

Design of a Website-Based Employee Attendance Information System of PT. Top Airconditioner

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Abstract - PT. Top Airconditioner is one of the companies engaged in AC service and air conditioning providers located at Permata Tangerang Blok DA No.11. PT. Top Airconditioner is currently using an outdated employee attendance system that involves collecting attendance data on paper, which is prone to loss and damage. This leads to delays in data recapitulation and ineffective management. To address this issue, a research was conducted to develop a web-based employee attendance system. The research utilized RAD analysis research method, UML system design, and PHP programming language with MySQL database. The main objectives were to create a system that allows employees to easily record their attendance daily and enables HRD to monitor attendance of employee more efficiently. The result of the research is a web-based employee attendance system that simplifies the process of recording attendance and enhances overall management. This new system will streamline the attendance process for PT. Top Airconditioner and improve HRD's ability to monitor attendance accurately.

Keywords:

*Presence;
Employee;
HRD;
Electricity;
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1. INTRODUCTION

PT Top Airconditioner is one of the companies engaged in air conditioning service and air conditioning provider located in Permata Tangerang Blok DA No.11. Top Airconditioner already has a website that contains information about PT. Top Airconditioner, the types of AC service services available and their prices. Although the company has only been running for about 8 years, there are already several parts that use information technology to support business continuity.

The development of technology today greatly affects civilization, especially in terms of work in an organization or company that can be completed easily, quickly, accurately and can be accessed anywhere and anytime (realtime). One example of an activity that can be developed with technological developments is an employee or employee attendance information system. According to Triyono, et al in the SENSI Journal Vol. 4 No. 2/2018, Attendance is an attendance data collection, part of the reporting of activists of an institution, a component of the institution itself which contains attendance data that is compiled and organized in such a way that it is easy to find, and used if needed at any time by interested parties ”

Attendance activities carried out by employees at PT Top Airconditioner are still carried out conventionally, namely still using WhatsApp and

inputting monthly reports which are still carried out using Ms. Excel. Activities that are currently running have not been running effectively because there are still several problems, namely the absence of a storage medium for employee attendance data because employee attendance data is currently stored using WhatsApp so that data is prone to loss, it takes a long time to search for employee attendance data because you have to search for data one by one by scrolling through attendance data on WhatsApp and there are still errors when making attendance reports sometimes the attendance reports generated do not match the attendance data on WhatsApp.

Based on the problems that occur, an employee attendance system is needed which aims to make it easier for employees to do attendance besides that it can also facilitate Human Capital in managing employee attendance data. For this reason, researchers will raise this issue in thesis research entitled “Design of a Website-Based Employee Attendance Information System at PT. Top Airconditioner”.

2. THEORETICAL FOUNDATION

2.1 General Theory

1. According to Puja et al (2020: 159) in the Journal is Design (design) is a general term for creating or designing an object from the beginning of manufacture to the end of manufacture.

2. According to Lukman et al. (2023: 130) in the Journal "Designing is creating and creating an application or system that does not yet exist in an agency or object". It can also be said that design is a process or implementation of the results of an analysis that produces a system or application that can be applied to an agency in need.
 From the above statement regarding the definition of Design and Build, it can be concluded that Design and Build is to create an object from the beginning - the end of manufacture and then produce a system / application that is needed.
3. The definition of the system according to Tukino in (Maydianto, 2021) the system is a series of work networks of various interconnected elements in order to achieve certain goals.
4. Understanding the system according to Erawati in (Maydianto, 2021) the system is a network of work processes that are interrelated and come together to achieve a goal and carry out an activity.
5. The system according to Andrianof in (Maydianto, 2021) is a combination of several elements, components or variables that are integrated with each other in order to form a single unit so that a goal and target can be achieved.
 From the above statement regarding the definition of the system, it can be concluded that the system is a combination of a collection of elements, components or variables that are interconnected with each other in order to achieve a certain goal.
6. According to Amru Yasir who quotes (2020), a system is something that has parts that interact with each other to achieve certain goals through three stages, namely input, process and output (Widjajanto).
7. The system is a group of elements that are closely related to one another, which function together to achieve certain goals (Mulyadi).
8. According to Wire Bagye (2020: 159) in the Journal System is a process of combining several elements or component components in achieving the desired goal.
 From the above statement regarding the definition of the system, it can be concluded that the system is the desired element or elements in achieving goals.
9. According to Pamudi and Yudi Kristyawan (Vol. 15, 2023) Information systems are a combination of hardware, software, brains, and/or rules that convert data into knowledge that can be used to solve problems and make decisions. Information system devices must all be interconnected and bound to each other.
10. According to Amru Yasir (2020) Information Systems are data that has been processed into a form that is meaningful to users, which is useful in making current decisions or supporting information sources. Data does not yet have value while information already has value. Information is said to be valuable if the benefits are greater than the cost of getting it.
 From the above statement regarding the definition of an information system, it can be concluded that an information system is a combination of software or hardware in the form of data and becomes knowledge for users and is then useful in making decisions because of the source of information and is bound to one another.
11. According to Sri Rahayu and Yana Diana (2021: 225) "Data is a collection of information that contains meaning. Data is needed for measurement, recording, decision making, information gathering, and much more. Data is needed because the information has a very important meaning for the present and the future, while the database is the organizer, processor and presentation of the data. Database is a collection of data that is organized in such a way as to form very useful information.
12. According to Lukman et al. (2023: 131) in the Journal Database is a collection of data (archives) that are related and organized in such a way that they can be used quickly and easily.
 From the above statement regarding the definition of data, it can be concluded that data is a collection of information that contains meaning, both measurement, recording, decision making and information gathering and has a very important meaning for the present and future.
13. According to Hasyim Hasanah in the Journal of Sri Rahayu and Ade Setiadi (2021: 237) Observation is one of the empirical scientific activities based on field facts and texts, through the experience of the five senses without using any manipulation. The purpose of observation is description, in qualitative research giving birth to theories and hypotheses, or in quantitative research used to test theories and hypotheses.
14. According to Sri Rahayu and Ade Setiadi (2021: 238) Interviews are actions that need to be taken when collecting data, because by doing so we will directly ask things related to the research to the perpetrators of activities such as students, teachers, and principals.
15. According to Sri Rahayu and Ade Rahayu (2021: 238) Looking for data related to research themes both on the internet and in libraries, this method of collecting data with literature studies can also provide some data from several related and relevant sources.

