ANALYSIS AND DESIGN OF WEB-BASED HUMAN RESOURCE INFORMATION SYSTEM (Case Study: Garuda Sentra Medika Clinic)

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Abstract:

Human resources (HR) is one important part in an organization (company). The amount of information that must be managed related to human resources raises problems with a high level of complexity. Human Resource Information System (HRIS) is a system that collaborates and combines activities related to the Human Resource Department (HRD) management. HRIS is an important key in HRD to automate several functions and increase efficiency. Garuda Sentra Medika (GSM) Clinic is a Strategic Business Unit of PT. Garuda Indonesia (Persero) whose main function is to carry out management of health facilities and services for Garuda Group employees and their families, as well as third parties in need. HR management by other vendors at Garuda Sentra Medika (GSM) Clinic makes it difficult to analyze staffing data (Recruitment, employee attendance and performance. employees). To solve this problem, we need a web-based human resource information system that is integrated with third parties.

Keywords — **Human resources (HR), Human Resource Information System (HRIS), Garuda Sentra Medika (GSM) Clinic**

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I. INTRODUCTION

The very rapid development of information technology has an impact on the use of information technology on a large scale by companies and agencies in order to improve organizational performance, this can be seen from the easier it is to obtain the infrastructure of information technology itself. Therefore, the process of delivering messages, information and knowledge can be faster, easier and up to date.

In the field of management, it is explained that one of the elements in the organization is human resources [1]. Human resources (HR) is an important part of an organization or company [2]. The amount of information that must be managed and the complexity of business processes related to human resource management, raises its own problems if it is processed and managed manually. With the current technological developments, it is not impossible that these problems can be overcome.

A human resource information system or Human Resource Information System (HRIS) can be defined as an integrated system used to collect, store and analyze information about human resources in an organization consisting of databases, computer systems, hardware and software required. to collect, record, store, manage, provide, present and manipulate data for human resource functions [2].

Garuda Sentra Medika (GSM) Clinic is one of the Strategic Business Units (SBU) of PT. Garuda Indonesia (Persero), whose main function is to manage health facilities and services for Garuda Group employees and their families, as well as third parties in need. In addition, the Garuda Sentra Medika clinic also manages special services in the aviation medicine sector as one of its aviation business support services, such as crew health care, air medical evacuation, and medical assistance.

Garuda Sentra Medika clinic has two employment statuses, namely permanent employees and temporary employees or outsourcing. The process of managing human resources at the Garuda Sentra Medika clinic was previously managed centrally by the HR department of PT. Garuda Indonesia (Persero). Due to the increasing number of outscorsing employees from various branches, the HR of PT. Garuda Indonesia (Persero) decided to hand over the management of outsourced employees to vendors or third parties.

II. RESEARCH METHOD

A. *Data Collection Method*

1. Literature Study

   Collecting data by using or collecting written sources by reading, studying and recording important things related to the issue being discussed in order to obtain a theoretical picture.

2. Documentation

   This technique is used to collect documents related to human resources management system problems.

3. Observation

   Collecting data by direct observation of the Garuda Sentra Medika Clinic, by recording important things related to the report, so that complete and accurate data is obtained.

4. Interview

   Data collection techniques were carried out through face-to-face and direct question and answer between researchers and sources.

B. *Research Method*

The research method used is qualitative research. Qualitative research is methods for exploring and understanding the meaning that some individuals or groups of people perceive as derived from social or humanitarian problems. This qualitative research process involves important efforts, such as asking questions and procedures, collecting specific data from participants, analyzing data inductively from specific themes to general themes, and interpreting the meaning of the data.

III. DESIGN ANALYS

A. *Analysis of Current Process*

There are several business processes at this point that will be the main analysis

1. Outsourced Personnel Recruitment Process business

profile matchups or candidate data matching based on the files that have been sent at the time of job advertisement. HRD will match employee data with the TAD specifications provided by the user. After matching the data, the HRD calls the candidates who are judged to have a match with the predetermined specifications to make a psychological selection. After conducting the psychological test selection, the selected candidates will be called back to conduct an interview. In the interview stage, it will be determined which candidates will be accepted as employees of the Sentra Medika clinic.

