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Designing An Android Attendance Application For Employees Of The Sub-District KUA Putri Hijau North Bengkulu

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Abstract: This thesis aims to design an Android application specifically developed for attendance activities at the Kantor Urusan Agama (KUA) Putri Hijau District North Bengkulu, using the MIT App Inventor platform. This application is expected to be more efficient than the old application and can provide convenience for employees who want to run attendance and make it easier for the admin to recap attendance data. To achieve this research, researchers use the Prototype method with code block programming development in MIT App Inventor and use Googel maps assistance in validating attendance locations. In the implementation process, the author will focus on designing an interface that is simple and easy to understand, ensuring compatibility with Android devices, and integrating features that are relevant to the needs of Attendance and Licensing. The importance of creating an application that can be accessed without difficulty by users without a conventional programming background is a major concern. Therefore, this research will prioritize the use of visual programming provided by MIT Inventor, enabling application development without the need for in-depth knowledge in programming. The result of this research is an Android Attendance application design that can be used by Admin and Employees at the Office of Religious Affairs Putri Hijau District, North Bengkulu. This application is expected to provide benefits for KUA Admins and Employees in terms of reducing the number of employees.

Keywords: Prototype, Attendance, Office of Religious Affairs

Introduction

Currently, Android technology is developing rapidly and is very easily accepted by various levels of society and various professions. This success is due to its ease of use, unlimited availability in terms of time and space, and affordable price. In addition, Android-based applications are generally very compatible with Android technology itself. Innovative advancements are growing rapidly nowadays. Especially the increase in data innovation. This can be seen from the lifestyle of how Indonesian individuals in general continually incorporate innovation in doing daily exercises. But there are still few who utilise innovation to help their work or meet their needs at work. There are still work

packages that must be done by utilising technology such as android smartphones,

computers and others, but there are still many who use traditional things in doing work and gathering the necessary information. (Setiawan 2020).

With so many android smartphones today, it allows some companies to update their application systems where they use android smartphones. Because it is easier to operate such as in doing attendance anywhere, for example employees who work at the religious affairs office (KUA) so that the time used is not much wasted. Where in utilising an android smartphone is very simple, almost all levels of society have an android smartphone.(Husain, Prastian, and Ramadhan 2017)

The Religious Affairs Office (KUA) itself is an institution under the auspices of the Ministry of Religion of the Republic of Indonesia and carries out functions based on government regulations, both the Marriage Law and the Ministry of Religion Regulations. This office is also one of the marriage registration teachers responsible for registering and managing marriages as a whole. KUA is an organisation that is sincere in developing the potential of regulatory faculties in the field of information planning and authoritative administration that is effective in terms of accuracy, correctness and significance, especially in marriage registration." (Almuttaqin Givo 2016).

The author conducted this research because as is happening now at the religious affairs office (KUA) of Putri Hijau sub-district, North Bengkulu where they are still doing attendance manually for honorary employees and for employees who are already civil servants (Pegawai Negri Sipil) there is already an application, even though there already has a good network but every time the attendance schedule comes in and out there is often a disturbance that causes inability to attend, The researcher designed the application intends to shorten in terms of attendance and can focus on the Putri Hijau KUA, therefore the religious affairs office (KUA) of Putri Hijau sub-district, North Bengkulu really needs an android attendance application system in order to make it easier for employees to take attendance and make it easier for the admin of the religious affairs office (KUA) to recap attendance data and not take a long time.

Seeing the above problems, the authors conducted research to design an Android attendance application, in reducing fraud in terms of attendance the authors used a GPS-based location validation system, as well as making it easier for admins to recap data, and minimising loss of attendance data. In connection with the background of the above problems, the authors want to present a scientific paper entitled: Design of Android Attendance Application for KUA Employees of Putri Hijau District, North Bengkulu.

Methodology

1. System Development Method

In this study the authors used the Prototype method, The prototyping method is an approach in framework advancement where an introductory event or "model" of the framework is built, tried, and refined through several cycles based on client criticism. The most important reason for this strategy is to recognise and correct mistakes or shortcomings in the early stages of progress, so that the final item is more in line with user needs. (Pressman and Maxim 2020).