2.2 Specialized Theory

1. According to Lengkong and Fiden and Masrikat Presence or commonly known as attendance is an activity or routine carried out by an employee to prove that he is present or not in an organization or company.
2. According to Chrismika Hardyanto (2022: 32) Attendance is something that must be done by the company to be able to know the attendance rate

of its employees. By recording all employee attendance every day, the company will have an indicator to assess how the performance of these employees. The more active employees are to come and work from the office will reflect how their level of discipline at work.

The conclusion of attendance is that attendance or attendance is very important for employees as proof of attendance at an organization or company. Employee attendance is very important for companies to monitor their attendance and performance levels. By recording attendance every day, companies can assess employee discipline and performance. The more diligent and punctual employees attend and work in the office, the higher the assessment of their performance.

4. According to Rizka Adlia Yuannisa (2022) who quoted As indicated by the 1969 regulations, it is stated that a representative is a laborer who takes care of business and submits the results of his work to a superior whose work is in accordance with the call or work based on ability as his job. Some definitions of employees according to experts.
5. According to Hasibuan, employees are people who can carry out administration (brain or energy) and get paid a mutually agreed amount.
6. According to Subri, employees are the working age population (adults 15-64 years) a number of people in a country who produce labor and products assuming there is an interest in their work, and to earn a wage.
 From the above statement regarding the definition of employees, it can be concluded that employees are a number of people who have jobs and rely on brains and muscles and produce wages as payment for completing work properly.
7. Photo is one of the commercial genres of photography because the photos produced must explain the intent of the following key points (Purnama, 2020):
 - Easy to understand: The purpose of the photo should be easily understood by consumers.
 - Clear: The resulting photo should show the details of the object.
 For example, product photos should display the packaging, labels, or logos that characterize the seller.
8. Selfie is one of the non-verbal expressions of feelings. Thus, the selfie actually has a message that the actor wants to convey to the audience. (Riko Setiawan and Prudensius Maring 2020);
9. A website is a collection of interconnected pages in which there are several items such as documents and images stored on a web server. Web app is an application that resides on a web server that users can access through a browser. Web apps usually display user data and information from the server. (Munawar et al., 2022)
10. Websites are part of internet technology, where technology is a system created by humans for

certain purposes and purposes to make it easier for humans to ease their efforts, increase their results, and save energy and existing resources. Currently, the internet is the most widely used source of information to find the information needed because on the internet network there is a search engine or search engine that can be used by users to search for the web pages they need. (Andriyan et al., 2020)

From the above statement regarding the definition of a website, it can be concluded that a website is a collection of information on the internet created by humans to make it easier for humans, both work and knowledge.

- 11 According to Randi V. Palit et al. In the Journal of Sudaryono and Efana Rahwanto (2020: 342) "Xampp is free software, which supports many operating systems, is a compilation of several programs". Xampp functions as a stand-alone server (localhost) consisting of the Apache HTTP Server program, MySQL database, and PHP and Perl programming languages.
- 12 According to Rachmat Agusli et al. in Sudaryono and Efana Rahwanto's Journal (2023: 342) "MySQL is a Relation Database Management System (RDBMS) software that can manage databases very quickly, can accommodate very large amounts of data, and can be accessed by many users (multi-use) and can perform a process synchronously or simultaneously (multi-threaded)".
- 13 According to Tarmizi Maulana et al. (2024: 2) "PHP (Personal Home Page) is a standard language that is often used in the world of websites. PHP is a programming language in the form of scripting that is placed on a web server ". Hypertext Preeprocessor is another term for PHP. It is a programming language that can only run on a server where the results will be displayed on the client.
- 14 According to Suendri in Sudaryono and Efana Rahwanto's Journal (2020: 340) UML (Unified Modeling Language) is a standard specification language used to document, specify and build software.
- 15 According to Novi Cholisoh et al. (2021: 137) there are 4 four of the most common UML diagrams, diagrams are widely used to describe software that is designed by emphasizing an approach to object oriented programming (OOP). Among the four diagrams are:
 - Use Case Diagram
 Use case diagram is a diagram that describes the interaction between the system and the user or actor.
 - Activity Diagram
 Activity diagram is a diagram that describes the workflow of system activities with users or actors.
 - Class Diagram

Class diagram is a diagram that describes the relationship between structures, class definitions, packages and objects and their interactions with one another.

