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Validation Information System for Mobile-Based Proposal Seminar Registration

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Article Info	ABSTRACT
	The information systems study program at the Faculty of Science and Technology is one of the study programs at the State Islamic University of North Sumatra, Medan. As a study program in the field of computer technology, the information systems study program has an important role in efforts to develop knowledge in the field of computer technology as demanded by national digital literacy. There are several problems in the registration system for proposal seminars in the information systems study program at the Faculty of Science and Technology due to the lack of performance of the system. The purpose of this research is to build a mobile-based information system that can be used to validate the proposal seminar registration that has been conducted by students. The system development method used is waterfall, while in making a visual system design, the author uses UML (Unified Modeling Language). In developing the information system, the author uses Kodular tools and the Google Spreadsheet database. With this information system, it is hoped that it can assist students in registering for proposal seminars and assist study program admins in validating proposal seminar registrations that have been carried out by students easily and quickly via mobile android.

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1. INTRODUCTION

In order to support the national digital literacy program, the Information Systems (IS) study program at the State Islamic University of North Sumatra, Medan, needs to carry out digital transformation. This digital transformation includes the use of information and communication technology (ICT) as an educational and administrative medium, both in the teaching and learning process and processes related to student administration [1]. In the academic field, the IS study program has implemented digital transformation through an internet-based learning process or e-learning. Through this platform, students can access lecture materials, assignments, and interact with lecturers online. This allows flexibility in learning, accessing material from anywhere and anytime.

In addition, in the process of student administration services, the IS study program has also implemented online-based services through the study program website. One example of administrative services available is the registration and validation of proposal seminar registration. Students can register and upload proposals through this online platform, and the validation process is also carried out online. This makes it easier for students to carry out administrative processes without the need to physically come to campus.

In the Information Systems study program (IS Study Program) at the Faculty of Science and Technology, the proposal seminar registration system faces several problems caused by minimal system performance.

Therefore, it is necessary to develop a system capable of managing the computerized proposal registration process to increase efficiency and make it easier for registration officers to record student data. Based on the results of observations, it was found that the SI Study Program website has provided a proposal seminar registration feature, but uses Google Form as a medium for filling in data. This requires registration officers to collect data manually and validate files separately, resulting in double work in the validation process and potentially a waste of time and the risk of losing files that have been previously collected. To overcome these weaknesses, an information system will be developed that minimizes double work and makes it easier for students and registration officers to collect and validate proposal seminar registration data. The information system that will be developed will enable students to upload all the files needed as a requirement to register for a proposal seminar through the system that has been provided. After uploading the file, students will wait for validation results and confirmation from the registration officer through the system. The registration officer only needs to validate and confirm the requirements that have been uploaded by students through the system.

The information system is data that is collected, grouped and processed in such a way that it becomes a single unit of information that is interrelated and mutually supportive so that it becomes valuable information for those who receive it [2]. Proposal seminar is the stage after the proposals prepared by students have been completed and declared appropriate by the supervisor to be presented in the seminar. Usually the form of a feasible statement is signed on the research proposal approval sheet. The seminar proposal will be tested by several examiners [3]. Android is an operating system developed to be implemented on Linux-based mobile devices that includes an operating system, middleware and applications [4]. Kodular is an application that is a derivative of App Inventor. Like App Inventor, Kodular also uses a block approach in building applications, making it easier for users who are not familiar with the Java language or find it difficult to learn it [5]. UML is a visual language for modeling and communicating about a system using diagrams and supporting texts [6].

Thus, the development of this information system is expected to increase the effectiveness and efficiency of the proposal seminar registration process. Students will find it easier and faster to upload requirements files, while registration officers can validate and confirm requirements through the system more efficiently. As for the advantages of the Android system, currently the Android application has been widely used along with the ease of getting smartphone devices. Android is also an open source operating system so it is relatively easier to develop applications. The ease of developing software using Android is an advantage of the Android operating system [7].

2. RESEARCH METHODE

The method used in this research is in accordance with the stages contained in the waterfall model. Waterfall model The software development model introduced by Winston Royce in the 70s is a simple classic model with a linear system flow. The output from the previous stage is the input for the next stage [8]. This means that each stage in this method is carried out sequentially and continuously [9]. So if step one has not been done then it will not be able to do steps 2, 3 and so on [10].
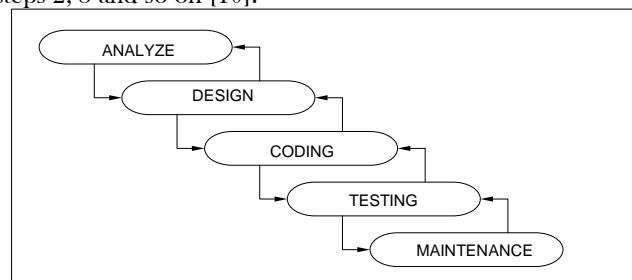