Files of candidates who have been accepted as employees of the Sentra Medika clinic are then submitted to the outsourcing party for processing. The outsourcing party will summon prospective employees to sign the contract.

2. Employee Attendance Process business

Making attendance reports starts when employees perform daily attendance. At the end of each month, outsourcing employees are required to make attendance and overtime reports. After the attendance and overtime report is made, the outsourcing employee will submit the report to the manager to be signed. After the manager has signed the attendance report and the proposed overtime report, the manager will return the attendance and overtime report to the employee concerned. The attendance list report and overtime that have been signed by the manager are then submitted to the HRD by the relevant outsourcing employee and the HRD will then submit the report to the outsourcing party for processin

B. *Problem Analysis*

Problem analysis is done using Fishbone Diagram or fish bones. The fishbone diagram is a visual tool for identifying, exploring, and graphically depicting in detail all the causes associated with a problem.

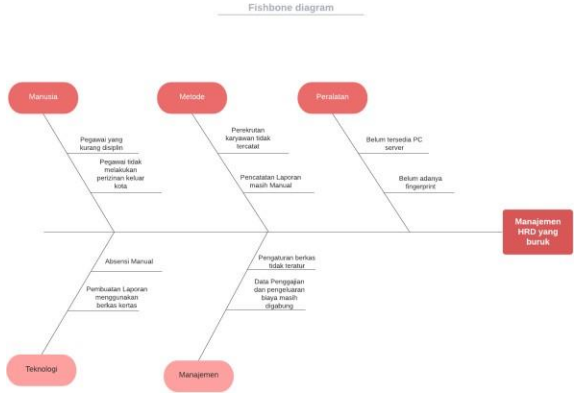


Figure 1 . fishbone diagram

Tabel 1. Fishbone Diagram Analysis

No	Identification of problems	Root of the problem
1	Human	Lack of Discipline Employees
		Employees do not carry out permits if they leave the city
2	method	Employee recruitment is not recorded
		Report recording is still manual
3	Equipment	Not yet available server PC
		There is no fingerprint
4	Technology	Attendance is still manual
		Making reports is still in paper
5	Management	Irregular file settings
		Payroll and company expense data are still combined

IV. RESULTS

In analyzing the system development design, the author uses the Unified Modeling Language (UML). The diagrams to be designed are Use Case Diagrams, Activity Diagrams, Sequence Diagrams, and Class Diagrams.