- Sequence Diagram

Sequence diagram is a diagram that describes user interaction with the system in sequence.

- 16 According to Yola Monica et al. in the Journal of Fachrihusaini, et al (2023: 2661) "PIECES is a concept used to analyze work systems in a company or organization". there are 6 (six) criteria, namely, performance (Performance), information (Information), economy (Economic), control (Control), efficiency (Efficiency) and service (Service).
- 17 According to Mohammad Arya Rasyid Sikumbang et al. in the Journal of Fanesyah Musvina, Sri Rahmawati, S.Kom, M.Kom. and Hakamsyah Andrianof, S.Kom, M.Kom (2022: 77) "RAD (Rapid Application Development) is a software development method with an object oriented approach to system development". This development method is used because it can shorten the time in planning, designing and implementing a system when compared to traditional methods.
- 18 According to Sri Rahayu and Ade Setiadi (2021: 239) Blackbox testing is used as the final stage of testing the system by observing the results based on the experiments carried out. According to Ramadi, R. Black box testing is testing the fundamental aspects of the system without paying attention to the internal logic structure of the software. This method is used to determine whether the system is functioning properly or not.
- 19 According to Ervina in the Rahmat Bachtiar Journal (2023: 21) "elicitation is a method carried out by researchers with stakeholders in analyzing the proposed system so that it can be executed". Based on the above definition, it can be concluded that elicitation is a design that is carried out based on the desired new system by conducting research with related management and agreed by the author so that it can be executed immediately.

2.3 Literature Review

According to M. Ridho Mahaputra (2022: 33), "a literature review is a description of theories, findings, and other research materials obtained from reference sources that serve as the foundation for a research study." The literature review is arranged within a clear conceptual framework regarding the problem-solving approach outlined in the research problem formulation. Based on this, several literature reviews are presented as follows:

1. This research was conducted by Riko Setiawan and Prudensius Maring (2020) in the *Pewart Indonesia Journal* titled *The Motive for Taking Selfie Photos for Online Class Attendance During the Covid-19 Pandemic Among Elementary School Students*. The study uses Alfred Schutz's phenomenological theory and employs a qualitative approach to understand the motives of students taking selfies in various self-presentations. The results show three main motives among elementary students in Kebon Jeruk, West Jakarta, for sending selfies as virtual class attendance: (1) as proof of presence, (2) to build self-image, and (3) to attract others' attention.
2. This research was conducted by Chrismikha Hardyanto (2022) in *KOMPUTA: Journal of Computer and Informatics Science*, titled *Utilization of Mobile Technology in Employee Attendance Recording During the New Normal Era of the Covid-19 Pandemic*. In this study, a mobile attendance application was developed to track employee location during check-in and to verify identity using Google Maps API, geofencing, and fingerprint sensors on smartphones. The testing results concluded that the attendance application effectively addresses the research problem.
3. This research was conducted by Rahmat Gunawan, Arif Maulana, and Lysa Nopitasari (2021) in the *Journal of Electronics and Computer Science*, titled *Design and Development of a Student Attendance System Using Android-Based QR Code*. The designed program offers a solution to issues in the attendance system at STMIK Rosma Karawang and helps achieve objective activities that support academic operations.
4. This research was conducted by Fazrin Muhammad Rizaldi in an undergraduate thesis titled *Web-Based Employee Attendance System Using GPS (Case Study at PT. Mersifarma)*. The researcher developed a web-based attendance system and used it as the focus of the study.
5. This research was conducted by Paturusi in an undergraduate thesis titled *Location-Based Attendance Application*. The aim was to develop a location-based attendance application to help teachers take attendance more easily, replacing manual processes.
6. This study was conducted by Haider Ismail Ibrahim and Israa Shadhan Talfan (2021), titled *Student Attendance Registration System Based on QR Code*. The app has two interfaces: one for students to mark attendance and another for teachers to create and display a QR code for students. The app displays attendance records, absenteeism, and allows differentiation of students who actively participate in lectures.
7. This research was conducted by Bagus Ramdana Kurnia Aji, M. Mahaputra Hidayat, Alifia Julianti, and Ahmad Arif Muzzani in the *Journal of Electrical Engineering and Computer Sciences* (2023), titled *Development of Employee Online Attendance System Using Webcams and Web-Based Location: Case Study of CV. OTW Computer Gusaha*. The application aims to

improve the efficiency of the attendance process, simplify monitoring and evaluation, and minimize fraud.

