
DESIGN OF ATTENDANCE INFORMATION SYSTEM WEB-BASED EMPLOYEE ON PT. CKTI KARAWANG

Ahmad Anas¹, Siti, Aminah Azzahrah
Informatics Engineering Study Program, STMIK Pamitran

Abstract

Processing of employee attendance data at PT CKTI Karawang is still done conventionally starting from attendance, leave, illness and permission. Therefore, a more organized data processing and structuring is needed so that the data can be presented properly and its security can be guaranteed. The data collection method used is to conduct observations and interviews related to the obstacles or obstacles that exist in the attendance system at PT CKTI Karawang. In addition, the authors also conducted a literature study to support the theory needed in the preparation of scientific journals. Designing a Web-based employee attendance information system and Mysql as a solution to solving problems that exist in the company's attendance system, and with a computerized system an effective and efficient activity can be achieved. This application can also produce information on entry, leave, illness and permission as well as monthly attendance reports in the company.

Keywords: attendance system, system design, Web

Introduction

Along with the rapid pace of technology and various kinds of computerized technological conveniences, now government and private agencies utilize technological facilities in processing data that used to be processed conventionally into computerized patterns to facilitate the transaction process and search for data that has been stored in the *database*. PT CKTI Karawang as a company engaged in the sale of heavy equipment that has been long established still uses a manual attendance system. The process of processing employee attendance such as the process of attendance in, out, permission, sickness and leave to the monthly employee attendance report requires an organized mechanism and arrangement so that data can be presented and properly secured. From the background description above, the author makes a program using the web as a means of support. The title of the research is "**Designing a Web-Based Employee Attendance Information System at PT. CKTI Karawang**".

Theoretical Foundation

A. Definition of Information System

Sutarman (2012: 13), states that "Information Systems can be defined by collecting, processing, storing, analyzing, disseminating information for specific purposes". Like any other system, an information system consists of inputs and outputs. (Mattigara & Ramlah, 2021)

B. Employee Attendance

Employee attendance can be understood as data that shows the presence of each employee every day in a company. Not only when employees enter the office, but also when employees go home and close their workday. (Sutikno: 297).

The types of employee attendance itself can be clearly distinguished, based on the use of media or technology chosen by the company. Make no mistake, until now there are still companies that use analog attendance systems. Then this type will still be included in the following list.

1. Analog Model Time Attendance

Analog attendance can be understood as a manual attendance model that still uses physical equipment. This attendance is implemented in a variety of ways ranging from using stationery directly, to using a machine that can print hours when the card is inserted into the available slot.

This method, in the current era, is considered irrelevant because it requires a lot of equipment, repeated purchases of paper and stationery, and the condition of the machine that needs regular maintenance.

2. Entering Employee PIN

The second model is an attendance system that includes the employee's PIN as the main identity. Each employee has a PIN that is used in order to clock in and out, which is unique and different from one another. This PIN, in the attendance system, will become the employee's identity so that the data entered becomes more accurate. However, the disadvantage of using this system is that the PIN entered can be entered by other employees, to circumvent the system used.

3. Fingerprint Usage

This model is quite popular and is used by many companies. Basically, the use of fingerprints in the attendance system requires employees to place their fingers on the scanner device to be scanned directly. If the scanned fingerprint matches what is in the database, then the employee can complete the attendance process.

However, this system underwent massive changes during the pandemic because it was considered less hygienic. Several models emerged as alternatives and prioritized the touchless side of employee attendance.

4. Magnetic Card

A few decades ago, the use of magnetic cards in employee attendance was still common. The method is similar to using a credit or debit card when shopping. However, the system will recognize the card of each employee who has been registered, so that when swiped the data will enter the data collection system.

Although the process is fairly fast, this method has several conditions. One of them is that employees can only do attendance with a card. When you forget to bring the card, then the attendance will be difficult to do.

5. Use of Website and Mobile Attendance

The application of these two methods is increasingly in demand in the pandemic era because the devices used will practically not be the same between one employee and another. Basically, employees input their username and password on the website provided by the company, to take attendance.

For the mobile type, the company will provide a special application for employees that is integrated with the company's database. This attendance can also be given a GPS feature, so that employee position tracking can be done accurately.

6. Employee Attendance with Biometric Technology

The application of biometric technology in the attendance system has actually been done quite a lot by various companies. Besides being more hygienic because attendance is done without touching at all, this process also only takes a few seconds.

The integration of the entered data with the biometric data contained in the database is fast, accurate, and secure, making the process easier for employees. Employees only need to stand in front of the scanner camera to enter their biometric data, and the system will work automatically.