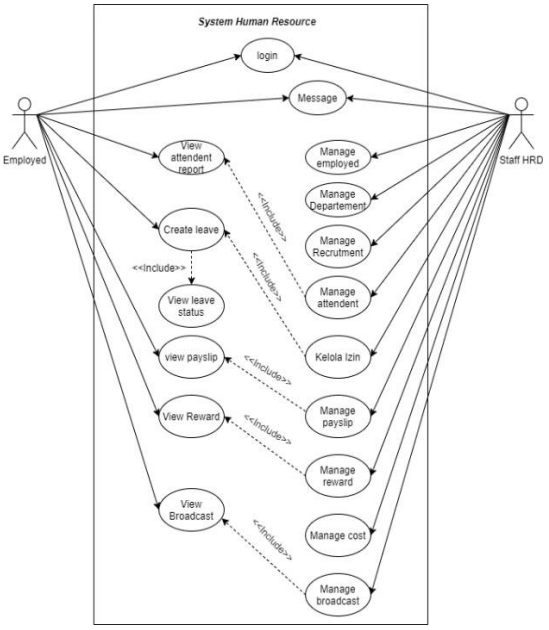


Figure 2. Usecase Diagram

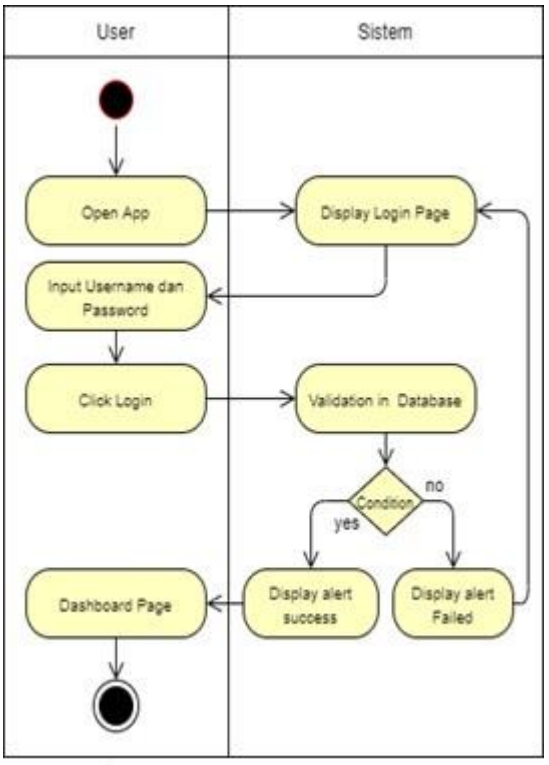


Figure 3. Activity Diagram Login

In the login diagram, HR or employees enter the login page on the website first, then fill in the username and password data which will then be verified by the system and enter the main page

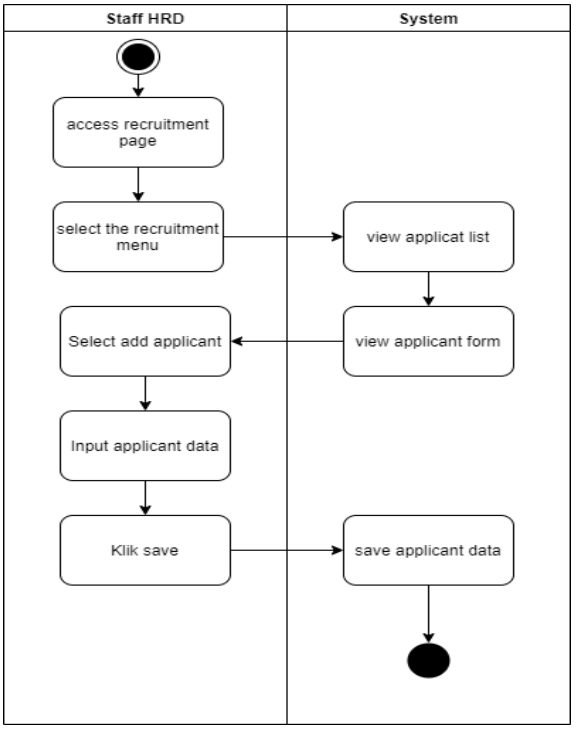


Figure 4. Activity Diagram Recrutment

In the recruitment management diagram, HRD has access to the recruitment page on the website first, then selects the recruitment menu. HRD chooses recruitment monitoring, so HRD will be transferred to the page for monitoringrecruitment

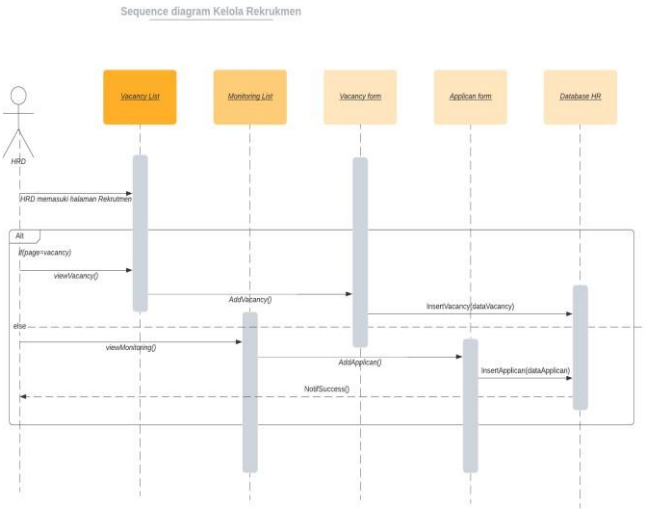


Figure 5. Squence Diagram Recrutment

There are 5 objects in the recruitment management sequence, namely the vacancy list, monitoring list, vacancy form, applicant form, and HR database. The vacancy list functions to display the list of vacancies that have been inputted while the vacancy form is a form to fill in vacancy data, if HR accesses the monitoring page, there will be a monitoring list object that functions to display the applicant's data that has been inputted, the applicant form functions to display the filled-in form. for applicants who then saved the HR database

