

# Mobile-based Assignment Reminder Application for Students and Lecturers

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## ABSTRACT

This research is motivated by the large number of student activities that sometimes make students forget or overlook the activities they have to do on time. One of the activities that sometimes forget or even get overlooked is assignments. Assignments are activities carried out by a group of people in carrying out learning activities. The purpose of this study is to design an android-based task reminder application that can remind students about lecture assignments, be able to remember students about the deadline for assignment collection, and other information regarding lecture activities. The application design method used is the waterfall method. Research This study was tested using white-box and black-box methods. The test results show that the application is correct, has no errors in terms of logic and function, and can functionally produce the expected output.

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## 1. INTRODUCTION

Duties play an important role in teaching and learning methods because from the assignment students can hone the knowledge they already have as well as a measure of student intelligence. In everyday life, students generally find it difficult sometimes even some people forget to organize and keep their daily activities, especially they often miss remembering assignments because of the many activities, therefore an application is needed that can help the student agenda as well as remind the student. wherever and whenever.

Several studies have been conducted regarding the creation of reminder applications. Some have been done based on case studies [1] or not. The lecture assistant application for students based on Android is made to facilitate learning at STMIK Banjarbaru [2]. The e-reminder application has also been created to facilitate campus academic activities at UIN SUSKA [3]. A lecture reminder model or prototype has also been made in the form of an alarm using an Arduino microcontroller installed in the UKM room [4].

Mobile assistant information system for students majoring in Android-based Information Systems at the Mobile assistant information system for students majoring in Android-based Information Systems at the STMIK Indonesian Padang [5]. Android application to organize personal lecture agenda for students [6].

Making a messenger application for Brawijaya University students using the Firebase platform [7]. Academic activity reminder for lecturers using JSON [8]. Design [9], [10] and a lecture reminder application based on Android [11], [12]. A reminder information system for scheduling a website-based final exam for the Informatics department at the Yogyakarta University of Technology [13].

The application made does not discuss feature selection such as feature selection used for prediction [14]. The purpose of this research is to create an Android-based reminder application. This application is expected to make it easier for lecturers to make assignment reminders to students.

## 2. RESEARCH METHOD

The data used in this research are lecturers, students, subjects, and classrooms. The data comes from the Department of Informatics, Harapan Bersama Polytechnic. This study used the waterfall development method. The waterfall model provides an ordered life-flow approach from analysis, design, coding and testing [15]. The following are the stages of the research flow:

1. Identification of problems  
The problem in this study is that there are still many people who have not received information and have difficulty obtaining information related to learning activities such as assignments.
2. System requirements  
This analysis is needed in the design of a task reminder application that is made, with the aim that the system can achieve the expected goals. The system analysis is expected to be able to run with the following wishes: (1) the application can display information on all student activities and remind students about assignments, (2) the application can provide notifications when there are new assignments.
3. Collecting data  
Data collection in this study was conducted using two existing methods, namely the method of observation and interviews. Interviews were conducted with students with a question and answer session with the speakers, about activities and also lecture information, whether they got the information on campus.
4. Design  
System design made with UML modeling. The data that has been collected at the problem identification stage, system requirements, and data collection are collected and recapitulated to produce applications that suit the system's requirements. Design making is done by describing the application design that will be made, starting from the login view, my schedule, tasks, reminders, and profile display activities using Photoshop. Then also make the materials needed by the application such as example application icons that will be created.
5. Implementation  
At this stage, a system is created per section, such as the application menu, activity profiles, each student's profile, and user profiles. The tools used at this stage are android studio. At this stage, adjustments are also made to the modules that have been made.
6. Testing  
At this stage, testing is carried out, this is done to find out whether the application made is appropriate or there are still errors. At this stage, testing is carried out using the White Box and Black Box system testing methods.

## 3. RESULTS AND DISCUSSION

The application has been completed. Figure 1 displays the login page. On this page, users are required to log in for the first time using it. to log in, the user uses the registered email and password.