The advantages of this system are clearly more accurate and faster than other systems. It's just that a solid initial investment is required, so that the system used is truly reliable.

Employee attendance will eventually become a way for companies to continue to collect data related to employee attendance at the company. The more sophisticated the system used, the more accurate the data obtained. Therefore, the use of the latest attendance products and features should ideally be an option taken by the company. (Dedy: 101-103).

C. Website

According to Lukmanul Hakim (2004), a website is an internet facility that connects documents locally and remotely. Documents on the website are called webpages and links on the website can be used by users to switch from one page to another (hypertext) page either between pages stored on the same server or on servers around the world. Pages can be accessed or read through browsers such as Google Chrome, Mozilla Firefox and so on.

Research Methods

This research was conducted by conducting fieldwork using observation and interviews with relevant sources.

A. Observation

This method is carried out by collecting data through direct observation to the location of the source of information, namely PT CKTI Karawang to obtain the information needed in writing this scientific journal. Research activities include data collection, analysis, presentation of data carried out systematically and objectively which aims to solve a problem.

B. Interview

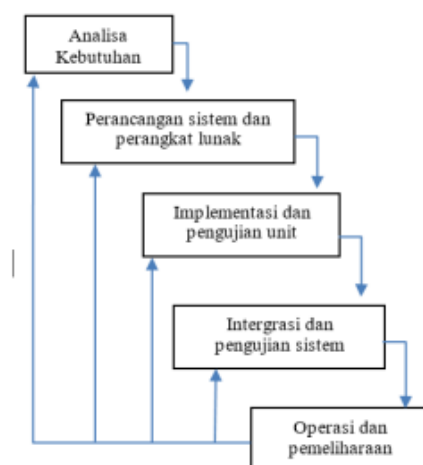
In this method, the author conducts dialog by means of direct face-to-face and question and answer with relevant administrative and financial staff who can provide useful information for the completion of this scientific journal. Interviews were limited to these two sections because observations were made during the Covid-19 pandemic.

C. Literature Study

This method is done by reading and studying literature as a reference related to the writing of this scientific journal.

D. Waterfall Method

Waterfall According to Sholikhah, Sairan, and Syamsiah (2017: 47), explains that, "Waterfall is a classic model that has a sequential nature in designing software." The waterfall method is something that describes a systematic and sequential approach (step by step) to a software development. Stages with user requirements specifications then continue through the planning stages, namely planning, modeling, construction, a system and delivery of the system to users, support for the complete software produced (Novitasari 2018).



Gambar 1. Metode Waterfall

Figure 1: Waterfall Diagram
Source: (Yauma et al., 2021)

E. System Analysis

To support the making of this Hajj and Umrah pilgrim administration information system application, several *hardware*, *software* and *brainware* components are needed.

1. Hardware

Hardware is the physical device that makes up a computer and helps make it work. The hardware or minimum hardware specifications required consist of:

1. Using *Intel Core i3 Processor* or its equivalent.
2. Uses 4.00 GB of RAM.
3. *Harddisk* or storage media capacity of at least 40 GB.
4. *Mouse, keyboard, printer and monitor* as interface equipment.

2. Software

Software is a system support tool consisting of an operating system and database applications. The required software specifications consist of:

1. Operating System *Windows 7 Ultimate 32 bit version*.
2. Programming language, *Visual Basic.Net...*
3. *Microsoft Access 2013 Database*.
4. *Microsoft Word 2013* word processing.
5. *Crystal Reports version 13.0* data report.

3. Brainware

A person who works in a computerized system. The new system requires people to master the computer applications that will run the day-to-day operations.

F. Functional Design

The functional design used is the UML (*Unified Modeling Language*) method. The design made with the UML method consists of: *use case diagram*, *class diagram*, *activity diagram*, *statechart diagram*, *collaboration diagram* and *deployment diagram*.

G. UML (Unified Modeling Language)

According to Rosa A.S and M. Shalaludin (2015: 137), UML (*Unified Modeling Language*) is a visual language for modeling and communicating a system using diagrams and supporting text.(Noviyanti et al., 2021)

1. Use case diagram

Use Case Diagram according to Tohari in Tabrani and Aghniya (2019: 46) concludes that, "use case is a series or description of a group of interrelated and forming a system in an orderly manner that is carried out or supervised by an actor".(Apriliah et al., 2019)

Use Case diagram description can be seen in **Figure 1.1**.

