

# *Towing Car Booking System Using Android and Web Based Application*

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**Abstract**—To deal with broken cars on the road, a towing car booking system using android operating system is built. By using GIS (Geographic Information System) for the development, ensuring the location of the customer become easier. Furthermore, the system is developed using PHP programming language. Data management in this application uses the MySQL database engine. GPRS (General Pocket Radio System) channel is used for sending customer data. This application is designed using the UML (Unified Modeling Language) which is suitable for modeling applications developed with object-oriented language (OOP). In this towing car booking application, the android application acts as a client while the web application as a server which is used by the operator of the towing car company in managing data orders from customers. This application has successfully designed and implemented. It is concluded that the system has benefits for driver, the system interface has a simple display and easy to use by users, and the system has running well. Therefore, it can be a reference for android application developers who have integration concept between android and web applications.

**Keywords**-*android applications; GIS; PHP; object oriented programming; integration; client-server*

## I. INTRODUCTION

### A. Background

Operating system developments for mobile phones increase rapidly in accordance with the emergence of mobile gadgets which launch various types of models, more complete and attractive features from time to time, one of that is the android operating system. This is one of the triggers for appearance of the operating system that can support multiple platforms, so that the application in it has its own advantages. The operating system is the main software tasked with direct management and control of hardware and other software so that it can run. The operating system is used as an interface between the user and the device, it also used to control devices and applications.

Mostly driver do not know well about the engine and a strike car will cause panic. Sometimes driver also don't know the towing car service telephone number. To overcome this situation, a towing car booking system using android operating system is made for supporting a high mobile activity.

Service quality improvement is one of the business strategies emphasized in fulfilling consumer desires. While on the other hand, company performance and customer satisfaction are a unit that is difficult to separate. Performance has a direct effect on customer satisfaction. Therefore, a business unit is expected to be able to improve its performance starting with knowing the degree of consumer satisfaction. Consumer is the only ones who can judge whether the quality of service is good or not. Consumer value these services by comparing the services they receive (perception) with the services they expect (expectation) [1]–[5]

If the consumer feels very satisfied with the service provided by a company, the consumer will be returning to repurchase. [6]–[10]

### B. Problems

- 1) How to analyze and design an android and web based application of towing car booking systems.
- 2) How to communicate data between android client and web server.

### C. Purpose

- 1) How to analyze and design an android and web based application of towing car booking systems.
- 2) How to communicate data between android client and web server.

### D. Research Limitation

- 1) System design using UML.
- 2) Users input data through the android application then the output will be sent to the database web application that functioned as a server.
- 3) The system is implemented using PHP and Java programming languages.
- 4) User can only cancel the order if the status has not been confirmed by the company operator.

5) The towing car booking system is only valid for one particular area as the starting point of the map on the server.

6) The research focused on data communication between android and web.

7) Benefits of Research

8) Develop an application that supports mobile phones with android operating system which is now starting to develop rapidly among smart phone.

9) Helping to interact and strengthen the relationships between towing car service providers and customer.

### E. Research Authenticity

Research related to the problem of ordering service systems, especially towing car, has never been done, but an android application system that is integrated with web applications has been done in previous research.

## II. DEVELOPMENT METHOD

Literature study and data retrieval consists of several steps as follows:

- 1) Identify needs.
- 2) Analysis.
- 3) Designing.
- 4) Implementation.
- 5) Testing and evaluation.

Following is a detail of the design step.

### B. User Use Case

Figure 1 shows the use case diagram of this system. Several activities that an actor/ user can do can be seen on the figure.

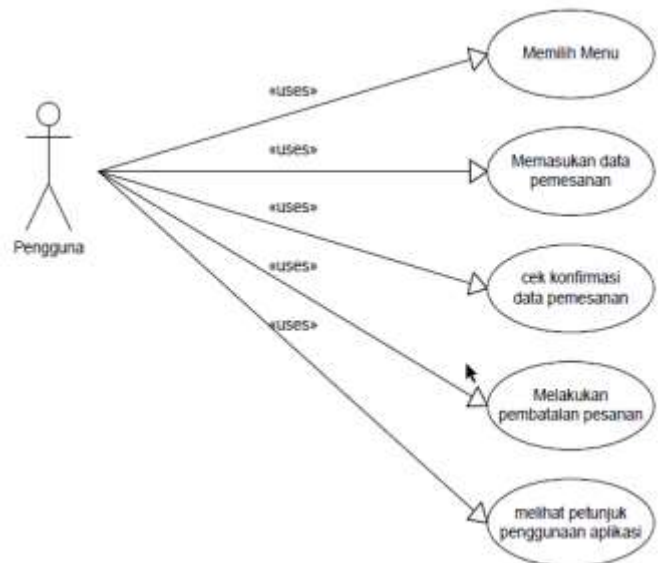


Figure 1. Use case diagram of the actor of the system

### C. Web Application Use Case

Figure 2 shows the web application use case. The actor here is Admin.