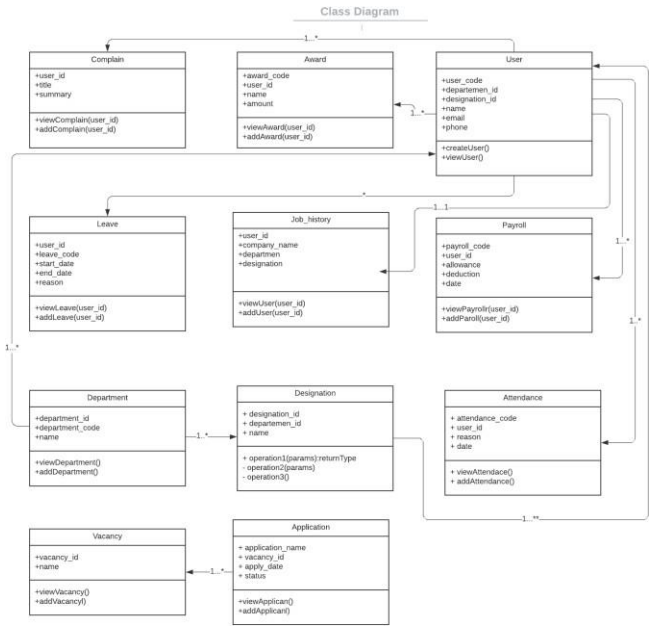


Figure 6. Class Diagram

Class diagram description:

1. Almost all object classes are related to user / employee objects
2. Applicants and vacancies are not related to the user because they are candidate users / employees
3. Department and designation are interrelated because each department has employees and the designation or position of each department may be of different types
4. - Applicants and vacancies are related to each other for job vacancies that contain many candidates

The payroll table is used to store payrolls in the system. The explanation can be seen in the following table:

Tabel II

Tabel payroll

No	*Field*	*Type*	Keterangan
1.	Payroll_id	Int(11)	*Primary Key*
2.	Payroll_code	longtext	Payroll code
3.	User_id	Int(11)	Id user
4.	allowance	Long_text	allowance
5	deductions	Long Text	deduction
6	date	Long text	date
7	status	Int(11)	Status payroll

The user table is used to store personal data about system users in this application. The explanation can be seen in the following table:

Tabel III

Tabel User

No	*Field*	*Type*	information
1.	user_id	Int(11)	*Primary Key*
2.	user_code	longtextt	User code
3.	name	longtext	Employed name
4	father_name	longtext	Father name
5	phone	longtext	Phone number
6	Date_of_birth	longtext	Date of birth
7	gender	longtext	gender
8	local_address	longtext	address
9	Permanent_address	longtext	complete address
10	nationality	longtext	nationality
11	Marital_status	longtext	marital status
12	Email	longtext	Email
13	password	longtext	password
14	Department_id	Int(11)	Id departeme n
15	Designation_id	Int(11)	Id designation
16	Date_of_joining	longtext	Date of joined
17	Joining_salary	longtext	Salary
18	status	Int(11)	Employed status
19	type	Int(11)	Type user

Attendance table is used to store employee attendance data. The explanation can be seen in the following table:

Tabel IV

Tabel attendace

No	*Field*	*Type*	Keterangan
1.	attendance_id	Int(11)	*Primary Key*
2.	attendance_code	Long Text	Leave code
3.	status	Int(11)	status
4.	user_id	Int(11)	User id
5	Date	Long Text	Date of leave
6	reason	Long Text	Leave reason

Applicant table is used to store applicant data. The explanation can be seen in the following table:

Tabel V

Tabel applican

No	*Field*	*Type*	Keterangan
1.	applican_id	Int(11)	*Primary Key*
2.	Applicant_name	Long Text	Applican name
3.	Vacancy_id	Int(11)	Applicant Id
4.	Apply_date	Long Text	Date of Applicaned
5	status	Long Text	Applicant status

And there are several user interface input and output designs in the figur 7- 10

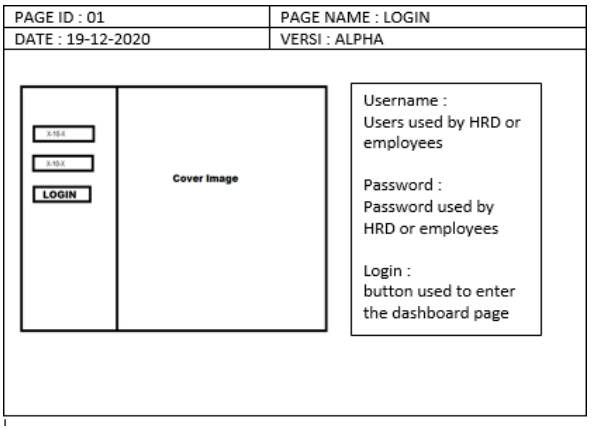


Figure 7. User Interface Login

Figure 7 is the user interface design for the login form for the user by entering a username and password

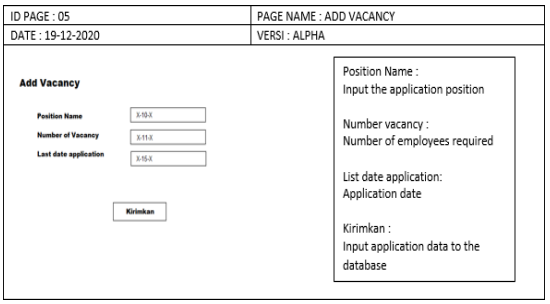


Figure 8. User Interface Add Vacancy

Figure 8 is the user interface design in the form adding blanks by inputting position, number and date

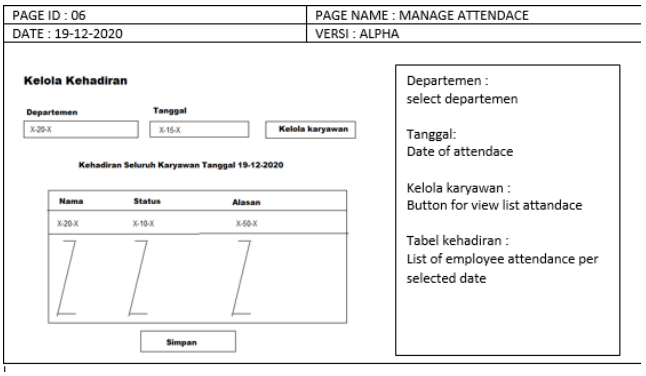
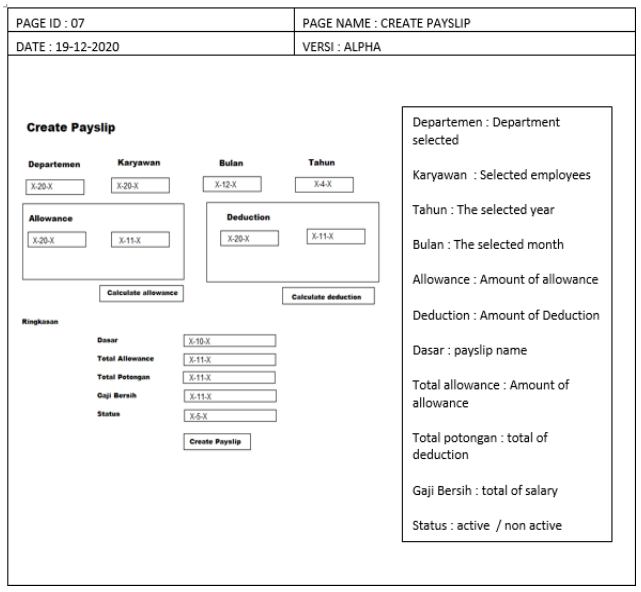


