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PUSH NOTIFICATION TECHNOLOGY AS A SYSTEM ANDROID BASED STUDENT PRESENCE

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ABSTRACT

Knowing school academic information is important for parents of students to monitor their children's attendance during school hours, in this way parents will feel more comfortable when their children go to school and attend school hours. Many schools have not implemented a computerized student attendance system so that for attendance reports only monitoring is only the school, by using this presence system monitoring is not only the school but also involves the parents, guardians of students. With these students will be more disciplined. The application of this system based on android by utilizing push notification technology can be a solution in terms of notifying student presence information. This application is looking forward to providing student attendance information and sent to parents of parents via each smartphone automatically, with this it is hoped that it can increase parental supervision of their children.) where this method produces a design that is acceptable to consumers and can be developed easily.

INTRODUCTION

The rapid development of technology makes big changes in this world, where everything is competing to use information technology. In terms of the world of education, information technology is also involved. The use of information technology is not only complementary but is a necessity that can drive service quality and development for its users. Currently, many educational institutions implement a website-based academic management system. This academic system is usually often used by students to view information about academic information in their school, this system can also be seen by parents. However, the real-time attendance system has not been widely implemented. Knowing school academic information is important for parents of students to monitor their children's attendance during school hours, in this way parents will feel more comfortable when their children go to school and attend school hours.

Attendance or attendance card is a document that records the attendance hours of each employee in the company[1] From the perspective of the world of education, it turns out that there are still educational institutions, both formal and non-formal education institutions, which process data manually[2]. The manual attendance system is still ineffective and inefficient, so it can hinder the performance of teachers in knowing student attendance. Another obstacle is that communication and information between the

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school and the parents of students are difficult with a manual system. This can cause these students to lie to their parents[3]. In addition to current technology development schools, universities are widely used in providing information to students on their lecture systems using mobile applications as a medium for delivering information[4].

Push Notification is a service that is widely used for notification purposes via short messages on smartphones. With the Push Notification service, users can be helped in terms of brief notifications[5]. For example, it can provide notification if there is a low stock of raw goods, so that anticipatory action can be taken before the goods are completely depleted. The push notification technology used utilizes Firebase as a medium for delivering messages in the form of the latest stock to the user[6]. Android is an operating system that is open source[7]. The development of technology in cellular phones has now developed using the Android operating system technology. The number of Android users encourages application developers to create applications that are diverse and can be used on an Android smartphone[8]

Android was founded by a company called Android Inc. in Palo Alto of California, the USA in 2003 whose Founder is Andy Rubin[9]. The Android operating system is based on the Linux kernel. On top of the kernel, Android provides a set of libraries, such as database libraries and application runtime libraries[10].

METHOD

The The research method is a framework or a frame of mind to formulate an idea that is directed and related to the aims and objectives. In this study, researchers used qualitative methods, where the system development used the System Development Life Cycle (SDLC) development model which consisted of several stages. First Project Selection and Identification. This stage identifies the need for Information Systems for the development or improvement of a new system. Both Project Planning & Initialization. In this phase it is decided to determine the scope of the system to be proposed, including the specific Information System project plan, time plan and resource requirements. Third analysis, determining system requirements, studying the needs and structure of the relationship between these system requirements so that redundancy does not occur, generalizing initial design alternatives to suit needs, comparing these alternatives so that they are in accordance with costs, resources, and technical levels so that they are achieved. agreement for the Information System development process. Fourth, Logic Design, which is a description of system functions selected from system development in an independent analysis and computer platform, in this phase the conversion of alternative recommendations for Information Systems development solutions is carried out into logical and physical specifications. The five physical designs of the analysis team must determine: the programming language to be used, the database system, the file structure, the hardware and software platform, the operating system, and the network environment. Sixth Implementation. which is the implementation phase of the physical design that has been made. Seventh Maintenance (Maintenance).

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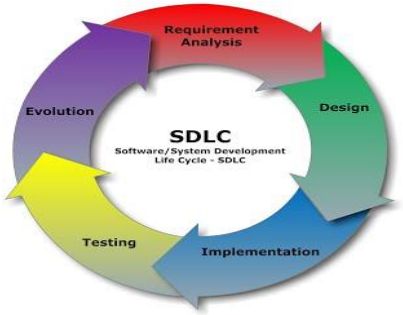

Image 1. System Development Life-Cycle

RESULT AND DISCUSSION

System Analysis

System analysis in this study found problems in each student attendance process who had not used a system with certain methods as a medium for delivering real-time attendance reports to each student's parents, the process was not yet effective so it could cause damage and loss of data that caused The BP / BK Coordinator has difficulty in recapitulating attendance reports. There were still high student absenteeism reports with negligent information, while reports from parents of students stated that students had left for school. The system flow in this study can be seen in the following figure:

