



Development of Online Academic Portal System Android Based on National University

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ABSTRACT

Online academic portal is a system of information section in every tertiary institution. Various academic information ranging from displaying all student information which includes academic activities of students, lecturers and administrative staff. However, the online academic portal system at national universities is still not effective in using web-based services. Therefore, the aim of the researchers is to design an Android-based national university academic portal system so that it can help users / students access online academic portals anywhere without having to open the National University web. Application trial results can display all academic information data with 100% accuracy. In developing the national university's academic portal system, researchers used the waterfall method which is a mature method for researching the development of a system, so that many researchers use this method for research. Then this application is designed using the PHP programming language, PostgreSQL and android studio, this research methodology uses the waterfall method which has several stages of research namely data collection, literature study, application creation, system testing. The results of this study are Android-based online academic portal systems. This research methodology uses the waterfall method which has several stages of research namely data collection, literature study, application making, system testing. The results of this study are Android-based online academic portal systems. This research methodology uses the waterfall method which has several stages of research namely data collection, literature study, application making, system testing. The results of this study are Android-based online academic portal systems.

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1. Introduction

The development of technology in the current era is increasingly rapid where currently humans are required to make various kinds of information technology accurately, one of which is the online academic portal of the National University system which is part of all academic information to find out activities during the lecture process, such as academic profiles or in the presentation of academic information quickly and accurately. Now the problem being faced by national universities is the management of academic portal activities at the National University still using web-based services. National University as the oldest private campus in the capital city of Jakarta should be supposed to implement academic activities based on mobile applications in the form of an android-based academic information portal system. Android is a mobile platform that is able to directly communicate with various database servers, so that in its development many data-based applications have been developed that are developed on this platform in accordance with the Android-based academic information portal system which can help students make it easier to open academic information systems anywhere without must open the national University web portal. The online academic portal



application is expected to run well according to what is expected by the National University academic community which displays all student information including academic activities of students, lecturers and administrative staff in a mobile manner. so that in its development many emerging data-based applications developed on this platform are in accordance with the Android-based academic information portal system which can help students make it easier to open academic information systems anywhere without having to open a national University web portal. The online academic portal application is expected to run well according to what is expected by the National University academic community which displays all student information including academic activities of students, lecturers and administrative staff in a mobile manner. so that in its development many emerging data-based applications developed on this platform are in accordance with the Android-based academic information portal system which can help students make it easier to open academic information systems anywhere without having to open a national University web portal. The online academic portal application is expected to run well according to what is expected by the National University academic community which displays all student information including academic activities of students, lecturers and administrative staff in a mobile manner.

In this section Several previous researchers have conducted similar research related to this system on campus which has also been developed including research by: Dedy Setiawan, Tri Suratno and Lutfi (2018) This research is to analyze, design and design an Android-based academic information system. In research on the development of this system using the Java programming language, Java programming is used to build android-based applications, while for the information system database researchers use MySQL [1].

Furthermore Irfan Sudahri Damani, researchers Build Online Academic Applications for facilities at AMIK Tunas Bangsa Pematangsiantar Online [2].

then Recky T. Djaelangara, Rizal Sengkey, ST., MT, Octavian A. LA, ST ., MTI. (2015) Web-making research in high school using the Waterfall methodology as research [3].

Next research is Jony (2015) Android Based Academic Information Application. This study designed an android-based academic information application to facilitate students in time and distance limitations via handheld smartphone [4].

Further research Riska Nurtantyo Sarbini, Dian Efytra Yuliana, Diah Arie WK (2018) DESIGN ANDROID BASED ACADEMIC INFORMATION SYSTEM was designed with the programming language java, android studio, and mySQL [5].

Based on the results of several studies in several related journals, which become a reference in making this online academic portal system, it can be concluded that the development of an android-based academic portal system at the National University is needed in universities to find out information sharing of academic processes at the National University and help students / I to get information quickly and can access anywhere without having to open the National University website.

2. Research Methods

In developing the National University's online academic portal system, researchers used the Waterfall method approach to design an Android-based online academic portal information system. The Waterfall method is a sequential system development method, in which the process is seen flowing down through the stages of data collection, literature study, application making, and system testing. so that many researchers use this method for the development of a system, the following can be seen in the picture stages of system development using the waterfall method below:

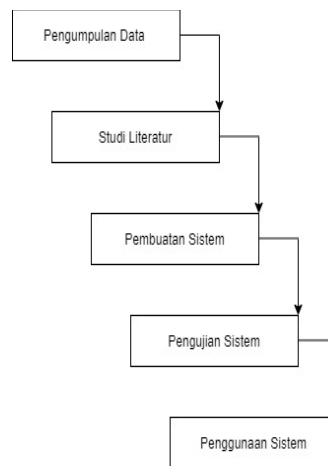


Fig 1. Waterfall method

In Figure 1 above are the stages or paths of the Waterfall model used in the study, these stages start as follows:

- a. Data collection
The stage to be carried out in data collection is the discussion and observation stage
- b. Study of literature
The literature study stage is needed for a deeper understanding and arrangement of components to design an application such as hardware and software as shown in the table below:

Table 1

Software and Hardware Specifications	
Software	hardware
Android studio	Asus Tuf Gaming
Xampp	AMD Ryzen 5
PoshgreSQL	Ram 8 Gb
Composer	

- c. System making
The stage of making an android based online academic portal application system uses php programming language and android studio software for its android application, for application design using adobe XD CC.
- d. System Testing
The testing phase of the application, where looking for systems that have bugs
- e. System usage
The use of a system where the system has been tested for any bugs or errors that exist in the system.

