Implementation of Laravel Framework on Online Presence App Design for Internship Employees (Case Study: PT. XYZ)

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Abstract. Numerous companies use presence as a component of employee presence. PT. XYZ uses presence for all its employees. PT. XYZ has permanent employees, contract employees, and internship employees. Currently, presence data recording for internship employees at PT. XYZ still uses the manual method so it takes a long time and is vulnerable to data manipulation. This study aims to facilitate the management of the presence of internship employees so that they can validate the work location of internship employees and facilitate internship employees in making daily activity reports. This online presence system is designed using the PHP programming language and MySQL as the database. In this study, the author uses the Waterfall Software Development Life Cycle (SDLC) method. Then the system testing was carried out using User Acceptance Testing (UAT) by distributing questionnaires to respondents. Based on the results of the black box testing and user acceptance test (UAT) that have been carried out, it was found that the system developed was in accordance with its function and was very well accepted by internship employees and employees of PT. XYZ.

1 Introduction

PT. XYZ is a state-owned company that majors in the telecommunications sector, where this company is a provider of telecommunications networks, services, and content with fiber optic transmission media located in Indonesia. PT. XYZ uses presence as a component for the attendance of permanent employees, contract employees, and internship employees. Currently, presence for internship employees is done manually, i.e., each intern needs to do the presence in the form of a monthly report, where internship employees will fill in presence, leaving, and the carried-out activities that will be validated and signed by the field mentor. The processing of presence data for internship employees who are still done manually results in delays in receiving data because the delivery process will take time. Delay in delivery will affect the flow of other information systems such as recording presence data in monitoring the performance of internship employees. In terms of security, the manual presence system is still very vulnerable. If it is torn or lost, it will cause delays in the flow of presence information for internship employees in recapitulating data because it has not been stored in the database.

The researcher saw several problems based on the collection of information obtained from permanent employees, contract employees, and interns. From the above problems, the researcher will create a website-based online presence system that aims to make apprentices attend presence using an application equipped with processing and recapitulating the presence data of apprentices. The system uses the PHP programming language with the Laravel framework and MySQL database [1].

The contribution of this research is to combine the three previous studies to produce a concept for developing this online presence. The study results showed that presence could store information more easily because it is computerized and stored in an automated system. This implies that presence has a very important role for the company because presence is a routine carried out by an employee to prove that he is really in an office.

2 Literature Review

Presence is an activity or routine carried out by someone to prove whether he is in an agency. This presence relates to the implementation of the rules that have been determined by each company or institution [2]. Presence can also be interpreted as a document that records the presence hours of each employee in the company. The recording of working time is intended to record the actual hours of entry and exit done by the employees in their department. This timesheet document can be used to validate the presence record of each employee as well as to collect data on the number of hours attended by employees in a paid period and to obtain production data

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needed for the distribution of wages, salaries, and intensive calculations [3]. An internship employee is a program designed by the Indonesian government with regulations set out by law. This internship employees' rule is regulated in the Regulation of the Minister of Manpower Number 6 of 2020 concerning the Implementation of Apprenticeships in the Country. Internship employees are those who are learning in the process so that when they graduate, they can improve their abilities to become professional and be accepted for work [4].

Unified Modeling Language (UML) is a graphic or image to visualize, define, build, and document an object-oriented software development system. UML itself provides a standard for creating blueprint systems, which include business process concepts, writing classes in certain programming languages, database schemas, and components needed for software systems [5]. UML is a visual language used for modeling and communicating a system using diagrams and supporting text. Therefore, the use of UML is not limited to certain methodologies, but mainly, UML is most widely used in object-oriented methodologies [6] and Entity Relationship Diagram (ERD) is a design tool to model a database. The purpose of making ERD in an organization is for modeling that shows the relationship between data that has a relation, as well as documenting existing data by explaining each data and its relation. Relation cardinality is the maximum number of entities that can be related (associated) with entities in other entity sets [7].