8. This research was conducted by Ahmad Raihan Djamarullah, Ilyas Nuryasin, and Hardyanto Wibowo in the *Ultimities Journal of Informatics Engineering Currently* (2024). The study abstract states that attendance in companies, schools, or universities is still often done manually using paper, which is inefficient. BYOD (Bring Your Own Device) can ease the attendance process for users, and simplify management for administrators.
9. This study was conducted by Devendra Kumawat, Gauri Shrimali, Kalpit Malviya, Mayank Kataria, Palak Intodia, and Bhupendra Teli in the *International Journal of Advanced Research in Computer Science* (2021). The system incorporates fingerprint scanning, voice recognition, and geofence restrictions. Admins can define geofence boundaries. The paper demonstrates improvements in the attendance management system through biometric verification in organizations.
10. This research was conducted by Kashif Ishaq and Samra Bibi, titled *IoT-Based Smart Attendance System Using RFID: A Systematic Literature Review*. The abstract concludes that IoT-based attendance systems using RFID offer significant benefits. This paper provides valuable insights for institutions aiming to build advanced attendance systems that enhance student engagement and academic performance by outlining guiding principles, best practices, and solutions to challenges.

3. METHODOLOGY AND RUNNING SYSTEM ANALYSIS

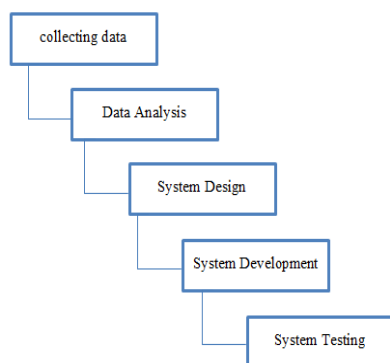


Figure 1. RAD waterfall method

This research employs the Rapid Application Development (RAD) system development method due to its relatively short development cycle and active user involvement at every stage. To gather the necessary data for designing the employee attendance information system, the author used three main data collection approaches.

First, the observation method was conducted by directly observing the manual attendance process,

which still relies on paper, at PT. Top Airconditioner. Second, the interview method involved direct discussions with individuals involved in the attendance process, particularly the personnel and HR departments, to understand the challenges they face. Third, the literature review method was used to explore theories and previous studies from journals, scientific articles, and other relevant literature sources.

To analyze the current system and design a new one, the PIECES method was applied, which includes six key aspects: performance (system performance), information (information quality), economics (cost efficiency), control (security and control), efficiency (resource usage), and service (service quality). This analysis aims to identify weaknesses in the existing system and the advantages of the proposed system.

The system design process used the Unified Modeling Language (UML) approach with the help of Visual Paradigm software. Several types of diagrams were utilized in this design, including:

- Use Case Diagram, which illustrates the interaction between users and the system;
- Sequence Diagram, which shows the chronological order of activities between users and the system;
- Activity Diagram, which outlines the flow of user and system activities from start to finish;
- Class Diagram, which explains the data structure and relationships between entities in the system, such as user, attendance, and report entities.

System development followed the stages of RAD, beginning with requirement planning, where users and analysts work together to identify system goals and required information. This is followed by the system design phase, where users actively participate in designing the system interface and workflow, and provide feedback for design revisions when necessary. Once the design is finalized, the prototype development and feedback gathering phase takes place, in which an initial version of the system is built and tested by users. User feedback is then used to refine the system before full implementation. The final phase is implementation, which involves the development of the program by the programmer based on the finalized design.

The system is developed using the PHP programming language with a MySQL database, running on a local server using XAMPP, and written using the Visual Studio Code editor. To ensure that all system functions work properly, the Blackbox Testing method was used. This method focuses on functional testing from the user's perspective without examining the internal code. The purpose of this testing is to detect errors in functions, user interfaces, data access, and system performance.

3.1 Current System Procedure Design

To analyze the existing system, this study uses

the Unified Modeling Language (UML) to illustrate the current procedures and processes.

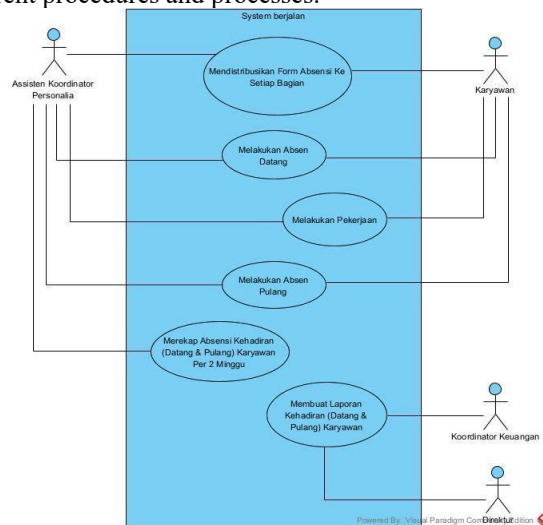


Figure 2. Use Case Diagram of Running System

Based on the Use Case Diagram above, the following explanations are provided: The current system includes several key use cases. The first is "Distributing Attendance Forms to Each Department", where the actors involved are the Assistant Coordinator of Personnel and Employees. In this process, the Assistant Coordinator of Personnel is responsible for distributing attendance forms to all departments. The second use case is "Clocking In", which involves both the Assistant Coordinator of Personnel and Employees, who are responsible for recording their arrival times. The third use case is "Performing Work", where the sole actor is the Employee, who carries out the tasks assigned to them. The fourth use case is "Clocking Out", again involving both the Assistant Coordinator of Personnel and Employees, who are responsible for recording their departure times. The fifth use case is "Recapping Employee Attendance (Arrival & Departure) Every Two Weeks", carried out by the Assistant Coordinator of Personnel, who summarizes employee attendance data biweekly. The final use case is "Generating Employee Attendance Reports (Arrival & Departure) Every Two Weeks", which is performed by the Finance Coordinator and the Director, who are responsible for preparing formal attendance reports on a biweekly basis.