2.1 Use case diagrams

Use case diagrams are designed to find out who the actors are outside the system. This use case shows the function of each actor how the system communicates well and knows how the system works. At this stage the researchers only focus on the side of students in accordance with the online academic portal application of the national university system.

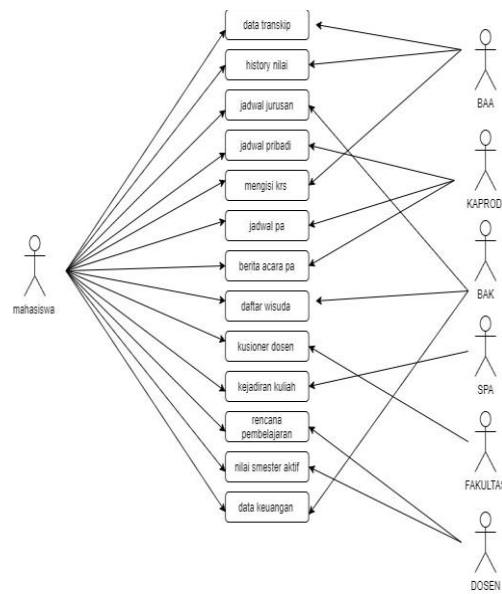


Fig 2. Use Case Diagrams

2.2. Activity Diagram Running

From the use case diagram above, the redesigned activity diagram design runs to project communication between user / student and a system on the National University academic portal. Figure 3 is a walking activity diagram that has been designed consisting of login, transcript data check, value history, department schedule, personal schedule, KRS filling, PA schedule, PA minutes, graduation list, lecturer questionnaire, lecture attendance, lesson plan, active semester values and financial data.

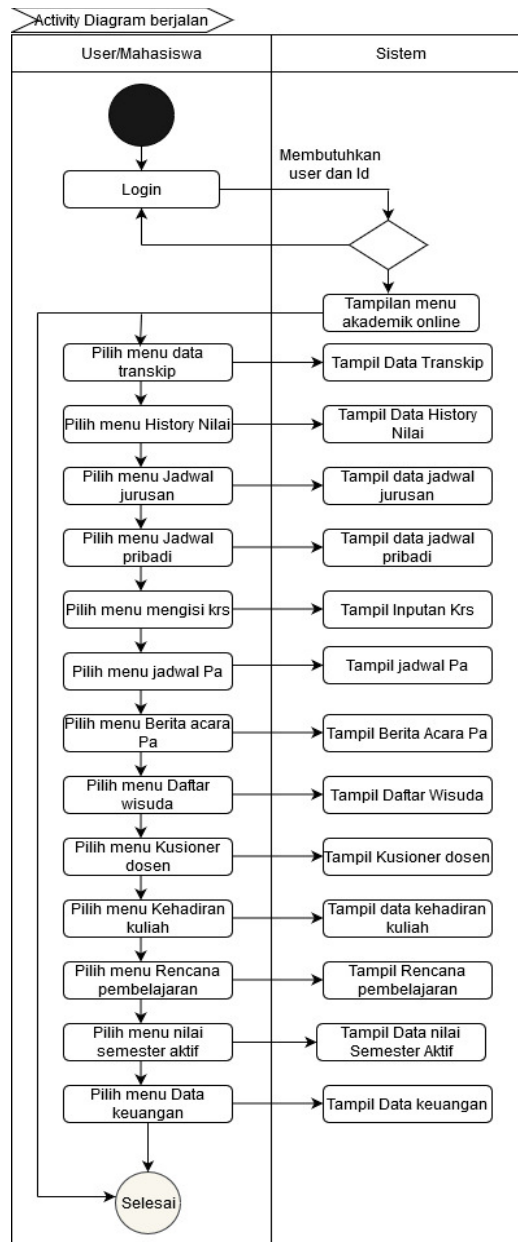


Fig 3. Activity Diagram Running

2.3. System Flowchart

Following is the proposed flowchart in designing this system can be seen in the picture below:

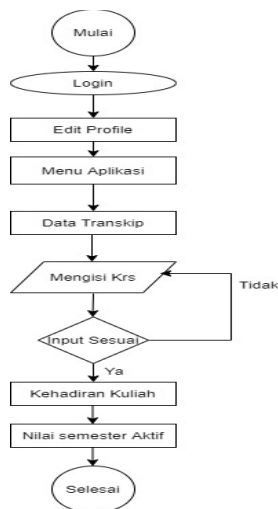


Fig 4. System Flowchart

3. Results and Discussion

3.1. Implementation

Following are the results of the implementation of the Android-based online academic portal application that has been designed. The following description is below:



Fig 5. The initial display opens the application

Figure 5 is the initial appearance when opening an online academic portal application

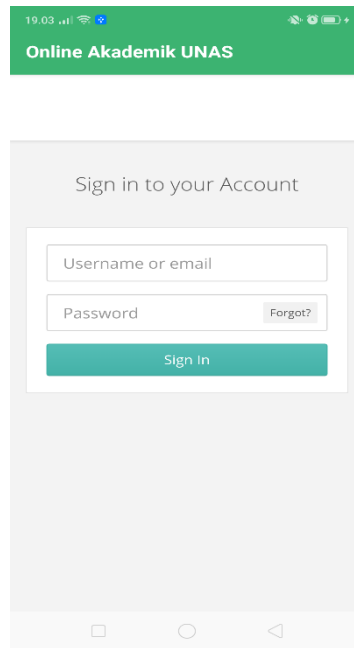


Fig 6. Display login application

Figure 6 is the initial display with the login command to enter the user name and password

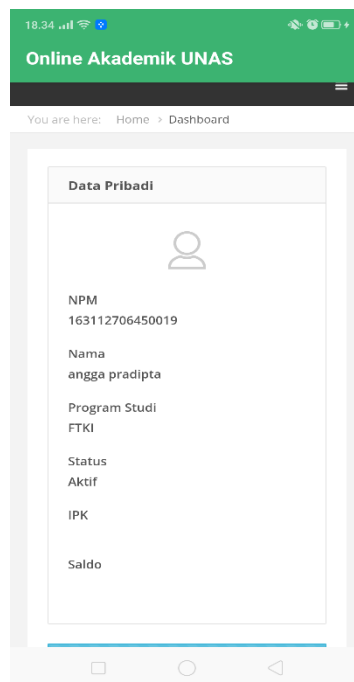


Figure 7. Profile display

Figure 7 is the profile menu display

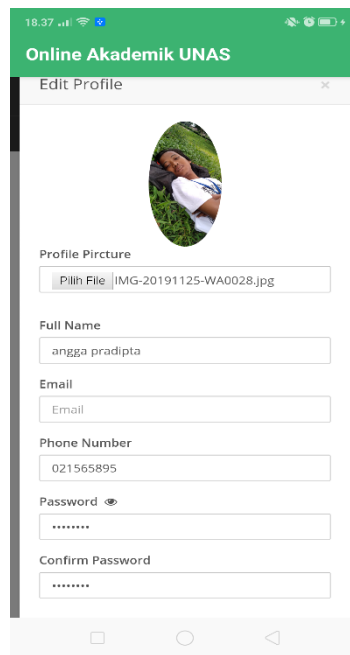


Fig 8. Display Change Profile

In the picture above is a display if you want to change the profile, in this development the profile can be changed by changing the name and photo.

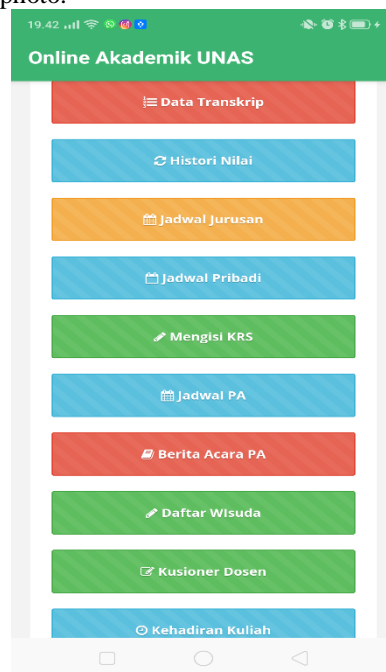


Fig 9. Menu Display

Figure 9 is an android-based academic online portal menu, where this menu is below the profile and can be scrolled down there are menus of student academic services.

3.2. Test result

Following table of application test results on an android smartphone:

Table 2
Trial results

No	Tested menu	Was successful	Failed	Ket
1	Login	√		Valid
2	Edit Profile	√		Valid
3	Transcript Data	√		Valid
4	Value history	√		Valid
5	Majors schedule	√		Valid
6	Personal schedule	√		Valid
7	Filling in krs	√		Valid
8	PA Schedule	√		Valid
9	PA minutes	√		Valid
10	Graduation List	√		Valid
11	Lecturer questionnaire	√		Valid
12	College attendance	√		Valid
13	R. Learning	√		Valid
14	N. active semester	√		Valid
15	Financial data	√		Valid

4. Conclusion

Based on the results of the research and testing phase above it can be concluded that:

- This Android-based online academic portal system application that has been designed can accurately store academic data of national university students.
- This android based online academic portal system application can also help students access academic portals anywhere quickly, accurately using an android mobile phone while they are within the reach of the internet network. after the elaboration results above the researcher gives advice to a number of parties involved in the application of this online academic portal system to be applied and can be used in the academic process at a national university such as adding a notification to the application so students know about the academic information related to their students.

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