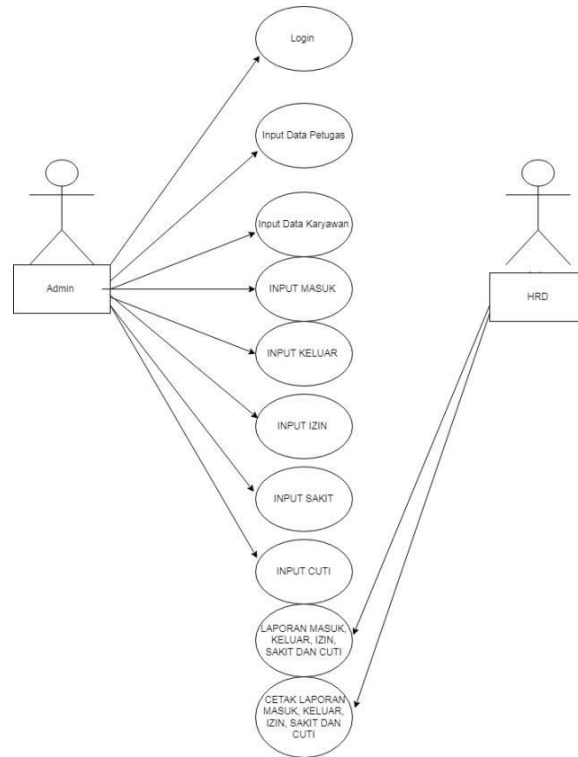


Figure 1.1: Use Case Diagram
Source : author

2. Activity Diagram

Activity diagrams show a sequence of actions and identify the results (Shelly and Rosenblatt, 2012). Activity diagram is a diagram that describes the dynamic nature of a system in the form of a flow and control model from activity to other activities (Henderi, 2009). Statechart diagram or also called transition diagram shows how an object changes from one state to another, depending on the events that affect the object (Shelly and Rosenblatt, 2012). Statechart diagrams are useful in object-oriented modeling where states are triggered by special events (Henderi, 2009).(Hidayatuloh & Setyaningsih, 2021)

Activity Diagram description can be seen in **Figure 3.1 - Figure 3.5.**

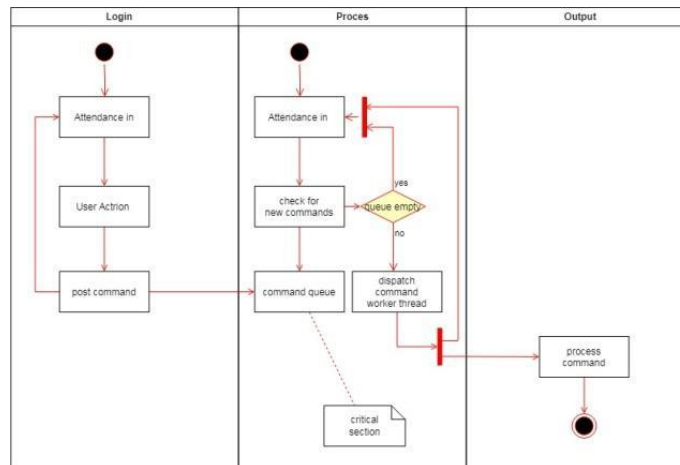


Figure 3.1: Activity Diagram by Officer For Employee If Login
Source: Author

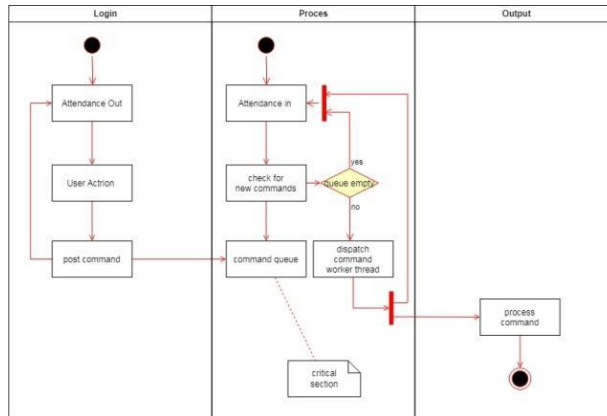


Figure 3.2: Activity Diagram of Officer for employees if they quit
Source: Author

