

Development of A Web-Based Employee Attendance Application for the Masterteam System at Pt. Mcquay Tritunggal Pratama

Supardianto¹, Annisa Nabila²

{supardianto@polibatam.ac.id¹, anssanbla16@gmail.com²}

Informatics Engineering Department, Politeknik Negeri Batam, Indonesia^{1,2}

Abstract. PT. McQuay Tritunggal Pratama is one of the companies based in Batam City precisely in Block B1, No. 18-19, Komp. Ruko Palm Spring, Jl. Admiral Bintan, Taman Baloi, Batam City, has several branches, namely in Cikarang and Surabaya. PT. McQuay Tritunggal Pratama is a company engaged in HVAC (Heating, Ventilation, and Air Conditioning). Attendance is a form of attendance data collection that has an important role for the company in measuring the development of employee performance. Attendance at PT. Mcquay Tritunggal Pratama can be said to be less effective, where all is still done manually starting from the data collection done by calling the name of the record and then marking as present or absent, the calculation of the entry hours and hours out, until the information does not enter, this has an impact on a relatively long time in the process of calculating the recapitulation of attendance from employees, as well as the form of attendance reports made in the form of hardcopy that can cause errors in data recording, complicate the data search process and can be feared loss of employee attendance data. The application of website-based attendance can facilitate PT. McQuay Tritunggal Pratama in conducting recapitulation data addressing attendance data damage and helping employees report attendance in real-time. This website-based presence application is created using the PHP programming language with Laravel framework and data storage process using MySQL.

Keywords: web-based; attendance; laravel.

1 Introduction

PT. McQuay Tritunggal Pratama is a company operating in the HVAC System sector that is responsible for customer service in terms of AC, Chiller, and Ducting. The company has four departments, which include Marketing, Chiller Specialist, Finance & Procurement, and Service & Maintenance. The bigger a company, the more Human Resources (HR) it needs [1]. Based on this, companies must carry out effective and efficient management of attendance data processing because attendance is one method for measuring employee performance development.

The attendance system implemented in this company can be said to be still ineffective, as everything is still done manually. This includes data collection, which is done by calling out names from notes and then marking them as present or absent, calculating clock-in and clock-out times, and providing information about absences.

This process has resulted in extended time for calculating employee absenteeism recapitulation, as well as the use of hardcopy attendance reports, which can result in errors in accounting data, difficulties in searching for data, and the potential loss of employee attendance data.

With technology advancing day by day, there is a need for a website-based attendance application for PT McQuay Tritunggal Pratama employees. The World Wide Web, often known as the Web, is an information presentation service that uses the concept of hyperlinks, making it easier for surfers (the term for computer users who browse or search for information via the internet) [2]. With this application, it is hoped that it can help management in data recapitulation and prevent damage to attendance data, as well as assist employees in reporting attendance in real time.

Several previous studies, which are related to this research and have different developments tailored to their needs, will be used as reference material. The following is an explanation of several previous studies:

A research conducted by Rachman Mulyandi and Chynthia Wulan Dini from STMIK Raharja, entitled "Application of Employee Attendance in Batuaceper District, Tangerang in Increasing Information Accuracy" [3]. This research discusses the process of processing employee attendance data. The employee attendance processing process can be used to prevent fraud in the attendance process, such as keeping attendance and returning home not according to the office leaving time. It can also be used as material for employee attendance reports to determine employee performance in terms of time discipline.

A research conducted by Risky Putra Fhonna and Marzuki AR from Malikussaleh University, entitled "Web-based Employee Attendance Information System at the Communication and Information Bureau of the North Aceh Regent's Office" [4]. This research discusses absenteeism and absenteeism recapitulation. In this research, the authors built an attendance information system to make it easier for company owners and human resources to calculate employee attendance data and provide solutions to problems in the North Aceh regent's office. Specifically, the fingerprint application no longer works.

A research conducted by Ruslan from the Sigma Information and Computer Management Academy, entitled "Website-Based Employee Attendance Information System at the Sako Palembang Subdistrict Office" [5]. This research discusses absenteeism and absenteeism recapitulation. In this research, the problem that occurred was that attendance data collection was still done manually, resulting in invalid data, damaged and lost data, as well as a lack of efficiency and effectiveness in data processing. With this system, it is hoped that it will be able to minimize absenteeism problems at the Sako Palembang Village Office.

