

# Information System of Human Resources in Supports the Operations and Planning of the Company (Case Study: PT. Cannet Electrics Indonesian)

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## Abstract:

PT. Cannet Electric Indonesia is a PMA company engaged in the field of kWh Meter provider. Human Resources Management in a company is very important and very much needed in managing employee data within the company. Constraints that exist in this company are the absence of a system that supports the running of operations and company planning. Employee management such as employee data, department data, employee leave submission, employee permit submission, employee attendance management, salary calculation and employee performance evaluation that are still physical and done manually. Where each process is still recapitulated in the excel file and word and documentation is not well organized, thus making the company's performance slow and data not transparent. The purpose of implementing the human resources system is to raise awareness about the importance of quality for the survival of the company. This web-based information system development is used to manage all employee data in the company. With the development of information systems it is expected to produce a report of information in order to accelerate the performance of the company, the transparency of information between employees and top management.

*Keywords* — Human resources management, web, unified modeling language, performance.

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## I. INTRODUCTION

Unifying information technology that is supported by increasingly advanced software or hardware will help a lot in the process and data of employees in the company. Almost all companies in terms of decision making, information dissemination, increased effectiveness of work and services have used computer information systems. Currently at PT. Cannet Electrics Indonesian, there is no system that supports the operations and planning of the company. Application and management of employees such as employee data, department data, employee leave, employee permits, employee attendance, salary calculation, employee performance appraisal and manual documentation management. Where each process is still

recapitulated in the excel file or word and documentation is not well organized, so that the company's performance is slow and data becomes not transparent, orderly, precise, easy, accurate, integrated, safe and efficient. Managing data manually has several problems.

But the problem is 1. How to build a website that can be use to help users in managing HR management ? 2. How to present information that can simplify the HR department in handling the process of applying for employee permission ? 3. How to build a website that can be used by users to manage employee data more effectively and efficiently ? 4. How to build a website that can be used to manage Supervisor leave to produce accurate information ? 5. How to build website that can manage employee performance appraisal to make decision ? 6. How to build a website that can

be used to manage employee attendance data and employee salary ? the answer is of course not. 7. How to present employee salary information and attendance data that can be accessed by all employees easily and quickly without having to request data to the HR admin ? however 8. How to build a website that can facilitate administration in printing data ?. Then an information system is needed that can provide recommendations to increase awareness about the importance of quality for the survival of the company by using the System Development Life Cycle (SDLC) method starting from system planning to the input and output stages.

With the development of information systems it is expected to produce a report of information in order to accelerate the performance of the company and can produce a collection of structured and well integrated data as input from the management in the decision making process. The benefits of this research are the benefits felt by the user, namely the work becomes more effective and faster, the information needed becomes easier to obtain and is transparent. But the most important thing is to solve the above problems that we have explained before so that they get the information they need. In this paper, the author presents in four parts, namely: I. Introduction, this section will explain the background, problem formulation and objectives of the research benefits. II. Platform Theory, in this section will be explained briefly about the theories that support the preparation of research, exposure methods used by the author, and related research. III. The results and discussion, in this section will be described about the analysis and design of information systems. IV. Conclusions, in this section, the authors provide conclusions from what has been discussed in the previous chapters.

## **II. PLATFORM THEORY**

### **A. Information Systems**

Technical information systems can be defined into interconnected components that can collect, process, store, and distribute information to support decision making and control in an organization. In addition, information systems contain information about people, places, and things that exist in the organization or the surrounding environment. With

information we can form data into a form that is meaningful and useful for organizations and human beings.<sup>[1]</sup>

### **B. Human Resource Management**

Human resources management is a method used to generate resources (labor or employees) that exist within the company. This system is used for everyone, effective, and reliable.<sup>[2]</sup>

### **C. Research Methods**

#### **1. Method of collecting data**

- a. Conducting literature studies, by collecting data using the process of reading, searching, processing the contents of several scientific work references, books and journals that can be used as references in the process of developing the system.
- b. Conduct direct observations by looking at the flow of work of the relevant HR department and collecting materials related to the problem.
- c. Conduct interviews by conducting two-way communication directly within the parties concerned.
- d. The documentation used to collect documents relating to human resources management system problems.

