Journal of Artificial Intelligence and Engineering Applications

Website: https://ioinformatic.org/

15th June 2025. Vol. 4. No. 3; e-ISSN: 2808-4519

Design of A Web-Based Teacher and Staff Attendance Information System at SD Negeri Laituta

Cresenvia Rambu Lendi[1*], Pingky Alfa Ray Leo Lede[2]

[1,2] *Program Studi Teknik Informatika, Universitas Kristen Wira Wacana Sumba*
cresenvial@gmail.com[1], pingky.leo.lede@unkriswina.ac.id[2]*

Abstract

In the current era of globalization, computers play a vital role in meeting the need for accurate, precise, and fast information. Computers actively contribute to various fields and simplify human tasks. Technological advancements, especially in the field of informatics, have led to the development of various software tools designed to address a range of problems, including information management. One essential need in the education sector is an attendance information system that facilitates the recording of staff attendance. At SDN Laituta, the attendance of teachers and staff is still recorded manually using an annual logbook, which is prone to damage and data loss. This study aims to design and implement a web-based attendance information system to improve the efficiency and accuracy of attendance records. The development method used is the waterfall model, consisting of five main phases: requirements analysis, system design, coding, testing, and maintenance. This system allows teachers and staff to record their attendance online and automatically generates attendance reports. The implementation of this web-based attendance system is expected to replace the existing manual method, making the attendance process faster, more efficient, and free from the common issues associated with physical records. Based on the results of testing using the black box method, all system features function as specified. Thus, the system has proven effective in enhancing attendance management for teachers and staff at SDN Laituta.

Keywords: *Design, Information System, Teacher and Staff Attendance, Website, Waterfall*

1. Introduction

Various human activities have changed as a result of the advancement of information technology. Various activities have changed from the conventional ones that are done manually to the modern ones that use [1]. In today's era of globalization, computers are essential to meet the need for accurate, precise, and fast information. One of the important purposes of using a computer is to provide very complete data. For this reason, computers play an active role in everything and will make one's job easier. Due to technological advancements, especially in the field of information, more and more software is being created to address information problems. To get what you need quickly, information is so important in life that computerized systems accurately and quickly are essential for all organizations, including schools.

The school attendance information system has an important role in recording the attendance of teachers and staff. At Lailuta State Elementary School, which is located in Lain Janji Village, Wulla Waijelu District, East Sumba Regency. Attendance recording is still done manually using a ledger every year. This causes several major problems, such as book damage, loss of attendance data, documents that are often scattered, and long time in attendance recapitulation which automatically hinders the creation of reports every month because they have to match data one by one. Errors in the attendance process of teachers and staff often occur which result in dirty attendance books, easy to tear, time manipulation hindering the process of analyzing attendance data. To address this issue, a web-based attendance system is needed that can record and manage data more accurately. A system that will make it easier to track the attendance of teachers and staff, reduce the possibility of errors, damages, and speed up the process of preparing reports. With more accurate data, schools will be easier to evaluate the performance of teachers and staff and make better decisions regarding attendance management.

With the existence of a web-based system, it is hoped that teacher and staff attendance data can be recorded more accurately and in real-time, reducing manual errors, in the management of attendance data. The system also offers easy access and management of data, allowing teachers and staff to monitor their own attendance and making it easier for schools to manage and analyze performance. The selection of web-based systems also reflects efforts to adapt to technological advancements, to make school administration easier.
Based on the background description above, the formulation of the problem studied in this study is How to reduce the risk of writing errors and loss of attendance data of teachers and staff at SDN Laituta schools?

The purpose of creating this system is to improve the accuracy and security of teacher and staff attendance data at SDN Laituta. The benefit of this research is that a web-based attendance information system can increase the efficiency of teachers and staff in conducting online attendance, to compile accurate report results in the year-end period.

2. Literature Review

2.1. Definition of System Design

Planning is the process of planning everything in advance. Design is a visual form that results from creative forms that have been planned. The first step in designing design starts from irregular things in the form of ideas or ideas then through the process of cultivation and management will produce things that are orderly, so that things that are already organized can fulfill their function and usefulness properly. Design is the drawing, planning, and sketching of several separate elements into a complete and functional unit[3].

2.2. Information Systems

According to [4], an information system is a system within an organization that combines the needs of daily transaction processing that supports the organizational operational functions of a managerial nature with the strategic activities of an organization to be able to provide certain external parties with the necessary reports. An information system is an organized collection of data and its use procedures that include more than just presentation.

2.3. Attendance

Attendance is an attendance data collection, part of reporting the activities of an institution, a component of the institute itself which contains attendance data that is compiled and arranged in such a way that it is easy to find and use if needed by interested parties at any time. According to. Attendance is a way to find out the extent of work discipline, whether the person who works is able to obey the applicable regulations. Attendance is an element of discipline that aims to improve discipline in an institution[5].

2.4. Website

A website or website can be defined as a collection of pages that are used to display text information, still or motion images, animations, sounds, and/or a combination of all of them that are both dynamic in nature that form a series of interconnected buildings, each of which is connected to a network of pages. The relationship between one web page and another is called hyperlink, while text that is used as a connecting medium is called hypertext[6].

2.5. Waterfall Method

The waterfall method or what is often called the waterfall seing method is called the classic life cycle, the name of this model is actually "Linear Sequential Model" which describes a systematic and also sequential approach to software development, starting with the specification of user needs and then continuing through the stages of planning, modelling), construction, and delivery of the system to users (deployment), which ends with support for the resulting complete software[7].

2.6. UML (Unified Modeling Language)

Unified Modeling Language (UML) is a standard rule that is commonly used in the industrial world to describe needs, analyze, design and illustrate object-based programming structures. UML provides writing standards for the design of a system, starting from business process workflow, behavior modeling system, the definition of classes and the design of databases and other elements required in the development of the system. UML tools commonly used in planning[8].

2.7. Black Box Testing

Black box testing is referred to as behavior testing. Where the interior structure, logic of the software being tested is unknown to the tester. The tester is based on the specification of the requirements and there is no need for code analysis. Black box testing testing is done from the perspective of the end user[9].