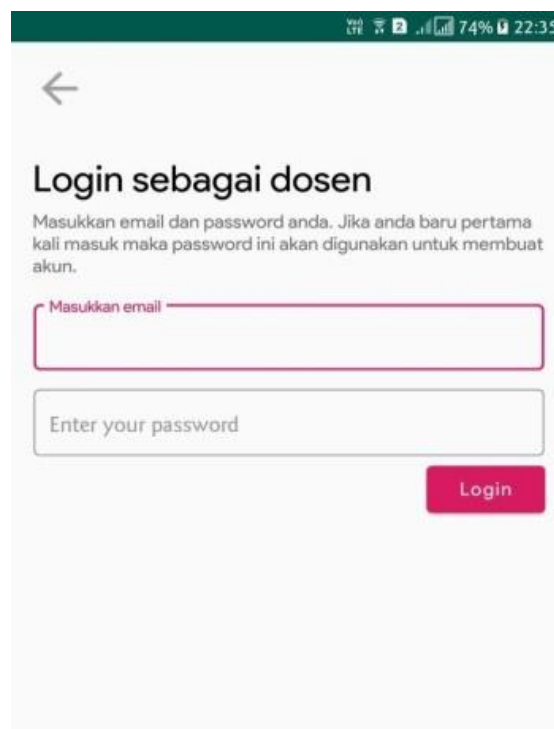


Figure 1. Login menu

The time setting is shown in Figure 2. On the menu, users can set reminders based on the day, date, and time.

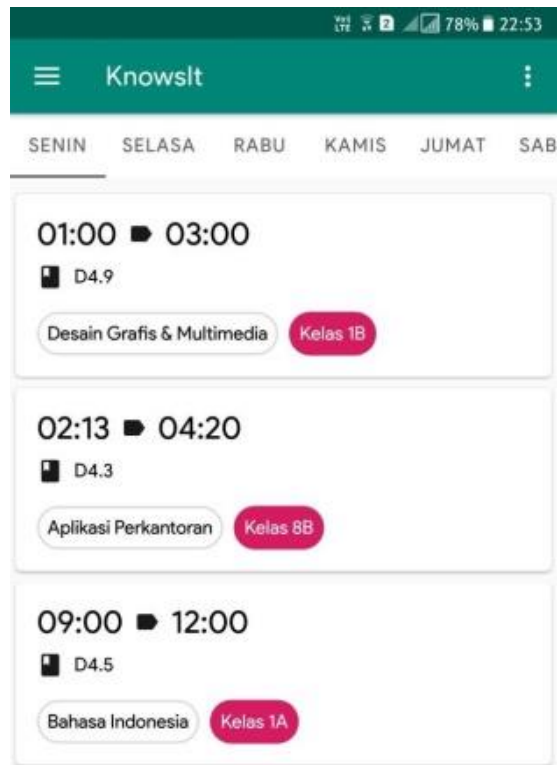


Figure 2. Time reminder setting

Figure 3 is a menu for writing reminders. Assignment reminders are made by the lecturer by selecting the class to be reminded.



