SYSTEM OF INFORMATION MANAGEMENT HUMAN RESOURCE MANAGEMENT AT KLINIK UTAMA AL ISLAM

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ABSTRACT

Klinik Utama Al Islam are clinics that perform public health services located in Jalan Awibitung, Cicadas. Klinik Utama Al Islam in the service, especially in maternal and child health services.

Based on interviews that have been conducted by Mr. Asep Rachmat as Head of HR at the Klinik Utama Al Islam stated that the current mismatch between the number of employees needs and criteria required by the clinic to the employee received. Another issue criteria and calculations are not in accordance with provisions set by the clinic. Difficulties also the decision on taking the leave. WP method (Weighted Product) is the method used for the screening of prospective employees that the result is a ranking of candidates from the highest to the lowest. AHP (Analytical Hierarchy Process) is the method used for the evaluation of staff performance will be conducted by the Head of HR and the result will be a rank which states that employees will receive any decision. In this system, employees can apply for leave in accordance with the existing criteria.

Based on the results of blackbox testing and beta testing can be concluded that this system is enough to help the Head of HR in planning and controlling in determining the amount and the criteria employees needed, assist in the administration of employee performance evaluation, as well as in planning and controlling employee leave.

Keywords*: Management Information Systems, Human Resources, Weighted Product, Analytical Hierarchy Process.*

1. INTRODUCTION

Based on an interview with Mr. Asep Rachmat as Section Head of HR at the Klinik Utama Al Islam was recorded in the current staffing data clinic has a total of 61 employees, with details 42 permanent employees and 19 temporary employees.

Mr. Asep Rachmat as Section Head of HR stated that employee recruitment procedures done to add new workers to fill the vacancy or a position of employment. But in the ongoing recruitment process is still there is a discrepancy between the number of employees who received the required number of employees, which has led to a mismatch problem of shortage and excess employees. Non-compliance also occurs on the criterion of employees who accepted the criteria needs by the clinic. If the employee gets the job do not match the criteria and educational background and experience of previous job history, it will have an impact on the quality of work performance. This means that there are problems in the placement office employees and result in employee performance received does not match the expectations of the clinic, so that the HR Department should review the performance of employees.

Other problems found in the performance appraisal is in progress, Mr. Asep Rachmat stated there is still a problem. This occurs because the criteria and calculations are not in accordance with a predefined, so employees do not know what is included in the performance appraisal. This makes it difficult to raise employee work performance, and also Section HR difficult to determine the actual performance of the employee. So the impact on HR Department difficulty when determining the decision to the results of the appraisal value of employee performance.

Difficulties were also found in the decision-making control of leave employees by HR Department, where the leave application process is constrained in the planning that has not been in accordance with the criteria leave application is correct. These problems cause employees to take leave on their own accord without seeing her leave ration so that the decision to leave became unclear. As a result, the human resources department should re-examine the entire vacation time employees. Likewise with taking time off employees within the same unit. In a unit should not happen all of its employees to take leave at the same time, it can cause no one employees working in the unit at the time the leave is taken. Hence for taking leave should be at least still there is one employee who works during the day taking leave.

The purpose of this study, to build the information system of human resources management at the Klinik Utama Al Islam in order to facilitate the Human Resources Department and head of human resources in the field of personnel. While the purpose of the research is as follows:

1. Assist the Head of HR in determining the amount and the criteria needs of employees based on the needs of each unit.

2. Assist the Head of HR and HR in assessing employee performance appraisal criteria.

3. Assist the Human Resources Department in controlling employee leave.

2. CONTENTS OF RESEARCH

2.1. Theoretical basis

The basics of the theory in the development of the system management information as a reference. Contain theories that can be used as a basis and reference in the design of management information systems human resources at the Klinik Utama Al Islam. In HR management information system This involves a variety of sources and study of theory among others, the method of Weighted Product (WP) and Analytic Hierarchy Processing (AHP).

2.1.1. Management information System

The management information system is a system that is usually applied in an organization to support decision-making and the resulting information is needed by all levels of management or in other words the management techniques of information within an organization [1].