2.8. SUS Testing

System Usability Scale (SUS) is a step in evaluation that measures the level of ease of understanding and use of the developed system and the level of user satisfaction with the use of the system. In the selection of respondents, there are no definite criteria or standards that are used as a reference from the foundation of the SUS theory. SUS testing involves a rating scale as an evaluation metric. The scale adopts a rating range from 1 to 5, where the number 1 reflects strong disapproval of the statement being tested and the number 5 indicates strong agreement with the statement. The SUS evaluation instrument consists of ten statements that function as measurement indicators[10].

3. Research Methodology

3.1. Profile of Laituta State Elementary School

Laituta State Elementary School is located in Lain Janji Village, Wulla Waijelu District, East Sumba Regency, East Nusa Tenggara Province. SD Negeri Laituta was established on December 1, 1963 by the East Sumba Regency Government. Currently, SD Negeri Laituta implements the 2013 elementary school learning curriculum guidelines. SD Negeri Laituta has a principal named Kahora Ndilu and the school operator Hilda Runia Asni S.Pt. SD Negeri Laituta itself has 13 teachers and teaching staff, who are responsible for the teaching and learning process and maintaining the quality of the school. SD Negeri Laituta itself has a total of 140 students divided into 6 classes with an average distribution of 25-30 students in the class.

3.2. Research Methodology

The research stage is the scope of the steps in the implementation of the research, starting from the beginning to the end. The steps are as follows:

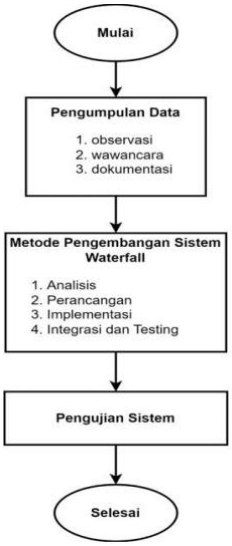

Fig. 1: Research Flow

The following is an explanation of the research flow, namely:

1. Observation
   Observation is the first step in building a system, this initial step will help by identifying the problem of a researcher who finds the problem that occurs and comes up with various solutions.
2. Interview
   After identifying the problem, it will start with the data collection process through an interview, the interview will be conducted by giving questions to trusted sources related to the case study being researched.
3. Documentation
   In addition, a documentation process will also be carried out in the form of data on the running system and supporting components in the form of records used.
4. Analysis
   At this stage after the data collection process is completed, an analysis process will be carried out to adjust to the existing problems, whether all the components needed are complete or not, if not, it will be completed first before proceeding to the next stage.
5. Planning
   After identifying the problem, then start designing the system design according to the user's needs. In addition, at this stage, the researcher revised the previous system design with the aim of ensuring compatibility with user needs.
6. Implementation
   At this stage, after the system design process has been successful, it will be demonstrated on a local scale, namely localhost to see if the function and design of the system is built whether it is in accordance with the needs or not. Programs that have been adapted to the current system design that have been successfully created need to be tested. 2223
7. Testing
   After the program is applied, it is necessary to evaluate the extent to which the program can run, then the process will be tested whether it is in accordance with the needs or not.

3.3. Use Case Diagram

In the use case diagram, it describes the analysis of the needs of the system in it, namely admin and user.

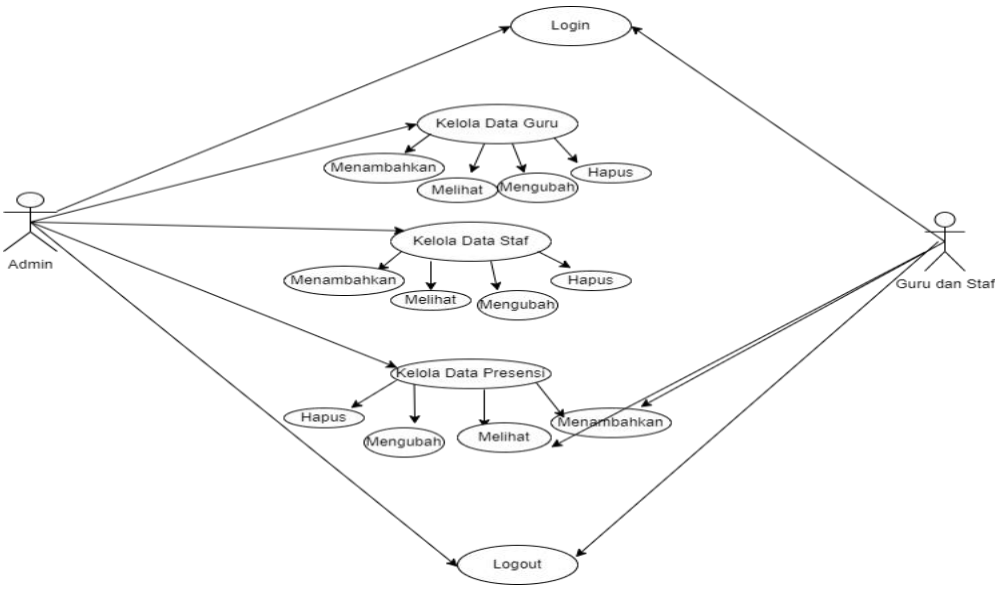

Fig. 2: Use Case Diagram

In image 2 above is this image, the admin will log in to the web and then fill in the password and username, after which the admin can input the data of teachers and staff. In the teacher and staff data section, it will contain data as a teacher and as an assistant in SDN Laituta. The system that will be developed will have 2 actors, namely admins: School operators, who will be the managers, teachers, staff and attendance data and can print them while users are teachers and staff who can only add attendance data and view attendance data.

4. Results

4.1. Implementation and Results

This chapter discusses the implementation of the online presence system that has been developed, which includes an explanation of how the system works as well as the features available in the application. In addition, the results of testing the system through trials involving a number of respondents were also presented, to evaluate the level of functionality and ease of use of the system. The purpose of this test is to obtain direct feedback from users as a basis for assessing the system to the extent to which the application can meet the user's needs.
The system developed aims to facilitate the process of recording the attendance of teachers and staff digitally and in a structured manner at SDN Laituta. The process starts from recording the teacher's daily attendance, by entering data such as name, date, and attendance status (attendance, permission, saki t, or alpa) which is automatically stored in the database. The system provides a simple interface that is easy for teachers and administrative staff to use. In addition to recording, users can also view attendance recaps, search for data by name or date, and print attendance reports. The entire process is designed to be efficient and support the smooth running of school administration in monitoring the attendance of teachers and staff in real time and accurately.

