

# Android-Based Practical Work Student Registration form Application System Design

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## A B S T R A C T

This system is designed to improve the efficiency of the attendance process through the use of information technology. The system allows students to register for attendance online through an android-based mobile application. Implementation involves developing an application with registration and attendance recording features, as well as student data management. Evaluation involves user feedback to improve performance and functionality. The support of PT PLN (Persero) is very important in the implementation of this system. The hope is that this online attendance system can improve the efficiency, accuracy, and reliability of the attendance process for practical work students at PT PLN (Persero) and provide guidance for other organizations in utilizing information technology.

## INTRODUCTION

In today's world of work, student interns play an important role in increasing productivity and making valuable contributions to the company. PT PLN (Persero) UP2D North Sumatra as a leading energy company in Indonesia, realizes the importance of student practical work in preparing them for the real world of work [1,2,3,4].

However, the practical work student registration process at PT PLN (Persero) UP2D North Sumatra is still done manually and often faces obstacles in terms of efficiency and reliability. This manual process involves physically filling out registration forms and manually collecting documents. In addition, the verification and attendance recording process is also done conventionally, which is prone to errors and time-consuming [5,6,7,8].

To overcome these challenges, it is necessary to develop an Android-based application that can facilitate the registration process of practical work students at PT PLN (Persero) UP2D North Sumatra. This application will speed up the registration process, reduce data input errors, and provide convenience in verification and attendance recording. By using advanced information technology, such as the Android platform and mobile applications, this application will provide an efficient and reliable solution in managing the practical work student registration process. In addition, this application will enhance the user experience through an intuitive interface and additional features that provide notifications and registration status checking [9,10,11,12,13].

It is hoped that by making this Android-based practical work student registration form application, PT PLN (Persero) UP2D North Sumatra will optimize the registration process and increase efficiency and reliability in preparing practical work students to become a competent workforce in the energy industry [14,15,16,17,18,19].

## METHOD

The operational objectives of this report are to conduct a needs analysis, design an intuitive user interface, develop an Android-based practical work student registration form application, conduct application testing and validation, officially launch the application, and evaluate the success of the application in improving the efficiency of the practical work student registration process at PT PLN (Persero) UP2D North Sumatra.

The data needed to create an Android-based practical work student registration form application at PT PLN (Persero) UP2D North Sumatra includes: Student Data, namely student personal information such as name, nim, study program, and contact required for the registration process. Practical Work Data: Information related to the place of practical work, the period of practical work, as well as the duties and responsibilities that must be carried out by students during practical work. Attendance Data: Information on student attendance during practical work which includes the date and time of entry, exit, and the number of hours worked.

### *Stages of Practical Work Implementation*

#### *Preparation Stage*

1. Meeting with related parties of PT PLN UP2D North Sumatra to understand the needs and requirements in the practical work registration process.
2. Identify the data requirements to be collected in the registration form, approval process, and other important aspects.
3. Identify features that must be included in the practical work registration form application, such as filling in personal data, uploading supporting documents, validating data, displaying registration status, and notifications.
4. Create a project plan that includes workflow, database structure, user interface design (UI/UX), and application functionality. Consider data security and privacy factors.
5. Determine the technology to be used, such as programming language (Java or Kotlin), development framework (e.g., Android Studio), and other supporting technologies (e.g., Firebase).
6. Form an app development team consisting of developers, user interface designers, and other team members.
7. Start by prototyping a simple app to test basic functionality and user interface.
8. Perform regular testing and debugging during the development stage to ensure the app is working properly.
9. Conduct limited user trials to test the app in a real environment and improve it based on their feedback.
10. Officially launch the practical work registration form application at PT PLN UP2D North Sumatra and conduct training for users.
11. Perform regular maintenance, including software updates, troubleshooting, and feature upgrades based on user feedback and changing needs.