Management Information Systems (MIS) can also be defined as a computer-based system that is used to provide information to support the operation, management, and decision-making in an organization. MIS typically produce information to monitor performance, maintain coordination, and provide information to the organization's operations. Information reports generated by the MIS provided in the form of periodic reports, summary reports, and a comparison report. In addition, sometimes the MIS also provides reports that can be requested at any time - and users can customize the layout of the information required [5].

The stages of the information system Management (MIS) using cycles PDCA as in Figure 1.



***Figure 1.** PDCA Cycles*

PDCA cycle is a systematic method for process improvement continues - again based on the principle that we need to understand the situation or process before fixing it. Here is an explanation of each PDCA cycle activities:

1. *Plan, plan stage is the stage to set targets or goals to be achieved in process improvement or problem to be solved, then determine the method to be used to reach the target or targets that have been determined.*
2. *Do, do stage is the implementation stage or carry out all that has been planned in phase plan including its running processes, as well as collecting data (data collection) which will then be used to check the stage and act.*
3. *Check, check stage is the stage of the examination and review and study the results of the implementation in stages do. Doing a comparison between the actual results have been achieved with the targets set and also the accuracy of the specified schedule.*
4. *Act, act stage is the stage to take the action necessary to the outcome of the check phase. There are two types of actions to be taken based on the results achieved, among others:*
   a. *Corrective actions, which can be a solution to the problems encountered in achieving the targets, corrective actions need to be taken if the results did not achieve what was targeted.*
   b. *Standardization Action, action to standardize the way nor the best practices that have been made, act Standardization is done if the results reach the set targets.*

The cycle will return to the stage plan to carry out further process improvements resulting in a cycle of continuous process improvement (Continuous Process Improvement) [4].

2.1.2. Weighted Product Method (WP)

Weighted Product use multiplication method to connect rating attributes, where each attribute rating should be raised to a first weight attribute is concerned. Where the process is similar to the process of normalization [6].

The concept of weighted product calculation method:

1. *Determining the value of vector S.*
   The preference for alternative given the following formula:

$$S_i = \prod_{j=1}^{n} X_{ij}^{wj} \qquad (1)$$

   with i = 1,2,…,m and j = 1, 2, …n.
   where :
   S : Preference alternative analogy as vector S
   X : Value criteria
   W : Weight of criteria / sub-criteria
   i : Alternative
   j : Criteria
   n : number of criteria
2. *Make improvements weights first. The initial weight fixed in advance by the following formula:*

$$W_j = \frac{w_j}{\sum w_j} \text{ so that } \sum W_j = 1 \qquad (2)$$

3. *Then proceed to determine the value of the vector to be used calculating the referrers (Vi) to perangkingan / search the best alternative to the following formula:*

$$V_i = \frac{\prod_{j=1}^{n} x_{ij}^{wj}}{\prod_{j=1}^{n} (x_{ij}^{*})^{wj}} \qquad (3)$$

Information:
Vi = largest value of the alternative selected.
Π = product
Xij = value attribute alternative i to j
wj = weight of each attribute it simply like this:

$$V_i = \frac{S_i}{S_1 + S_2 + \cdots S_n} \qquad (4)$$

4. *After performing the calculations preferences (vi) above will then obtain alternative options most worthy of the best and be the best choice in decision-making.*

2.1.3. Analytic Hierarchy Processing Method (AHP)

AHP is a method that breaks down a complex situation, unstructured, into their component parts, arranging parts or this variable in the order of hierarchy, giving a numerical value to the consideration of the subjective about the relative importance of each variable, and synthesize these considerations to assign a variable which has the highest priority and act to influence the outcome in this situation [7].

In resolving problems with AHP there are certain principles that must be understood, which are:

1. *Make Hierarchy*

Complex systems can be overcome by breaking it down into the support elements, composing elements in the hierarchy and combining or synthesizing.

