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Utilization of Mobile Applications to Speed Up The Search for Android-Based Index Places

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ABSTRACT

Purwokerto is one of the cities in Central Java Province. The development of Purwokerto is currently quite rapid, both in the economic and educational fields. There are many boarding houses for rent in the Purwokerto area, especially around campuses and business areas. However, the majority of boarding house owners still market boarding houses manually, such as by putting up a sign saying 'Accept Boarding House' in front of their house or by hiring a jockey. Along with the development of current technology, especially in the field of smartphones, many applications have emerged to help their users. To bridge the needs of users and boarding house providers, an application is needed that can display information on boarding houses in Purwokerto. The application that is built is mobile-based with an Android operating system for users who want to find boarding houses. While boarding house providers use a web-based system that can update boarding house advertisements. The method used in compiling this research uses the Waterfall model. The testing stage is carried out by conducting a product test. The product test is carried out by testing the application using the attributes of reliability and durability, conformance, serviceability, appearance and perceived quality. Android-Based Boarding House Information System in Purwokerto can help users or boarding house seekers to obtain information about boarding houses more quickly, so that users become more efficient in finding boarding houses according to their wishes.

Keyword : Android; Product Testing; Boarding House; Waterfall

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1. INTRODUCTION

In the era of globalization, the need for information is very high, and the presentation of information is required to be fast and accurate. At this time, information is one of the main needs of society in this modern era. One of the media that can be a facility to obtain information quickly and accurately is the internet. The internet is a physical network connection of millions of computers using the same protocol for sharing / transmitting information, in addition to sharing / transmitting information, the internet is also used to connect two or more people online. The internet allows free access to protocols from anywhere in the world and is able to accept all types of computers connected to the network (Almagor, 2011).

Today we have witnessed that the internet has made the lives of users easier and started connecting separate services to be connected (eg: telecommunications, investment banking, pharmacy, social interaction, education, entertainment) with devices (eg: computers, servers, smartphones, even electronic chips in households). The rapid development of mobile devices leads to the development of various mobile applications ranging from entertainment, education, health and business (Kim & Jung, 2014). This is utilized by mobile phone manufacturers to compete to create very practical and flexible communication tools, namely smartphones. Especially on Android-based smartphones which are open source for developers to create or develop new applications. The existence of smartphones is very helpful for users to get information and meet their various needs faster and easier, including in terms of finding boarding houses.

With the great enthusiasm of students / employees to find boarding houses, it is very necessary to have information on boarding house rental data in the form of boarding house photos, boarding house facilities, a price list for each boarding house for rent, and a boarding house map via Google Maps with the help of GPS. So it is necessary to build an android-based boarding house search information system so that students or employees can find boarding houses that suit their wishes effectively and efficiently in the Purwokerto area.

The application that is built is mobile-based with an Android operating system for users who want to find boarding houses. While boarding house providers use a web-based system that can update boarding house advertisements. The method used in compiling this research uses the Waterfall model. The testing stage is carried out by conducting a product test. The product test is carried out by testing the application using the attributes of reliability and durability, conformance, serviceability, appearance and perceived quality. Android-Based Boarding House Information System in Purwokerto can help users or boarding house seekers to obtain information about boarding houses more quickly, so that users become more efficient in finding boarding houses according to their wishes.

2. RESEARCH METHOD/MATERIAL AND METHOD/LETERATURE REVIEW

In making this research, the author uses several research methodologies with literature studies to develop this software, the author looks for literature or library sources related to the software to be created. This library source will help the author in writing existing theories, and can be used as a comparison with the research that has been made. Then using the observation method, which is carried out to collect data by conducting direct observations in the field, then systematically recording the object. Observing all aspects that are in accordance with the needs of making the application. After observation and data collection, the software development method will be carried out, the method used in making this project is the waterfall method.

The Waterfall SDLC model is a sequential software development process in which software development progresses like a stream flowing downward (similar to a waterfall) through a list of phases that must be executed to successfully build a computer software. Originally, the waterfall model was proposed by Winston W. Royce in 1970 to describe software engineering practices. The Waterfall model defines a series of phases that must be completed one after another and move to the next phase only when the previous phase has been completely completed. Figure 2 illustrates the phases of the Waterfall SDLC Model (Bassil, 2012).