#### **2. The proposed system design method is the Unified Modeling Language.**

“Unified Modeling Language is one language standard that is widely used in the industry to define requirements, make analysis and design, and describe architecture in object-oriented programming”.<sup>[3]</sup>

### **D. Related or Previous Research**

In the main information system, the authors found three types of journals related to our current work. We can see it briefly in the following sentence :

1. The research conducted by Robby Cokro Buwono, Ema Utami and Eko Boedijanto, proposed a human resource information system that manages the identity of employees, divisions, positions, assignments, election model positions. But the scope is not to manage leave data, permit data, attendance data, salary data and employee ratings.

2. The research conducted by Sitti Nurbaya Ambo and Muhammad Ghufroon is about information systems that manage attendance data and employee personal data created using the MVC method (Model, View, Control). But the scope is still not to manage leave data, permit data, and employee performance evaluation.
3. The research conducted by Diyan Agus Permana and Rizki Yudhi Dewantara about system development in the form of an employee recruitment information system design. While this study discusses human resource management, including management of employees, application for permission, filing leave, managing attendance, salary and distribution of employee ratings.

### III. RESULT AND DISCUSSION

In this section will be described about the analysis and design of information system.

#### E. PIECES Analysis

The following is the explanation of the PIECES analysis (Performance, Information, Economics, Control, Efficiency, Service) differences between the old system and the system that will be proposed for Management Human Resources at PT. Cannel Electric Indonesian :

TABLE I  
PIECES ANALYSIS

| No | Parameter   | Problem   | Solution  |
|----|-------------|---|---|
| 1  | Performance | <p>a. Management of employee and department data is still in the data manually using Microsoft Excel applications so that the data needed by HR Managers takes time.</p> <p>b. For the process of submitting employee permits and leave Supervisors still using</p> | <p>a. Web-based systems are created to input data from employee biodata forms and manage departments so employees can see profiles in detail and HR Managers can view employee lists.</p> <p>b. Made a system that can handle the permit application process, making it easier for every employee who</p> |

|   |             |   |  |
|---|-------------|---|--|
|   |             | <p>paper sheets, these processes and procedures are good enough but still not effective and efficient.</p> <p>c. The employee performance appraisal form is still physically in the form of a paper sheet distributed by the HR Admin and given to each department Supervisor.</p>  | <p>will apply for permission.</p> <p>c. Made a system that can directly input employee assessment data that has been distributed by the HR Admin, then the system directly displays the total points obtained by each HR employee and Manager can easily see and make a decision.</p>  |
| 2 | Information | <p>a. In the management of leave or employee permission still manually and using forms, it is difficult to find data on employees who are on leave or who are often permitted.</p> <p>b. In managing employee salaries, the data is still paper and employees get the information must wait for the salary to be paid first, then the employee will get a salary form from the HR Admin and result in no salary transparency.</p> | <p>a. Made leave and permission management system for each employee who will apply for leave and permission so that Managers, Supervisors and employees can see the status or history of leave or employee permission and make a system that can give leave approval and permission to facilitate the licensing process and leave.</p> <p>b. Created a salary system of management for employees that employees can access through the web portal. With the existence of this system, each employee can see the details or detailed salary needed without having to request a salary form to the HR Admin.</p> |