General Login View

Figure 3 shows the general login page on the SDN Laituta online attendance system. This page serves as the main gateway for system users, namely school admins, teachers or staff. To be able to access the system, users are required to enter the username and password that has been registered. The login display is designed with a simple interface to be easy to operate for all users, and is equipped with validation to ensure a safe and smooth process.

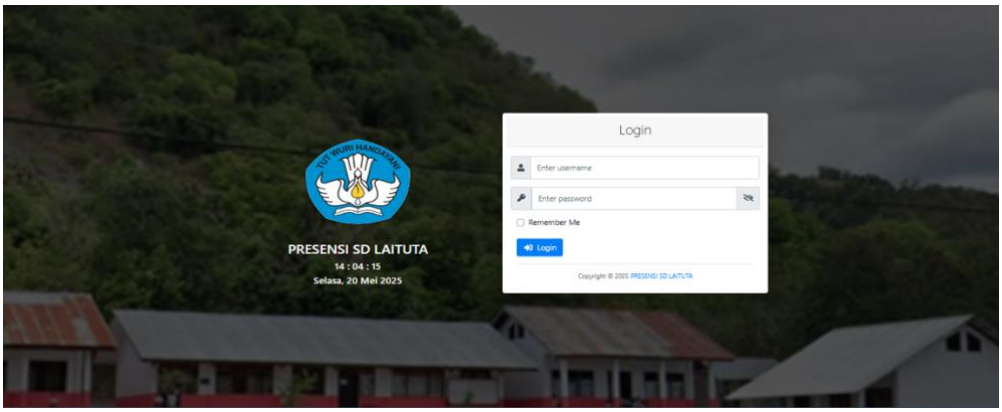

Fig. 3: General Login Page View

Dashboard admin view

Figure 4 shows the display of the admin dashboard page in the SDN Laituta online presence system. This page can only be accessed by school admins who are responsible for managing the system. This dashboard displays a comprehensive recapitulation of attendance data, including the number of attendance and absences of teachers and staff. In addition, there is information about active users who use the

system, as well as the percentage of attendance presented in visual form to facilitate the evaluation and monitoring process. This feature helps admins in retrieving accurate data.

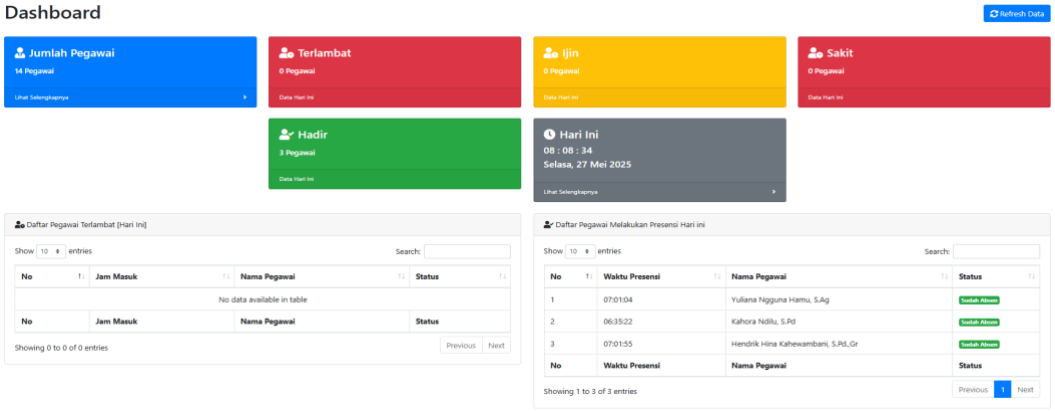

Fig. 4: Admin Dashboard Page View

Admin view View Teacher and Staff Data

Figure 5 shows the interface of the View Teacher Data page accessed by the admin in SDN Laituta's online attendance system. On this page, admins can view a list of teachers who have been registered in the system, including information such as employee names, section shifts, verification status, and action buttons to view details, edit, or delete teacher data. This view is designed to make it easier for admins to monitor and manage teacher data quickly and in a structured manner. The existence of data search and filtering features also improves navigation efficiency as the amount of data increases.

.

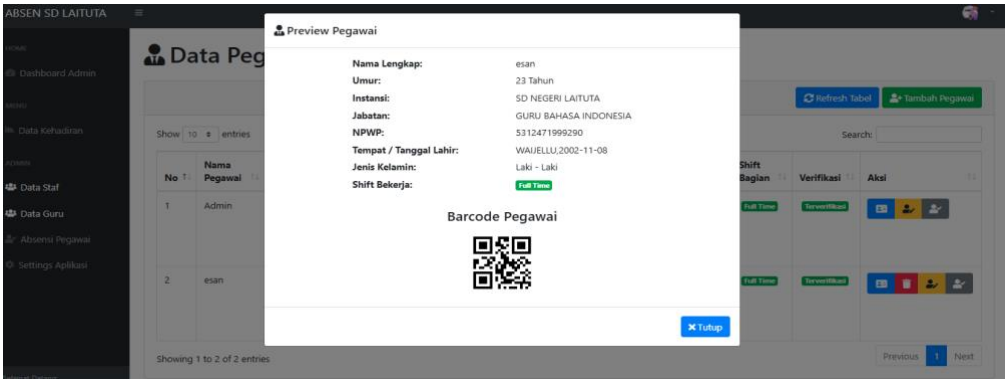

Fig. 5: Admin View Teacher Data

Add Teacher and Staff Data admin view

Figure 6 shows the admin interface page on the Add Teacher and Staff Data feature in SDN Laituta's online attendance system. In this view, admins can input complete information related to teacher data to be added to the system. This form includes entries such as employee code, position, agency, NPWP (optional), age, place and date of birth, account role, gender, work shift, verification status, and employee barcode generation options. This feature facilitates the systematic and efficient process of entering new employee data, and ensures that each registered teacher has a well-managed identity and status in the system.