2 Analysis and Design

2.1 Application Development Models

This application development method uses the Waterfall model, often also called the linear sequential model or classic life cycle [11]. The waterfall model provides a sequential or ordered software life flow approach. This application design method is used as a guide in carrying out work on this application so that the results are in accordance with the specified objectives. The Waterfall method has five stages, which are presented in Fig 1.

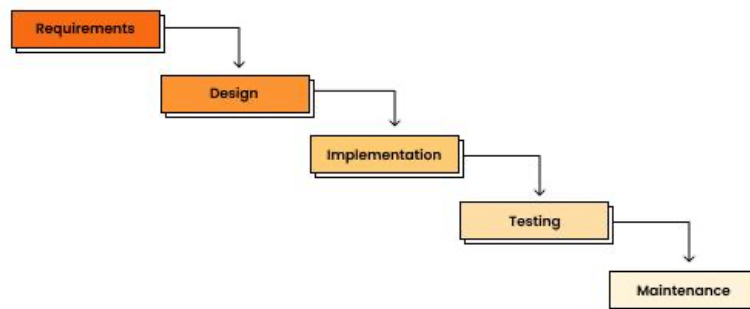


Fig 1. Waterfall Model

1) Requirements

During the Requirements stage, the needs of the application are analyzed and prepared. This includes analyzing the required features, functional and non-functional requirements, limitations of the application, and identifying high-risk features that may be released early

2) Design

During the Design stage, the UI and UX appearance of the Website-Based Attendance Application are designed and created. Additionally, the database design is tailored to the user's needs

3) Implementation

During the implementation stage, the coding process is carried out according to user needs and system design. This includes front-end and back-end development using PHP, CSS, Laravel, JavaScript, and Database.

4) Testing

During the Testing stage, trials are conducted on the built application to identify bugs or errors in implementation. Additionally, it helps determine if the user can easily access the application and understand the navigation

5) Maintenance

During the maintenance stage, periodic maintenance is performed to ensure the application can be used comfortably

2.2 System Overview

It is hoped that the Website-Based Employee Attendance Application in the MasterTeam System can help management obtain the necessary data properly to produce the information needed in recapitulation data and overcome damage to attendance data as well as help employees report attendance in real-time. This system is an employee attendance application that was built on a website basis.

An overview of the system being built can be seen in Fig 2; it allows 2 users to access, namely user and admin, the user opens the MasterTeam Attendance Application in the browser then the application will display a login page that can be used to log in for users who already have an account and register for users who don't have an account yet. On the home page, users can select the attendance feature which can be used for attendance directly in the create live attendance feature, view historical attendance data, and can also print attendance reports on home attendance, can be seen in Fig 2.

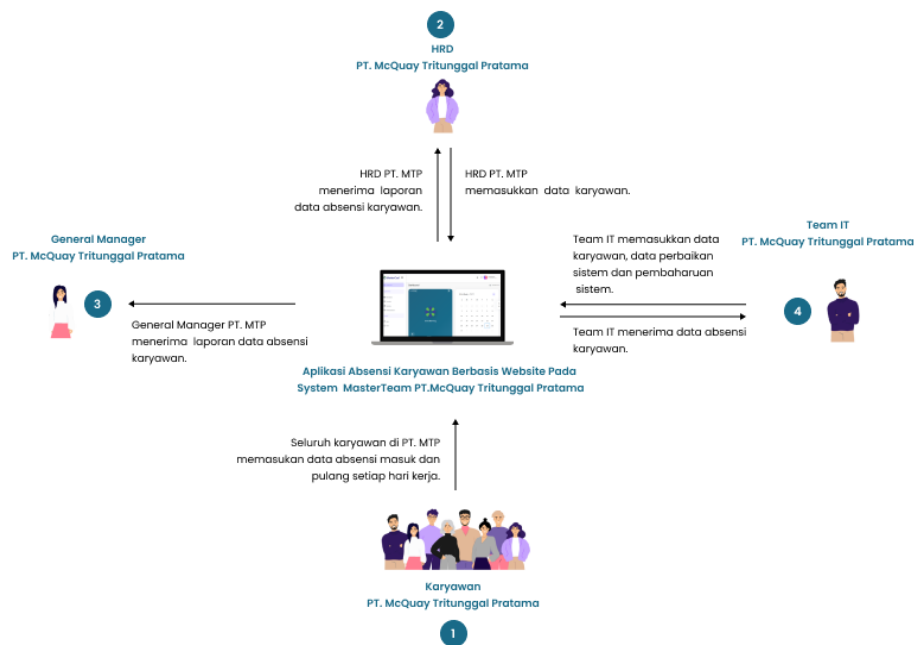


Fig 2. System Overview

The description of the system overview is as follows:

1. First, the employee actor will enter daily attendance data, including check-in and check-out times, into the application.
2. Second, the HR actor is able to input employee data into the application and can also retrieve attendance reports from it.
3. Third, the general manager actor has the capability to access employee attendance data reports.
4. Fourth, the IT team actor can input employee data, system repair and update information, and also has the ability to retrieve employee attendance records.

2.3 Functionality Needs

In creating a Website-Based Employee Attendance Application on the MasterTeam System PT McQuay Tritunggal Pratama is divided into two, namely functional needs and non-functional needs. This application is used by 4 types of users, namely: Admin, Supervisor, Director, and Employees. Access specifications for each user can be seen in Table 1.

Table 1. Functionality Needs.

Code	Functionality Needs
F001	The system can log in or register.
F002	The system can reset the password.
F003	The system can display employee data.
F004	The system can display employee data.
F005	The system can change employee data.
F006	The system can delete employee data
F007	The system can return employees.
F008	The system can print attendance data reports
F009	The system can display attendance data
F010	The system can add attendance data
F011	The system can delete attendance data
F012	The system can display historical attendance data

2.4 Non-Functionality Needs

The non-functional requirements for the Website-Based Employee Attendance Application on MasterTeam System PT McQuay Tritunggal Pratama can be seen in the following Table 2.

Table 2. Non-Functionality Needs

Code	Non-Functionality needs
NF001	The interface design of the application is made user-friendly so that users can easily use the system.
NF002	It is a web-based application.
NF003	The applications can be accessed online.
NF004	The application requires access to the user's location and camera to add attendance data.

2.5 Use-case diagram

A Use Case Diagram describes an interaction between one or more actors and the system to be developed. Use-cases are used to determine what functions exist within a system [8]. Below is the design of a use-case diagram for Website-Based Employee Attendance Application on the MasterTeam System PT McQuay Tritunggal Pratama. The use cases can be seen in Fig 3.

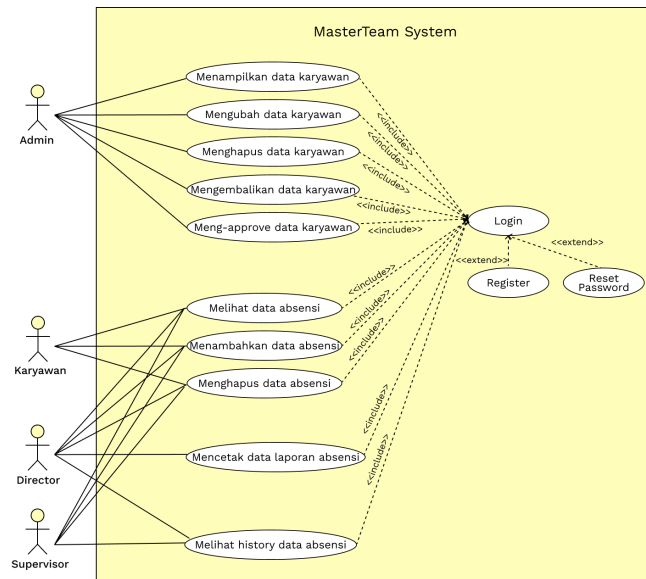


Fig 3. Use-case diagram

3 Result and Discussion

The results and discussions conducted have led to implementations as shown in the images below:

3.1 Interface Implementation

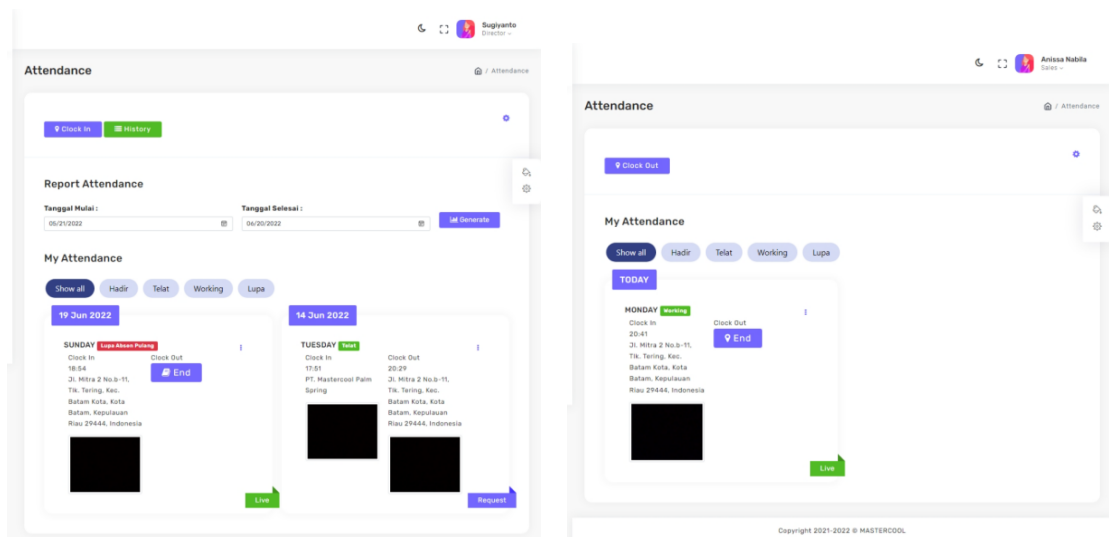


Fig 4. Attendance Interface

The attendance page is used for taking attendance and viewing attendance that has already been taken. On this page, there are different displays for employees, supervisors, and directors. Employees can view their own attendance on this page. They can also mark their attendance and return it. Attendance can only be marked once a day can be seen in Fig 4.

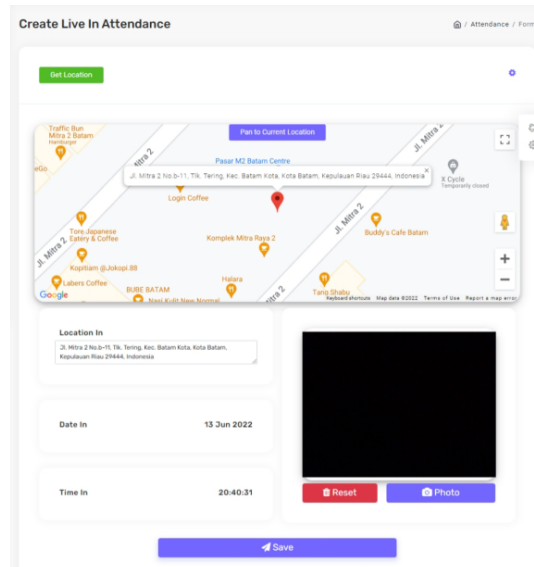


Fig 5. Create Attendance

The Create Attendance page is a page for inputting attendance. On this page, there is a form containing a customized location where the employee is located, time, and date and take a photo to fill in attendance. The Create attendance page can be seen in Fig 5.

Date	Location	Time	Photo	Category	Status
21 Jan 2022	4320+M4 Bellan, Batam City, Riau Islands, Indonesia	16:02	View	Live	Take
24 Jan 2022	4320+M4 Bellan, Batam City, Riau Islands, Indonesia	08:19	View	Live	Take
30 May 2022	Jl. Patra Kuningan I No. 8, RW. 4, Kuningan Tim., Kecamatan Setiabudi, Kota Jakarta Selatan, Daerah Khusus Ibukota Jakarta 12950, Indonesia	20:03	View	Live	Take
30 May 2022	Jl. Patra Kuningan I No. 8, RW. 4, Kuningan Tim., Kecamatan Setiabudi, Kota Jakarta Selatan, Daerah Khusus Ibukota Jakarta 12950, Indonesia	20:08	View	Live	Take

Fig 6. History Attendance

The history attendance page is a page for viewing employee attendance reports which contain date, location, photo, category, and employee attendance status which can be accessed by supervisors and directors. The attendance history page can be seen in Fig 6.

3.2 Testing

This website-based employee attendance application was tested using the black-box method, namely software testing that focuses on software functionality. By using this method, the software will be tested so that it meets the expected functional needs. This test is carried out by all employees at the company's weekly meeting. Testing can be seen in Table 3.