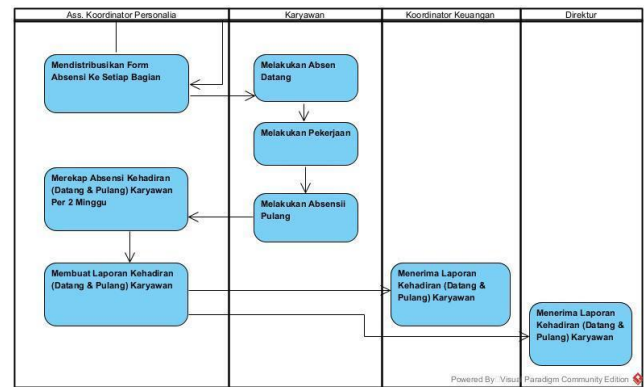


Figure 3. Activity Diagram

The Assistant Coordinator of Personnel distributes attendance forms to each department. Then, the Assistant Coordinator of Personnel and the employees record their arrival. The employees proceed with their work. Afterward, the employees record their departure. The Assistant Coordinator of Personnel compiles the employee attendance records (arrival and departure) every two weeks. The Assistant Coordinator of Personnel then prepares the employee attendance report (arrival and departure). The Finance Coordinator receives the employee attendance report, followed by the Director who also receives the report.

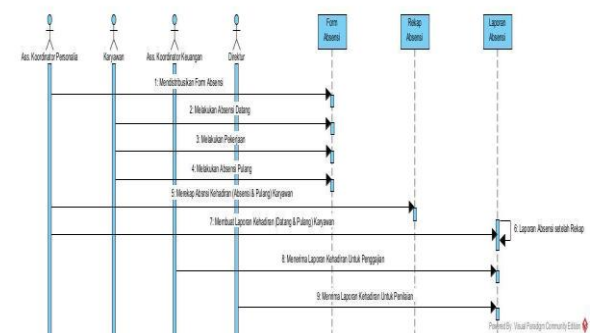


Figure 4. Sequence Diagram

The Assistant Coordinator of Personnel distributes the attendance forms. Employees clock in. Employees perform their work. Employees clock out. The Assistant Coordinator of Personnel compiles the employee attendance records (arrival and departure). The Assistant Coordinator of Personnel prepares the attendance report (arrival and departure) and the attendance summary report. The Finance Coordinator receives the attendance report for payroll purposes. The Director receives the attendance report for evaluation purposes.

3.2 PIECES Analysis Method

The following is a comparison table of the current system with the proposed system for the Employee Attendance System.

No	Type of Analysis	Weaknesses of the Current System	Proposed System
1	Performance	Still uses paper-based media for employee attendance.	Now uses a web-based system for employee attendance with selfie photo verification, making the process more efficient.
2	Information	There are errors in inputting employee attendance data, leading to inaccurate attendance information.	Data input is now handled by the system, reducing the chance of data entry errors. The system only requires employees to take a selfie, without manual data entry, as the attendance date is automatically generated—minimizing human error.
3	Economics	Still requires budget allocation for purchasing paper.	Uses a system that stores data in a database, significantly reducing monthly paper use and saving approximately 1 million IDR per month.
4	Control	Data can be easily lost.	Data is more secure and accessible only according to user roles registered in the database, such as employees and admins.
5	Efficiency	Report generation takes a long time.	Includes a report printing function based on the required report date range, improving efficiency.
6	Service	It takes around 30 minutes to manually compile attendance data.	Data is stored in the database, making it easier and faster to generate attendance reports.

Table 1. PIECES Analysis Method

Based on the problems encountered in the employee payroll data processing, PT. Top Airconditioner requires a web-based employee attendance system to assist the personnel department in managing the employee attendance process more efficiently. With the implementation of this system, the company is expected to improve efficiency and accuracy in employee attendance management.

In response to the current issues in employee payroll data processing, the following alternative solutions are proposed:

- To develop a web-based employee attendance system using selfie photo verification, which will help accelerate the generation of attendance reports.
- To improve the performance of the personnel department in handling the employee attendance process, thereby reducing existing problems.
- To facilitate supervisors in monitoring employee attendance on a monthly basis.

4. PROPOSED SYSTEM DESIGN

After conducting research and analysis, a proposed system design will be developed to create an effective and efficient solution that simplifies the employee attendance process. The proposed system is based on the issues identified in the current system. The proposal presented in this thesis report involves designing a web-based employee attendance system illustrated through a Use Case Diagram, Activity Diagram, Sequence Diagram, and Class Diagram, using the Visual Paradigm tool to provide a clear overview of the system to be developed.