3 Research Method

In this study, the researcher provides an overview of the steps taken in its implementation and the methodology used is the waterfall [8] which can be seen in Figure 1 below.

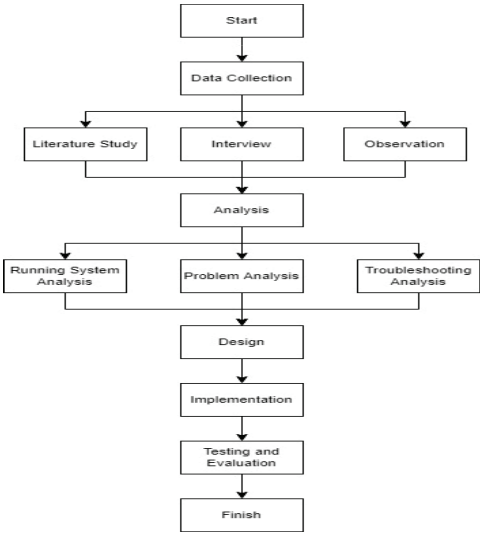


Fig. 1. Research Design

3.1 Data Collection

The data collection method at PT. XYZ is carried out in three ways, namely interviews, observation, and literature study. In this study, interviews were conducted with seven people including one manager, three mentors, and three internship employees with the result that internship employees still do presence manually by making presence forms based on a period containing details of the work done and signed by them, then followed by asking for the mentor's signature. After that, it is signed by the manager so that the document is valid in accordance with company regulations. Furthermore, the researchers made observations by looking directly at how the presence process was carried out by the company, starting from inputting to presenting monthly reports at PT. XYZ. The results of this observation can be concluded that these activities can be correlated to manual presence methods, which are validated by permanent employees (mentors) towards internship employees' activities, directions, and evaluations carried out by managers and permanent employees (mentors) to internship employees and many more.

Furthermore, in this study, a literature study was carried out by searching, observing, reading, and comparing with similar applications carried out by 3 previous researchers. The first study conducted by Gueta, Martinez, Ramirez, & Silva with the title "Attendance Monitoring and Remuneration with Android Application Implementing Ioe in Thumbayan Food Express and Marketplace" resulted in a system that can record and store employee information by making it simpler and easier because it is computerized and can be stored in an automated system. Therefore, attendance monitoring does not require book records. In another hand, the checking of employee working hours uses a Biometric Fingerprint Scanner. It reduces the hassle of calculating employee basic salaries and can easily determine daily presence without checking every stall in the market [9]. Furthermore, the second study conducted by Olagunju, Adeniyi, & Oladele under the title "Staff Attendance Monitoring System using Fingerprint Biometrics" resulted in a biometric-based Employee Attendance Monitoring System that is used to assist Administrators to manage recap, monitor, and track employee attendance appropriately [10]. The third research conducted by Rjeib, Ali, Farawn, Al-Sadawi, & Alsharqi under the title "Attendance and Information System using RFID and Web-Based Application for Academic Sector" resulted in an attendance information system using web-based RFID which was implemented to manage student data and provides the ability to track student attendance, rate students, and provide information about schedules, class times, class numbers, and other student-related information. The proposed system provides convenience for staff where there is no need for additional paperwork and additional lockers to store data. The result is an innovation in developing a reliable system to support attendance management systems for the academic sector [11]. In this study, we used a combination of those three studies and came up with a concept to develop this online presence. The

following table compares similar applications (see Table 1).

Table 1. Previous Research Journal

Feature	The Journal Tittle of the Previous Researchers			
	Attendance Monitoring and Remuneration with Android Application Implementing Ioe In Thumbayan Food Express And Marketplace [9]	Staff Attendance Monitoring System using Fingerprint Biometrics [10]	Attendance and Information System using RFID and Web-Based Application for Academic Sector [11].	The Laravel Framework Implementation on Design and Build Online Presence Application for Internship employees (Case Study: PT. XYZ) (Current Research)
Login Access	√	√	√	√
Login Role	Admin, Tenant	Admin	Admin	Admin, Manager, Mentor and Internship employees
Presence	√	√	√	√
Manage User	x	x	x	√
Manage Presence	√	x	√	√
Presence Report	x	x	x	√
Presence Using Face	x	x	x	√
Presence Filter with Certain Time Range	x	x	x	√
Work Description	x	x	x	√
Geo-location	x	x	x	√

3.2 Analysis

System analysis running at PT. XYZ in processing and recapitulating the presence data of internship employees can be seen in Figure 2.