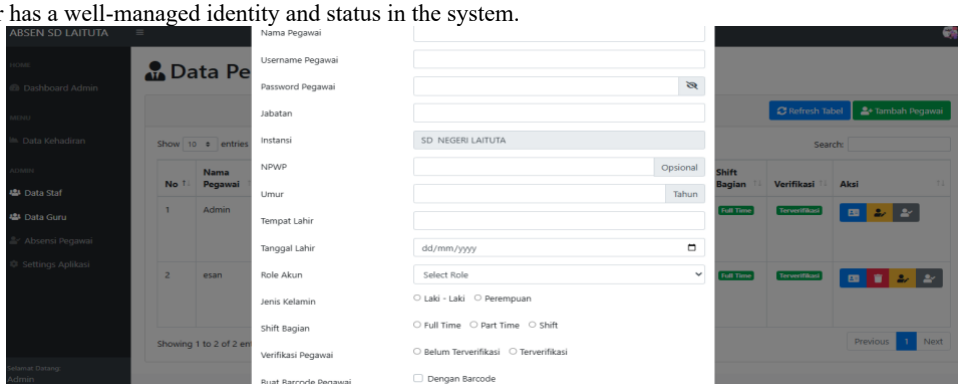

Fig. 6: Admin View Add Teacher and Staff Data

Add Teacher and Staff Data admin view

Figure 7 shows a detailed display of teacher and staff attendance on SDN Laituta's online attendance system. On this page, the daily attendance data of each employee is displayed in full, including the employee's name, position, and attendance status. The attendance status displayed includes being present at the office, working from home (WFH), permission, sick, and alpa (absent without explanation). Each attendance entry is equipped with a date, recording time, and location information if the employee performs location-based attendance. This feature allows schools to monitor and manage the attendance of teachers and staff in real-time, as well as document attendance status transparently.

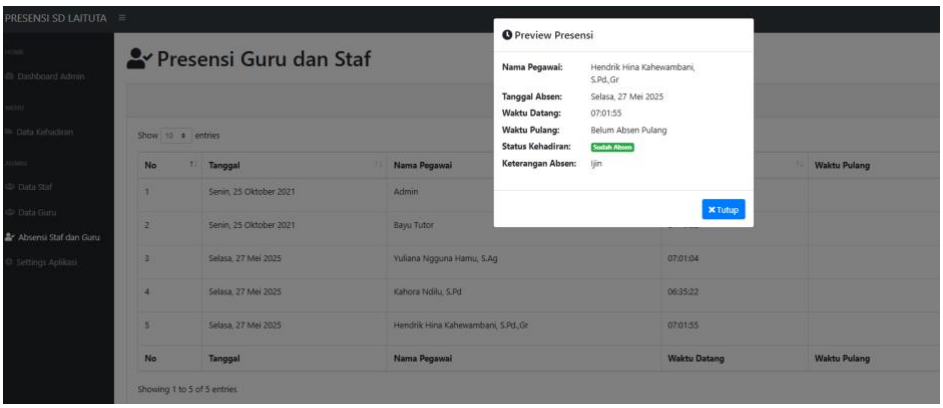

Fig. 7: Detailed view of Teacher and Staff Attendance

Edit Teacher and Staff Data admin view

Figure 8 shows the admin interface page for the Edit Teacher and Staff Data feature on SDN Laituta's online attendance system. In this view, admins can update teacher data such as employee code, position, agency, NPWP (optional), age, place and date of birth, and account roles. In addition, there are settings for gender, work shifts (Full Time, Part Time, or Shift), employee verification status, and the option to create employee barcodes. This feature is designed to make it easier for admins to maintain and update employee data efficiently through one integrated form.

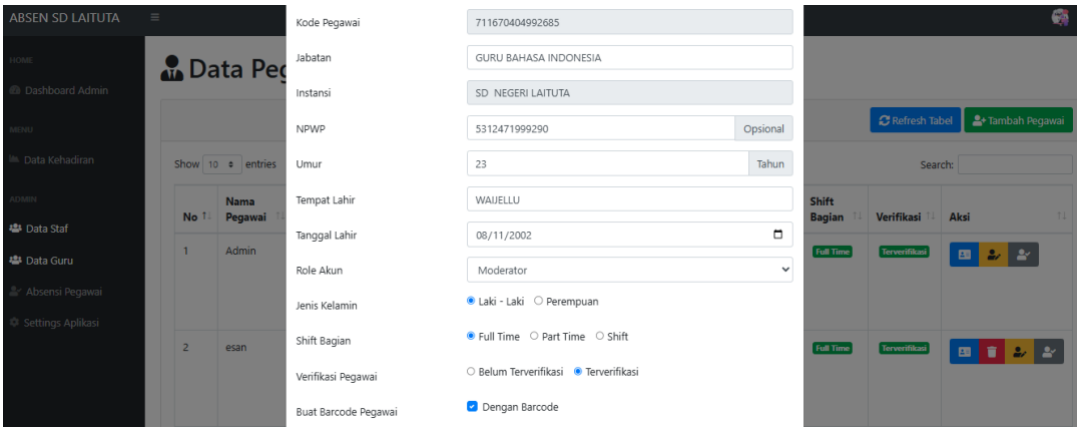

Fig. 8: Admin view Edit Teacher Data

Delete Teacher Data admin view

Figure 9 shows the admin interface page on SDN Laituta's online attendance system that is used to delete teacher and staff data. On this page, admins can view a list of teacher data that has been stored in the system, including information such as name, NIP, and activeness status. Admins have access to delete the data of teachers who are no longer active or no longer registered as part of the school. This feature helps maintain the accuracy and novelty of user data in the system, so that the attendance management process remains well organized and in accordance with the current conditions in the school environment.

Fig. 9: Delete Teacher Data admin view

Teacher and Staff Data Attendance admin view

Figure 10 shows the display of the Teacher and Staff attendance page accessed by the admin in the online attendance system of SDN Laituta. On this page, admins can monitor the attendance data of all teachers and school staff. The information displayed includes the employee's name, date of attendance, time of attendance in and out, and attendance status (attendance, permission, or absenteeism). This view is equipped with search features, date filters, and data navigation that makes it easy for admins to recap and evaluate attendance thoroughly. This is very helpful in the accurate and efficient attendance management process in the school environment.