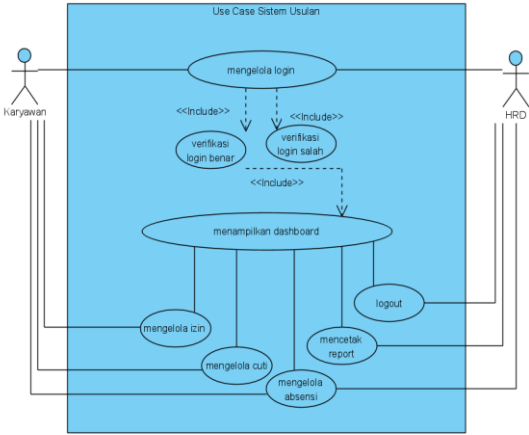


Figure 1. use case diagram of the proposed employee attendance system

In the proposed use case diagram above, there is: One system that encompasses all activities involved in the web-based employee attendance information system process, Two actors who perform activities, namely the employee and the HR department (HRD), A total of nine use cases carried out by all actors.

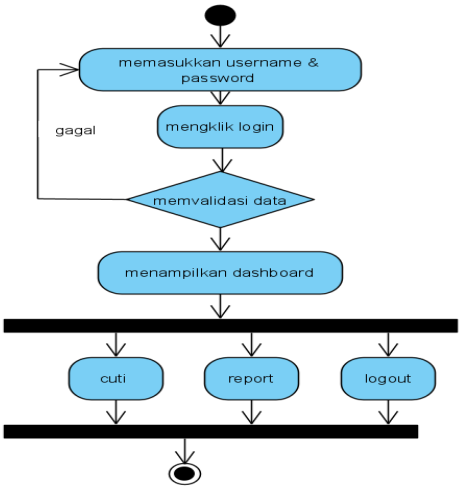


Figure 2. HRD activity diagram

In the proposed activity diagram in Figure, there are: 1 initial node that initiates the system object, 6 system actions that represent activity steps, 1 fork node that illustrates multiple flows, 1 decision node that describes the login activity with two possible outcomes: if the login is successful, the customer proceeds to purchase items; if incorrect, the user must re-enter the information correctly, 1 final node indicating the end of the system flow

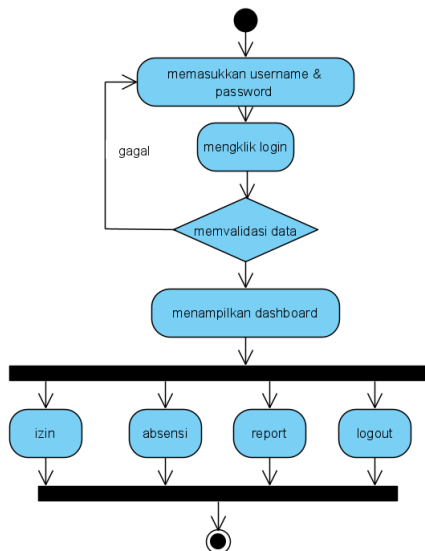


Figure 3. Employee activity diagram

In the proposed activity diagram above, there are: 1 initial node that initiates the system object, 7 actions from the system that represent a series of activities, 1 fork node that explains multiple flows, 1 decision node that describes the login activity with two possible outcomes: if the login is successful, the admin can access the web dashboard; if unsuccessful, the admin must re-enter the information correctly, 1 final node indicating the end of the system flow.

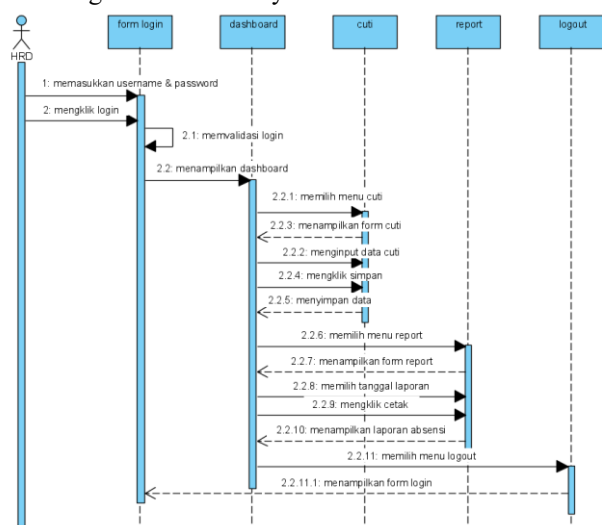


Figure 4. HRD Sequence Diagram

In the proposed sequence diagram above, there are: 1 actor who performs the activities, namely HRD, 5 boundary lifelines, which are login form, dashboard,

leave, report, and logout, 10 messages that represent the activities.

