*Jurnal Mantik, 6 (2) (2022) 2056-2061*

Published by:Institute of Computer Science (IOCS)

Jurnal Mantik

Journal homepage: www.iocscience.org/ejournal/index.php/mantik/index

# Android-Based Hospital Location Search Application In The City Of Makassar

**Muhammad Rizal H[1], Mursalim[2], Arhamy Uthami Akbar Pandaka[3], Sri Wahyu Ningsih[4], Umar Paisal[5]**

[12345]Program Studi Teknik Informatika, Universitas Teknologi Akba Makassar

Email : rizal@akba.ac.id[1], mursalim@akba.ac.id[2], arhamy20@mhs.akba.ac.id[3], sriwahyuningsih20@mhs.akba.ac.id[4], umarpaisal18@mhs.akba.ac.id[5]

ARTICLE INFO

Article history:
Received: Jun 30, 2022
Revised: Jul 20, 2022
Accepted: Jul 29, 2022

**Keywords**:
Android
Location Based Service
Hospital

**ABSTRACT**

At the beginning of 2020 the world was hit by the Covid-19 virus. Including Indonesia. Until now, in 2021, every day tens to hundreds of people have to be hospitalized due to the invasion of the Covid-19 virus. Every day there are many people who need to go to the hospital to have their condition checked, especially with the Covid-19 virus pandemic. Makassar City is an area that has quite a lot of hospitals. And not all hospitals are known by the public. One solution to overcome this problem requires location services to provide information on health care facilities that can be accessed easily anytime and anywhere by users. So to solve this problem we created an application, namely the Android-Based Hospital Location Search Application in Makassar City. With this application, it is hoped that the people of Makassar City can easily find information on the nearest hospital they want to visit. This study aims to develop an android-based hospital search application using Location Based Service (LBS) technology and route instructions to get to the hospital using the Google Map API which can be accessed online. The research stages include needs analysis, system design, implementation and testing. This hospital search application was tested using the black box method and tested directly by us. The results of the black box test state that the functions in the hospital search application run smoothly. Even when we tested independently, this application was running well and was suitable for use by the community. With this hospital search application, health information, especially in Makassar City, is increasingly accessible.

Copyright © 2022 Jurnal Mantik.
All rights reserved.

## 1. Introduction

In early 2020, the whole world was hit by the Covid-19 pandemic. Including Indonesia. Until now, in 2021, tens to hundreds of people have been infected by this virus. Whether it's asymptomatic, mild, moderate to severe symptoms. Until 2021, many people have been hospitalized. Even without this virus, countless people have been hospitalized. Makassar City is the capital city of South Sulawesi province. Makassar is the largest city in Eastern Indonesia and the region the second largest metropolitan area outside Java, after Medan City. From the aspect of development and infrastructure, the city of Makassar is classified as one of the largest cities in Indonesia and with an area of 199.26 km² and a population of almost 1.4 million people, the city is ranked fifth in terms of population after Jakarta, Surabaya, Bandung and Medan. With such a large area, people who are still unfamiliar with the locations in Makassar Municipality will certainly still find it difficult to find the desired place or address [1]–[3].

Makassar City as one of the largest cities in Eastern Indonesia, makes Makassar City one of the cities that has quite a lot of hospitals. Hospitals are one of the health services for the community and are even needed by the community, especially in the midst of this Covid-19 pandemic. Although Makassar City has many hospitals, it turns out that not all locations or the existence of hospitals are known by the people of Makassar City. Lack of information about hospitals in Makassar City provides an opportunity to develop media that can provide information quickly. Nowadays, with the progress and development of the times, information can be obtained easily and quickly anytime and anywhere [2].



**Accredited "Rank 4"(Sinta 4),** DIKTI, No. 36/E/KPT/2019, December 13th 2019.

**Jurnal Mantik** is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License (CC BY-NC 4.0).

One of the benefits of information technology is that it makes it easier for humans to carry out activities, especially helping to find the location they want to go to using GPS technology. This technology can help to get the direction of the route to the destination with the help of GPS technology. The technology can find the path to the destination location by pointing out directions that can be seen from the available map images [2], [4]–[6].

In this study, an Android-based hospital search application has advantages over previous researchers. The difference between this application and previous research lies in database access that does not require an internet connection, because the database used in this application uses a local database or sqlite browser [7], [8] . The problem discussed in this study is the lack of health information and information on the location of the hospital that is not yet known by the local community and newcomers. Makassar City has many hospitals but not all of them are known by the Makassar people or from outside Makassar City.