|   |            |  |  |
|---|------------|--|--|
| 3 | Economy    | The increasing number of Human Resources need by the company and recording is still done manually, causing greater costs to pay for these Human Resources.                             | With a system that can manage Human Resources data independently and according to needs, all systems can be processed automatically so that the need to add Human Resources becomes declining  |
| 4 | Control    | There is no control that can be generated in a system based on report data made, so it is still manually made by HR Admin that is useful to be submitted to the company Managers.      | Reports that enter the system will all be controlled if implementing the Human Resources System, so that the existing data can be processed automatically by the system and reports will be made in real time that can be seen by the Manager or Top Management company, Supervisor and Employees. |
| 5 | Efficiency | Making reports and processing or management can only be done by the HR Admin, so that the dependency and accuracy in processing incoming reports still rely on Admin users in general. | Need a system that can handle problems in Human Resource management, so that dependence on user Admin will be reduced and will create an efficiency in providing information.  |
| 6 | Service    | Users employees cannot see the details or details of monthly salary system or online, so they still need HRD Admin assistance to provide employee salary form.                         | The need for web-based portal facilities to process employee salaries that can be accessed and can be seen by each employee so that they can be monitored properly.  |

**F. Use Case Diagram**

There are four actors in the proposed use case diagram, namely HRD Admin, HR Manager, Supervisor and Employee. Next is the proposed use case diagram Fig. 1.

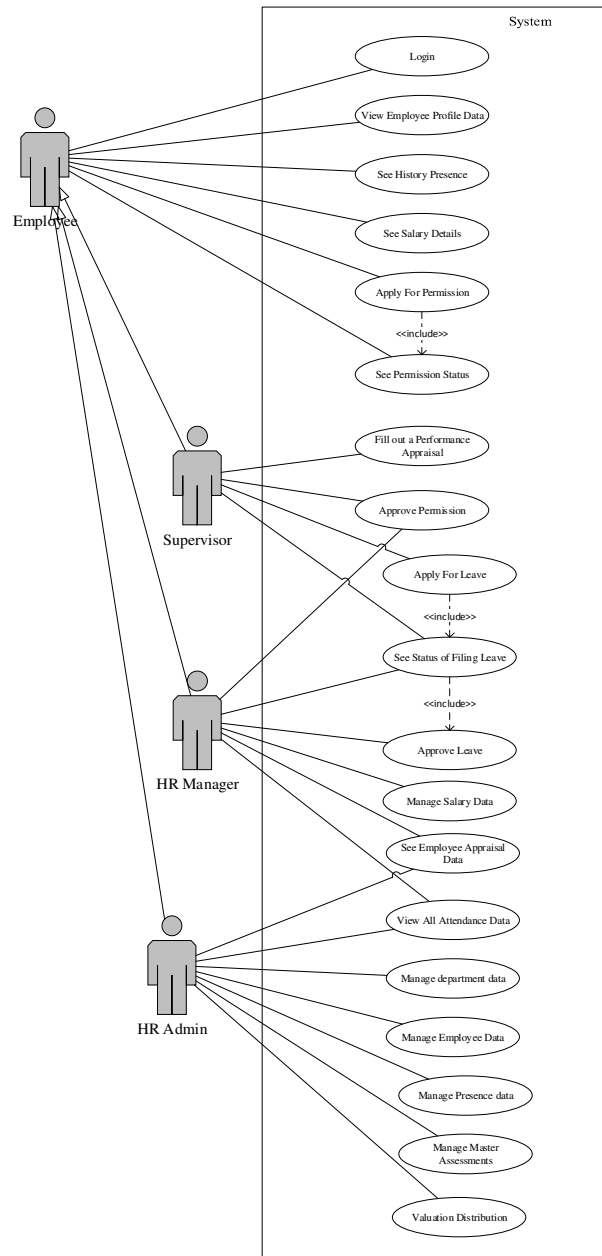


Fig. 1 Use Case Diagram

**G. Activity Diagram**

Activity diagram is a diagram that is used to describe the activity or flow between users and the system.