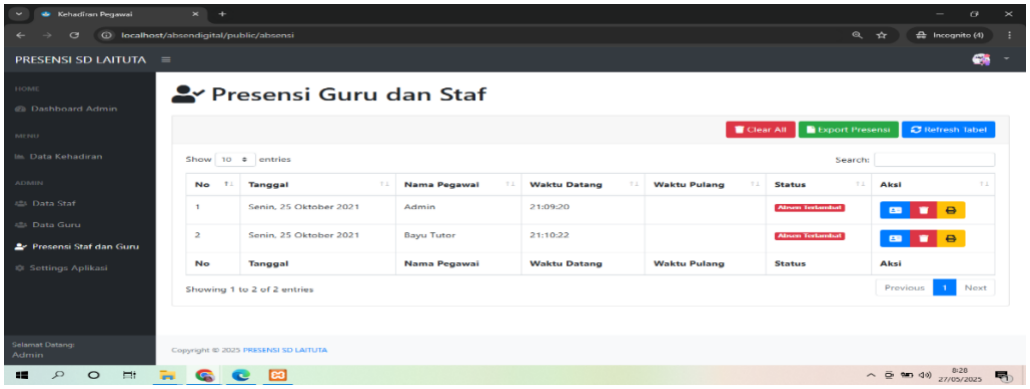

Fig. 10: Teacher and Staff attendance admin view

Logout admin view

Figure 11 shows the display of the Logout feature used by admins to exit the system after completing the management of Teacher and Staff data. This logout feature is important to keep the system secure by ensuring that no party can access the data without permission after the admin session ends. Once the admin selects the logout option, the system will end the active session and redirect you to the login page. Thus, this feature plays a role in protecting data confidentiality and preventing misuse of access.

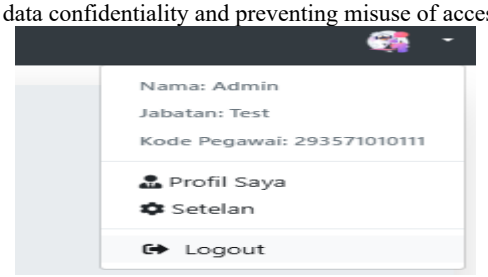

Fig. 11: Logout admin view

Teacher and Staff Dashboard View

Figure 12 shows the Teacher and Staff Dashboard page in the attendance system of SDN Laituta. On this page, users can see a preview of their personal data that includes important information such as name, job title, and employment status. In the main part of the dashboard, there is a QR button that can be used by teachers or staff to make attendance by scanning the QR code. In addition, the system also provides an alternative to manual attendance in the form of a card button to submit attendance directly if there is a problem in scanning the QR. It also provides real-time tracking that helps users monitor whether they are on time or late, supporting discipline and accuracy in attendance recording.

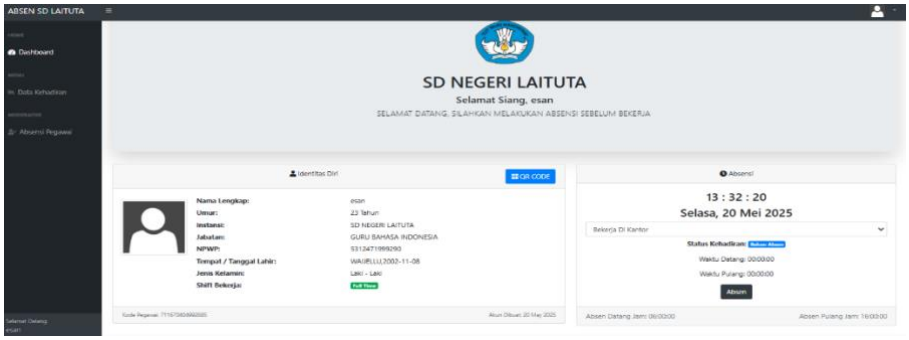

Fig. 12: Dahsboard Teacher and Staff Display

QR Teacher and Staff Display

Figure 13 shows the QR Code page used by teachers and staff to conduct the attendance process digitally. In this display, the system will display a personal QR code that can be scanned using a device that supports QR reading, either by the admin or the automated attendance system. These QR are unique to each user and are directly connected to their identity in the system, thus minimizing attendance recording errors. This feature provides convenience and efficiency, especially in the daily attendance process in the SDN Laituta environment. However, in some cases, the QR process may still be imperfect, so the system still provides an alternative to the manual attendance method as a backup.

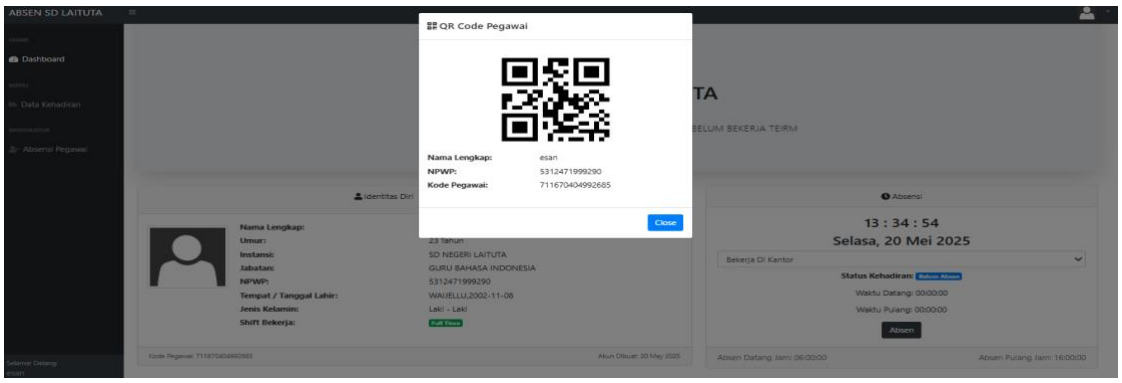

Fig. 13: QR Teacher and Staff Display

Display of Teachers and Staff Attendance

Figure 14 shows a view of the attendance page accessed by teachers and staff. On this page, users can view a recap of personal attendance data, including attendance time information, late status, and shift type (Full Time, Part Time, or Shift). This feature aims to provide transparency to users regarding their presence, as well as help in independent monitoring of discipline. The data is displayed in a structured table, making it easy for users to view their attendance history chronologically and accurately.

