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Online Car Repair Shop Application with Android-Based Home Service

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ABSTRACT

The use of private cars has reached a total of 23,230,297 units. The number of car users, either for delivering goods, means of transportation, or for personal interests makes it easier for drivers to carry out their activities. Mobile vehicles have their way of keeping the car in good condition, such as automatic car services and clutch cars with different ways of handling. Car accidents cannot be separated from problems when traveling, for example, tires leaking due to punctured nails, crashing tires, and accidents stuck in holes. The limited number of people who know the location of the nearest workshop to the current location can cause confusion and have to ask people around from the workshop needed and there are still many motorists who have not been able to take good care of their cars Current technological developments I propose an online workshop application so that instead of asking people around it will be easier if from a smartphone you can bring the workshop itself to the location or the house, People can order home service services so that it is easier for people to check the car from home.

Introduction

Along with the development of the times, cars have become one of the vehicles that are often used by Indonesian people today. At this time, the use of private cars has reached a total of 23,230,297 units. The number of car users, either for delivering goods, means of transportation, or for personal interests makes it easier for drivers to carry out their activities. Mobile vehicles have their way of keeping the car in good condition, such as automatic car services and clutch cars with different ways of handling. Car accidents cannot be separated from problems when traveling, for example, tire leaks due to nail punctures, car breakdowns, car crashes in holes, and others (Sofi & Dharmawan, 2022).

One of the businesses that provide mobile repair services is the workshop business. A workshop is a business facility that provides repair and after-sales maintenance services on customer-owned vehicles (Widhiananda, Suyadnya, & Saputra, 2018). The workshop provides a place equipped with a building in which there are tools and tools used in repairing and maintaining vehicles (Farras, Sukmono, & Bashit, 2017).

Regular repairs and maintenance are required to ensure that the vehicle is in good condition and safe. The limited number of people who know the location of the nearest workshop to the current location can confuse and have to ask people around the workshop needed and there are still many motorists who have not been able to take good care of their cars (Audrilia & Budiman, 2020).

With the current development of technology, I propose an online workshop application so that instead of asking people around it, it will be easier if from a smartphone you can bring the workshop itself to the location or to your home, people can order home service services so that it makes it easier for people to check the quality of the car from home without going to a workshop that does not know where it is (Zaki & Putra, 2018).

This application will use the Haversine Method which is a distance measurement method based on the curvature of the earth to make it easier for users to find the nearest workshop that can be reached on foot and get information that continues to grow from workshop owners who play a direct role as a source of data (Nugroho & Asmara, 2020). The Haversine method was chosen because the method does not take into account the unidirectional lane system or lane density so that the user still gets the right distance measurement results even though the workshop has missed the path passed. In addition, the haversine method also has a distance measurement accuracy rate of 90% for measurements within a radius of 2 km (Ariani, Guntoro, Erlangga, & Aprlinda, n.d.).
The objectives and benefits of this research are:

Purpose

1. Building an application that can facilitate and help the workshop provide services widely online.
2. The application can do home servicing to where the user is
3. The application makes it easier for people to maintain the condition of the car.

Benefit

1. Makes it easier for drivers to check the condition of the car by ordering home service services
2. It can make people know how important it is to check the condition of the car before traveling.