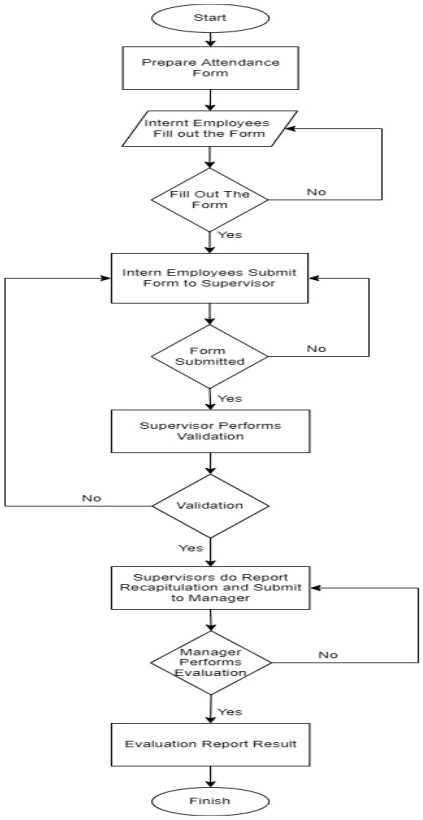


Fig. 2. Running System Analysis

Figure 2 is a flowchart of running system analysis at PT. XYZ at this current time. First, the mentor prepares a presence form which will be filled out by the internship employees and then the intern fills out the presence form and then the intern submits it to the mentor for validation. The mentor validates by giving a signature on the form after that, the mentor recapitulates presence, and then the mentor makes a presence report to be submitted and evaluated by the manager.

3.3 Design Systems

In this study, researchers used use case diagrams in Figure 3 for defining the actor that use the application, class diagrams in Figure 4, ERD diagrams in Figure 5 and Architecture Design in Figure 6. The below picture