Based on the problems above, to help the public find the location and information of hospitals in Makassar City, an Android-based hospital search application was developed. This application will later provide information about the location of hospitals in Makassar City, pictures, addresses, telephone numbers and websites to visit the hospital's official website. Not only that, this application also displays a map that can help people find a route to the location of the hospital to be addressed via google maps [1], [4], [6], [8], [9]. The purpose of this study is to design and build an android-based hospital search application, especially in Makassar City to provide health information, location, address and hospital routes. This application is expected to make it easier for people in Makassar City and migrants from outside Makassar City to find out information services about the hospital they want to visit.

## 2. Method

In this study using the waterfall model. The sequence of stages that are passed in the waterfall model follows the System Development Life Cycle (SDLC) [10]–[13]. The stages in this research include needs analysis,system design, implementation and testing.

a. Needs analysis

Needs analysis includes needs. Data needs include data collection carried out using social media to collect pictures/photos and detailed hospital information that is deemed necessary to be displayed on the application that will be made.

b. System planning

To make it easier for us to make this application, it takes several designs such as use case diagrams and activity diagrams.

1) Use case diagrams

The use case diagram aims to describe what is done in the use of the application. The proposed diagram is asfollows:

- Users see a list of hospitals displayed by the application. The information displayed is the details of the hospital, namely the picture of the hospital, the name of the hospital, the address and the number. phone.
- Users see the location of the hospital displayed by the application. The information displayed is maps and routes to rs.
- Users see about the application displayed by the application. The information displayed is the version of the application and the instructions for using the application.
-

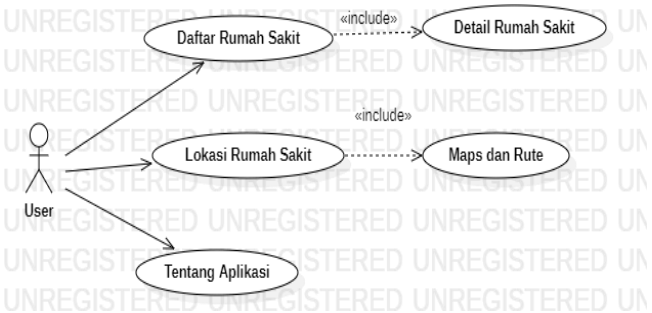



**Figure 1**. Use case diagram



**Accredited "Rank 4"(Sinta 4),** DIKTI, No. 36/E/KPT/2019, December 13th 2019.

**Jurnal Mantik** is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License (CC BY-NC 4.0).

2) Activity diagram

Activity diagram is a way to model the activities that will occur in a use case. In making a hospital location search application, it can be described with the following activities:

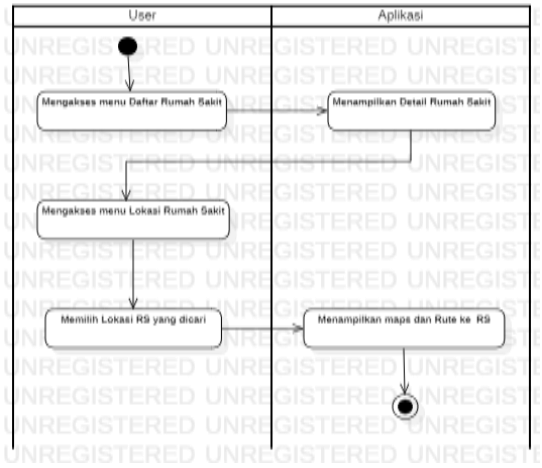



**Figure 2**. Activity diagram

The activity starts when the user accesses the hospital list menu. Then the application will display the details of the hospital (such as a picture of the hospital, the name of the hospital, the address and phone number). Then the user accesses the hospital location menu and selects the location of the hospital he is looking for. Then the application will display maps and routes to the hospital you want to go to.

a. Implementation
   The minimum hardware equipment used includes apersonal computer (PC), the following personal computer specifications: (a) Intel Core i3-2348M @ 2.30Ghz (b) Intel VGA (c) 4GB RAM (d) 500GB hard drive and android smartphone. Software that supports the development of this application uses (a) android studio software, (b) figma.
b. Testing Testing the hospital search application in Makassar City based on Android using the black box testing method [14], [15]. Black box testing aims to test the main functions of the applications that have been made, such as the main menu buttons, markers and details.

## 3. Result and Discussion

This hospital search application can be run on the Xiaomi Redmi 5 Plus smartphone device with a minimum android version of 4.4 KitKat. Next, we will explain the implementation results and the finished results of the hospital search system that has been developed.

### 3.1 Display Splash Screen

Splash Screen is the initial screen display after the application is run. In this process, the system will display the application logo which lasts a few seconds. The results can be seen in the following image.