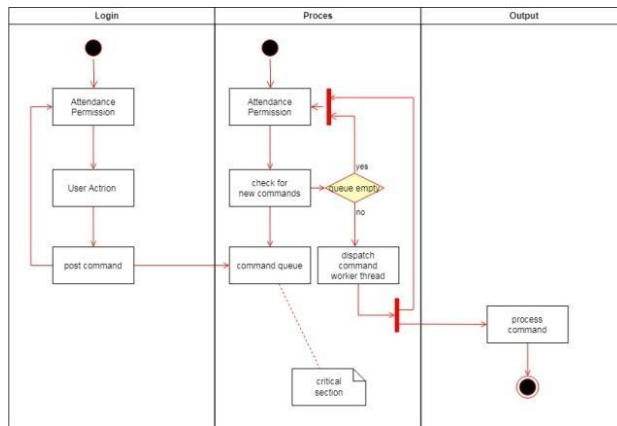


Figure 3.3: Activity Diagram of Officer for employee if Permission
Source: Author

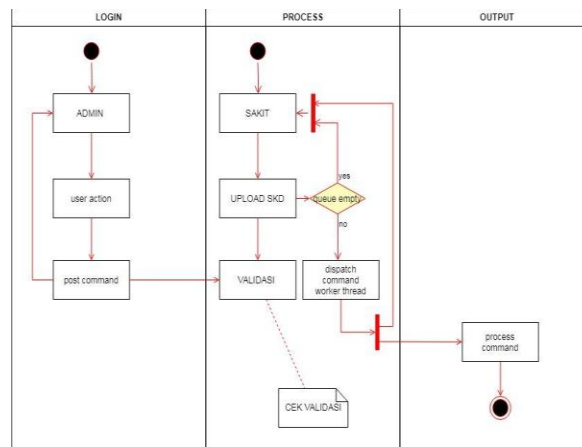


Figure 3.4: Activity Diagram Admin for Employees if sick Source: Author

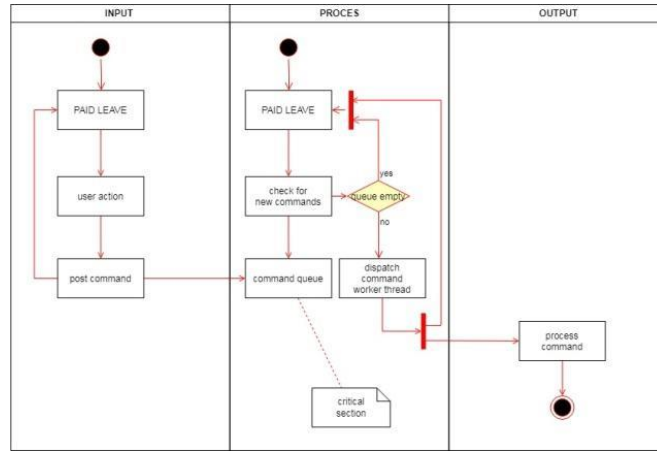


Figure 3.5: Activity Diagram of Officer for Employee Leave
Source: Author

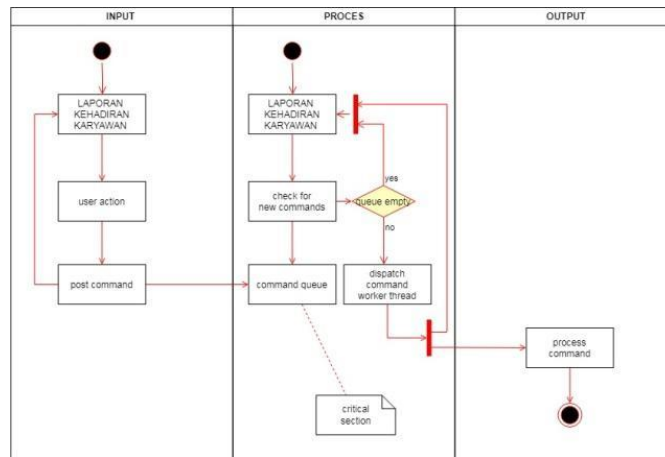


Figure 3.6: HRD Activity Diagram for Monthly Attendance Report
Source: Author

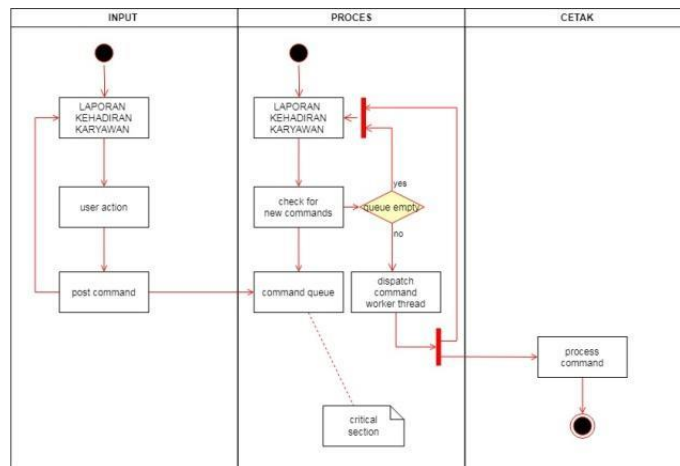


Figure 3.6: Activity Diagram for HRD to Print Monthly Attendance Report
Source: Author