Figure 1. Waterfall Method Steps

The stages of system development:
1. *Analyze*
   The process in which need assistance is carried out is related to the design of a validation information system (SI-Vatar) for registration of android-based proposal seminars with details based on the results of discussions with the Information Systems study program section.
2. *Design*
   Designing a validation information system (SI-Vatar) for registration of android-based proposal seminars based on defining system requirements using UML consisting of Use Case Diagram, Sequence Diagram, Activity Diagram and Class Diagram.
3. *Coding*
   Design translation in the form of coding using codular applications. So that the application can be built as desired.

4. *Testing*
   Perform testing of information systems that have been built to see deficiencies or errors that occur.
5. *Maintenance*
   The stage where the maintenance process is carried out periodically after the system can be used.

3. RESULT AND ANALYSIS
3.1 Problem Analysis

At this stage, the author conducted an analysis of the current system regarding the registration process for proposal seminars at the Information Systems Study Program, Faculty of Science and Technology, State Islamic University of North Sumatra. So far, the registration process for thesis proposal seminars has been carried out using Google Forms. Meanwhile, the registration process for journal article seminars is still done manually. By doing this way, there are still some obstacles and problems that occur, including:

1. Students experience difficulties in seeing the status of registration that has been done.

2. Students cannot check files that have been uploaded.

3. It is difficult for study program admins to validate proposal seminar registrations that have been carried out by students

4. The study program admin has difficulty conveying information regarding registration status.

3.2 Analysis of System Requirements

Registration Validation Information System (SI-Vatar) Mobile-Based Proposal Seminar The UIN North Sumatra Information System Study Program is intended to assist registration officers and students in validating proposal seminar registration data. In its development, this system will be built with a variety of service features that students can use later. But basically, this system is intended to help students register for proposal seminars according to the final project chosen by students such as theses or journals by uploading the various requirements needed and provided by the system later. After these requirements are uploaded, with the existing data, the registration officer can easily validate the data and provide output, whether the data is accepted or not. After the data is received, the study program admin will also announce the schedule and upload a proposal seminar invitation letter which can be viewed and downloaded by students through this developed system.

3.3 System Design

1. Use Case Diagram

   Use case diagram are used to describe what interactions the user can make with the system [11]. The Registration Validation Information System (SI-Vatar) Proposal Seminar was built in a multi-user manner, so that this information system can be accessed by two different users, namely students and study program admin.
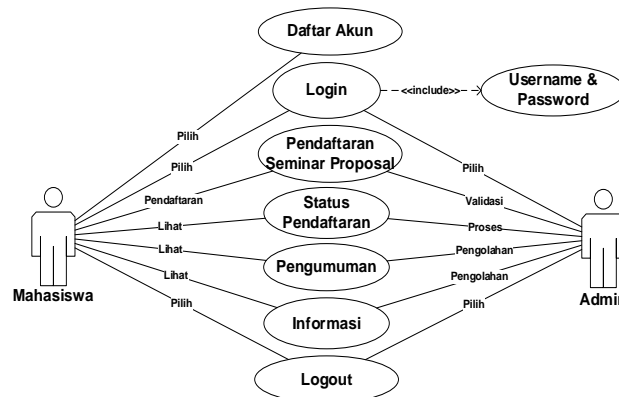