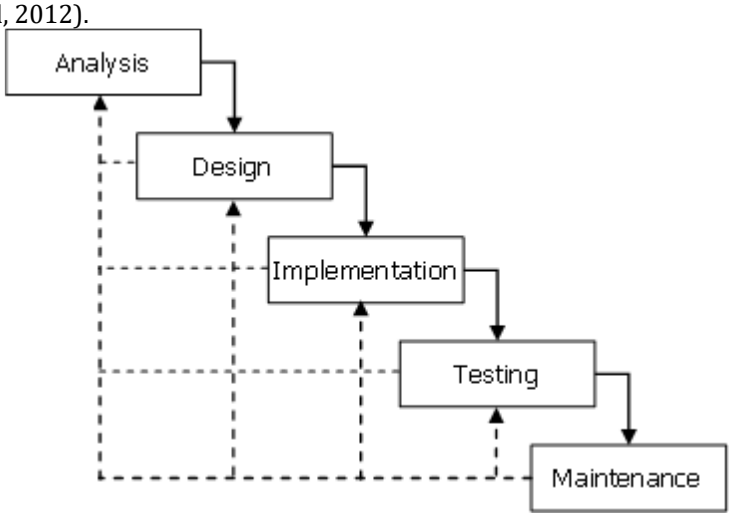

Fig 1. Waterfall Model

At this analysis stage, the author collects information and analyzes the system requirements to be worked on. The data collection process is carried out by means of interviews conducted with boarding house owners and boarding house users. The design stage is the processing of information and analysis of system requirements, the results of the analysis are then used to design a system that will be used to overcome the problems that arise. To describe what kind of system will be created, it is necessary to create a modeling design using UML (Unified Modeling Language) for android applications which include Use Case Diagrams and Sequence Diagrams, for web-based systems DFD (Data Flow Diagram) is used.

3. RESULTS AND DISCUSSION

The GoletKost software runs via mobile device media on the Android platform with a minimum operating system requirement of Android 4.1 (Jelly Bean) to Android 6.0 (Marshmallow).

A. Home Page (Mobile)

Figure 2 is the initial display when a general user opens the boarding house information application on their Android. Here, users can view or search for boarding house advertisements based on boarding house categories, boarding house areas and boarding house prices. In the upper left corner there is a side menu containing several menus and at the bottom there is a search menu based on area and price.

Fig 2. Home Page

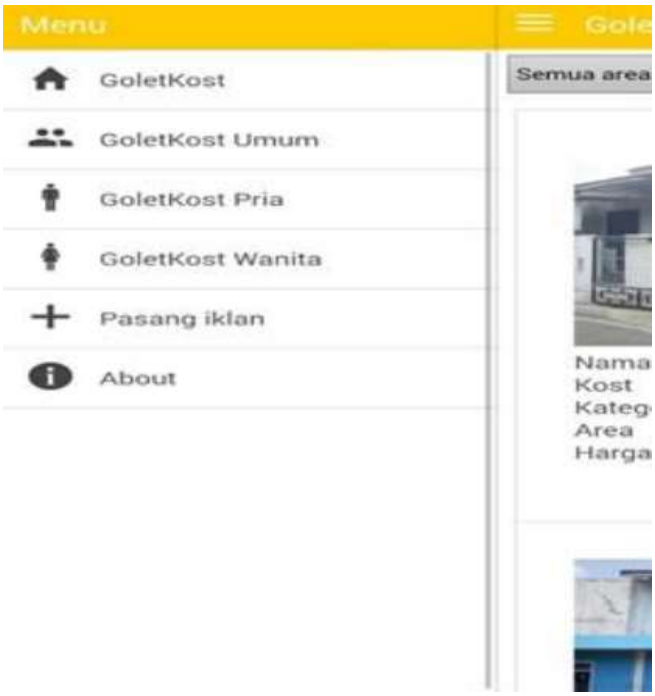

Fig 3. Side Menu Page

Explanation sub section 1

B. Slide Menu Page

Figure 3 is a display of the menu page, this page displays several menus, namely the Golet kost menu is the home menu on this application, the Golet kost Umum menu is a boarding house search menu based on the general boarding house category, the Golet kost Pria menu is a boarding house search menu based on the male boarding house category, the Golet kost Wanita menu is a boarding house search menu based on the female boarding house category, the Pasang Iklan menu is used to open the Purwokerto boarding house information system website, the About menu is used to display information about the application.

C. Boarding House Advertisement Detail Page (Mobile)

Figure 4 is the display when the user selects a boarding house advertisement on the home page. This display contains photos of the boarding house and complete boarding house information and is equipped with the location (map) of the boarding house. The back button is used to return to the home page and the location button is used to open the Google Maps application and then display the location of the boarding house.