Fig. 3. Use Case Diagram

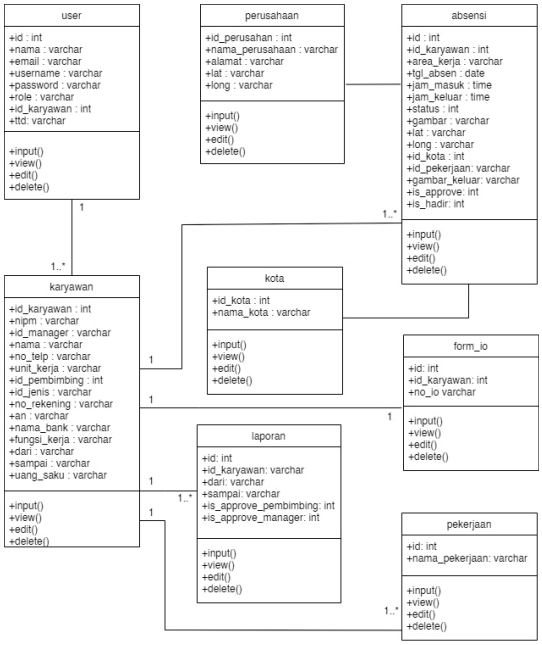


Fig. 4. Class Diagram

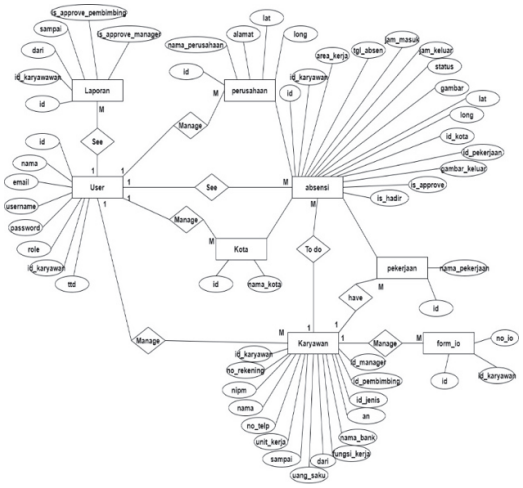


Fig. 5. Entity relationship diagram

Figure 6 we can see in the application architecture created for each user can access the application using a web browser via the URL link. Web server is where the application is located, and every incoming data will be stored in the database.

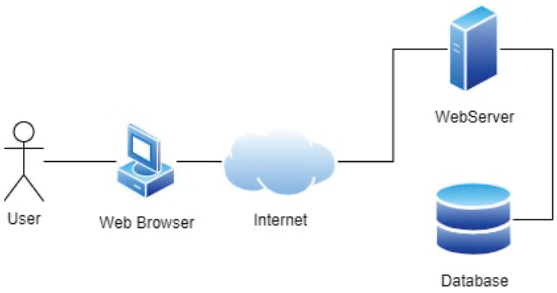


Fig. 6. Architecture Design of the App

3.4 Implementation

In this study, researchers used web browsers such as Google Chrome, and Microsoft Edge to access online presence applications. The display in Figure 7 below is a login display into the application. Figure 8 can show if login is correct user can show dashboard.

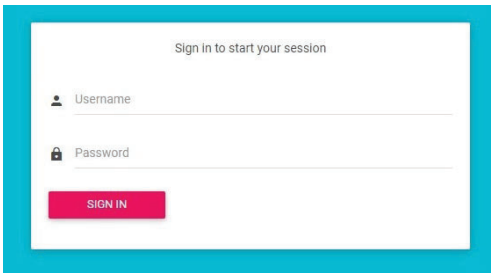


Fig. 7. Login Page

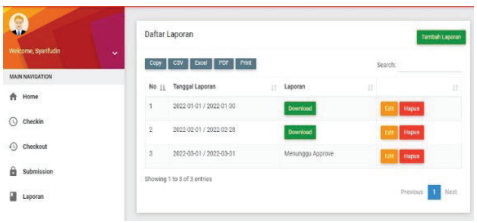


Fig. 8. Home Page

In Figure 9 internship employees do presence on the check-in menu. After taking presence, the mentor will validate the presence every day for the internship employees. The mentor can see the details of the intern's entry and exit hours and can display the coordinates of the location where the intern performs presence. Here's how it looks in Figure 10 below.

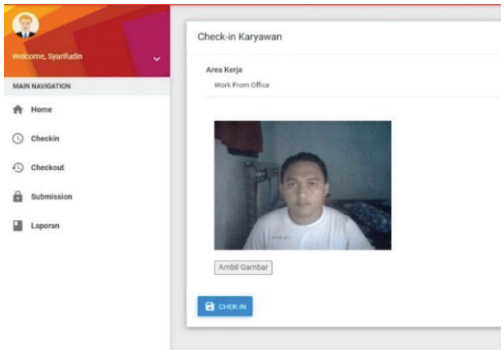


Fig. 9. Check-in Page

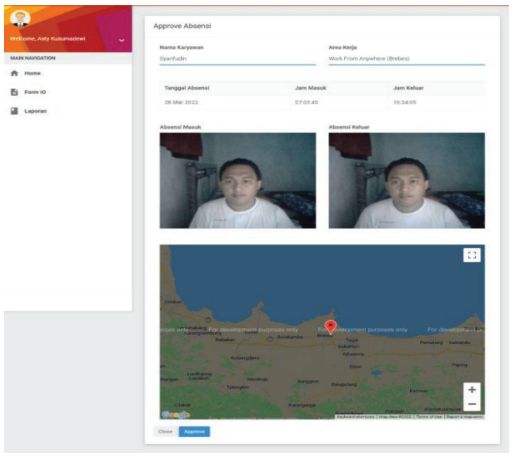


Fig. 10. Approved Presence Display

Furthermore, the intern can submit a report, and after the report has been approved by the mentor and manager, the intern can download the report file. Here's how the report page looks in Figure 11.