Results and Discussion

A. Brief History of the Organization

PT CKTI is a company engaged in the sale of heavy equipment with a range of Indonesia and abroad. PT CKTI was established on December 10, 1980, located at Jl. Jakarta No. 12 Karangpawitan, Kec. Karawang, Kab. Karawang, West Java.

B. Proposed Design

System design that is assembled and made to create a special system about the Hajj and Umrah system that can be developed for its users.

After the system analysis process using UML (*Unified Modeling Language*), the next step is to create a *database* using *mysql*.

The data created is with tables:

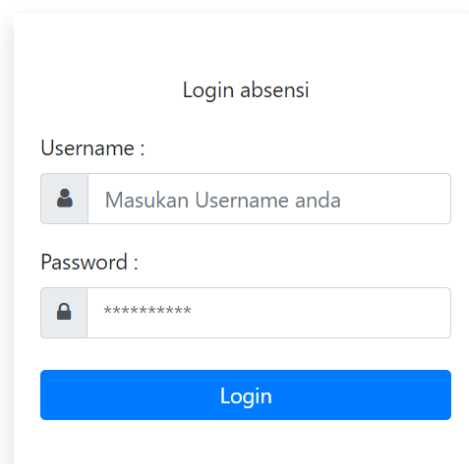
1. Admin Data
2. Employee Data
3. Work Entry Register
4. Work Exit Register
5. Permit Register
6. Sick Register
7. Leave Register
8. Employee Attendance Report
9. Print Employee Attendance Report

The tables are interconnected with each other.

C. System Implementation

1. Login Form Implementation

The following user interface at the beginning of the system, can be seen in Figure 1.1



Login absensi

Username :

Masukan Username anda

Password :

Login

Figure 1.1: Login View
Source: Author

2. Main Menu Implementation

The following is the main menu display after the user enters the login menu, can be seen in **Figure 2.1** below:

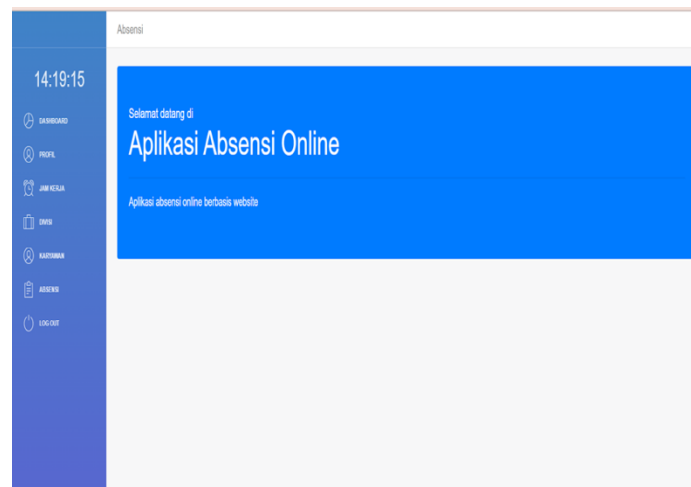


Figure 2.1: Main Menu Display
Source: Author

3. Employee Data Input Implementation

The data input menu display can be seen in **Figure 3.1** below:

Figure 3.1: Employee Data Input Display
Source: Author

4. Implementation of Employee Attendance

The report menu display can be seen in **Figure 4.1** below:

Figure 4.1: Employee attendance menu
Source: Author

5. Implementation of Monthly Employee attendance report

The report menu display can be seen in **Figure 5.1** below:

Figure 5.1: Monthly employee attendance report menu Source: Author

Conclusion

1. With a computerized system, the work process becomes more optimal and can be done quickly and precisely with a small error rate.
2. Making monthly administrative reports at PT CKTI more effective and efficient.
3. Data security is more guaranteed with user restrictions, one of which is giving *passwords* and granting access rights.

Of course, from the design of this system there are still many shortcomings and in the future this design can still be developed to be more useful.

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