Figure 2. Use Case Diagram

2. Sequence Diagram

   Sequence Diagram describes how the user interacts with the information system to get the information needed [12]. Sequence diagram on the Registration Validation Information System (SI-Vatar) Proposal Seminars consist of student sequence diagrams and admin sequence diagram.
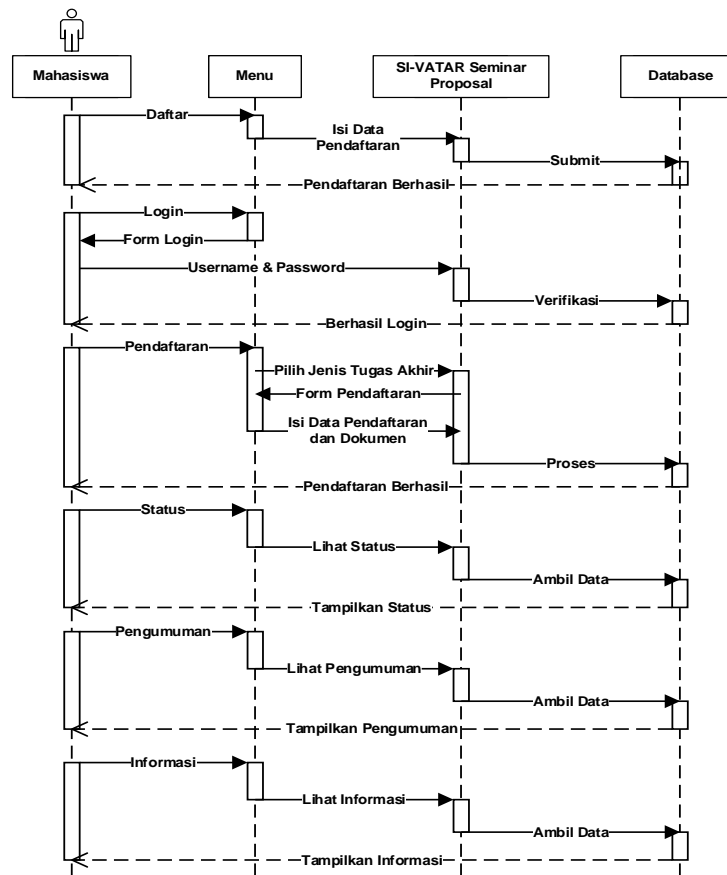
Figure 3. Sequence Diagram Mahasiswa

3. Activity Diagram

Activity diagrams or also called activity diagrams, are diagrams that describe the activities of a system, how the system performs an activity in carrying out certain functions [13]. Activity diagrams are divided into two, namely student activity diagrams and admin activity diagrams.
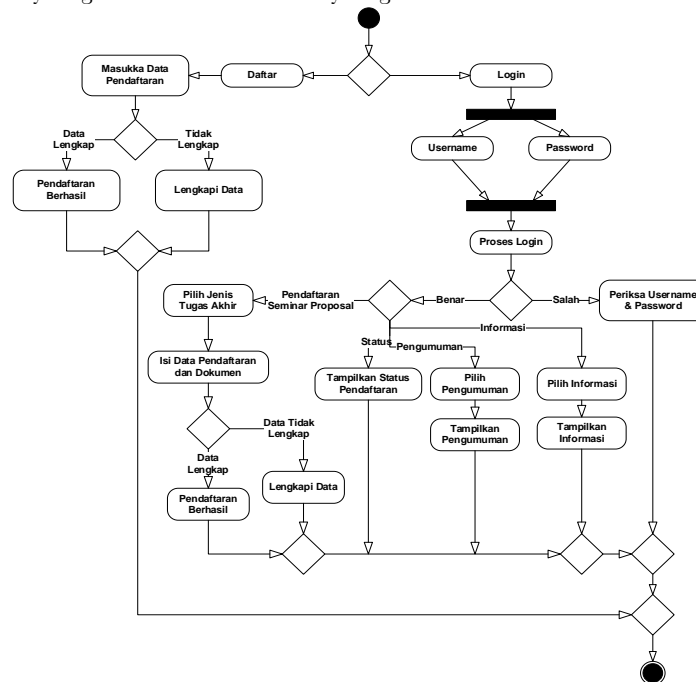

Figure 4. Student Activity Diagram

4. Class Diagram

Class Diagram is a diagram that describes the relationship of each class or table contained in the Registration Validation Information System database (SI-Vatar) Proposal Seminar [14]. Class or Registration Validation Information System (SI-Vatar) Proposal Seminar consists of admin tables, student tables, registration tables, announcement tables and information tables.
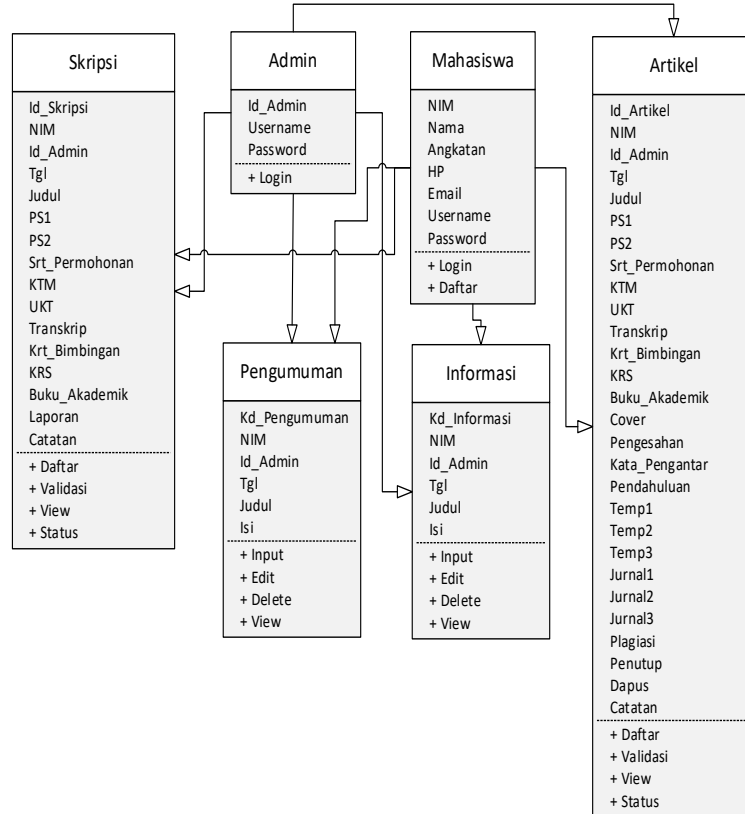