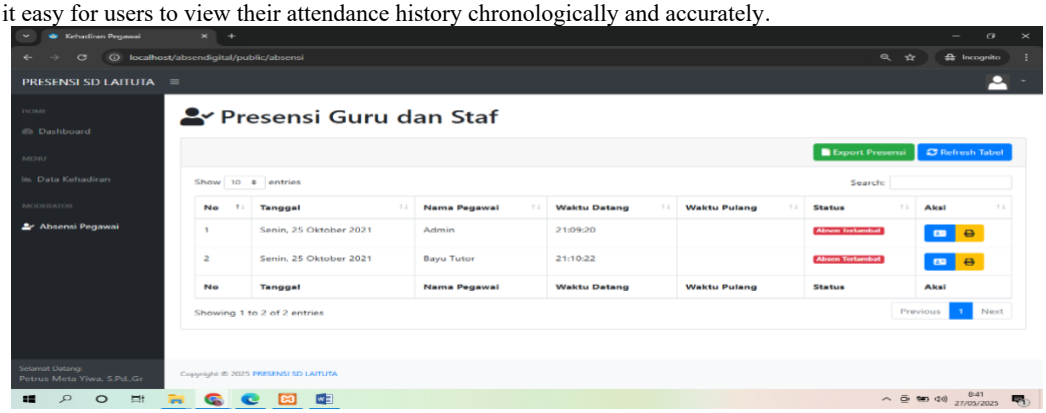

Fig. 14: Teacher and Staff Presence Display

Display of Teachers and Staff Export Attendance

This image shows the attendance data export feature available to users (teachers and staff) in the system. Through this view, users can download attendance records in a specific format (such as Excel or PDF) for personal documentation, reporting, or evaluation purposes. This export feature is designed to be easy to use, with clear action buttons that directly lead to the process of downloading the attendance data that has been recorded in the system. This makes it easier for teachers and staff to manage their attendance history independently and professionally.

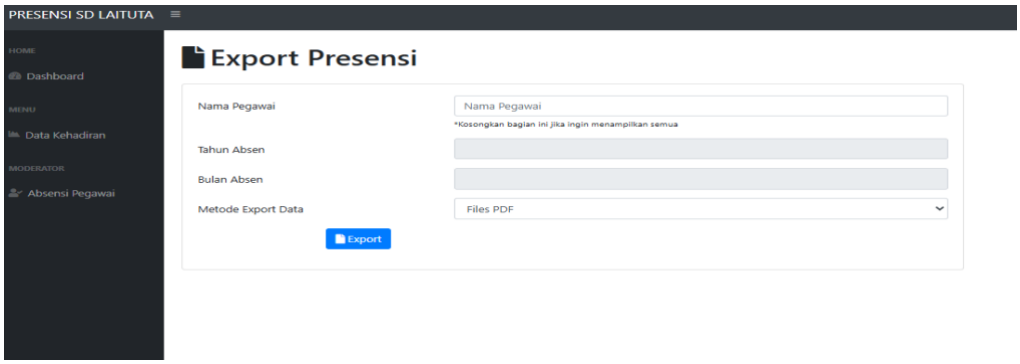

Fig. 15: Display of Teachers and Staff Export Attendance

Teacher and Staff Profile View

Figure 16 Teacher and Staff Profile Display This image shows the user profile page (teachers and staff) in SDN Laituta's online attendance system. In this view, users can see personal information such as full name, PIN, job title, and contacts that have been registered in the system. This page also allows users to update their personal data if needed, such as changing their profile picture or updating their contact information. With a simple and intuitive interface, this feature supports easy user identity management and ensures that the data used in the system is always accurate and up-to-date.

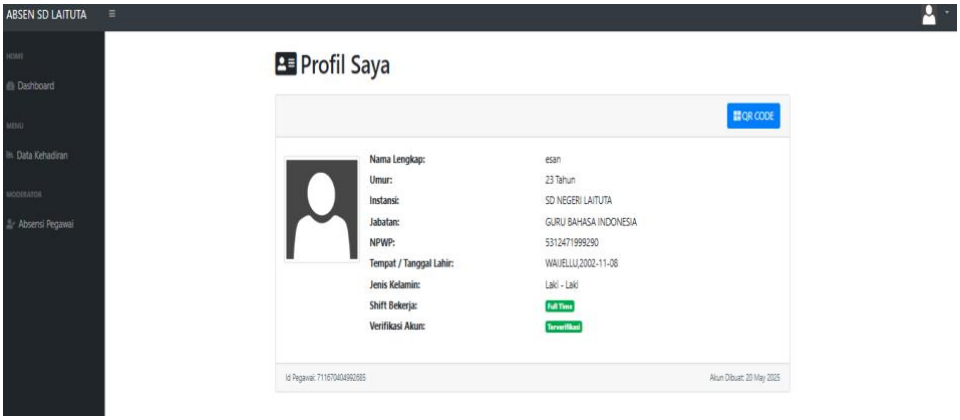

Fig. 16: Teacher and Staff Profile View

Teacher and Staff Settings Views

Figure 17 Teacher and Staff Display This image shows the settings page that teachers and staff can access in SDN Laituta's attendance system. In this view, users are given access to make basic settings to their accounts, such as changing passwords as well as making other adjustments related to system usage preferences. This settings page aims to provide users with convenience and flexibility in managing their accounts independently, as well as ensuring that the system can be used more personally according to each user's needs.

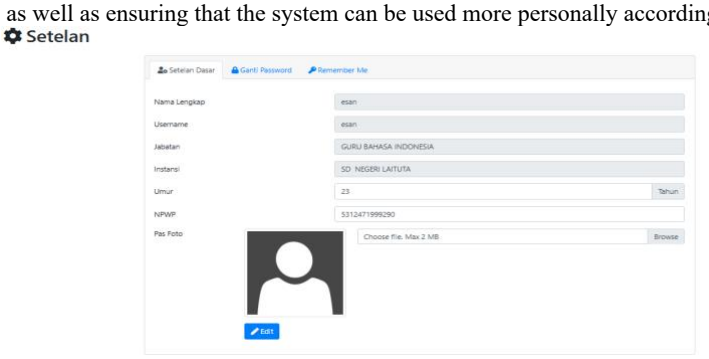

Fig. 17: Teacher and Staff Settings Display

Logout Teacher and Staff View

Figure 18 shows the display when teachers and staff log out of their accounts in the attendance system of SDN Laituta. This sign-out feature serves to securely end the usage session, ensuring that the account doesn't remain active on the device you're using, especially if it's being used together. This display is an important part of keeping user data safe and supporting responsible system use practices.