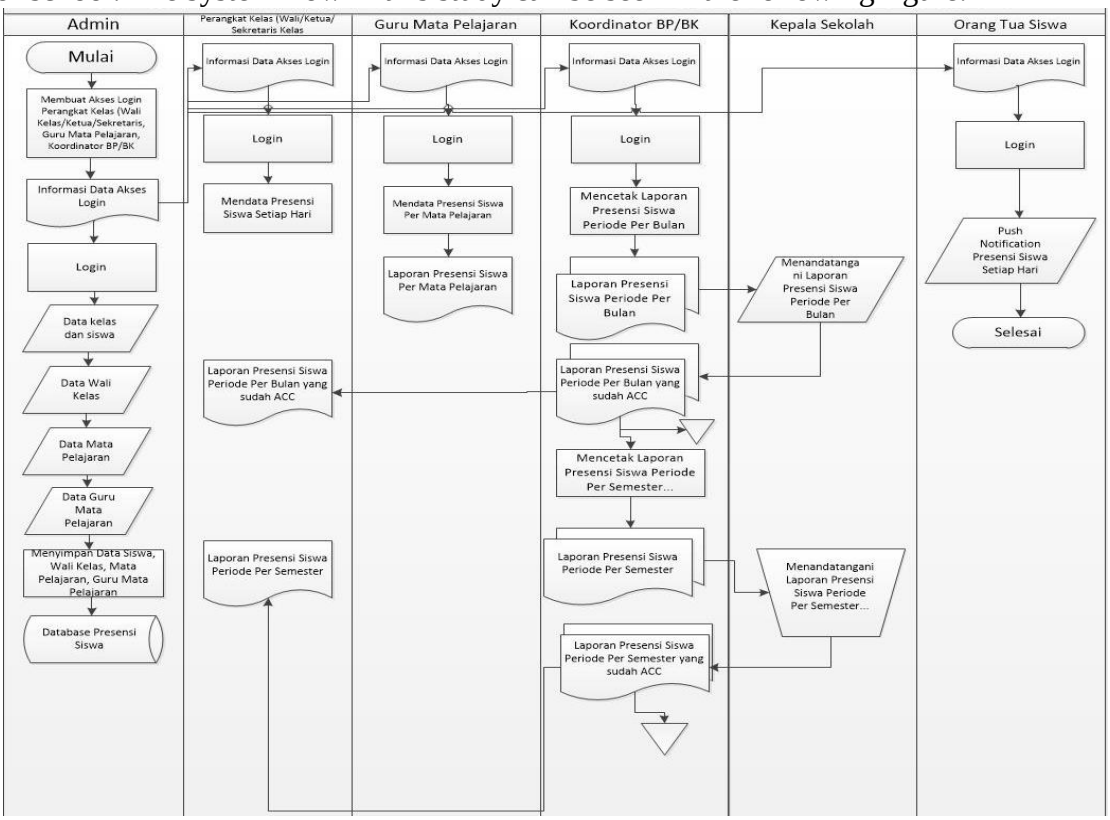

Image 2. System Information System Flow

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Design

Application design includes the design of the system description process which is described by modeling using Unified Modeling Language (UML). Unified Modeling Language (UML) is a visual modeling method used in the design and manufacture of object-oriented software. In this case, the modeling system is described by a use case diagram which can be seen in the following figure.