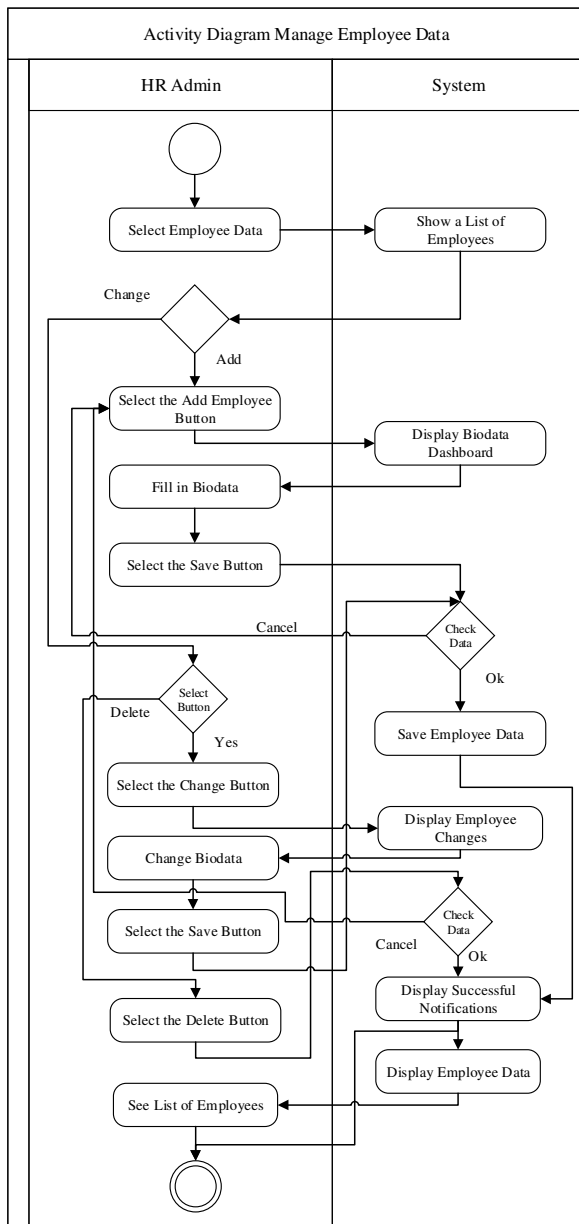


Fig. 2 Activity Diagram Manage Employee Data

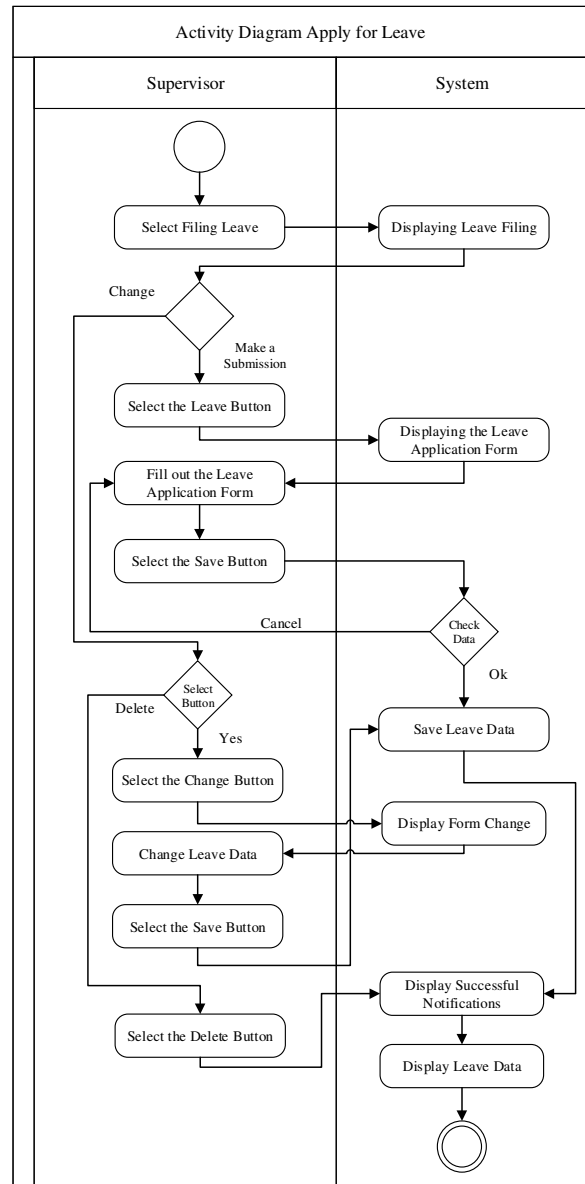


Fig. 3 Activity Diagram Apply for Leave

**H. Sequence Diagram**

Sequence diagram are diagrams that are associated with use cases where sequence diagrams show what stages should occur in a use case.

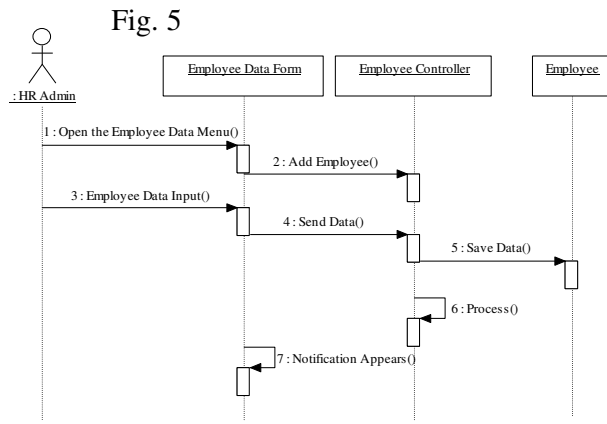


Fig. 4 Sequence Diagram Manage Employee Data

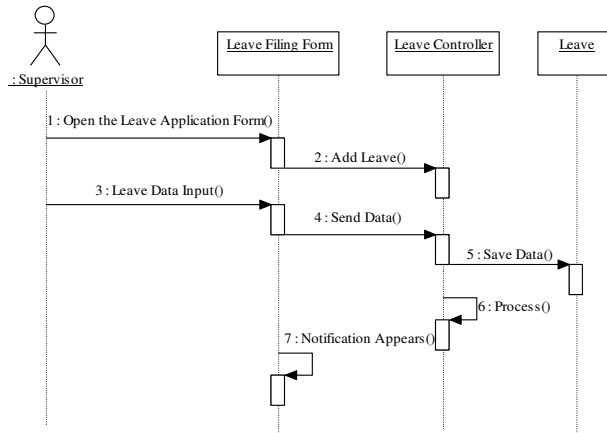


Fig. 4 Sequence Diagram Apply for Leave

J. Database Specifications

TABLE 2  
Users Table

| No | Attribute Name | Type     | Long | Description  |
|----|----------------|----------|------|--------------|
| 1  | user_id        | int      | 3    | User Id      |
| 2  | username       | varchar  | 10   | User code    |
| 3  | password       | varchar  | 50   | Username     |
| 4  | create_date    | datetime |      | Date created |
| 5  | update_date    | datetime |      | Date changed |
| 6  | partner_id     | int      | 3    | Employee id  |