**Accredited "Rank 4"(Sinta 4),** DIKTI, No. 36/E/KPT/2019, December 13th 2019.

**Jurnal Mantik** is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License (CC BY-NC 4.0).

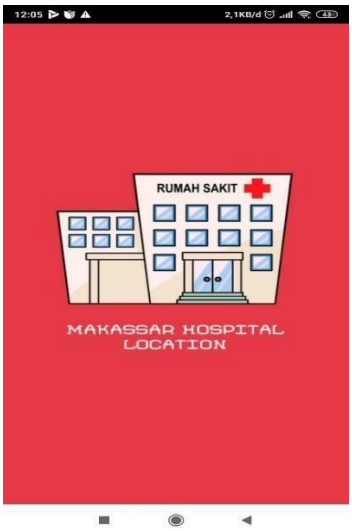



**Figure 3**. Splash Screen

### 3.2 Main Menu Display

In the main menu of the application, there are 3 function buttons that can move to other pages, namely the list of hospitals, hospital locations, hospitals, and about the application. The results can be seen in the following figure.



**Figure 4**. Main Menu

### 3.3 Hospital List View

This hospital list page contains detailed hospital lists such as hospital pictures, hospital names, hospital addresses and hospital telephone numbers. The resultscan be seen in the following



**Accredited "Rank 4"(Sinta 4),** DIKTI, No. 36/E/KPT/2019, December 13th 2019.

**Jurnal Mantik** is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License (CC BY-NC 4.0).




**Figure 5**. Hospital List View

### 3.4 Hospital Location Display

The hospital location page displays a folder containing information about the location of the hospital. Information is presented through a map containing a marker where the hospital is located. The location of the hospital is marked with a red marker, when the marker is touched/clicked it will display the name of the hospital. On the map there is also a Route feature todisplay the route to the hospital you want to go to. The results can be seen in the following figure.

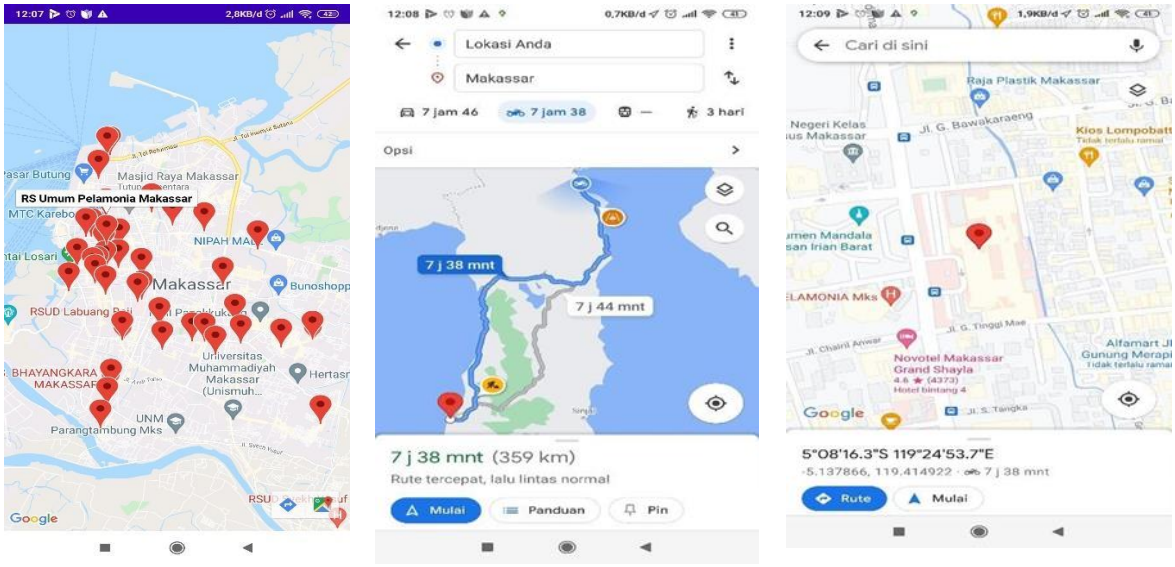



**Figure 6.** Hospital Location Menu

## 4. Conclusion

Based on the research conducted, that this research resulted in a search application for the location of the nearest hospital in Makassar City. It is hoped that the application can help and make it easier for the public to be able to find the location of the nearest hospital.