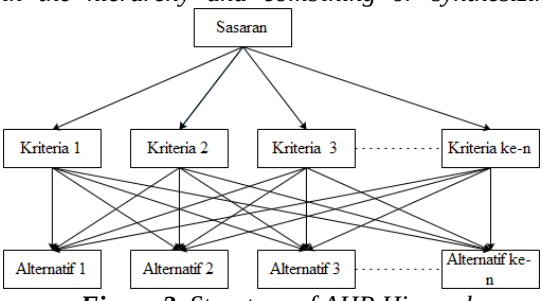


Figure 2. *Structure of AHP Hierarchy*

2. *Assessment Criteria and Alternatives*

Criteria and alternatives made with pairwise comparisons, for many, a scale of 1 to 9 is the best scale for expressing opinions. Values and definition of qualitative opinion of a comparative scale can be measured using analysis table as shown in the following table.

Table 1. *Pairwise Comparison Scale Rating*

The intensity of importance	*Description*
1	*Both elements are equally important*
3	*One elements a little bit more important than any other element*
5	*One elements is more important than other element*
7	*One element is obviously more important than other elements*
9	*One element absolutely essential of the other elements*
2,4,6,8	*Values between two adjacent comparison values*
Reverse	*If the activities i got one point when compared with activity j, then j has the opposite when compared with i.*

3. *Setting Priorities*

For each criteria and alternatives, should be paired comparisons (Pairwise Comparisons). The values of the relative ratio of the entire alternative criteria can be adjusted to a predetermined judgment to make weight and priority. Weights and priority calculated by manipulating the matrix or through the completion of a mathematical equation.

4. *Logic Consistency*

Consistency has two meanings, first, similar objects can be grouped according to the uniformity and relevance. Second, regarding the level of relationships between objects based on specific criteria.

2.2. PDCA Analysis

Analisis PDCA digunakan untuk memberikan gambaran tentang proses manajeman yang ada dalam sistem informasi manajemen sumber daya manusia pada Klinik Utama Al Islam.

2.2.1. Analisis Monitoring Jumlah dan Kriteria Karyawan

PDCA analysis is used to provide an overview of management processes within the system of human resource management information at the Klinik Utama Al Islam.

Table 2. *Monitoring Number of Employees*

Unit	*Capacity*	*Amount*
Administration	*1*	*1*
General Administration	*1*	*1*
Marketing	*1*	*1*
HR administration	*1*	*1*
Midwifery unit	*10*	*10*
Nursing unit	*11*	*10*
Nutrition unit	*4*	*4*
Laboratory unit	*3*	*3*
Radiology unit	*3*	*3*

Pharmaceutical unit	*7*	*7*
Laundry unit	*3*	*3*
Special Services Unit	*2*	*2*
Accounting unit	*2*	*2*
Security unit	*4*	*4*
Medical Record Unit	*3*	*3*
Unit Dental Clinic	*3*	*3*
Unit Admin & Kassa	*5*	*5*
Admin Contractors	*1*	*1*
IPSRS	*1*	*1*

In monitoring the number of employees above quota remaining nurse position 1 again. For this case, the clinic nurse will increase the number of employees as much as one person through the recruitment and selection of new employees.

2.2.2. Employee Recruitment and Selection Analysis Using WP Method (Weighted Product)

Stages of the recruitment and selection of employees for which accounts using the method of Weighted Product can use PDCA cycle.

1. Plan

Stages of the recruitment and selection of employees first is before the recruitment and selection of employees, Head of HR to first determine the weight and criteria, here are weights and criteria contained in Table 3.

***Table 3.** Recruitment Criteria*

No	*Criteria*	*Initial*
1	*Religion Test Scores*	*K1*
2	*Practice Test Scores*	*K2*
3	*Theory Test Scores*	*K3*
4	*Interview*	*K4*
5	*Work Experience*	*K5*

2. Do

The next stage is the recruitment and selection of employees. Head of HR will determine the terms - the terms of recruitment and selection criteria, will further determine the weighting of each criterion to be determined based on the needs of employees needed. Sample data job candidates with requisite criteria for each - each and has been carrying out religious test, practice test, test of religion, the theory test, and interview as shown in Table 4.