TABLE 3  
Employee Table

| No | Attribute Name      | Type    | Long | Description                |
|----|---------------------|---------|------|----------------------------|
| 1  | employee_id         | int     | 3    | Employee Id                |
| 2  | nik                 | varchar | 10   | Employee NIK               |
| 3  | name                | varchar | 50   | Name                       |
| 4  | npwp                | varchar | 20   | No NPWP                    |
| 5  | address_ktp         | varchar | 100  | ID card Address            |
| 6  | domicile_ktp        | varchar | 26   | ID card domicile           |
| 7  | status_place_ktp    | int     | 1    | Status place KTP           |
| 8  | home_address        | varchar | 100  | Home address               |
| 9  | domicile_place      | varchar | 26   | Domicile place now         |
| 10 | status_of_residence | int     | 2    | Status of residence now    |
| 11 | no_hp1              | varchar | 12   | No main HP                 |
| 12 | no_hp2              | varchar | 12   | Alternative number phone   |
| 13 | no_telp             | varchar | 10   | Telp number                |
| 14 | pin_bb              | varchar | 10   | Pin BBM                    |
| 15 | email               | varchar | 50   | E-mail address             |
| 16 | status_married      | int     | 2    | Status married             |
| 17 | date_married        | date    |      | Date married (dd-mm-yyyy)  |
| 18 | date_divorce        | date    |      | Date divorce (dd-mm-yyyy)  |
| 19 | no_ktp              | varchar | 16   | KTP Number                 |
| 20 | no_sim              | varchar | 12   | SIM Number                 |
| 21 | eye_defects         | int     | 2    | Information on eye defects |
| 22 | place_of_birth      | varchar | 20   | Place of birth             |
| 23 | date_of_birth       | date    |      | Date of birth (dd-mm-yyyy) |
| 24 | transportation_type | int     | 2    | Transportation type        |
| 25 | transportation_desc | varchar | 50   | Transportation description |

I. Class Diagram

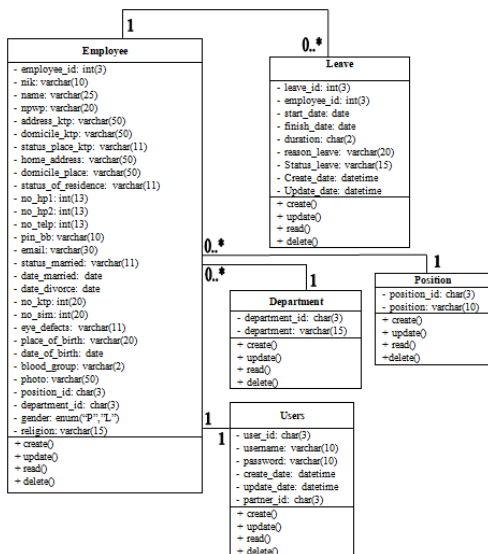


Fig. 5 Class Diagram



|    |                |          |    |                          |
|----|----------------|----------|----|--------------------------|
| 26 | vehicle_status | int      | 2  | Vehicle status           |
| 27 | blood_group    | varchar  | 1  | Blood group              |
| 28 | photo          | varchar  | 50 | Employee photo           |
| 29 | position_id    | int      | 3  | Position ID              |
| 30 | department_id  | int      | 3  | Department ID            |
| 31 | weight         | int      | 3  | Weight                   |
| 32 | gender         | enum     |    | Gender                   |
| 33 | create_date    | datetime |    | Date and time for making |
| 34 | update_date    | datetime |    | Date and time of update  |
| 35 | religion       | int      | 2  | Religion                 |
| 36 | height         | Int      | 3  | Height                   |

TABLE 4  
Position Table

| No | Attribute Name | Type    | Long | Description   |
|----|----------------|---------|------|---------------|
| 1  | position_id    | int     | 3    | Position ID   |
| 2  | position_code  | char    | 5    | Position code |
| 3  | position       | varchar | 20   | Position name |

TABLE 5  
Department Table

| No | Attribute Name  | Type    | Long | Description     |
|----|-----------------|---------|------|-----------------|
| 1  | department_id   | int     | 3    | Department ID   |
| 2  | department_code | char    | 6    | Department code |
| 3  | department      | varchar | 20   | Department name |