Fig. 18: Logout Teacher and Staff View

4.2. Testing

The testing of SDN Laituta's online attendance system was carried out through two main approaches, namely Black Box Testing and System Usability Scale (SUS). The Black Box Testing method is used to evaluate the functions of the system based on predetermined specifications, regardless of the internal structure or programming code. The focus is on ensuring that each input produces the appropriate output. Meanwhile, the SUS method is used to measure the extent to which the system is easy to use from the user's perspective. SUS generates scores that reflect the effectiveness, efficiency, and satisfaction of users in using the system. The combination of these two methods aims to guarantee that the online attendance system not only works technically correctly, but is also convenient and acceptable to users, such as teachers and staff of SDN Laituta.

Black Box Testing

The testing of the online attendance system at SDN Laituta was carried out using the black box method. The results of the test can be seen in Table 1, which shows the performance of the system in carrying out each of its functions according to the design.

Table 1: Black Box Testing

Yes	Tested Navigation	How to Test	Result	Information
1	Login	Enter the correct username and password	[√] Successful []Didn't Work	Login is successful and you enter the main page
		Enter the wrong username and password	[√] Successful [ ] Didn't work	The system displays a failed login message and returns to the login page
2	Manage Teacher Data	Click the Teacher Data menu	[√] Successful [ ] Didn't work	View teacher data lists
		Click the add data button	[√] Successful [ ] Didn't work	Display teacher data add form
		Click the edit data button	[√] Successful [ ] Didn't work	Display teacher data edit forms
		Click the delete data button	[√] Successful [ ] Didn't work	Show a confirmation of teacher data deletion
3	Presence of Teachers & Staff	Click the teacher and staff attendance menu	[√] Successful [ ] Didn't work	Displays a recap of teacher and staff attendance
4	Teacher & Staff Dashboard	Click the dashboard menu	[√] Successful [ ] Didn't work	Displays personal data, time, QR, and manual attendance buttons
5	Scan QR Code	Click the QR scan button	[√] Successful [ ] Didn't work	QR-based attendance processing system
6	Manual Attendance	Click the absence button without QR	[√] Successful [ ] Didn't work	The system performs manual attendance recording
7	Export Presence	Click the export data button	[√] Successful [ ] Didn't work	System displays and downloads attendance data
8	User Profile	Click the profile menu	[√] Successful [ ] Didn't work	View detailed information of teachers or staff
9	Settings	Click the settings menu	[√] Successful [ ] Didn't work	Displays system settings options (including dark/light mode)
10	Logout	Click the login button	[√] Successful [ ] Didn't work	The system logs out the user and returns to the login page

Table 1 shows the results of the online presence system test using the black box method, which shows that all functions in the system can be carried out according to the specifications that have been set. Based on the results of this test, it can be concluded that the online attendance system developed has run well and is able to meet the needs of users in terms of recording the attendance of staff and teachers digitally and in a structured manner.

System Usability Scale (SUS)

System Usability Scale (SUS) testing is an evaluation stage that is carried out after the system function test is completed. The purpose of this test is to measure the level of user satisfaction with the Teacher and Staff data collection system that has been developed. SUS testing is important because it provides an overview of the extent to which the system can meet the needs and expectations of users, as well as the ease of use felt during the use of the application.

Table 1: SUS Test Statement Table

Yes	Question	Answer				
			SS	KS	TS	STS
1	I will use this system again					
2	I find this system to be complicated to use					
3	I feel I need technical help to use this system					
4	I find this system easy to use					
5	I Feel functions in this system is well integrated					
6	I feel too many Incompatibilities in this system					
7	I feel that many people will use this system because it is very helpful					
8	I find this system very troublesome to use					
9	I need to learn a lot before I use this system					
10	I don't get any obstacles in using this system					

In the online attendance system test at SDN Laituta using the System Usability Scale (SUS) method, testing was carried out on 10 respondents consisting of 1 (one) principal and 9 (nine) teachers who were actively teaching at SDN Laituta. The purpose of this test is to

evaluate the level of ease of use of the system as well as user satisfaction with the digital presence application developed. The following is a list of the names of respondents along with their age and position status at school.

Table 3: List of Respondents of Management and Teachers and Staff.

Respond	Name	Age	Status
R1	Kahora Ndilu, S.Pd	43	Principal
R2	Soleman Neonane, S.Pd.K	38	Mapel Teacher
R3	Hendrik Hina Kahewambani, S.Pd.,Gr	30	Classroom Teacher
R4	Musa Neonane, S.Pd.,Gr	28	Classroom Teacher
R5	Petrus Meta Yiwa, S.Pd.,Gr	29	Classroom Teacher
R6	Lika Atahau, S.Pd.,Gr	31	Classroom Teacher
R7	Fredrik P. Asamau, S.Pd.SD.,Gr	27	Mapel Teacher
R8	Marselina Hona Hamuli, S.Pd.,Gr	25	Classroom Teacher
R9	Yuliana Uses Hamu, S.Ag	33	Mapel Teacher
R10	Sofia Margaretha Kaita Lepir, S.Pd	24	Classroom Teacher

The following are the scores obtained from respondents in the online attendance system test at SDN Laituta using the System Usability Scale (SUS) method. This test was carried out to assess the level of ease of use and user satisfaction with the presence system that has been developed.

Table 4: SUS Test Results.

