Prototype Development of Android-Based Thesis Information System at Institute Informatics and Business (IIB) Darmajaya

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Prototype Development of Android-Based Thesis Information System at Institute Informatics and Business (IIB) Darmajaya Bandar Lampung

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ABSTRACT
The rapid progress of Android-based mobile device technology has propelled the development of various applications that add diversified functions to mobile devices. Advanced systems in Android-based applications have also been utilized in many different sectors of life, including in education, from K-12 to university. Such advanced systems will be able to effectively solve distance and time limitations. This study tries to develop an Android-based system of thesis/final project consultation service that will help us solve some issues in availability schedule between students and lecturers. It is not designed to replace conventional consultation service, but rather to serve as an additional channel that connects students and lecturers in planning the thesis/final project consultation process. The ultimate aim, therefore, is to smooth the way for consultation process and to help more students complete their theses/final projects without considerable delays. In addition, the online consultation system will minimize paper consumption since it offers a paperless procedure.

Keywords: Android, consultation, thesis

1. INTRODUCTION

The rapid advancement in technology of Android-based mobile devices is currently supported by the creation of applications that ultimately make these devices become multifunctional. Besides offering convenience and speed, the Android-based application also offers various features at very economical costs.
At present the use of cellular telephone devices is no longer limited to meeting communication needs. Applications built on Android-based technology have begun to develop throughout the sector, one of which is used to support education from childhood to college. Research is one of the many studies that try to develop android-based applications for academic administrative services in tertiary institutions.
This application has been developed to support various processes in tertiary institutions, but supporting and accessing offered by the Android-based system makes this application very

interesting to develop. Of course, the benefits will be felt to be applied to provide solutions to agreed services constrained by time and space. One of the many complaints related to thesis / thesis guidance services. Often students also provide information about the difficulties to carry out the final project / thesis because they do not have a matching time or the availability of time schedules between the two parties. It is important to be dissolved in space and time in the process of the final project / thesis can be resolved.

This study asks for a solution to the problem of thesis / thesis guidance service by developing an Android-based guidance system. This system does not support providing final assignment / thesis services that provide conventional channels for additional channels for lecturers and students in the preparation process of the formation. Thus it is expected that the process can run with the number of students who finish with time that can be increased. Another advantage of the realization of this online guidance system can also help the use of paper because this system facilitates the guidance process that is done without paper.

2. LITERATURE REVIEW

2.1. Information Systems

The system is a set of things that consist of parts or components of components that are intertwined, related, dependent, and mutually supportive, which are collectively unified in one Unity (unity) To achieve specific objectives efficiently and effectively. While information is data that has been processed, formed, or manipulated according to specific needs. So that information systems can be defined as a set of interconnected components, collecting (or obtaining), processing, storing, and distributing information to support decision-making and supervision in a Organization The components that compose an information system consist of the following.

a. Hardware, which is a component to complement the activities of entering data, processing data, and data output.
b. The software, which is the programs and instructions provided to the computer.
c. Database, which is data collection and information organized Sedemikaian form so that user information system easily accessible.
d. Telecommunication, which is communication that is between users of system with computer system together into an effective network.
e. Human, which is personal information system, including admin, analyst, programmer and operator.
f. procedures, i.e. ordinances that include strategies, policies, methods, and regulations in the use of computer-based information systems

2.2. Final Assignment Guidance/thesis

Guidance is a clue how to do things. While the definition of final duty/thesis according to the Bahasa Indonesia dictionary is a scientific essay that must be written by students as part of the final requirements of academic education. Thesis is a requirement to get undergraduate status (S1) and final task for diploma (D3). Strata I Program students in semester VII and diploma-III program students in semester V can begin to compose theses and final assignments by being guided by the guidance lecturers who have been informed by the Chairman of the program Sdtudi or Dean. With guided guidance step by step is expected the thesis/final task is weighted, has good quality and can be accounted for a comprehensive trial of graduation