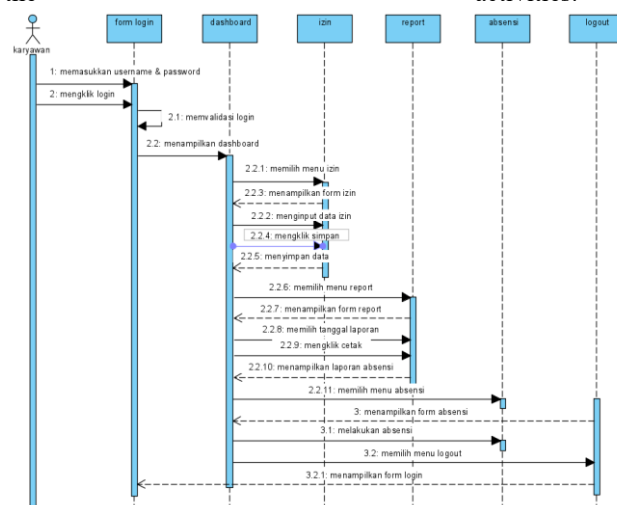


Figure 5. Employee Sequence Diagram

Based on the proposed sequence diagram above, there are: 1 actor who performs the activities, namely the employee, 6 boundary lifelines, which are login form, dashboard, leave, attendance, report, and logout, 11 messages that represent the activities.

No	Existing System	Proposed System
1.	Employees check in and out using paper forms.	Attendance will be recorded through a website, making it easier to calculate check-in and check-out times.
2.	Attendance data is not well-organized.	On the website, data will be neatly organized and systematically structured.
3.	Everyone can see the attendance records because they are stored on paper.	On the website, only certain actors can access attendance data, ensuring the company's data security.
4.	Attendance is easily done on paper.	Employees only need to access the attendance website to record their attendance.
5.	Report creation still uses MS Excel and requires manual re-entry from previously written reports.	Generating reports directly on the website makes it easier for the admin.

Table 1. current system procedures and proposed systems

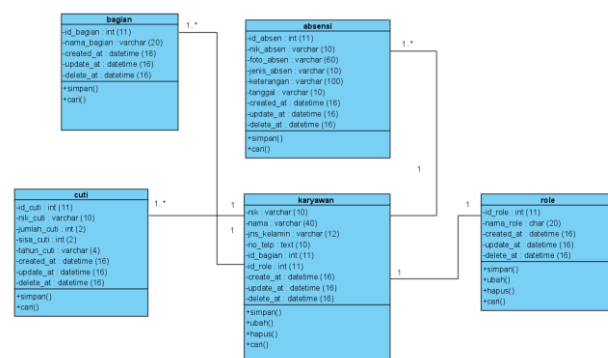


Figure 6. Proposed System Class Diagram

Based on the class diagram above, it illustrates the proposed system. In the proposed system, there are five tables: employee, attendance, leave, role, and permission.

No	Field name	Data type	Field size	Keterangan
1.	nik	integer	10	Primary Key
2.	nama	Varchar	40	
3.	Jns_kelamin	Varchar	12	
4.	No_telp	Text	10	
5.	Id_bagian	integer	11	
6.	Id_role	integer	11	
7.	Created_at	datetime	16	
8.	Update_at	datetime	16	
9.	Delete_at	datetime	16	

Table 2 employee database specifications

No	Field name	Data type	Field size	Keterangan
1.	Id_role	Integer	11	Primary Key
2.	Nama_role	Varchar	20	
3.	Created_at	datetime	16	
4.	Updated_at	datetime	16	
5.	Delete_at	datetime	16	

Table 3. Role database specifications

No	Field name	Data type	Field size	Keterangan
1.	Id_absensi	Integer	11	Primary Key
2.	Nik_absen	Varchar	10	
3.	Foto_absen	Varchar	60	
4.	Jenis_absen	Varchar	10	
5.	keterangan	Varchar	100	
6.	Tanggal	Varchar	10	
7.	Created_at	Datetime	16	
8.	Update_at	Datetime	16	
9.	Delete_at	Datetime	16	

Table 4. Attendance database specifications

No	Field name	Data type	Field size	Keterangan
1.	Id_bagian	Integer	11	Primary Key
2.	Nama_bagian	Varchar	20	
3.	Created_at	datetime	16	
4.	Updated_at	datetime	16	
5.	Delete_at	datetime	16	

Table 5. database section specifications

No	Field name	Data type	Field size	Keterangan
1.	Id_cuti	Integer	11	Primary Key
2.	Nik_cuti	Varchar	10	
3.	Jumlah_cuti	integer	2	
4.	Sisa_cuti	integer	2	
5.	Tahun_cuti	integer	4	
6.	Created_at	Datetime	16	
7.	Update_at	Datetime	16	
8.	Delete_at	datetime	16	

Table 6. leave database specifications

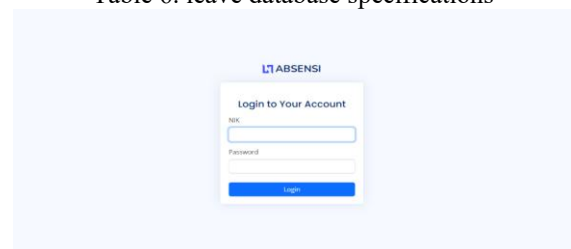


Figure 7. Attendance Form page is a login form that functions for system security.



Figure 8. Attendance page is an attendance page that functions for employees to record employee attendance when they come and go every day.



Figure 9. Employee Dashboard Page is an employee dashboard page that functions to display the features contained in employee user access rights.