D. Google Maps Page of Boarding House Location (Mobile)

Figure 5 is the display when the user presses the "Location" button on the boarding house ad detail display. This Google Maps display shows the location of the selected boarding house and can help direct the user to get to the boarding house they want. Users can activate the navigation route by first activating GPS on the user's device.

Fig 4. Boarding House Advertisement Detail Page

Fig 5. Google Maps Page Boarding House Location

E. Category and Price Search Menu Page (Mobile)

Figure 6 is a display of the general boarding house page, in this menu users can search based on the area or price of the boarding house. This search menu is also in the GoletKost menu for men and women. This search facility can make it easier for users to choose a boarding house based on price or area.

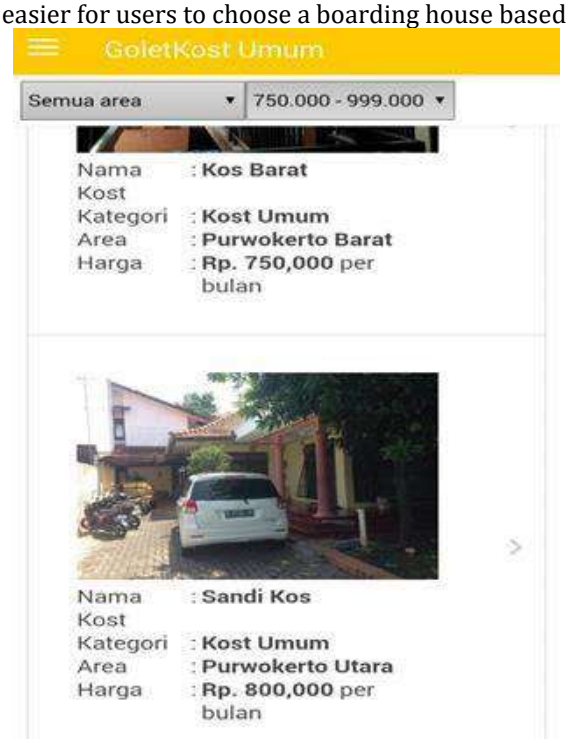

Fig 6. GoletKost General Menu Page (Mobile)

F. General User Home Page (Web)

Figure 7 is the first display when a user opens the Purwokerto boarding house information website. On this page there is boarding house advertisement information and several menus, namely the home menu is used to return to the main page, the login menu is used to enter the member page (boarding house owner) or the admin page, the register menu is used to register as a member (boarding house owner), the about us menu is used to display information about the Purwokerto boarding house information system website, the contact us menu is used to display information about the web owner. On this page there is also a search facility, namely boarding house search, used to select the desired boarding house category (Male/Female/General), area search, used to select the desired boarding house area (North/South/East/West Purwokerto), price search is used to select the desired boarding house price range. To place a boarding house advertisement, you must first register as a member. After becoming a member, users can place advertisements and update their boarding house advertisements. Admin also has the right to add members and add boarding house advertisements, besides that, admin can also print member data and advertisement reports.