2.3. Android

Android is a Linux-based operating system designed for touch screen mobile devices such as smartphones and tablet computers. Android was originally developed by Android, Inc., with financial support from Google, which then bought it in 2005. The operating system was officially released in 2007, together with the founding of the Open Handset Alliance, a consortium of hardware, software and telecommunications companies aimed at advancing the open standards Mobile devices. The first Android phone was on sale in October 2008. The Android user interface is generally a direct manipulation, using touch gestures similar to real actions, such as swiping, tapping, and pinching to manipulate objects on the screen, as well as a virtual keyboard for writing text. In addition to touch screen devices, Google has also developed Android TV for television, Android Auto for cars, and Android Wear for watches, each of which has a different user interface. The Android variant is also used on portable computers, game consoles, digital cameras, and other electronic devices. Android is an open-source operating system, and Google releases its code under the Apache license. The code with an open source and licensing license on Android allows the software to be freely modified and distributed by the device makers, wireless carriers, and application developers. In addition, Android has a large number of app developer Communities (apps) that extend the functionality of the device, generally written in a customized version of the Java programming language.

2.4. Android Studio

Android Studio is an integrated development environment-Integrated Development Environment (IDE) for Android application development, based on IntelliJ IDEA. In addition to being an IntelliJ code editor and powerful developer tool, Android Studio offers more features to increase your productivity when creating Android apps, for example:

- Flexible Gradle-based version system
- Fast and feature-rich Emulator
- Unified environment for development for all Android devices
- Instant Run to drive changes to running apps without creating a new APK

- Code templates and GitHub integration to create the same app features and import sample code
- Extensive testing tools and frameworks
- Lint tool to improve performance, usability, version compatibility, and other problems
- C++ and NDK support
- Built-in support for Google Cloud Platform, making it easy to integration Google Cloud Messaging and App Engine

Each project in Android Studio contains one or more modules with source code files and resource files. The types of modules include:
- Android app Modules
- Library Modules
- Google App Engine Module

By default, Android Studio will display your project file in the Android project view. Views are organized by modules to provide quick access to your project's main source files.
All file versions appear at the top under Gradle Scripts and each application module contains the following folder:

- manifests: Contains AndroidManifest.xml file.
- java: Contains Java source code files, including the JUnit test code.
- res: Contains all non-code resources, such as XML layout, UI strings, and bitmap images.

2.5 Eclipse Eclipse

Eclipse Eclipse is an open source community that aims to produce an open programming platform. Eclipse consists of frameworks that can be further developed, assistive devices for creating and managing software from its inception to launch.

Eclipse is an IDE (Integrated Development Environment) that is used to develop software and can be run on all platforms / OS because it is called (platformindependent). Eclipse has several advantages that make it widely used in software development including: - Can run a variety of operating systems such as Windows, Linux, Solasris, Mac, etc. - Developed with java language, but Eclipse also supports the development of applications based on other programming languages such as C ++, Python, PHP, etc., which makes Eclipse also called multy-language. - Multy - role, besides being an IDE, Eclipse can also be used for activities in the software development cycle, such as documentation, software testing, web development, etc.

2.6. Database

Database, or often also spelled database, is a collection of information stored in a computer systematically so that it can be checked using a computer program to obtain information from that database. The software used to manage and call database queries is called a database management system (DBMS). The database system can be learned in information science. The term "database" originated from computer science. Although then the meaning is broader, including things outside the field of electronics, this article is about computer databases. Records that are similar to databases actually existed before the industrial revolution in the form of ledgers, receipts and data sets related to business.

The basic concept of a database is a collection of records, or pieces of knowledge. A database has a structured explanation of the types of facts stored in it: this explanation is called a scheme. Schema describes the object that is represented by a database, and the relationship between these objects. There are many ways to organize a schema, or to model a database structure: this is known as a database model or data model. The model commonly used today is the relational model, which in layman's terms represents all information in the form of interconnected tables where each table consists of rows and columns (the actual definition uses mathematical terminology). In this model, relationships between tables are represented using the same values between tables. Other models such as the hierarchical model and the network model use a more explicit way to represent relationships between tables. The term database refers to the collection of interconnected data, and the software should refer to it as a database management system (DBMS). If the context is clear, many administrators and programmers use the term database for both meanings