Table 3. Testing Result

Use Case Scenario	Expected Result	Test Result (Correct)	Test Result (Wrong)
Login	Login successfully	Login data is valid and successfully entered into the system	Login data is invalid, the system displays a warning message and returns to the login page
Register	Register successfully	Registration data is valid and directed back to the login page waiting for the admin to approve the account	Register data is invalid, the system displays a warning message and returns to the register page
View Employee	Can be see data employee	Display data employee	-
Edit Employee	Can be change data employee	Employee data is valid so it is processed and stored	Employee data is invalid, the system displays a warning message and the data is not processed
Delete Employee	Can be delete data employee	The system will delete the selected employee data	-
Approval Data Employee	Can be approval data employee	The system will approve the selected employee data	-
Return Data Employee	Can be return data employee	The system will return the selected employee data	-
View Attendance	Can be see data employee	Displays attendance data	-
Add Data Attendance	Can do attendance	Valid attendance data is processed and stored	Invalid attendance data, the system displays a warning message and the data is not processed
Delete Data Attendance	Can be delete data attendance	The system will delete the selected attendance data	-
Print Data Attendance	Can be printed data attendance	The system will display a print form to print the attendance report	-
View History Data Attendance	Can be history data attendance	The system will display the entire history of attendance data	

4 Conclusion

4.1. Conclusion

Based on the problem formulation and objectives of the research, it can be concluded that:

1. A website-based employee attendance application has been built on the MasterTeam PT system, McQuay Trinity Primary. This application is expected to make things easier and faster for employees spread outside the PT office, McQuay Tritunggal Pratama, in carrying out attendance and reporting absences, as well as requesting absences.
2. This application facilitates companies, especially the human resources management section, in recording employee attendance data, which is needed to recapitulate employee attendance reports..

4.2. Recommendations

This application has not been built perfectly. Therefore, further development is needed to improve it compared to the previous version. The suggestion for further development is to include employee attendance in the newly created application. Additionally, it is hoped that employee permits and leave requests can be applied for, as well as reimbursement for funds used for work purposes.

References

- [1] Masram, dan Mu'ah. 2017. Manajemen Sumber Daya Manusia. Surabaya: Zifatama Publisher.
- [2] Riyadli, H., Arliyana, A., & Saputra, F. E. 2020. Rancang Bangun Sistem Informasi Keuangan Berbasis WEB. Jurnal Sains Komputer Dan Teknologi Informasi.
- [3] Rachman, Mulyandi., dan Chynthia, Ayu, Wulan, Dini. 2013, Aplikasi Absensi Pegawai Kecamatan Batuaceper Tangerang Dalam Meningkatkan Akurasi Informasi Tangerang: Sekolah Tinggi Manajemen Informatika dan Komputer Raharja.
- [4] Fhonna, Rizky Putra, and A R Marzuki. 2021. Sistem Informasi Absensi Pegawai Pada Biro Kominfo Kantor Bupati Kabupaten Aceh Utara Berbasis Web. *Jurnal Ilmu Komputer dan Sistem Informasi (JIKOMSI)* 3(3): 333–40.
- [5] Ruslan. 2019. Sistem Informasi Absensi Pegawai Berbasis Web Pada Kantor Kelurahan Sako Palembang. Palembang: Amik Sigma Palembang
- [6] Putri, T. H. 2017. Hubungan Gaya Kepemimpinan Otoriter dengan Motivasi Kerja Karyawan di PT. Telkom Langsa Tbk. Universitas Medan Area.
- [7] Harumy, T.H.F., Julham Sitorus, Meliza Lubis. 2018. Sistem Informasi Absensi Pada Pt . Cospar Sentosa Jaya Menggunakan Bahasa Pemrograman Java. *Jurnal Teknik Informatika* 5(1): 63–70.
- [8] Aminudin. 2015. Cara Efektif Belajar Framework Laravel. Yogyakarta: Lokomedia
- [9] Yudho, Yudhanto., dan Helmi, Adi, Prasetyo. 2018. Panduan Mudah Belajar Belajar Framework Laravel. Jakarta: Elex Media Komputindo.
- [10] Enterprise, J. 2017. Otodidak MySQL untuk Pemula. Jakarta: PT Elex Media Komputindo.
- [11] Ariani, Sukamto, Rosa., dan M. Shalahuddin. 2014. Rekayasa Perangkat Lunka Struktur dan Berorientasi Objek. Bandung: Informatika.