Method

Research Outline

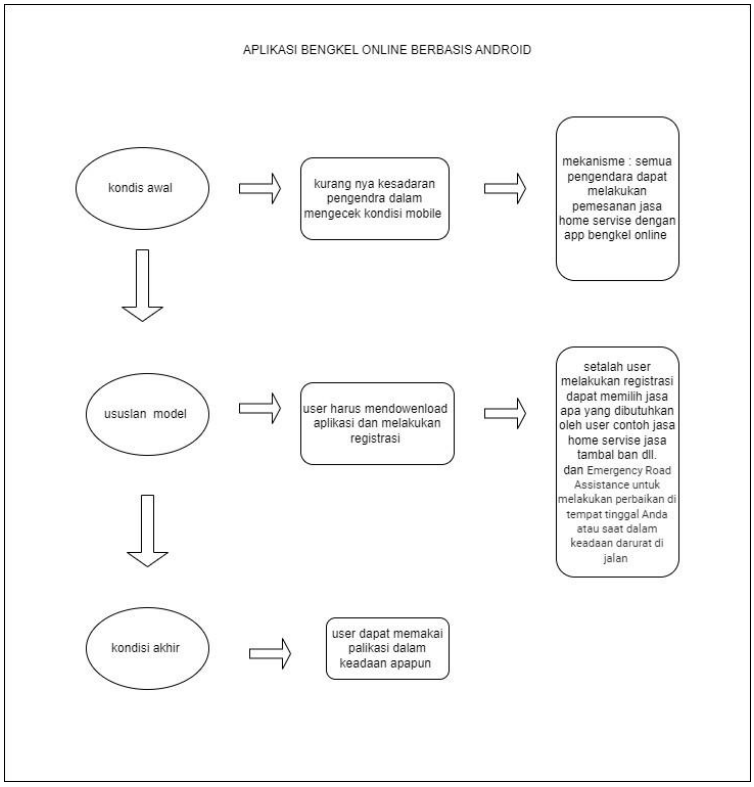

Figure 1 Research Outline

Table 1
Data Source

It	Data	Information
1	study book	It is carried out to obtain data and information by reading various authors' materials, scientific essays, and other sources. The problems that

How to get data

1. Observation

Conducting direct observations to obtain workshop information
2. Interview

Collecting data and information needed to build a workshop system.
Data collection time
1. Data Cross Section

Cross-section data is data collected at a certain time to provide an overview of the development of an object or event.
Model Architecture

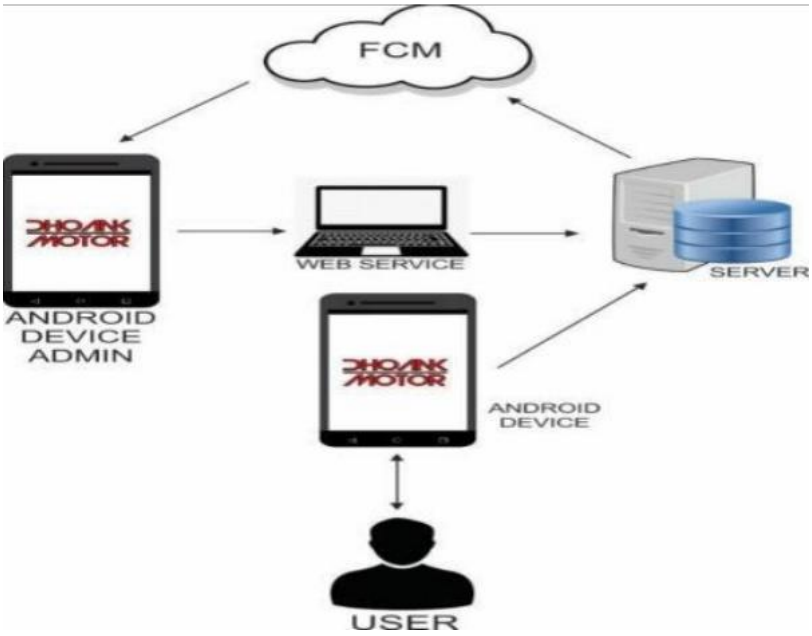

Figure 2
Model Architecture

Results and Discussion

Functional Analysis

Table 2
Functional

No.	Function Name	Information
1	Login	Features for the community and admins to log in to the system
2	Logout	Features for the community and admins to log out of the system
3	Manage Online Workshop Profile	Features for admins to add, view, change, and delete online workshop data
4	Service Booking	Features for the public to be able to perform services at home or in workshops

5	Workshop search	Features for the community to split spread by category certain.

Non-functional needs

Table 3
Non-functional

No.	Function Name	Information
1	Limit 26ystem down	The system is allowed to be down for 5 minutes in 1 year
2	App Response	The system must be able to respond to requests from clients in Maximum time 30 ms
3	Batas request client	The system can serve requests from clients up to 100 requests simultaneously.
4	Additional security for login data	The system uses two-step verification to ensure the authenticity of users who log in to the system.
5	Menu authentication differences system	The system has a different menu display when accessed Travelers and admins
6	Ability to run in a Web Browser	The system can show the features it has appropriately using the top 10 most favorite web browsers of the CNN version in 2022
8	System Theme Colors	The dominant 26ystem Theme color follows the distinctive color pharmacy is green