Figure 5. Class Diagram

3.4 System Implementation

The following shows the results of the Proposal Seminar Registration Validation Information System (SI-Vatar), the Proposal Seminar Registration Validation Information System (SI-Vatar) page display consists of two views, namely the student page view and the admin page view.
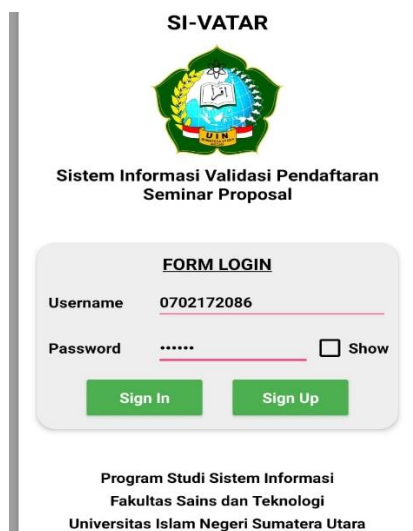

Figure 6. Student Login Page

Figure 7. Student Account Registration Page

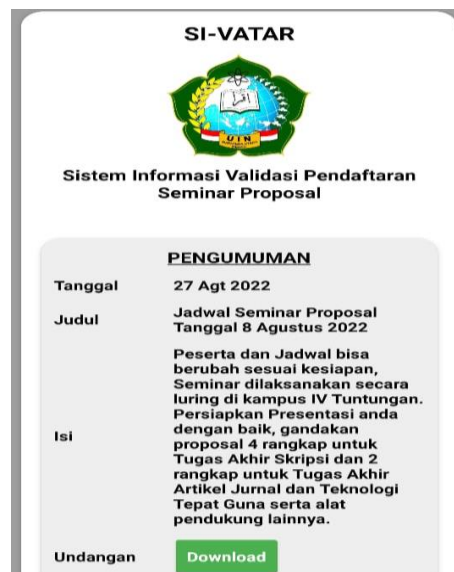Figure 8. Thesis Proposal Seminar Registration Page

Figure 9. Proposal Seminar Schedule Announcement Page

Figure 10. Information Page

The author has developed an Android-based information system that can assist students in registering for proposal seminars and assisting the Information Systems Study Program admin in validating the registration. This information system can be accessed by two users, namely students and admin.

On the student menu, students can register an account to get the username and password needed to log into the information system. After successfully logging in, students can choose various available menus, such as Seminar Proposals, Information, Announcements, and Status. On the Proposal Seminar menu, students can choose the type of final assignment, such as a thesis report or journal article, and register for a proposal seminar by inputting data and uploading the required documents. Students can also view announcements and information related to proposal seminars submitted by study program admins, as well as view the status of registrations that have been carried out.

On the admin menu, the admin can login to the information system using the specified username and password. After successfully logging in, the admin can select the registration list menu, announcements, and information. On the registration dan list menu, the admin can choose to register for a seminar proposal that has been carried out by students. The admin can check the data and registration requirements documents that have been

uploaded by students, and change the registration status according to the decision that has been taken. Admins can also process announcement data and information, including input, edit, and delete, as well as send announcements to student.

With this information system, it is hoped that the proposal seminar registration process will become more efficient and organized, as well as make it easier for students and study program admins to carry out tasks related to proposal seminar registration and validation.

4. CONCLUSSION

After conducting this research, the authors draw conclusions from the research that has been conducted regarding the Registration Validation Information System (SI-VATAR) for Mobile-Based Proposal Seminars, namely the information system that has been built can make it easier for students to register and obtain information about proposal seminar activities via smartphone android. The information system that has been built can help the information system study program admin in viewing information and validating Android smartphone proposal seminar registration. The information system that has been built can replace the manual seminar proposal registration system with information technology-based proposal seminar registration via an Android smartphone. The information system that has been built has been adapted to the specifications of the Android smartphone used by most people, so that it can avoid problems during the installation and use of the system.

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