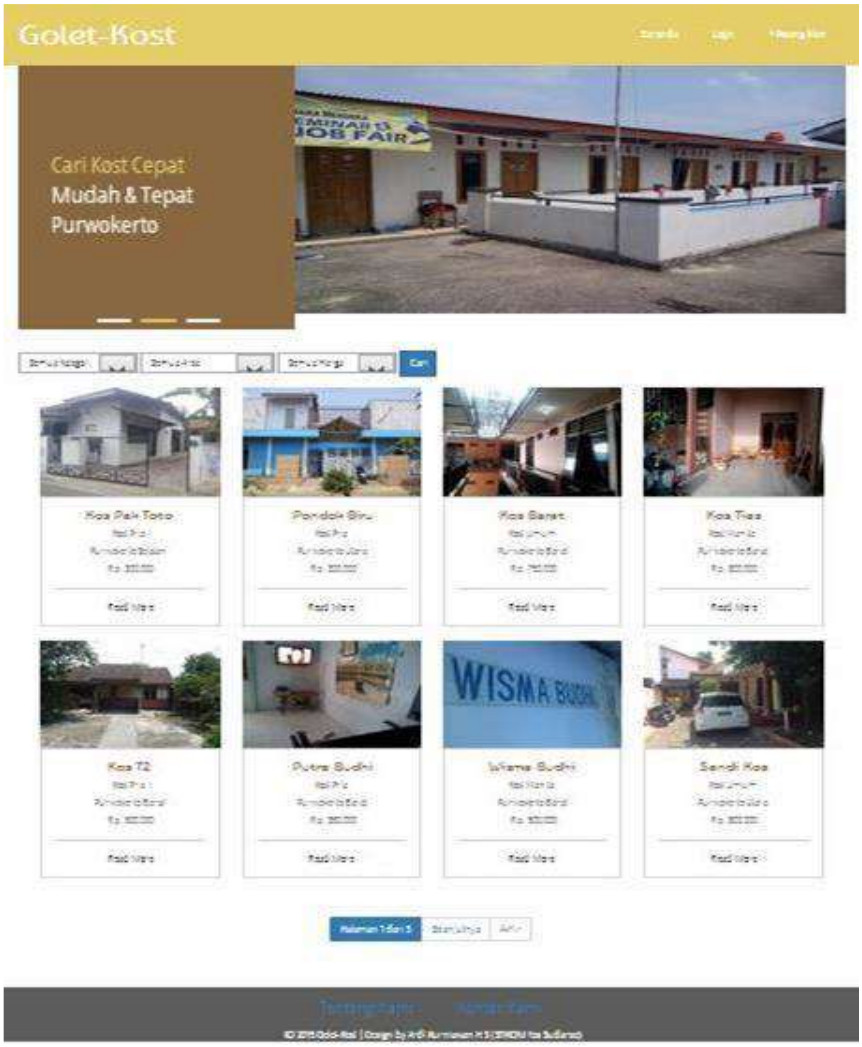

Fig 7. General User Home Page (Web)

G. Product Testing

After the system was built, a product test was conducted by taking a sample of 32 people who had the ability or understanding of an application. The sample tried the application and then filled out a questionnaire based on the components of Operation, Reliability & Durability, Conformance, Service Ability, Appearance and Quality. The questionnaire contained 12 questions, with 2 questions for each component. The minimum value for each question is 0 and the maximum is 5 with a Yes and No scale. Table 1 is the result of the processed questionnaire.

Table 1. Product Test Attribute Values

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
O	32	5	10	8.91	2.100
R	32	5	10	8.75	2.200
C	32	5	10	8.91	2.100
S	32	5	10	8.13	2.459
A	32	5	10	7.97	2.495
Q	32	5	10	8.28	2.413
Valid N (listwise)	32				

In Table 1 the minimum value is 5, the maximum value is 10 and the mean value of each attribute is more than 7.5 with a total of 32 respondents, and the maximum value of 6 attributes is 60. Furthermore, to find out the value of NUP (Product Test Value), we must first know the value of RNU6A (Average Test Value of 6 Attributes). The RNU6A value is obtained by: (Faqih, 2015)

RNU6A=mean (O+R+C+S+A+Q)

RNU6A=8.91+8.75+8.91+8.13+7.97+8.28 = 50.9375

After RNU6A is known, the next step is to find the value of NUP, namely by using the
Product Test Value = (RNU6A / N Max 6A) x 100
Product Test Value = (50.9375 / 60) x 100 = 84.8958

Table 2. Product Test Value

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
RNU6A	32	45.00	55.00	50.9375	2.67531
NUP	32	75.00	91.67	84.8958	4.45884
Valid N (listwise)	32				

The Product Test Value (NUP) limit in this study is 70. If NUP ≥ 70 then the product quality is declared good and suitable for use by the general public, but if NUP <70 then the product is declared unsuitable for use and must be reviewed (Faqih, 2015). In the table above, the average value of NUP can be seen, which is 84.8958, which means that the NUP value ≥ 70 then the product quality can be declared good and suitable for use. In addition to product testing, a benefit test was also carried out on 12 boarding house owners and 20 boarding house users, the benefit test was carried out by distributing questionnaires. Several items were measured using the ISO 9126 standard, with the characteristics of usability, ease, efficiency, and accuracy.

4. CONCLUSION

Based on the results of the study conducted using product testing, it can be concluded that the Android-Based Boarding House Information System to Accelerate Boarding House Search in Purwokerto has good product quality and is suitable for use by the general public and is also very useful for boarding house users who will search for or view boarding houses in Purwokerto. Further development of this application, for example, boarding house owners can update their boarding house information or place boarding house advertisements on the Android application and boarding house searches can use a radius from the user's position.

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