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Design and Development of Mobile Advertising as A Measure of Advertising and Education Promotion Using Location-Based Service

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ABSTRACT

The use of information technology in business is an important thing to implement in order for businesses to gain competitive advantage. In order to provide superior value to customers or potential customers, companies can implement mobile advertising. Mobile advertising is an advertising service on smartphones and mobile devices that can access content in various forms, from simple text messages to interactive content. This study aims to design a Location-Based Service (LBS) based mobile advertising for advertising and promotion. The method in this study uses the waterfall method with the programming language in this system using Java. This application system runs on the Android operating system. The database used is MySQL. This system can be operated on the Android system to be used for promotion.

INTRODUCTION

The development of information technology has changed the way companies do business, including people's lifestyles. The behavior of the community which is closely related to the use of gadgets is not limited to merely a means of communication but rather becomes an enabler to increase productivity in daily activities, such as coordination, collaboration, organizing, tasking, promotion, and so on. The use of information technology in business is an important thing to implement in order for businesses to gain competitive advantage. Competitive advantage can be achieved when the company provides superior value (superior value) to customers compared to other competitors or provides the same value at a lower cost.

In order to provide superior value to customers or potential customers, companies can implement mobile advertising. Mobile advertising is an advertising service on smartphones and mobile devices that can access content in various forms, from simple text messages to interactive content. This study aims to design a Location-Based Service (LBS) based mobile advertising application system for advertising and promotion at universities, especially Polytechnics. [5] Polytechnics are vocational colleges that are widely spread in Indonesia, where many polytechnic colleges have departments and activities that must be promoted, in campus promotion there are many obstacles experienced, both control of human resources, finance and others, promotion can spend funds large, [6] with this system through

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LBS-based mobile advertising operated on the Android system, it is hoped that it can reach more people to get to know the Polytechnic campus while increasing customer value.

MATERIALS AND METHODS

In this research, mobile advertising requires stages in research. So that the results of the research are more relevant. In this study, to find customers will use GPS in finding the location. In making a mobile advertising system, the Waterfall method is used. Because this method is in the flow of sequential systems and the system is automatic.

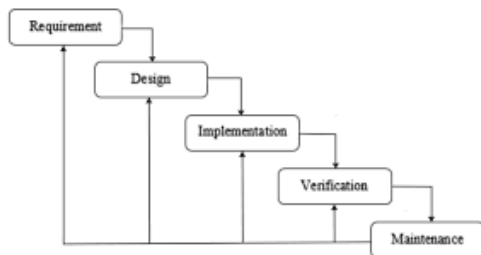


Figure 1
Waterfall Software Development Method

In the waterfall method, the stages in making a mobile advertising system are divided into five stages, namely the needs analysis stage, the design stage, the implementation stage, the verification stage and the last stage of the maintenance. The stages to be carried out are as follows :

1. Software Requirements Analysis
This stage is an analysis of system requirements to be made. Collecting data either from interviews, collecting documents and making questionnaires, from the data obtained will be analyzed in detail with the system requirements.
2. Design
The design stage is to develop the overall system architecture and determine the software flow in detail.
3. Implementation
The implementation stage is changing the entire design into program codes which will later be integrated into the system.
4. Verification
The verification stage is the stage of checking the system in its usefulness, where the system will be tried or tested, whether the system is running according to its function and purpose.
5. Maintenance
Tahap pemeliharaan merupakan tahap pemeliharaan sistem, dimana sistem akan di cek pada setiap proses.

In making a programming language system that will be used is Java and PHP. This application system runs on the Android operating system. The database used is MySQL.

RESULTS AND DISCUSSION

The system implementation plan is carried out by going through the stages in the waterfall method where all steps in the waterfallkan will be carried out, while the stages of making the system are as follows:

1. Software Requirements Analysis

At this stage, the system requirements analysis stage will be made. The collection of needs to specify the form of the system will be made, the need for the system to be created is, the system can run on the Android system, and the system can be used for promotion for universities, especially for polytechnic colleges, where this system will run promotional promotions carried out by tertiary institutions, so that promotions that have been carried out so far can reach the intended target, promotions using this system will be location-based, where smarfon devices will be installed and can disseminate location-based information.

2. Design

This design stage will describe the overall system architecture and determine the software flow in detail.

