Application of Meeting, Incentive, Conference, Exhibition (Mice) Case Study: PT. Bet Obaja International

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Abstract:

In an effort to increase productive performance, Obaja intends to improve the performance of the project that is obtained. However, in the current system, the project has a filing management arrangement which is quite complicated and takes a lot of time. Before the project runs, there is a data file verification of the details of the project that will be executed first. Detailed project data collection is still being carried out in detail, such as entering one by one the name, phone number, home address, email address, and participant's passport/Identity card number. This makes it prone to human error and uncontrolled / matched data. Therefore, I try to designed a management office information system to solve these problems. To support an efficient project data collection, I made this design using a web base and object-oriented. This system will later make it easy for admins to collect data on projects that run from anywhere and anytime, giving admin flexibility to monitor where project data has arrived. As well as from the Obaja's side, the benefits received are the ease and speed of verifying data files and tidiness of project data administration. Besides that, in making reports, it is also the main feature of the system that I designed. In producing approved data collection recommendations, I used a variation of the Waterfall method. The calculation results of this recommendation feature will form the basis for faster file documentation..

Keywords — **Informaton System, Waterfall, Website, Mice**

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I. INTRODUCTION

Meeting, Incentive, Conference, Exhibition (Mice) as a tourism activity whose activities are a combination of lesure and business, a group of people together, a series of activities in the form of meetings, incentive trips, conventions and exhibitions. (Incentive) is a gift or award given by a company to employees, clients or consumers. It can be in the form of money, tour packages / goods.

Mice Obaja is more focused on the Incentive field, which is a service department for companies who want to hold a corporate trip project. From this project, Obaja staff, namely sales and operations, will handle all the needs of the corporate trip, starting from manage all airplane tickets, travel documents, insurance, hotels and tours during location, entertainment, trip equipment, and group delivery and pickup on departures and returns.

Initially this project was done manually collecting data, year by year the project increased so that it

was quite difficult and required time to collect data and search the project budget history. The general manager of the Mice department feels that this method of budgeting is no longer effective in today's modern times. Therefore, the authors designed a data management information system to solve these problems. To support project data collection to make it easier for admins to the mice department.

In some opinions regarding the method used, namely, the waterfall SDLC model provides a sequential or sequential software flow approach starting from analysis, design, coding, testing, and support stages[1].

The Waterfall method is very suitable for web-based application development because it is more flexible and secure with various problems, such as less neat project management and inaccurate information. The Waterfall method is very suitable for developing web-based applications because it is more flexible and secure with various problems, such as less neat project management and inaccurate information[2].

Object-oriented or object-oriented method is a new paradigm in software engineering that views the system as a collection of interacting discrete objects[3].

In producing approved data management recommendations, the authors use variations of the Waterfall method.

II.   RESEARCH METHOD

A. Data Collection Method

1.   Observation

Direct observation and data collection are carried out by coming and seeing the project data collection process, searching for data history, the appearance of revenue in Obaja.

2.   Literature Study

Writing is done by looking for materials that support the definition of problems through books, the internet which is closely related to the object of the problem.

3.   Interview

By conducting interviews directly with the admin staff, namely Ilan Sagita, interviews were carried out to get a process flow related to the system built from related parties so that the system development was in accordance with the needs and could be the right solution.

B. Research Method

The research method used is applied research. Applied research takes less time to find the events**nalys** being researched. Researchers only focus on the design and implementation of research using contemporary phenomena[4].

C. Testing Method

Using quality testing from ISO 9126. And to get accurate quantitative data, a questionnaire was made with a measurement scale using a Likert scale[5]. The Likert scale is designed to assess the extent to which respondents agree or disagree with statements on a 5-point scale with this arrangement.

III.   DESIGN ANALYS

A. Analisys of Current Process

In the process of system analysis and design, some standard notations and diagrams are needed that can be used as a communication tool for system development. In the use case the user describes the kinds of activities that can be done in this application. The actor in this application is Admin. The use case diagram for the application user actor can be seen in Figure 1.
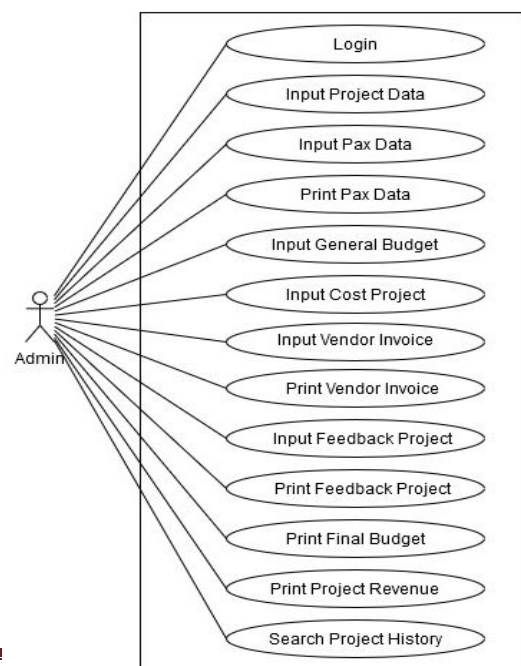
Fig. 1 Use Case Diagram

B. Problem Analys

To get some problems and the main problem can be determined the author uses the PIECES analysis method by analyzing performance, information, economy, security, service, and efficiency[6].