2.7 Related research

The following are some related studies that develop android-based applications.

a. In 2011, M. Ichwan and Fifin Hakiky conducted a study entitled "MEASUREMENT OF GOODREADS APPLICATION PROGRAMMING INTERFACE (API) IN MOBILE ANDROID APPLICATIONS". This research uses the goodreads method to search book data.

b. In 2014, Heru Supriyono et. al. conduct research with the title "DESIGN AND DEVELOPMENT OF HADIST LEARNING APPLICATION FOR ANDROID-BASED MOBILE DEVICES". In this research an Android-based application was developed to help in the study of hadith.

c. In 2015, Andi Juansyah conducted research with the title "DEVELOPMENT OF ASSISTED CHILD TRACKER APPLICATION - GLOBAL POSITIONING SYSTEM

(A-GPS) WITH ANDROID PLATFORM". In this study, A-GPS with the Android platform is used for child tracker.

d. In 2016, Bella C. N and Dony Tamara conducted research under the title "DESIGNING ANDROID-BASED E-CANTEEN APPLICATIONS USING THE OBJECT ORIENTED ANALYSIS & DESIGN (OOAD) METHOD". In this study an Android-based application was developed to help the canteen service.

e. In 2016, Sulihati and Andriyani conducted a study with the title "ONLINE ACADEMIC APPLICATION BASED ON ANDROID MOBILE AT TAMA JAGAKARSA UNIVERSITY". This research develops academic services based on Android.

3. METHOD

Data collection methods used in this research are observation and study literature from various relevant sources. The system development method used in this study is a structured system analysis and design method. Next is the system development cycle which is a sequence of rounds in the method of analysis and design of structured systems.

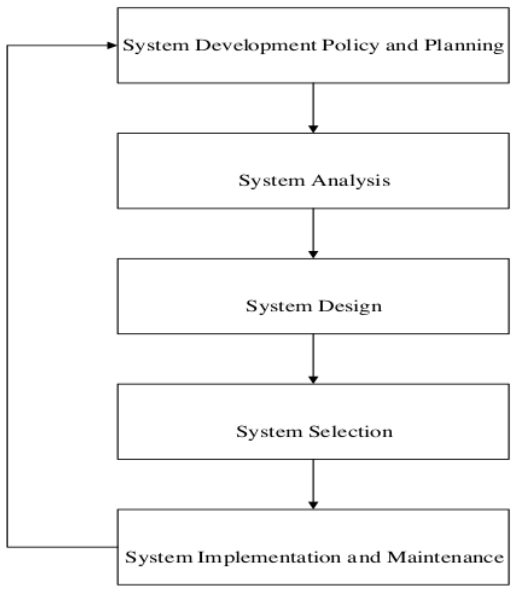

Figure 1. System development cycle

The system development approach used in this study, among others, is as follows.

a. Structured Approach, where the analysis and design process is carried out not only following the system development life cycle but also equipped with adequate tools and techniques to support the processes carried out in each phase of system development.
b. Top-down approach, where the system development is carried out starting from the formulation of information or system output to be produced, then collecting supporting data.
c. Modular approach, where the system development is done in stages module by module so that complex systems can still be completed within the limitations of existing resources

3.1. System Development Planning and Policy

The policy is a form of support from the authorities for the system development process that will be carried out. Without a system development policy, of course the system development process will be difficult to implement. After there is a system development policy then the system development planning is carried out to estimate the system development needs and assess the feasibility of the system. The feasibility assessment covers technical, economic, operational, schedule and legal feasibility

3.2 System Analysis

At this stage various weaknesses and needs of the running system will be explored. This stage becomes important because the results of this stage will be used as a basis for determining various things in the next stage.

3.3.Design System

After the analysis phase has been completed, the next stage carried out is the design phase which covers all components of the information system. The results of this stage are intended to answer all forms of problems identified in the analysis phase.

3.4.System selection

This stage is intended to determine the choice of various alternative choices available at the design stage. The system components and forms that are most suitable for application in a system are determined at this stage.

3.5. System Implementation and Maintenance

This stage is the stage where the system is implemented, operated and maintained so that it can operate in accordance with user expectations.