Figure 9. User Interface Manage Attendace

Figure 9 is a user interface design for displaying employee attendance lists by selecting the department and date



Figur 10. User Interface Create Payslip

Figure 10 is a user interface design on the employee salary calculation form

In evaluating the design results using User Acceptance Testing (UAT) testing, the results of the testing carried out are as follows:

Tabel VII

Tabel Resume user acceptance test

No.	Rancangan Subsistem Modul	Hasil UAT		Kesimpulan
		Diterima	Ditolak	
1	Login page	3		Needed
2	Departemen Manage Page	3		Needed
3	Add Employed page	3		Needed
4.	Add Applican Page	3		Needed
5.	Add Vacancy Page	3		Needed
6.	Attendace Manage Page	3		Needed
7.	Creat Payslip Page	3		Needed
8.	Add Award Page	3		Needed
9.	Add Notice Page	3		Needed
10.	Output: Dashboard	3		Needed
11.	Output : Employed List	3		Needed
12.	Output: Departement List	3		Needed
13.	Output: Payslip	3		Needed
14.	Output: leave List	3		Needed
15.	Output : Attendace manage	3		Needed
16.	Output : Award List	3		Needed
17.	Output: Applican List	3		Needed
18.	Output : expense manage	3		Needed
19.	Output: NoticeBoard List	3		Needed

The implemented application interface is based on user interface design in figure 11- 12

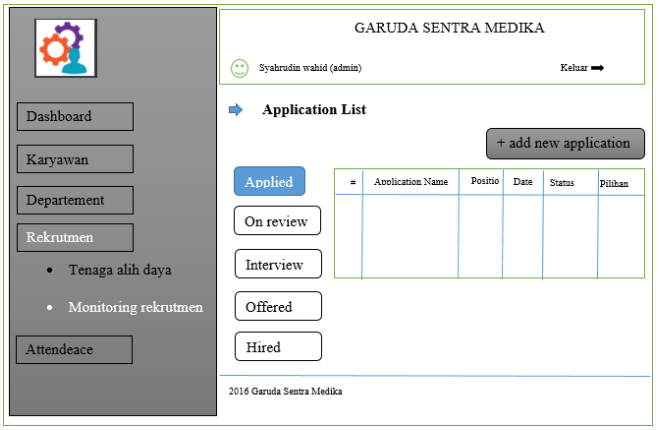


Figure 11. Recrutment page

The recruitment page is used by HRD staff to manage the applicant recruitment process

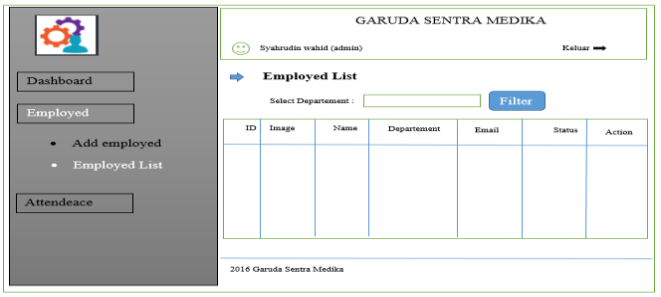


Figure 12. Employed manage page

Employee management page is used by HRD staff to manage employees such as adding new employees or changing employee status

I. CONCLUSIONS

Human resources (HR) is an important part of an organization or company so that the use of HRIS is an important role in managing human resources so that its implementation will result in an increase in the effectiveness of the human resource management function. The problem faced by the Garuda Sentra Medika clinic in managing human resources is the difficulty in analyzing personnel data such as recruitment data and employee attendance data because the data is managed by a third party and there is no system that can accommodate these needs. . From these problems, a web-based human resource information system was designed to facilitate the performance of HRD staff in carrying out the recruitment process and making various reports on human resources at the Garuda Central Medika clinic.

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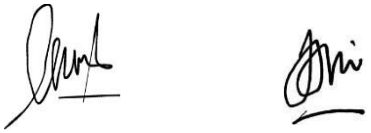

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