Figure 3. Task view

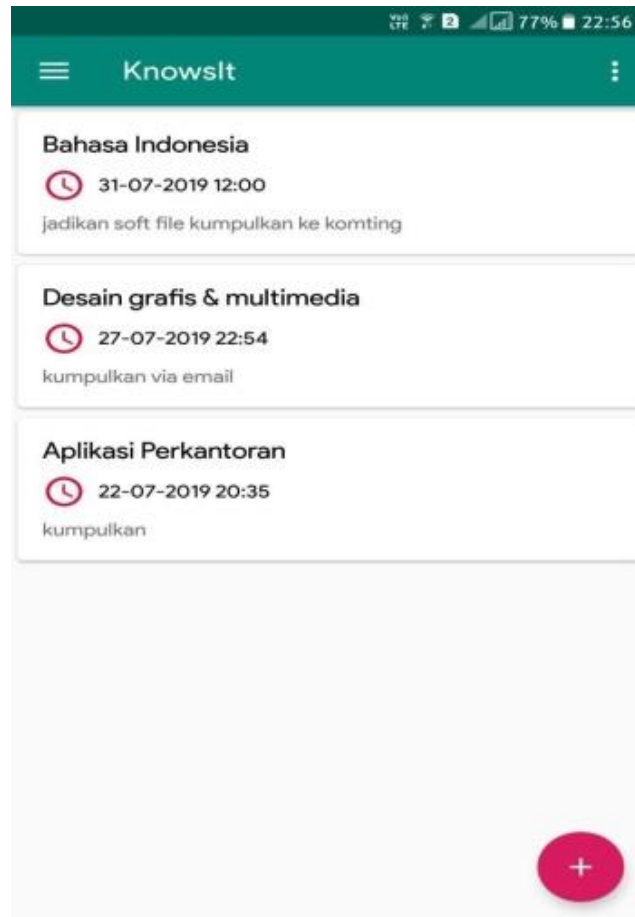


Figure 4. Reminder view

Figure 4 is a page that displays reminders made by lecturers. The image shows several assignment reminders for several courses.

Applications that have been made are tested using the white box and black-box testing methods. White-box testing is performed by executing all independent paths of the application at least once. The independent path of the program is determined through analysis of the flow chart notation and black-box testing is done by executing each menu in the application whether it is in accordance with your wishes.

The black-box test results show the application has been running according to its function. The test results are shown in Table 1.

Table 1. black-box testing result

Test item	Test method	Expected result	Result obtained	conclusion
Login menu	match username and password with database	success if it matches, and rejected if it doesn't	The user can log in when the username and password match and the user cannot enter when the username or password is wrong.	good
Time reminder	choose the day and set the time	can select the day and set the time	user can select day and time easily	good
Task menu	write down assignments and descriptions, then save	tasks can be saved	users can save tasks	good
Reminder menu	view task reminders and are clickable	the user is successfully viewing and clicking	the user is successfully viewing and clicking	good

The White-box testing is shown in Figure 5. Tests carried out using a path based on the program source code. It is known that the nodes in the flowgraph are 15, the edge is 15, the region is 2, and the predicate nodes are 1. After knowing the number of each, the independent paths in the function are 2. After knowing the number of independent paths, a comparison will be made using the relationship table between cyclomatic compatibility. It can be concluded that the application made has a low level of risk with a simple level of procedure because it has 2 independent paths.

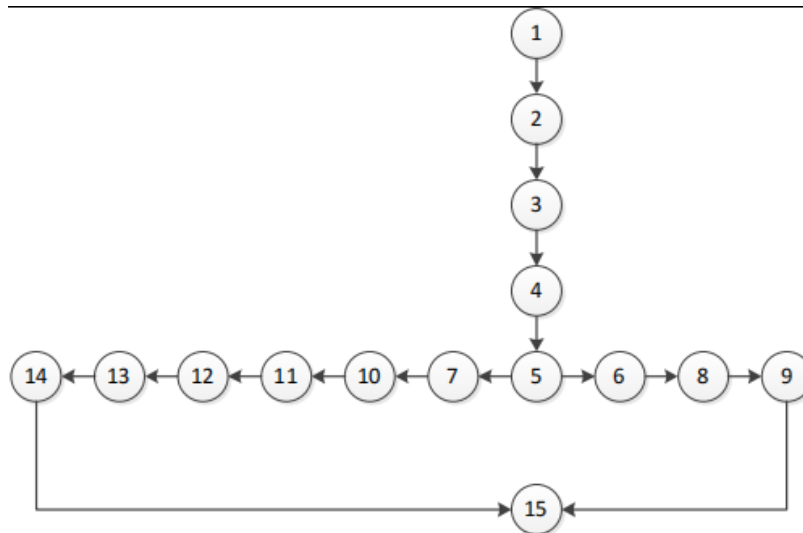


Figure 5. flowgraph tetsing

#### 4. CONCLUSION

The research objective is to design and create an Android-based task reminder application as a support tool that is able to remind students of assignments and the deadline for assignment submissions has been met. This is proven based on white-box and black-box testing. The results of white-box testing using the Cyclomatic Complexity (CC) method prove that the system is correct and has no errors both in terms of logic and function. The black-box test results prove that the application process is carried out correctly so that the functional system can produce the expected output.

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