***Table 4.** Sample Data of Candidate Employees*

Candidate	*Criteria*				
	Religion Test Scores	*Practice Test Scores*	*Theory Test Scores*	*Interview*	*Experience*
Sri H	*10*	*59,67*	*78*	*66,87*	*2*
Fitri S	*45*	*86*	*83*	*75,71*	*1*
Deni T	*50*	*90*	*93*	*68,75*	*1*
Nanik R	*63*	*74,33*	*71,5*	*66,25*	*2*
Hilmi F	*85*	*85,33*	*78*	*66,87*	*3*

After obtaining the data value of a prospective employee, a step - step of the process of recruitment and selection of new employees by using the method of Weighted Product is as follows:

1. *Determine the initial weight of each predefined criteria.*
2. *Perform repairs weight by using the formula (2).*
3. *Then the next step was to determine the value of vector S, where data - the data will be calculated using the formula (1). From these calculations, the obtained value for the vector S can be seen in Table 5 below:*

***Table 5.** Vector S*

Candidate	*Vector S*
Sri H	*38,79*
Fitri S	*49,34*
Deni T	*50,23*
Nanik R	*48,82*
Hilmi F	*55,71*
Total	*242,89*

4. *Then will determine the value of the vector V is used for ranking alternatives by using the formula (3). From these calculations, the obtained value - value for the vector V can be seen in Table 6 below:*

***Table 6.** Vector V*

Candidate	*Vector V*
Sri H	*0,159702*
Fitri S	*0,203137*
Deni T	*0,206801*
Nanik R	*0,200996*
Hilmi F	*0,229363*

3. Check

This stage is the stage of examination by the Head of HR if the results of the recruitment and selection of employees who carried out are in accordance with what is expected by the clinic. This check is performed by examining the results of the ranking of each prospective employee. Ranking results obtained from the value of each - each prospective employees can be seen in Table 7.

***Table 7.** Ranking Recruitment and Selection*

Candidate	*Scores*	*Ranking*	*Alternative*
Hilmi F	*0,229363*	*I*	*V5*
Deni T	*0,206801*	*II*	*V3*
Fitri S	*0,203137*	*III*	*V2*
Nanik R	*0,200996*	*IV*	*V4*

Candidate	Scores	Ranking	Alternative
Sri H	0,159702	V	V1

Based on Table 7 above, the alternative among prospective employees V1, V2, V3, V4 and V5 obtained the first rank job candidates with the highest score is the candidate V5 is Hilmi F with a value of 0.229363 and was elected as the best alternative to be admitted to a clinic employee.

4. Act

This stage is the stage to make a decision that will be determined by the Head of HR based on the results that have been obtained in the previous stage. Based on the results of the selection and value Table 7 above, the Head of HR's decision to recruit the candidates with the best value that Hilmi F for employees hired into the Klinik Utama Al Islam.

2.2.3. Performance Appraisal Employees using AHP Method (Analytical Hierarchy Process)

Stages of performance appraisal that the calculations using Analytical Hierarchy Process can use the PDCA cycle.

1. Plan

This stage is the planning stage before the evaluation of the performance appraisal is done. Employee performance appraisal to be performed to evaluate the performance and bonuses. The results of the assessment of the performance of a contract employee in the form of new contracts or the hiring of contract employees to permanent employees and no extension of the contract, while for permanent employees is shown in table 8 below:

***Table 8.** Permanent Employee Performance Appraisal*

No	Rank	Description
1	1 – 2	Getting 1x salary bonus
2	3 – 5	Getting 1/2x salary bonus
3	6 – 8	Getting an additional incentive bonus
4	9 – 10	In Training
5	11>	In Training and under supervision

In this case the assessment is carried out to give bonuses to employees who have a value of performance in accordance with the specified standard.