#### *Implementation Stage*

1. Needs analysis: Identification of application needs and requirements.
2. User interface design: Create an intuitive user interface design.
3. Backend development: Build the application backend to manage the data.
4. Frontend development: Code Android-based applications using appropriate programming languages and technologies.
5. Integrate additional features: If necessary, integrate additional features such as document uploading or notifications.
6. Testing and debugging: Conduct thorough testing to identify and fix bugs.
7. User testing: Test the app with a limited group of users to get feedback.
8. Launch: Official release of the app with documentation and instructions for use.
9. Maintenance and upgrades: Perform regular maintenance and feature upgrades based on user feedback.

#### *Report Preparation Stage*

1. Data collection: Involves capturing information related to reliability, responsiveness, data security, and effectiveness of system usage. Furthermore, the system performance is evaluated based on the collected data.
2. Data analysis: Analyze the data to evaluate the success of the room monitoring system implementation. In this analysis, the strengths and weaknesses of the system will be identified, as well as recommendations for improvements that need to be made.

3. **Report Preparation:** In order to compile a research report, it will discuss in detail about the background, objectives, methodology, data analysis results, and discussion of the practical work student registration form at PT PLN UP2D Company based on Android. The report will provide a detailed explanation of all aspects related to the implementation of the system.
4. **Financial Report:** In the final stage, the input and feedback received will be integrated into the final report. The report will be finalized by ensuring that all relevant aspects have been covered and are in line with the research objectives.

#### *Data Collection Method*

1. **Observation:** This method involves direct observation of the practical work student registration process at PT PLN UP2D North Sumatra. Observations can be made to observe how the current registration process is carried out, how forms are given to students, and how the necessary data is collected.
2. **Interview:** In the interview method, researchers can interview staff or personnel involved in the practical work registration process at PT PLN UP2D North Sumatra. Interviews can be used to gain direct insight into the challenges and needs that exist in the current registration process, as well as get suggestions and input regarding the expected features in the new registration form application.
3. **Documentation study:** Researchers can collect and analyze documents related to practical work registration at PT PLN UP2D North Sumatra. Such documents may include existing registration forms, registration policies or guidelines, as well as other relevant documents that can provide further understanding of the ongoing registration process.
4. **Survey:** The survey method can be used to collect data from students or previous practical work participants at PT PLN UP2D North Sumatra. The survey can be in the form of a questionnaire containing structured or open-ended questions about their experience in practical work registration, difficulties encountered, and their suggestions for improvement of the registration system.
5. **Pilot testing:** Once the Android-based practical work student roster form application has been developed, a data collection method that can be used is pilot testing. This involves using the app by a small number of students to see how the app functions, identify problems or bugs, and get feedback and suggestions for improvement.

## RESULTS AND DISCUSSION

This application is used for practical work students especially at PLN UP2D Medan using the Android mobile platform device has specifications, menus, and how the application works, namely:

1. Runs in the Android 4.0 (Ice Cream Sandwich) operating system environment or above.
2. Applications with the main menu directly enter student data then press the "Register" button.

The following is a flowchart of the attendance work system for practical work students at PLN UP2D Medan.

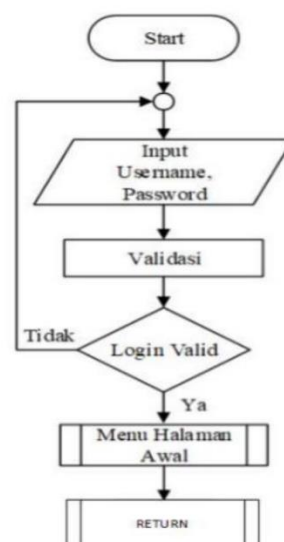


Figure 1. Flowchart of Student Attendance

Below is a picture of the Android-based application display menu for the attendance form of practical work students at PT PLN UP2D Medan.