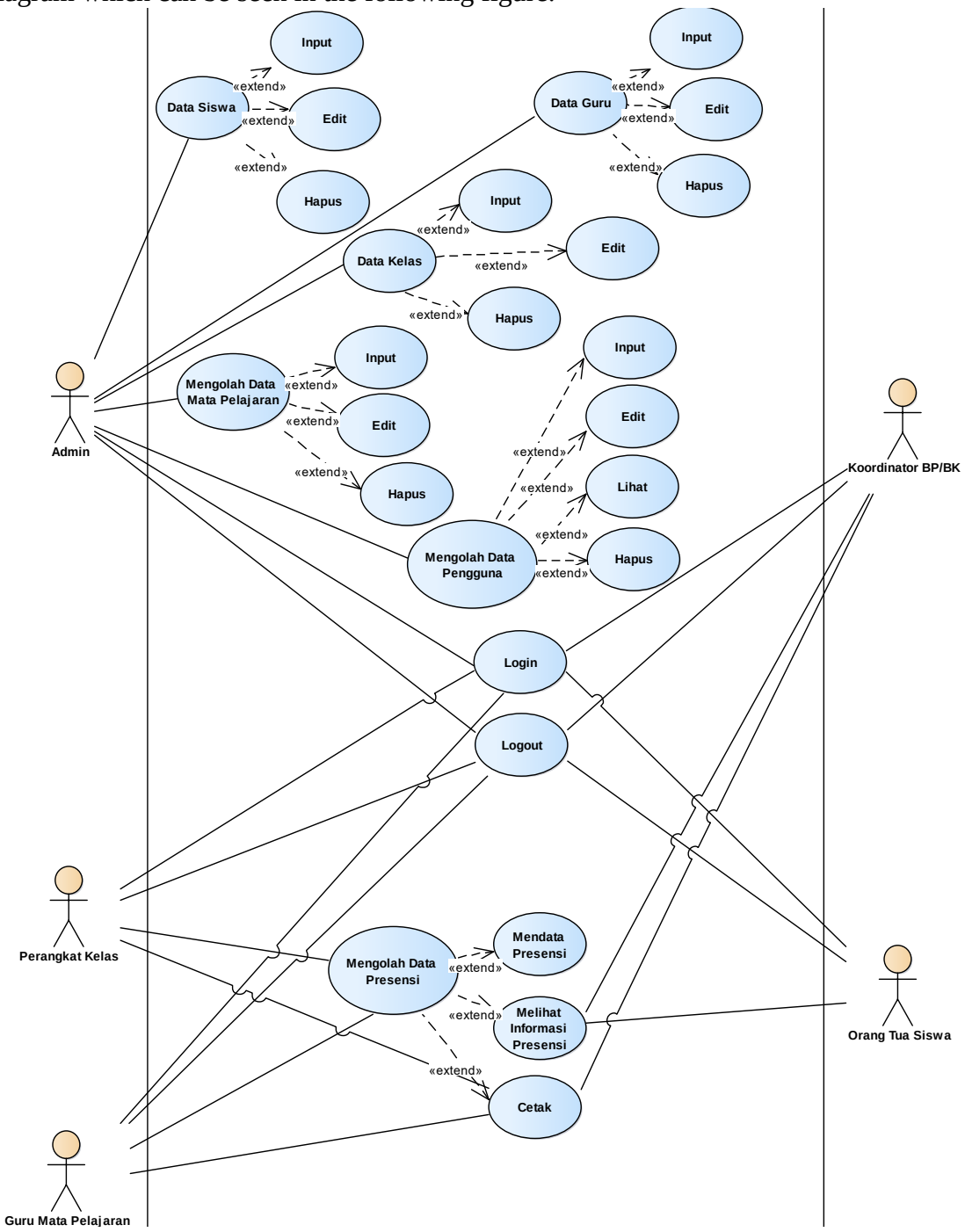

Image 3. System Use Case Diagram

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Implementation and Results

System implementation is the activity of implementing and testing the system. This chapter contains the implementation of the student attendance application that is referred to based on the results of the analysis and design described.

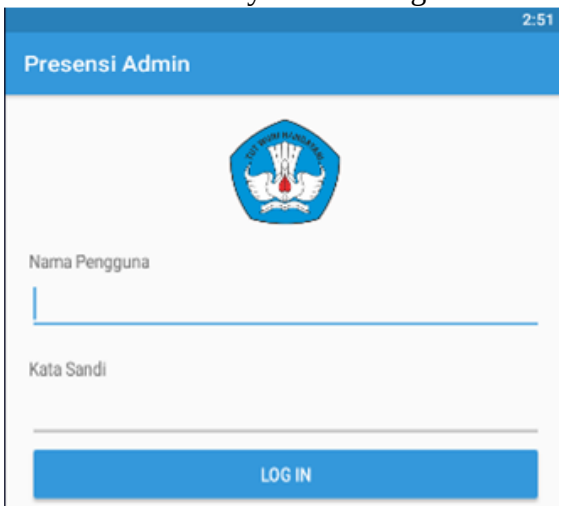

Image 4. Display Form Login

The login form is a page for access rights for admins and other users. Admin access rights function to manage data on the system, while other user access rights function to manage presence. The following will look at the login page.

Image 5. Display FormAdmin.

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The admin menu form is the initial page that will open after being accessed by the admin. The following looks like the admin form.

Image 6. Display Form Input Presence

The presence input form is a presence input page that can be accessed by class device users and subject teachers. The following shows the presence input form.

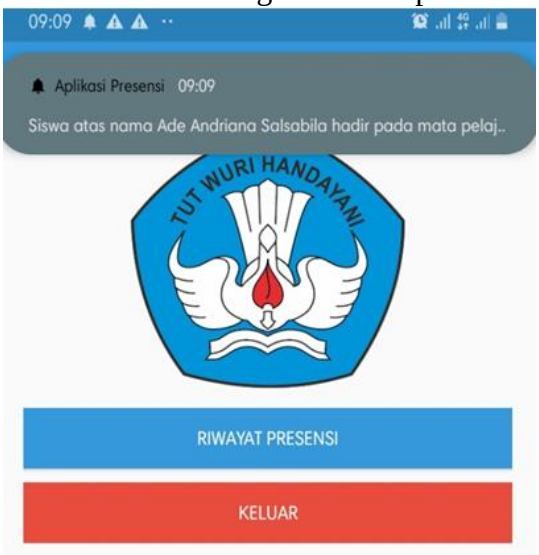

Image 7. Notification Message

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The final goal of this application is as a forum for monitoring parents 'students regarding the presence of children at school, if the class device has recorded the student's presence, the notification will automatically enter the parents' smartphone which has the presence application installed. The following displays the notification that comes in on the device using parental access rights.

CONCLUSION

The application is built with the Java programming language and uses MySQL as a database to help the student attendance management process in schools, especially as a work portfolio of BP / BK and assisting teachers where student attendance in each subject is needed as an evaluation of the subject matter being taught. As for parents of students, this attendance system can be a medium for controlling children's attendance to school every day, because student attendance information is sent automatically and realtime after class devices record student attendance and sent to the parents of each student's guardian.

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