Before conducting a performance appraisal, Head of HR Klinik Utama Al Islam has identified four main criteria as a parameter for assessing the performance of employees at the Klinik Utama Al Islam which can be seen in Table 9:

***Table 9.** Employee Performance Appraisal Criteria*

Criteria	Suckriteria	Code
Operational Performance	Very good	OP1
	Good	OP2
	Enough	OP3
	Less	OP4
General Performance	Focus on service	GP1
	Cooperation	GP2
	Achievement Orientation	GP3
	Competence	GP4
	Attention on procedure	GP5
Spiritual Performance	Tilawah, Tahsin	SP1
	QL Dhuha	SP2
	Sholat, Tahfidz	SP3
Discipline	Permit	D1
	Not come	D2
	Coming late / leave early	D3
	Uniforms Neatness	D4

2. Do

Stages in the process of evaluating employee performance is the Head of HR will set the period and time of the assessment, the next step is to conduct performance assessment will be undertaken by each Head of Unit and his team of Assessors preset to all employees of each unit.

Based on the assumptions above case, calculation steps AHP in the performance appraisal is as follows:

1. *Defining the problem*
2. *Make a hierarchical structure*
3. *Determine the priority elements, that is:*
   a. *Determine the scale of assessment or comparison of the value of each element.*
   b. *Make a pairwise comparison matrix.*
   Pairwise comparison matrix depicts the relative contribution or influence of each element on each criterion with other criteria. Determining the value scale for each sub-criteria carried out by the Head of HR in a way to see how important inter criterion with other criteria. Here is a comparison matrix criteria.

***Table 10.** Criteria Comparison Matrix*

Criteria	Operational Performance	General Performance	Spiritual Performance	Discipline
Operational Performance	1	2	4	5
General Perform	1/2	1	3	4

ance				
Spiritual Performance	*1/4*	*1/3*	*1*	*2*
Discipline	*1/5*	*1/4*	*1/2*	*1*

c. *Summing the values of each column (Σkolom) in the pairwise comparison matrix.*
d. *Creating value criteria or sub-criteria matrix.*
e. *Calculating the value or weight of the priority. elements*

4. *Calculate the ratio test consistency*
   a. *Make a summation matrix per row*
   b. *Calculate the consistency ratio (value x max)*
   c. *Calculating Consistency Index*
   d. *Calculating Consistency Ratio (CR)*

After following the processing steps AHP that aims to gain weight or priority value of each criteria and sub-criteria, then obtained a priority value that can be seen in Table 11.

Table 11. *TPV criteria and sub-criteria Results*

Criteria	*TPV Criteria*	*Subcriteria*	*TPV Subcriteria*
Operational Performance	*0,485*	*OP1*	*0,53*
		OP2	*0,24*
		OP3	*0,14*
		OP4	*0,09*
General Performance	*0,3*	*GP1*	*0,4*
		GP2	*0,24*
		GP3	*0,13*
		GP4	*0,13*
		GP5	*0,07*
Spiritual Performance	*0,12*	*SP1*	*0,53*
		SP2	*0,29*
		SP3	*0,16*
Discipline	*0,0725*	*D1*	*0,45*
		D2	*0,26*
		D3	*0,14*
		D4	*0,14*

Based on the above table, then the data will be multiplied by the value of the employee TPV criteria and sub-criteria that correspond to each of the criteria and sub-criteria of value employees. Here is an example of a data value of employee performance.

Table 12. *Data Scores Employee Yeti*

No	*Name*	*Criteria*	*Subcriteria code*	*Scores*
1	*Yeti A*	*Operational Performance*	*OP1*	*86,5*
			OP2	
			OP3	
			OP4	
		General Performance	*GP1*	*4*
			GP2	*4*
			GP3	*4*
			GP4	*4*
			GP5	*4*
		Spiritual Performance	*SP1*	*4*
			SP2	*4*
			SP3	*4*
		Discipline	*D1*	*4*
			D2	*3*
			D3	*1*
			D4	*3*

Table 13. *Data Scores Employee Irni*

No	*Name*	*Criteria*	*Subcriteria code*	*Scores*
2	*Irni Y*	*Operational Performance*	*OP1*	*86,5*
			OP2	
			OP3	
			OP4	
		General Performance	*GP1*	*4*
			GP2	*4*
			GP3	*4*
			GP4	*3*
			GP5	*4*
		Spiritual Performance	*SP1*	*4*
			SP2	*2*
			SP3	*1*
		Discipline	*D1*	*4*
			D2	*3*
			D3	*4*
			D4	*3*