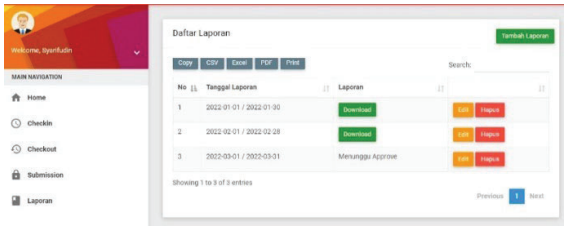


Fig. 11. Report page display

3.5 Evaluation

After the application is implemented, the researcher evaluates with black box testing [12] which tests all menus and features on each registered user role. This test is to observe the input and output results when the online presence application is used. The results of this test indicate that this application has no functional errors and provides an output that is in line with expectations the results as shown in Table 2.

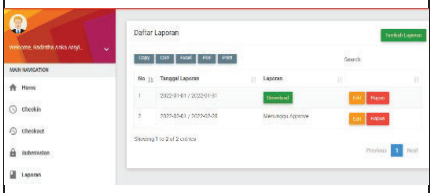
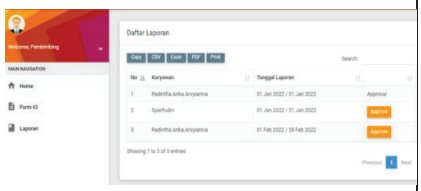
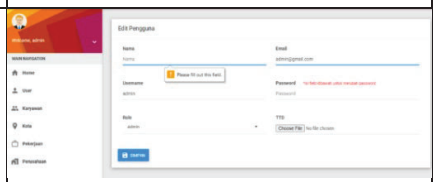
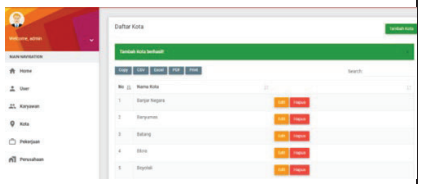
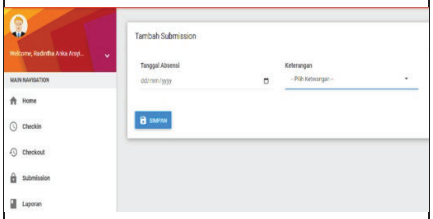
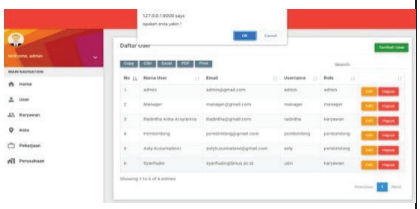
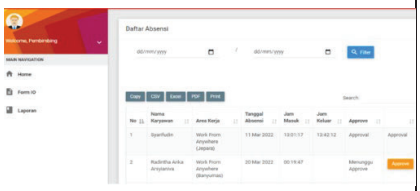
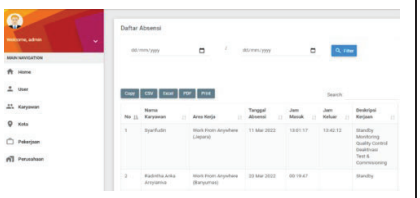
Table 2. Result Black Box Testing