N0	**Respondent Name**	**Question**											
		Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	X	X*2,5
1	Kahora Ndilu, S.Pd	4	4	4	3	4	3	4	4	3	3	36	90
2	Soleman Neonane, S.Pd.K	4	4	4	4	4	4	4	4	4	2	38	95
3	Hendrik Hina Kahewambani, S.Pd.,Gr	3	3	4	2	3	3	4	4	4	1	31	77.5
4	Musa Neonane, S.Pd.,Gr	4	4	4	4	4	3	4	4	4	3	38	95
5	Petrus Meta Yiwa, S.Pd.,Gr	4	4	4	4	4	3	4	4	3	2	36	90
6	Lika Atahau, S.Pd.,Gr	3	3	4	2	4	3	3	3	4	1	30	75
7	Fredrik P. Asamau, S.Pd.SD.,Gr	3	3	4	4	3	3	3	4	3	3	33	82.5
8	Marselina Hona Hamuli, S.Pd.,Gr	4	4	4	3	4	4	4	4	4	1	36	90
9	Yuliana Uses Hamu, S.Ag	3	3	3	3	3	3	3	3	3	3	30	75
10	Sofia Margaretha Kaita Lepir, S.Pd	4	4	4	3	4	3	3	4	4	3	36	90
							Average						86

The following is the average formula for calculating SUS:

$$\bar{x} = \sum \frac{x = 90+95+77{,}5+95+90+75+82{,}5+90+75+90}{n = 10}$$

$$\bar{x} = \sum \frac{x = 860}{n = 10} = 86$$

Information:
R = Responden
Q = Question
$\bar{x}$ = Average score
$\sum$ = Total SUS score
n = Number of respondents
The statement in the System Usability Scale (SUS) test consists of several items that must be answered by the respondent. The answers are then calculated to obtain an overall score that reflects the level of usability of the system based on user ratings. This score is the main indicator in evaluating the quality of user experience for the online presence system developed at SDN Laituta.

Table 2: SUS Testing Score

Answer	Shoes
Strongly agree (SS)	5
Agree (S)	4
Disagree (KS)	3
Disagree (TS)	2
Strongly disagree (STS)	1

The calculation results show that the average score of the System Usability Scale (SUS) for the online attendance system at SDN Laituta is 86. Based on the average value, the feasibility of the system is then assessed using grades according to the standards applicable in the SUS method, as shown in Figure 19.

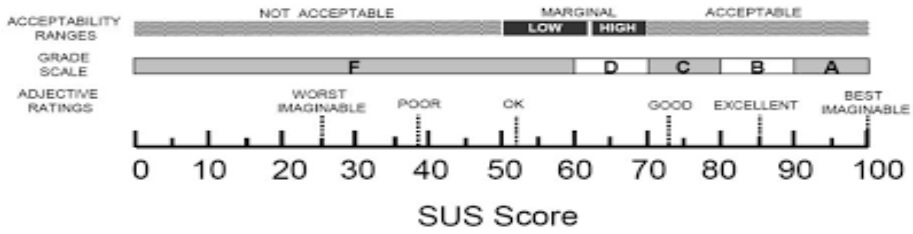

Fig. 19: SUS method

The determination of Acceptability Ranges, Grade Scale, and Adjective Rating is used to measure the level of user satisfaction with the application of the online presence system. Based on the average respondent score of 86, this attendance system is categorized as Acceptable. On the Grade Scale, the system gets category B, while the Adjective Rating is included in the Excellent category.

5. Conclusions and Suggestions

Based on the results of research and testing of the online attendance system at SDN Laituta, it can be concluded that the developed system has functioned well according to the expected purpose. This system is able to facilitate the process of recording the attendance of staff and teachers more efficiently and increase accuracy compared to the previous manual attendance method. Testing with the black box method showed that all features were running according to specifications, while testing using the System Usability Scale (SUS) resulted in an average score of 86, indicating the level of user satisfaction in the "Acceptable" category with a grade of B and an adjective rating rating of "Excellent". However, the system still has some shortcomings, especially in the data search feature that needs to be improved to be more responsive and easy to use.

For future system development, it is recommended that the search and data filter features be made more complete and sophisticated to make it easier to search for presence information. In addition, the development of a mobile version of the application can be an alternative to provide easy access to attendance data flexibly and practically. The use of more diverse testing methods is also recommended to obtain a more thorough evaluation of the system, as well as to involve more respondents from various staff and teachers to obtain a better picture of user satisfaction.

References

[1] Dikana, K. R., Utami, M., & Saputera, S. A. (2022). Design of a Web-Based Population Data Collection Information System in Tanjung Tawang Village, Muara Pinang District. JUSIBI (Journal of Information Systems and E-Business), 4(2), 80–91.
[2] Wijaya, Y. D. (2021). Application of the Rapid Application Development (RAD) method in the development of store data information systems. SITECH Journal: Information Systems and Technology, 3(2), 95–102.
[3] Prayunda, V., Yani Widiastuti, R., & Lynawati. (2023). Website-Based Data Collection Information System for the Javanese Christian Church Penaruban Congregation. Journal of Artificial Intelligence and Information Technology, 2(3), 132–136.
[4] Enrico Riski Putra. (2022). Design and Build an Automatic Employee Assignment Application at Pt. Argo Cipta Pratama. Proceedings, 2, 172–182.
[5] Puji Agustina, C., & Arif, Z. (2022). Implementation of Whatsapp Gateway in Blood Donation Service System Whatsapp Gateway Implementation in Blood Donation Service System. JACIS: Journal of Computer Information System, 2(02), 100–107.
[6] Azizah, A. J., & Prismana, I. G. L. P. E. (2022). Implementation of WhatsApp Gateway in Financial Management Apikasi of Tanwirul Qulub Lamongan Islamic Boarding School. Journal of Informatics and Computer Science (JINACS), 3(04), 403–410.
[7] Enrico Riski Putra. (2022). Design and Build an Automatic Employee Assignment Application at Pt. Argo Cipta Pratama. Proceedings, 2, 172–182.
[8] Mandang, C., Wuisan, D., & Mandagi, J. (2020). Application of the RAD Method in Designing the PLN UIP Sulbagut Project Web Application. Journal of Informatics Engineering, 1(02), 49–53.
[9] Pratama, S. D., Lasimin, L., & Dadaprawira, M. N. (2023). Black Box Testing on the Edu Digital Application is based on a website using the Equivalence and Boundary Value methods. J-SISKO TECH (Journal of Information Systems Technology and TGD Computer Systems), 6(2), 560.
[10] Fatmasari, A., & Fitriasih, F. (2024). Computer Service Customer Data Information System on Web-Based Computer Gift Cv. JATI (Student Journal of Informatics Engineering), 8(3), 3537–3544.