Table 14. *Data Scores Employee Astri*

No	*Name*	*Criteria*	*Subcriteria code*	*Scores*
2	*Astri L*	*Operational Performance*	*OP1*	*86,5*
			OP2	
			OP3	
			OP4	
		General Performance	*GP1*	*4*
			GP2	*4*
			GP3	*4*
			GP4	*3*
			GP5	*4*
		Spiritual Performance	*SP1*	*4*
			SP2	*4*

			SP3	4
		Discipline	D1	4
			D2	3
			D3	1
			D4	4

The next step is to calculate the value TPV sub-criteria with the following formula:
TPV subcriteria = Employee Value x Value TPV

Then from the table above, will be sought after the final value obtained from the formula:
Final value = value of each sub-criteria TPV x TPV value criteria.

Table 15. *Employees Final Scores*

	Yeti	Irni	Astri
Final Scores	24,09688	23,96113	24,06803

Table 15 above is the result of the final assessment of the calculation of the value of employee performance evaluation. This value is used as a basis to rank employee assessment. The greater the value, meaning the better.

3. Check

This stage is the stage of examination by the Head of HR if the results of the performance appraisal is done is in accordance with what is expected by the clinic. This check is performed by examining the results of the performance evaluation of each employee. Here are the results obtained by the total value of each employee can be seen in Table 16.

Table 16. *Employees Rank*

Name	Total Scores	Rank
Yeti A	24,09688	I
Astri L	24,06803	II
Irni Y	23,96113	III

4. Act

This stage is the stage to make a decision that will be determined by the Head of HR based on the results that have been obtained in the previous stage. Based on the table above, the Head of HR decided to give bonuses to the three employees at the Nutrition Services unit based on Table 8, the following is the result of the decision to grant a bonus.

Table 17. *Decision*

Rank	Name	Decision
I	Yeti A	Getting 1x salary bonus
II	Astri L	Getting 1x salary bonus
III	Irni Y	Getting 1/2x salary bonus

2.2.4. Analysis of Leave Decision

Stages of taking leave of employees who can use the PDCA cycle stages.

1. Plan

This stage is the stage of planning conducted by the HR to define the rules leave the clinic. The rules can be seen in the table below:

Table 18. *Kinds of Leave*

Leave Name	Kinds of Leave	Time
Annual leave	CT	12 Days
Marriage Leaves	CP	3 Days
Child Marriage Leave	CPA	2 Days
Circumcision Children leave	CKA	2 Days
Maternity wife leave	CIM	2 Days
wife / husband, parents / in-laws, Son / Daughter Dies leave	CKM	2 Days
Family Members Died leave	CKSRM	1 Days
Sick Children leave	CAS	1 Days
maternity leave	CM	3 months

2. Do

At this stage does the implementation phase which employees can take time off based on the type of leave specified in the preceding stage. For taking the leave, employees will choose in advance what type of leave where you want to capture. Furthermore, the employee is requesting approval from his superiors to leave application. If the boss does not agree, then the employee can leave application at a later time. Then if the supervisor approves the employee can directly submit the form leave from the human resources department. Human Resources Department will see that there leave application and will approve it by the rules of the Klinik Utama Al Islam that have been defined. Although already qualified employees leave application, HR Department can still perform denial of leave application for leave application must be in accordance with the operational needs of clinics, employees who leave was rejected submission will be rescheduled. Examples of cases of taking leave of this can be seen in the table below.

Table 19. *Employee Leave Request*

Name	Unit	kinds of leave	Leave Periode	Leave Date
Lilis Masriah	Nurse	CT	1	23/11/2016
Ana Merina	Pharmacy	CT	3	23/11/2016

Name	*Unit*	*kinds of leave*	*Leave Periode*	*Leave Date*
Sopi Rahmawati	*Midwife*	*CKA*	*2*	*09/11/2016*
Arsih Karsinem	*Dental clinic*	*CAS*	*1*	*14/11/2016*

HR section of the above table will be checked against the requirements of sabbatical leave by viewing history of each employee.

From the results of the examination, the results obtained leave history to leave the decision filed by employees. Can be seen in the table below.