It takes an infrastructure design so that the system runs according to its goals and runs well. In the mobile advertising process, advertising will involve several actors in its implementation who have their respective roles, namely:

- a. Management / merchant is the one who has the authority to serve advertisements, determine the target market based on advertiser requests.
- b. The user is a member who will be the target of the advertisement in the general public.
- c. Sales are those who sell or provide info to customers about advertisements.

3. Implementation

This stage is changing the entire design into program codes which will later be integrated into the system. Where the implementation of the system uses the waterfall method with a web-based PHP programming language with a codeigniter framework. This application system runs on the Android operating system, where the system design is converted using the APPSGEYSER application. The database used is MySQL.

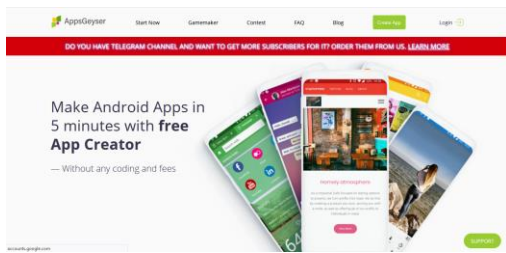


Figure 2
Appgyser Application

a. WEB Admin design

The design of mobile advertising as a means of advertising and promotion for higher education uses location-based services based on android. The system view for the server can be seen in the following image.

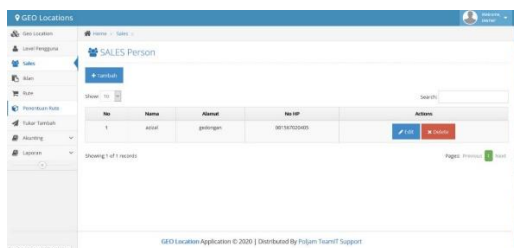


Figure 3
Web Admin

The Android-based and location-based service mobile advertising application works to process advertising data consisting of advertisements and routes / locations. Where the ad that will be promoted will be uploaded in the application where the advertisement application is already connected to the advertising route.

b. Android Based System Design

The system is designed to be able to provide advertising information that will be promoted through the Android application, this application is an Android-based application where the server will provide the latest data related to advertisements and routes, advertisements that do not match the automatic route will not be read by the server system, while the corresponding advertisements the route will be verified by the server.

The Android-based and location-based service advertising application at polytechnic universities aims to promote higher education using smart phones which makes it easy to promote and more effectively target consumers, while

the system that has been created based on research steps is as follows;

1) Initial Display

In the initial view of the application, the login menu will be displayed according to the authorization of the user who will access this application.



Figure 4
Initial Display

When logging in using the admin user, the entire main menu will be displayed, starting from the menu for inputting ad data to the user management menu.

2) Advertising Menu

This menu will display all advertisements in the system, this menu can see advertisements that will be promoted and advertisements that have been promoted and on this menu also add new ads.

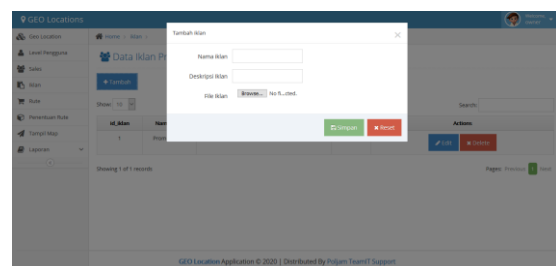
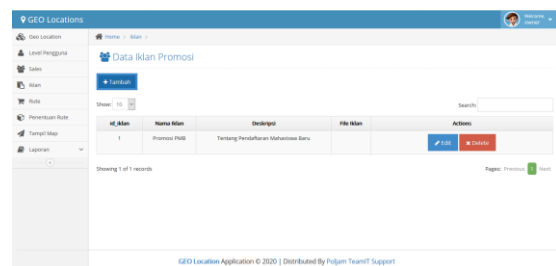


Figure 5
Advertising Menu

Where this ad menu will display a form as shown above, the admin will fill in the ad name, ad description

and will upload the ad into the system that has been designed, this ad will determine the route where this ad will be right on the sasaran.

3) Route Menu

This menu can only be changed and added by the admin, this menu will display all ad routes. This menu can only be changed and added by the admin, this menu will display all ad routes.