2. The stages of the prototype method include:

- a. Identification of needs, namely determining the basic needs and functionality of the system.
- b. Initial Prototype Development, which is creating an initial version of the system that includes the main features.
- c. Prototype Evaluation, i.e. testing the prototype with users and collecting feedback.
- d. Prototype Refinement, i.e. using feedback to refine and improve the prototype.
- e. Repetition, i.e. repeating the development and evaluation cycle until the prototype meets user needs.:



Figure 1 Prototype method scheme

3. Needs Analysis

In the needs analysis, researchers need information about the current system by conducting data collection techniques, namely interviews and observations at the Putri Hijau Religious Affairs Office in North Bengkulu and conducting literature studies on related journals. The steps taken in identifying needs analysis are described as follows:

a. Observation

Research observation is a data collection method that involves direct observation of the subject or situation under study. Here the researcher makes a direct visit and meets with those related to the Putri Hijau Religious Affairs Office, North Bengkulu.

b. Interview

Research interviews are one method of collecting qualitative information that involves direct interaction between the researcher and the source to be researched. In interviews, researchers ask questions to research sources to understand their views, experiences, or points of view related to the research topic.

c. Literature study

Literature study is a data collection method that involves searching, selecting, and analysing literature relevant to the research topic. This research does not involve direct contact with the research subject, but rather focuses on analysing literature that has been published on the research topic. The purpose of literature study is to understand and gain an understanding of what has been published on the research topic. This helps researchers create a theoretical and contextual foundation.

4. System Design

In designing this application the author uses the UML (Unified Modelling Language) design model. as for the UML model that the author uses in designing the system is a use case diagram, activity diagram, class diagram, and squence diagram.

Use Case Diagram System

Use Case Diagrams are used to describe the relationships that occur between participants and activities on the system. Use Case Diagram in this design consists of two roles, namely user (Employee) and Admin.



Figure 2 Use Case Diagram of the System

Result and Discussion

1. App Design Results



Figure 4.1 MIT App Inventor Logo

The picture above is the open source software that researchers use in making applications. The download link for the Putri Hijau KUA Employee Attendance Application can be downloaded by scanning the QR below:



Figure 2 Barcode Link Download of the Putri Hijau KUA Attendance Application

2. Login Display



Figure 3 Application Icon on android page



Figure 4 Location Access Permission Page

When the user opens the Android Hanpone, there is an Attendance application shown in Figure 3, then proceed by clicking the permission button using location access when using the application as shown in Figure 5.



Figure 5 Login Page

When the user opens the application, the login page will appear, then the user can be directly asked to enter a username and password. After that, you can choose the Login button, forget your password, and the register button to register if you don't have an account.

2. Register Page Display

On this page the user is asked to fill in the name, NIP, Religion, Gender, Email, Password, and add a photo. Then two bottoms are available, namely save or return.



Figure 6 Register Page



Figure 7 Attendance Page

On this page the user can view his personal profile, and can do Attendance In and Attendance Out, there are also other buttons such as the Information button, Back and the settings button.

4. Information Display



Figure 8 Information Page

This page contains information in the form of images about KUA Putri Hijau North Bengkulu, and there are buttons, namely the image edit button, Add image, and the back button to return to the main menu.

5. Display Settings



Figure 9 Settings Page

On this page there are three buttons, namely the change personal data button to change user data, the absence recap button to recap absences, and the back button to return to the initial menu.

6. Personal Data Change Display

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Figure 10 Page Change Personal data

On this page the user will enter new personal data that includes, Name, NIP, Religion, Gender, Email, Password, and Add a New Profile Photo.

In addition there are three buttons, namely the save button, delete and back button to move to the settings menu.

Conclusion

From this research, the following conclusions can be drawn: (1) The design of the Android Attendance application for KUA Employees of Putri Hijau District, North Bengkulu using MIT Inventor is a positive step to get attendance quickly and precisely, especially at the Putri Hijau Religious Affairs Office, North Bengkulu. (2) By utilising the MIT Inventor platform, researchers can design GPS-based applications, and are easy to use and can be used to implement further researchers. (3) After Black Box testing of the prototype android attendance application for KUA employees in Putri Hijau District, North Bengkulu, there are 23 features contained in the application design. And in Usability Testing testing has also fulfilled the desired expenditure. It can be concluded that the application design has fulfilled the expected expenditure.

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