Table 20. *Employee Leave Request Result*

Name	*Unit*	*kinds of leave*	*Leave Periode*	*Leave quota left*
Lilis Masriah	*Nurse*	*CT*	*1*	*6*
Ana Merina	*Pharmacy*	*CT*	*3*	*0*
Sopi Rahmawati	*Midwife*	*CKA*	*2*	*7*
Arsih Karsinem	*Dental clinic*	*CAS*	*1*	*5*

3. Check

This stage is the monitoring of leave requests. The human resources department would see how many employees apply for leave of absence, and how many leave requests are approved. So with the monitoring or controlling the vacancy because of the many employees who take leave could be seen. Approved leave application data can be viewed below.

Table 21. *Leave Request Approved*

Name	*Unit*	*Approval*	*Description*
Lilis Masriah	*Nurse*	*Yes*	*Terms complete*
Ana Merina	*Pharmacy*	*No*	*Exceed leave quota*
Sopi Rahmawati	*Midwife*	*Yes*	*Terms complete*
Arsih Karsinem	*Dental clinic*	*Yes*	*Terms complete*

According to the table above, it is entitled to take leave that Lilian Masriah, Sopi Rahmawati, and Arsih Karsinem. While that is not entitled to take leave is Ana Merina.

4. Act

This stage is the stage to make a decision that will be determined by the HR based on the results that have been obtained in the previous stage. According to the table above, then the HR decided to give leave to Lilian Masriah, Sopi Rahmawati, and Arsih Karsinem. While Ana Merina not given leave for annual leave quota has run out.

2.3. ERD

The main component is the establishment of Entity Relationship Diagram components of the entity set and relationship set described further through a number of attributes (properties) that describe all of the facts of the system being simulated. The ERD of Management Information Systems Human Resource at the Klinik Utama Al Islam can be described as follows:

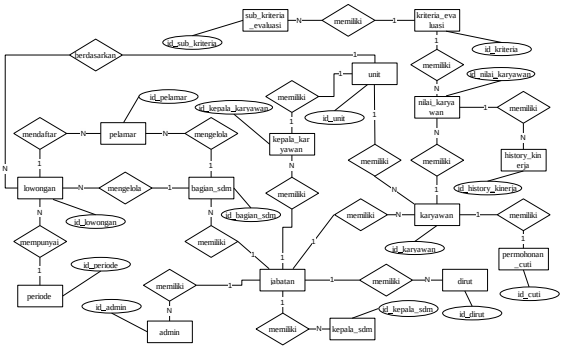


Figure 3. *ERD*

2.4. Diagram Context

Diagram context is used to describe the first system in outline. Diagram context is also a data flow diagram to the top level. Diagram context on the system can be seen in the following figure:

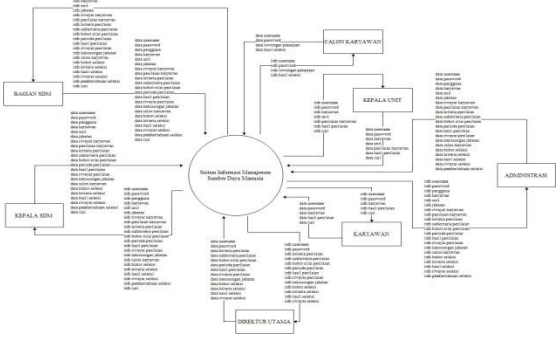


Figure 4. *Diagram Context*

2.5. DFD

Data Flow Diagram is a graphical representation that illustrates the flow of information and information transformation that is applied as the data that flows from the input and output.

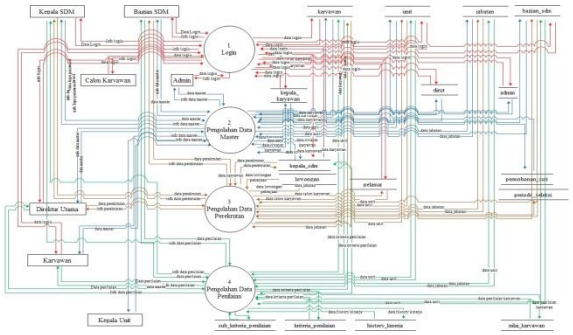


Figure 5. *DFD level 1*

2.6. Relation Scheme

In data modeling, entity presented with a table of existing entities in diagam E-R written with the framework of the table containing attributes called Table Relationships. Making the entity tables are always guided by the provisions on how to prepare the table. Table relationships will be described in the following figure.