Tested function	Role	Input	Expected results	Evidence
Login	• Admin • Manager • Mentor • Intern	Email and Password	Login is successful when valid. If it is not valid, the wrong email or password information will appear	Success
Menu Home	• Admin • Manager • Mentor • Intern	Pressing the home button	Displays the latest presence list	Success
Button Filter	• Admin • Manager • Mentor • Intern	Pressing the filter button	Showing data filtered by date	Success
Menu Report	• Manager • Mentor • Intern	Pressing the report button	Displays the report list data page	Success
Button Approve	• Manager • Mentor	Press the approve button	The page will display the report details	Success
Check-in	Intern	Pressing the check-in button	If you have filled out the check-in form, the system will save it in the database	Success
Checkout	Intern	Pressing the checkout Button	The system will show a checkout button popup	Success
Add Report	Intern	Pressing the add report button	The system will display the time range for which the report will be generated. If the employee selects the period and clicks	Success

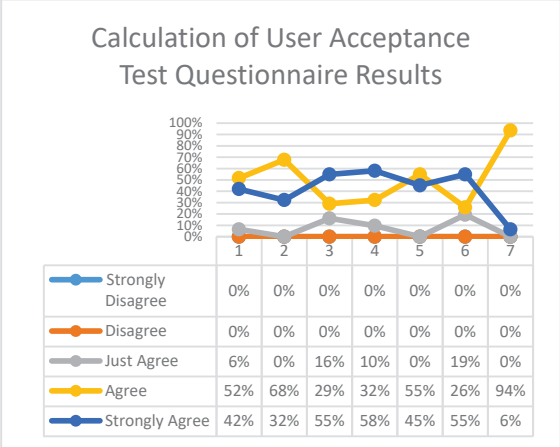
			save, the system will save it to the database	

In addition, the researcher also conducted an evaluation using the eight golden rules, with the results of this application meeting the requirements such as color consistency, layout, letters, cater to universal usability, offering informative feedback, design dialogs to yield closure, prevent errors, permit easy reversal of actions, support internal locus of control and reduce short-term memory load [13]. Here's how it looks in Table 3 below.

Table 3. Result Eight Golden Rules

Rules	Pictures
Strive for consistency : consistent font, button size, use of colors, and menu layout	
Cater to universal usability: the approve icon has an icon color display that can be used and recognized easily by users	
Offer informative feedback: have feedback for every user action	
Design dialogs to yield closure: interface dialog design by conveying that the process the user is running has been completed	
Prevent Errors: instructions for filling out the form according to the format accepted by the application	
Permit easy reversal of actions: can make it possible to cancel what the user did with the cancel button	
Support internal locus of control: users can take advantage of the search field feature	
Reduce short-term memory load: This online presence application uses easily recognizable icons such as those in the navigation menu	

Finally, the researchers conducted an evaluation using a user acceptance test by distributing 7 questionnaire questions via google form to 8 employees of PT. XYZ which is divided into managers, supervisors, and 23 other interns, with the results as shown in Figure 12.



	1	2	3	4	5	6	7
Strongly Disagree	0%	0%	0%	0%	0%	0%	0%
Disagree	0%	0%	0%	0%	0%	0%	0%
Just Agree	6%	0%	16%	10%	0%	19%	0%
Agree	52%	68%	29%	32%	55%	26%	94%
Strongly Agree	42%	32%	55%	58%	45%	55%	6%

Fig. 12. Result of UAT Questionnaires

From the results of the graph above, it is stated that this online presence application is very helpful for internship employees in daily presence activities and helps recapitulate work in the form of reports.

4 Conclusion

Based on the research, analysis, design, testing, and evaluation discussed above, it can be concluded that this online presence application was designed using the Unified Modeling Language modeling, then built using the PHP programming language and the Laravel framework. Then this online presence application is designed using a MySQL database so that data is stored properly, and users can view all data via the internet from anywhere so that delays in information can be avoided. The process is now faster, whereas reporting was still using the manual method, so it took a long time and was vulnerable to data manipulation. This research has been tried and carried out by procedures. This study has a limitation, which is its use only to accommodate internship employees and is currently limited to the use of the website only. The suggestions given to carry out the next stage of development it is expected that the system built can be developed through Mobile Apps. The system can be developed with Artificial Intelligent by using the face recognition feature for face validation to avoid manipulation of attendance and in the future can be integrated with financing so that the existing features are much more complete.

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