**Accredited "Rank 4"(Sinta 4),** DIKTI, No. 36/E/KPT/2019, December 13th 2019.

**Jurnal Mantik** is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License (CC BY-NC 4.0).

**References**


[1] D. Refandy *et al.*, "Rancang Bangun Aplikasi Pencarian Lokasi Objek Wisata Desa Suko Berbasis Android," *Inf. Technol. J.*, vol. 7, no. 1, pp. 67–76, 2021.

[2] M. Annah, Kasmawaru, "Peningkatan Layanan Informasi Rumah Sakit Dan Klinik Menggunakan Location Based Service Berbasis Smartphone di Kecamatan Tamalanrea Makassar Improvement of Hospital and Clinical Information Services Using Smartphone-Based Location Based Services," *Semin. Nas. Komun. dan Inform.*, pp. 9–16, 2019.

[3] N. Anugraha, R. Angriawan, and M. Mashud, "Sistem Informasi Geografis Layanan Publik Lingkup Kota Makassar Berbasis Web," *DoubleClick J. Comput. Inf. Technol.*, vol. 4, no. 1, p. 35, 2020.

[4] W. K. Nofa, R. Wirawan, U. Gunadarma, J. Margonda, and R. No, "Aplikasi Pencarian Rumah Sakit Wilayah Depok Berbasis Android," *Seinasi-Kesi*, vol. 3, no. 1, pp. 151–156, 2020.

[5] H. Hayatunnufus, "Sistem Informasi Geografis Pelayanan Kesehatan Berbasis Android Pada Kabupaten Way Kanan," *J. Portal Data*, vol. 8, no. 2, pp. 1–20, 2021.

[6] D. A. Winoto and F. W. Christanto, "Implementasi Google Maps Api Dalam Pengembangan Sistem Informasi Geografis Taman Kota Dan Kampung Tematik Berbasis Android Di Kota Semarang (Studi Kasus: Pejabat Pengelola Informasi Dan Dokumentasi Kota Semarang)," *J. Teknol. Inf. dan Ilmu Komput.*, vol. 7, no. 1, pp. 9–16, 2020.

[7] A. Wijaya, "Pembuatan Aplikasi Panggilan Darurat Berbasis Android Menggunakan Location Based Services," *JSAI (Journal Sci. Appl. Informatics)*, vol. 2, no. 1, pp. 97–104, 2019.

[8] R. Arianto and A. W. Utama, "Aplikasi Mobile Titik Sebar Rumah Sakit Di Kabupaten Bekasi Menggunakan Location Based Service ( LBS ) Berbasis Android," vol. 5, no. 1, pp. 62–71, 2020.

[9] R. Hidayati and N. Mutiah, "Penerapan Metode Haversine Formula Pada Pencarian Lokasi Fasilitas Kesehatan Terdekat," *J. Media Inform. Budidarma*, vol. 6, no. 1, p. 278, 2022.

[10] A. Herdiansah, N. Fitriawati, and A. Hariri, "Sistem Informasi Pelayanan Pasien Studi Kasus Klinik Jati Husada Tangerang," *J. Teknol. Inf. dan Ilmu Komput.*, vol. 8, no. 3, p. 465, 2021.

[11] D. Damayanti and N. Nirmalasari, "Sistem Informasi Manajemen Penggajian dan Penilaian Kinerja Pegawai pada SMK Taman Siswa Lampung," *J. Teknol. Inf. dan Ilmu Komput.*, vol. 6, no. 4, p. 389, 2019.

[12] S. W. Ginting and I. M. Sudarma, "Analisis Usability Aplikasi Sistem Informasi Destinasi Wisata Pulau Ambon Berbasis Android," *J. Teknol. Inf. dan Ilmu Komput.*, vol. 7, no. 5, p. 1061, 2020.

[13] J. K. Informatika and I. Artikel, "Pengembangan Aplikasi Geolocation Untuk Monitoring Lokasi Mahasiswa Selama Pandemi Berbasis Android Menggunakan Metode Waterfall ( Studi Kasus : Stmik Insan Pembangunan," vol. 10, pp. 56–62, 2022.

[14] M. Agustine Bacsafra and D. Mustika Kusumawardani, "Pengembangan Sistem Informasi Badan Pusat Statistik Kabupaten Kuningan Berbasis Android Dengan Metode Prototype," *J. Sains Komput. Inform. (J-SAKTI*, vol. 6, no. 1, pp. 379–390, 2022.

[15] M. N. Ichsanudin and M. Yusuf, "Perpustakaan Dengan Metode Black Box Testing Bagi Pemula," vol. 1, no. 2, pp. 1–8, 2022.




**Jurnal Mantik** is licensed under a Creative Commons Attribution-NonCommercial 4.0 International License (CC BY-NC 4.0).