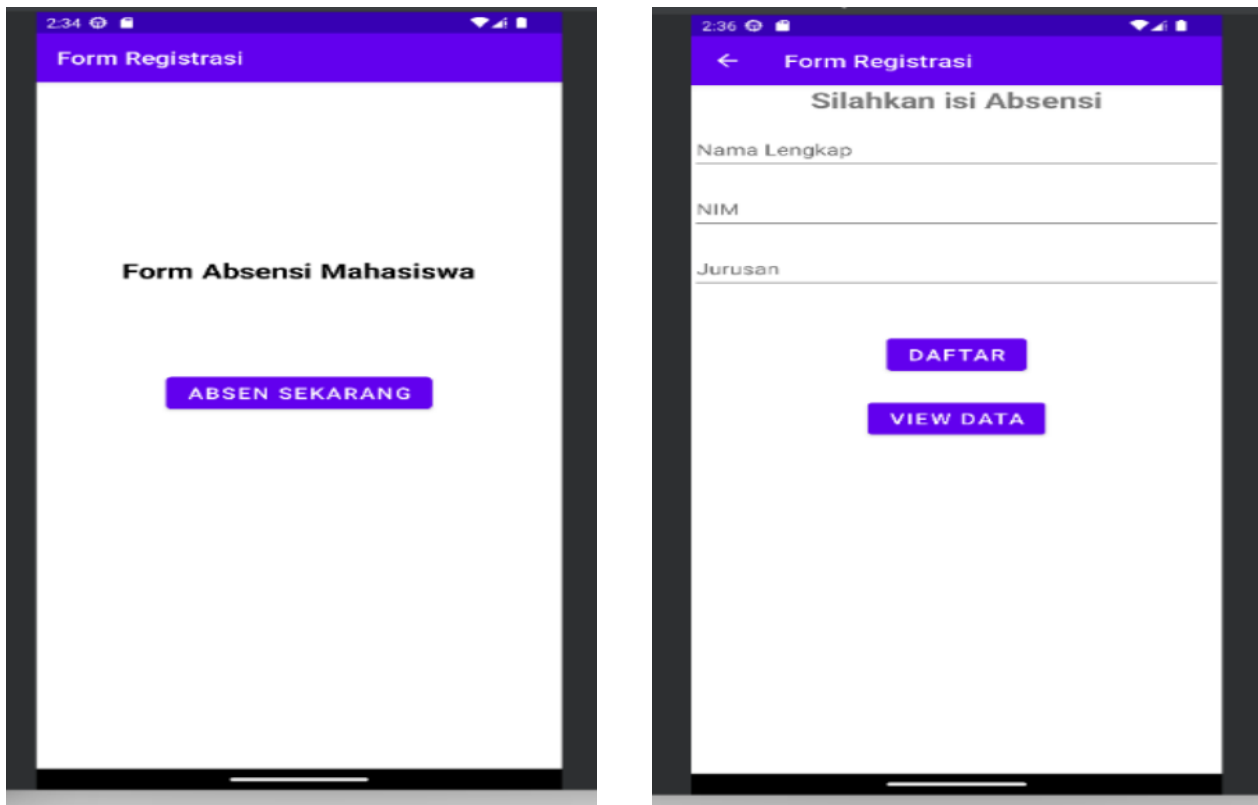


Figure 2. Main View and Filling View from Student

The results of designing a practical work student list application at PT PLN UP2D Medan using the Android platform in this study, namely: The main display menu is simple by pressing the blue button that will go to the display of filling out the form of practical worker students at PT PLN UP2D Medan. In the display of filling out the student form, after filling in all the required information, when pressing the 'REGISTER' button, the data of students working at PLN will be registered. 3. On the Student Form filling display, there is a 'VIEW DATA' button. If the form filling fails due to internet network disconnection, the data will be saved to the internal storage. When the internet network is active again, the stored data will automatically be sent to the main server, and the data in the internal storage will be deleted.

## CONCLUSION

Based on the report "Making Android-Based Practical Work Student Registration Form Application at PT PLN UP2D Medan", it can be concluded that the making of the application has been successfully carried out. This application facilitates the process of registering students for practical work at PT PLN UP2D Medan through the Android platform. This application provides features such as filling in personal data, uploading supporting documents, validating data, displaying registration status, notifications, and the ability to save data locally when the network is disconnected. The author hopes that for future research other methods will be used so that researchers know more about which method is more accurate

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