Login and sign up display

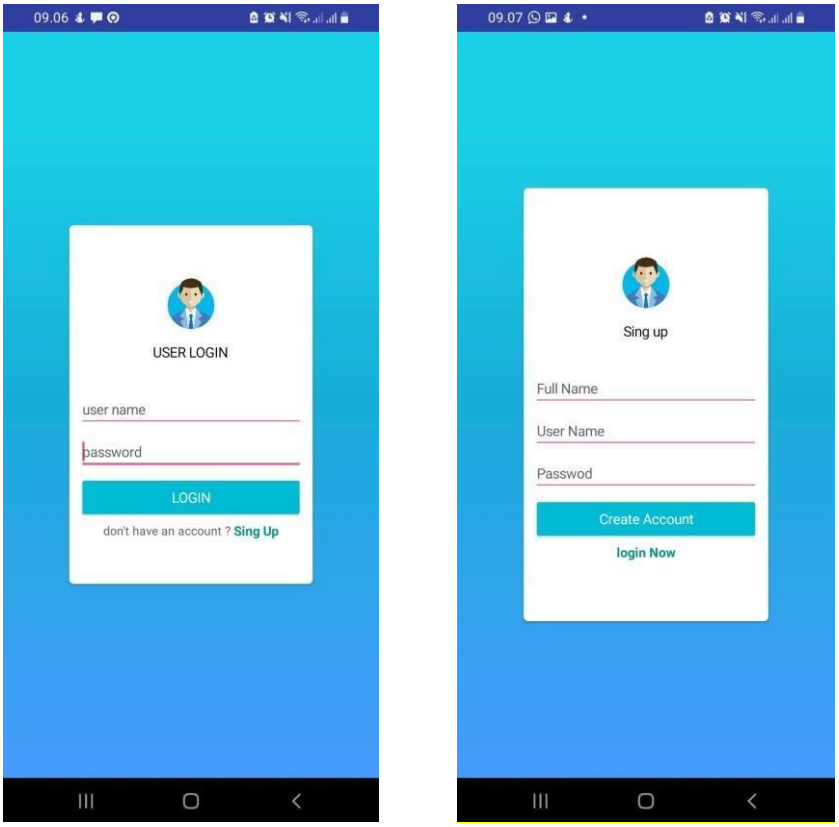

Figure 3 Display

The login display is used when the user has done a sign-up, but if the user does not have an account, they can click the sign-up icon and then register an account.

Home Display

Figure 4 Home Display

Based on the results of making an online workshop application, you can only find workshops with a distance of 2km so there are still many shortcomings.

The implementation process of designing an application carried out in the previous chapter will be explained in this chapter. Implementation aims to translate the needs of the software into an actual form that is understood by the computer in other words, this implementation stage is a continuation of the design stage that has been carried out. In this implementation stage, it will be explained about the hardware and software used in building this system.

Conclusion

Based on the results of making an online workshop application, it is hoped that this application can make it easier for motorists to find a workshop and check engine problems from home.

Bibliography

Ariani, Fenty, Guntoro, Adi, Erlangga, Erlangga, & Aprlinda, Yuthsi. (n.d.). Aplikasi Order Service Bengkel Menggunakan Metode Haversine Untuk Mengetahui Jarak Bengkel Terdekat. *Expert*, *10*(1), 345974.

Audrilia, Meri, & Budiman, Arief. (2020). Perancangan sistem informasi manajemen bengkel berbasis web (Studi kasus: Bengkel Anugrah). *Jurnal Madani: Ilmu Pengetahuan, Teknologi, Dan Humaniora*, *3*(1), 1–12.

Farras, Naufal, Sukmono, Abdi, & Bashit, Nurhadi. (2017). Analisis Estimasi Energi Panas Bumi Menggunakan Citra Landsat 8 (Studi Kasus: Kawasan Gunung Telomoyo). *Jurnal Geodesi Undip*, *6*(4), 371–380.

Nugroho, Anggun, & Asmara, A. A. Gde A. Putra Ratu. (2020). Sistem Informasi Geografis Order Layanan Bengkel Online Memanfaatkan Gps (Gmaps) Berbasis Web. *Jurnal Teknologi Informasi Dan Komputer*, *6*(1).

Sofi, Nelly, & Dharmawan, Riza. (2022). Perancangan aplikasi bengkel CSM berbasis Android menggunakan framework Flutter (bahasa Dart). *Jurnal Teknik Dan Science*, *1*(2), 53–64.

Widhiananda, IGNA, Suyadnya, I. M. Arsa, & Saputra, K. Oka. (2018). Rancang Bangun Aplikasi Reservasi Service Untuk Bengkel Sepeda Motor Berbasis Web. *J. SPEKTRUM*, *4*(2), 97.

Zaki, Badri, & Putra, Syahrizal Dwi. (2018). Aplikasi bengkel online menggunakan global positioning system (gps) berbasis android pada CV. Rumah Otomotif. *JISICOM (Journal of Information System, Informatics and Computing)*, *2*(2), 16–25.