TABLE 6  
Leave Table

| No | Attribute Name | Type     | Long | Description                     |
|----|----------------|----------|------|---------------------------------|
| 1  | leave_id       | int      | 3    | Leave Id                        |
| 2  | leave_code     | char     | 5    | Leave code                      |
| 3  | employee_id    | int      | 3    | Employee Id                     |
| 4  | start_date     | date     |      | Start date leave                |
| 5  | finish_date    | date     |      | Finish date leave               |
| 6  | duration       | int      | 2    | Duration leave                  |
| 7  | reason_leave   | varchar  | 100  | Reason for leave                |
| 8  | status_leave   | int      | 1    | Approval status                 |
| 9  | create_date    | datetime |      | Date and time approval          |
| 10 | update_date    | datetime |      | Date and time during the update |

K. User Interface Implementation

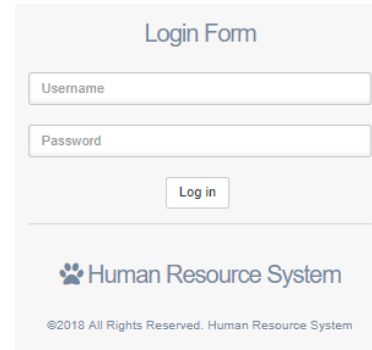


Fig. 6 User Interface Login

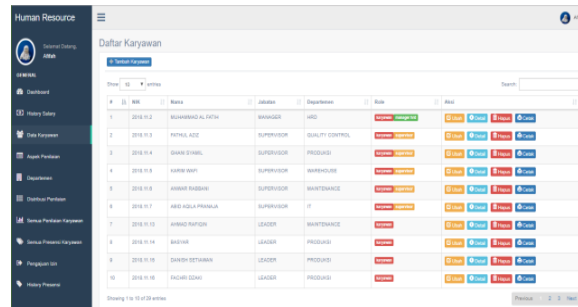


Fig. 7 User Interface Employee Data Menu

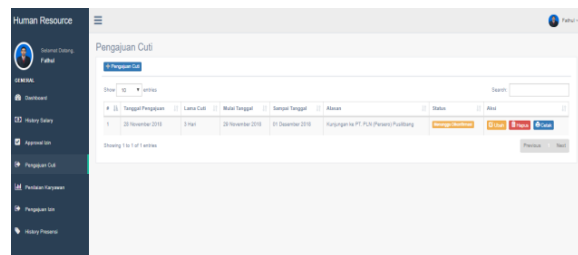


Fig. 8 User Interface Leave Filing Menu

IV. CONCLUSIONS

From this thesis report has been described how to design web-based human resources management system at PT. Cannel Electric Indonesian can be concluded by the author and provides the following suggestions :

1. The research produces a human resource management website that can be accessed and used by all employees and top management.
2. This website can make it easier for employees to submit permit applications, see permit

- status and can print permission application forms without having to do manual recording.
3. The use of this website can maximize the management of employee biodata files more effectively and efficiently. HR Admin can update data so that each employee can see the profile details of each individual.
  4. This website can make it easier for Supervisors to make leave, see leave status and can print leave application forms without having to do manual recording.
  5. This website can facilitate the management of employee performance, top management and Supervisors can easily fill out assessment data through a website that has been distributed by HR Admin. Then, the HR Manager can very easily see the total score or points of assessment obtained by each employee and can easily determine a decision.
  6. This website can process attendance data and employee overtime. Presence data that comes from finger print machines that have been exported in the form of Microsoft Excel, then imported through the website and processed into information on employee salary calculation.
  7. This website presents detailed salary information every month and displays a history of attendance every day that can be easily accessed through the website by all employees.
  8. The use of this website will be more optimal if you use Google Chrome.
3. There are charts to print the total of all employee salaries each month so that corporate expenses can be controlled properly.

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## ACKNOWLEDGMENT

Based on the conclusions above, there are some suggestions that can be useful for the development of this website for the future, namely as follows :

1. More appearance is made as attractive as possible because it will make users more comfortable when using the website.
2. There are charts to print the results of the employee performance appraisal recapitulation, so that top management can easily see the best employee achievement each period.