4. RESULTS AND DISCUSSION

Usecase Diagram Design

Design a user diagram for students and lecturers. there are 2 users, namely students and admin

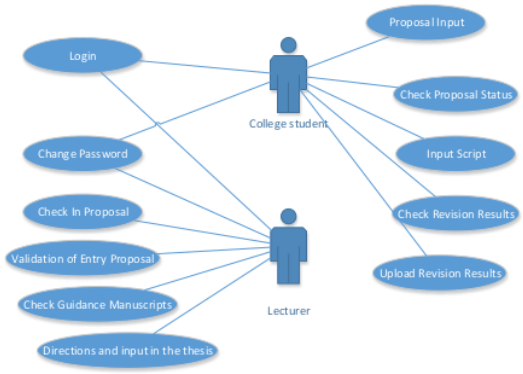

Figure 2. Use Case diagram

Display Output Application

After the application is successfully built, then it is time to test the application, whether the application is able to run well on smartphones. Here are the results of testing using the user as a student.

1. Login Display Next is the login screen, if the user is a student then enter a username like login at SISKA

Figure 3 Login Menu

2. After the next stage of the login process for the lecturer there is a menu as follows

Figure 4 .Lecturer Menu Display

3. After the next stage of the login process for the studens there is a menu as follows

Figure 5. Student menu display

4. Following is the appearance generated after the student has logged in and selected the proposal upload menu

Figure 6. Display Proposal upload Menu

The application can be downloaded at PlayStore with the same login and password menu as students have used so far in using web-based siska

5. CONCLUSIONS

With the Android-based Academic Information System can increase the functionality of the academic system application on mobile devices. Important information relating to the guidance process can be known directly with the notification or notification feature between lecturers and students. Android-based guidance application provides a new look that is more user friendly, easy to use, and easily accessed using a smartphone. The application can also run well as expected. This application can still be developed into more complex applications, for example by adding other features that can make it easier for users to obtain information

REFERENCES

[1] M. Iqbal, Sigit Darmadi, "Implementation and Analysis of Fingerprint Biometric System Authentication Performance", http://telecom.ee.itb.ac.id/~sigit/makalah%20Iqbal%20(TSSA%202005).pdf

[2] Ahmad Hidayanto, et al. "Determination of Human Face Region on Color Image Based on Skin Color Using the Template Matching Method", Journal of Electrical Technology. Vol. 5 No. 2, 2006.

[3] Andika Budi Pratama, "Point Minutiae Fingerprint Verification in Visum Et Repertum (VER) Using K-Means Clustering", UB Journal of Computer Science, Vol. XX No. XX, ISSN 2008.

[4] Darma Putra, Biometrics System: Basic Concepts of Image Analysis Techniques, Andi Publisher, Jogjakarta, 2008

[5] Effendi Nazrul, "Detection of Pornography in Digital Images Using Image Processing and Artificial Neural

[6] Networks". http://rifqi.web.ugm.ac.id/wpcontent/D Detection% 20Pornography% 20On% 20Image% 20Digital.pdf

[7] Eli Yani, "Introduction to Artificial Neural Networks", http://trirezqiariantoro.files.wordpress.com/2007/05/jaringan_syaraf_tiruan.pdf, August 2009.

[8] Sachs Jonathan. "Digital Image Basics", http://www.dl-c.com/basics.pdf, August 2009.

[9] Sri Kusumadewi. Artificial Intelligence (Techniques and Their Application), Graha Ilmu, Yogjakarta, 2003.

[10] Wibowo, H., & Indriyani, F. (2018, October). K-Nearest Neighbor Method For Monitoring Of Production And Preservation Information (Treatment) Of Rubber Tree Plant. In *Prosiding International conference on Information Technology and Business (ICITB)* (pp. 29-44).

[11] Setiawan, M. (2017, October). Metode K-Means Untuk Sistem Informasi Pengelompokan Mahasiswa Baru Pada Perguruan Tinggi. In *Prosiding Seminar Nasional Darmajaya* (Vol. 1, No. 1, pp. 130-145).

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