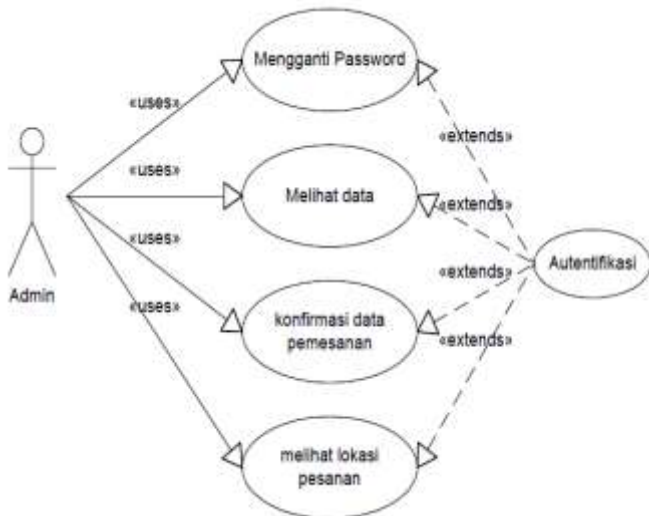


Figure 2. Use case diagram of web application

### III. IMPLEMENTATION

Our implementation is shown on Figures 3-12.

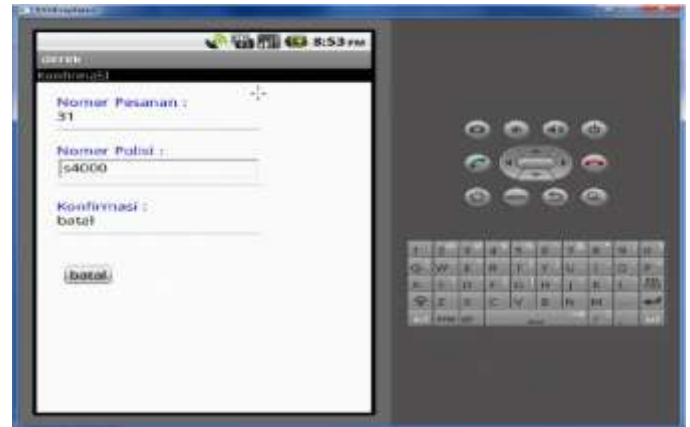


Figure 5. Implementation 3



Figure 6. Implementation 4



Figure 3. Implementation 1



Figure 4. Implementation 2

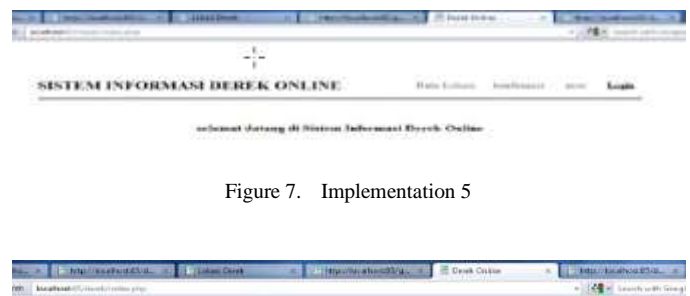


Figure 7. Implementation 5



Figure 8. Implementation 6



IV. TESTING

- 1) Results of the percentage calculation conclude that the system functionality is able to run well.
- 2) Based on the percentage results can be concluded that the system interface has a simple display and easy to use for users because the statistics show a balanced composition.
- 3) Based on the percentage results can be concluded that the system has benefits for driver.

V. CONCLUSION AND SUGGESTION

A. Conclusion

- 1) This study has succeeded in designing and implementing an android-based towing car booking application, concluded that the system has benefits for driver, the built-in system interface has a simple display and easy to use for users.
- 2) This study has successfully integrated an android-based towing car booking application with a web-based towing car booking management application. Test results concluded that the system functionality is able to run well.

B. Suggestion

- 1) Integrate the implementation into a larger system for accessing this system easier.
- 2) The weakness of this towing car booking system is it has not been able to be effective in its performance, especially in ordering confirmation that is delivered to android applications users and for towing car company service providers. The function of this system is yet accommodating the entire process of business activities.
- 3) It is expected that the next development able to add the SMS Gateway feature in order to resolve the deficiencies, therefore the system will provide confirmation in easy way for users (customers) and easier to serve customers better for towing car companies.
- 4) It is necessary to integrate the application that has been developed with the information system of the towing car company that is already built.

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Figure 9. Implementation 7



Figure 10. Implementation 8

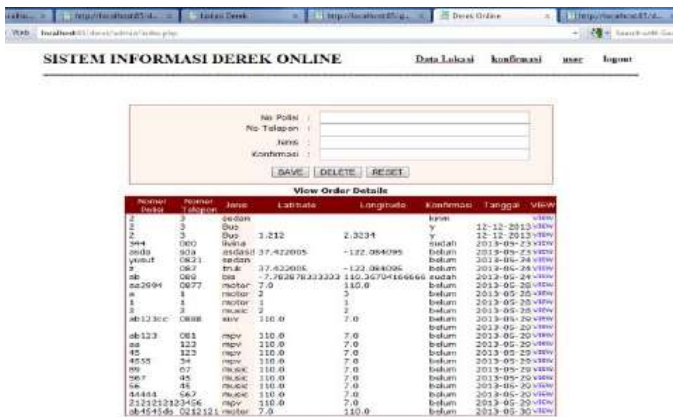


Figure 11. Implementation 9



Figure 12. Implementation 10



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