, address & route information to restaurants, restaurant telephone numbers, and restaurant menu lists.
- c. Application testing on 20 users of various types of Android Smartphones with Android system versions including Android Smartphones version 4.2.1 JellyBean, 7.0, Nougat, 8.1 Oreo, 9.0 Pie, 10.0 Android Q, Android 11 Red Velvet. Shows a ratio of 100% for the smoothness of the application, a ratio of 100% for the application to display nearby restaurants, a ratio of 95% for entering restaurant keywords, a ratio of 95% for accuracy of restaurant searches, a ratio of 95% for displaying detailed restaurant information, a ratio of 80% for displaying restaurant images, the ratio of 95% to display the restaurant route, 95% to display the restaurant menu list, 80% average restaurant search time is 8 seconds, 95% to display the restaurant's phone

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