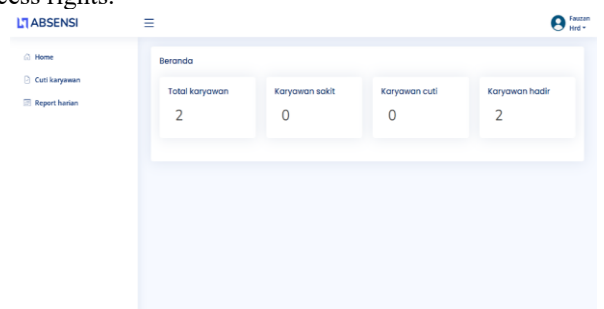


Figure 10. HRD dashboard page is an employee dashboard page that functions to display the features contained in the HRD user access rights

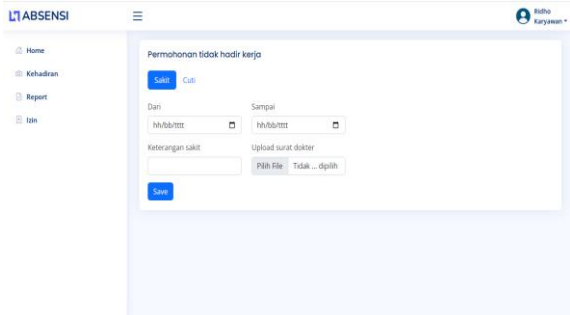


Figure 11. Permission Form Page is an employee permission page that functions to apply for permission.

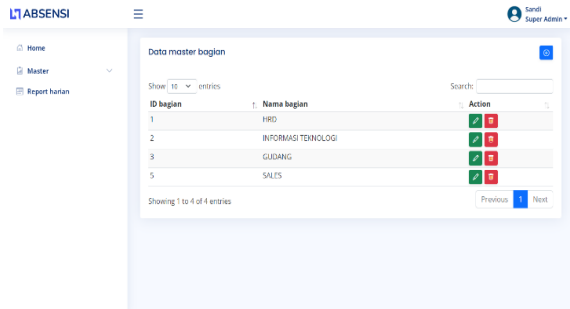


Figure 12. Section Form Page is a section form page that functions to input section data

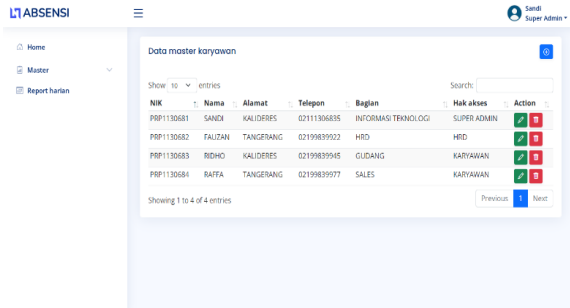


Figure 13. Employee Form Page is an employee form page that functions to input employee data

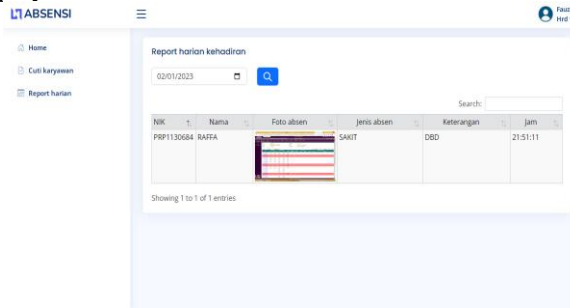


Figure 14. Attendance Report Form Page is an absence report form page that functions to provide information on employee absence reports.

No.	Testing Scenario	Page Tested	Expected Result	Test Result	Status
1.	If the username and password fields are left blank (invalid input)		The system will display an error message		Valid
2.	If both username and password are filled in correctly (valid input)		The system will display the dashboard menu		Valid
3.	User submits incomplete department data (invalid input)		The system will not save the data		Valid
4.	User submits incomplete class data (invalid input)		The system can still save the data		Valid
5.	User submits incomplete employee data (invalid input)		The system will not save the data		Valid
6.	User submits complete employee data (valid input)		The system will save the data		Valid

Table 7. BlackBox testing

5. CONCLUSION & RECOMMENDATION

Based on the previous analysis and discussion, the author can conclude the following :

Currently, employee attendance recording still uses attendance sheets, where each employee records their check-in and check-out times manually on paper. Every month, the HR department compiles the employee attendance report to be used as payroll data.

The current attendance system is not yet running optimally due to several issues, such as attendance sheets being prone to loss or damage, and the HR department needing around 30 minutes daily to compile attendance data, which makes the process inefficient.

To develop a system that facilitates the HR department in managing employee attendance data and generating attendance reports, this study proposes a web-based employee attendance system using selfie photo verification. The system includes two types of users: employees and HR. The advantage of this attendance system is that attendance is verified using selfies, preventing employees from clocking in on behalf of others. However, its drawback is that employees can clock in from any location, which could potentially allow them to deceive HR about their physical presence.

Training is required for employees to use the web-based employee attendance system so that the implemented system can function properly. Additional computer and server infrastructure is needed to support the implementation of the employee attendance system. Regular maintenance is necessary to ensure the system remains well-controlled.

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