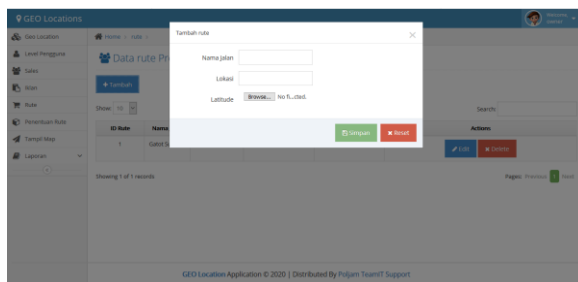
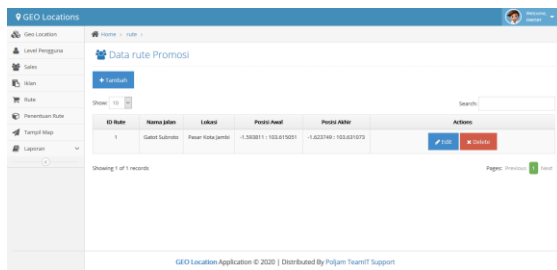


Figure 6
Route Menu

This route menu will determine the route to be selected, the route will be input by the admin, in the route menu there is a street name, location and latitude that will be uploaded to the system by the admin.

4) Sales Menu

In this menu, there are all sales personal data that will promote ads. and on this menu sales can download the fish files that will be promoted.

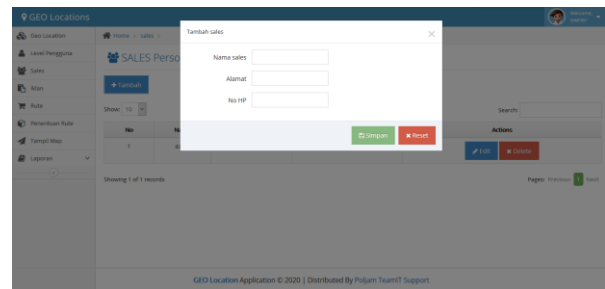
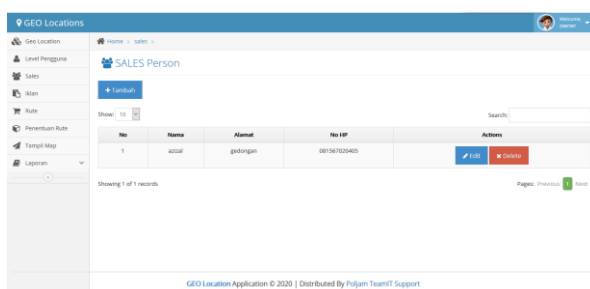


Figure 7
Re-Schedule Menu

The sales data is inputted by the admin, in this form the admin will input the sales name, sales address and cellphone number, where this is what will promote ads that have been input into the system, this ad will be promoted according to a predetermined route.

5) User Management Menu

This menu is only owned by users who are logged in as admin, because this menu functions to manage user data who will access this application, starting from adding, editing or deleting user data.

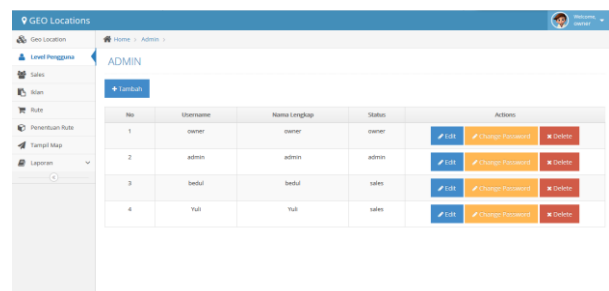


Figure 8
User Management

Admin will add users of this system based on the existing form fields, where the admin will create a username account and password as well as user status, whether as pious, admin, and owner. All existing users on the system are properly configured.

CONCLUSIONS AND SUGGESTION

In this study it can be concluded based on the discussion in the previous chapter the conclusions of this study are as follows:

1. mobile advertising system has been created as a means of promotion for universities, especially polytechnics.

2. Mobile advertising system promotion based on a predetermined location or route.
3. With the mobile advertising system, it can help polytechnic colleges in carrying out promotions, both for new student admissions or promotional activities.

The suggestions that can be given to improve the mobile advertising system that have been made are as follows:

1. The mobile advertising system needs to add features to control the advertisements that have been advertised right.
2. There needs to be an automatic reminder feature for sales to advertise ads that have not been advertised.

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