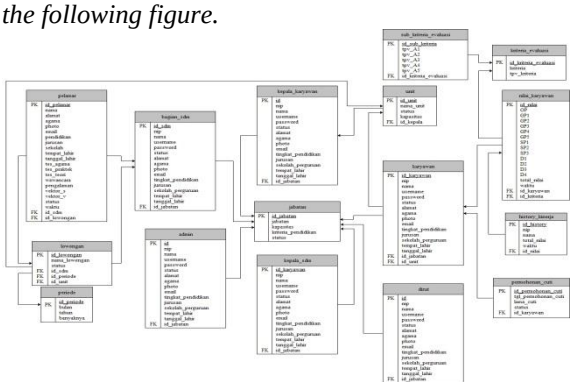


Figure 6. *Relation Scheme*

2.7. System Testing

Testing of the system is the cornerstone that aims to discover errors and deficiencies in the software being tested. The test aims to determine whether the system has been created to meet the needs in accordance with the system design objectives.

Tests are used to test the new system is a black box testing methods. Black box testing focused on testing the functional requirements of information systems.

1. *BlackBox Testing*

Black box testing focuses on functional requirements of software built. The management information system testing using test data based on the data contained in the Klinik Utama Al Islam.

Based on test results to the test case example above can be concluded that at every process in the system built still allows for syntax errors, but functional system can issue the expected results.

2. *Beta Testing*

Beta testing is done in order to determine the extent to which the quality of software that is built, is already in line with expectations or not. The research methods used were interviews.

Based on beta testing, it can be concluded that:

1. *This system is enough to be able to meet the needs of HR in managing employee data.*
2. *This system is enough to be able to meet the needs of the human resources department in conducting prospective employee data management.*
3. *This system is good enough in managing the data on leave.*
4. *This system is quite capable of helping the Head of HR and HR in assessing employee performance as criteria for assessment calculation is quite clear.*
5. *This system is enough to display information about employee leave time off so that control can be easily performed by the HR.*
6. *The system is quite able to assist in the recruitment and selection of new candidates for the selection and weighting are clear accounting as well as a ranking on the final value of the prospective employee.*
7. *This system can provide convenience in viewing each employee leave because there is a new leave application will be displayed at the HR.*
8. *This system is sufficient to provide information for the vacancy.*
9. *The system is capable of displaying the results of appraisal well so that it can be a reference for deciding on those assessments.*
10. *The system can display the leave application well enough that employees are encouraged by the decision-making related to such leave is relatively easy to do.*
11. *The system is fairly easy to use, but there is still no shortage of information on the various parts so sometimes create confusion.*
12. *Views on the system is already quite interesting and quite easy to use, it's just that there are parts that still need to be improved zoom.*

3. CLOSING

In this section we will discuss about the conclusions which contains the results obtained after analysis, system design, and implementation of software built and suggestions give important notes for further free software development.

3.1. Conclusion

Based on the description of the discussion of the analysis and testing that has been done, it can be a conclusion to the Management Information System of Human Resources at the Klinik Utama Al Islam is as follows:

1. *Management Information Systems Human Resources was enough to help the Head of HR in planning, organizing, and controlling in determining the amount and the criteria required of employees.*
2. *Management Information System Human Resources at the Klinik Utama Al Islam was enough to help the Head of HR and HR*

Department in the administration of employee performance appraisal process objective.

3. *Information Systems Human Resource Management at the Klinik Utama Al Islam was enough to help HR Department in planning, organizing and controlling employee leave.*

3.2. Suggestion

Based on the conclusions that have been described above, it is expected that the future is the Management Information System of Human Resources at the Klinik Utama Al Islam can be developed more broadly in order to further improve the performance of employees so that all the vision and mission of the clinic can be achieved.

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