TABLE I
PIECES ANALYSIS

No.	PIECES ANALYSIS		
	Aspect	**Obstacles**	**Solution**
1	Perfomance	Management of project data, customer data, and revenue data takes a long time because the management is still manual.	Provide a system design for easy processing of project data, customer data, & revenue data that is easy to use and access.
2	Information	Information regarding project data is less accurate because errors often occur in data collection and data loss.	Provide a system design that can provide accurate information because data is stored in the database.
3	Economics	The costs incurred are relatively large due to having to make project form sheets, handover project files, customer data and receipt proof sheets for each project component.	Provide a system design that can facilitate project data, handover project files, customer data and receipt proof sheets, and view project history.
4	Control	The data collection of project component expenditure costs often occurs due to errors because the bill receipts are in paper form and are not neatly recorded.	Provide a system design that provides data on bill of component expenditures to facilitate data collection on project expenses.
5	Efficiency	Project data management that takes a long time.	Provide a system design that can make efficiency in the project management process.
6	Service	It is difficult for the admin to document and get information about the project because the admin has to find data that takes a long time.	Provide a system design that admins can use to carry out project data collection, project monitoring, and get information about the project by simply accessing the mice management system website.

C. Application Design

At the application design stage, several diagrams, screen designs and database specifications are needed. The database design is in the form of an entity relationship diagram as shown in Figure 2.
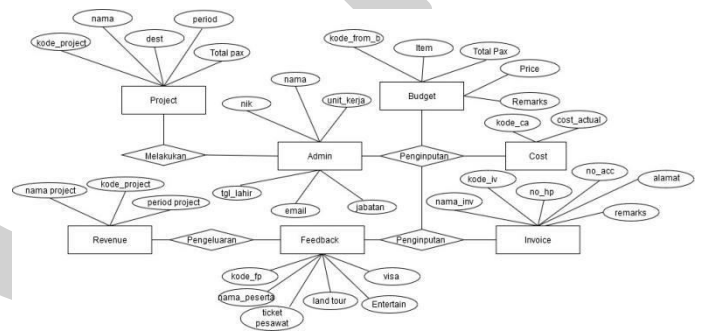
Fig. 2 Entity Relationship Diagram

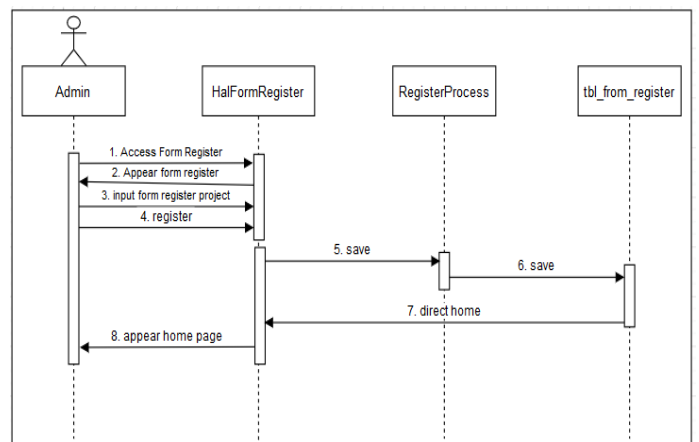Also some examples of sequence diagrams are shown in Figure 3 and Figure 4.
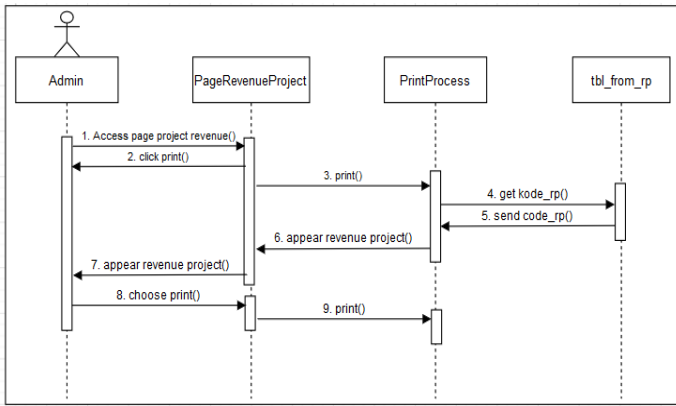
Fig. 3 Sequence Diagram of Project Register

Fig. 4 Sequence Diagram of Print Project Revenue

Some examples of database specifications. 3 of the 9 tables are shown in Table 2, Table 3, and Table 4.

2.	Nama_inv	Varchar	30	Vendor Name
3.	No_phone	Varchar	30	Vendor Phone Number
4.	Total_Inv	Int	20	Total Nominal Invoice
5.	No_Acc	Varchar	30	Vendor Account Number
6.	Address	Varchar	30	Vendor Address
7.	Remarks	Varchar	30	Invoice Remarks

And also some examples 3 of 14 screen designs shown in Figure 5, Figure 6, and Figure 7.

TABLE II
REGISTER FORM

No.	Field Name	Data Type	Length Data	Remarks
1.	Register_code	Int	15	Project Register Code
2.	Name	Varchar	20	Project Name
3.	Dest	Varchar	20	Destination Project
4.	Period	Date	10	Project Period
5.	Pax	Int	10	Total Pax

TABLE III
ADMIN

No.	Field Name	Data Type	Length Data	Remarks
1.	Nik	Int	15	Admin Identity Number
2.	Name	Varchar	20	Admin Name
3.	Div_unit	Varchar	20	Admin Division Unit
4.	Position	Varchar	20	Admin Position
5.	Birthday_date	Date	10	Birthday Date Admin
6.	Email	Varchar	30	Admin Email

TABLE IV
VENDOR INVOICE

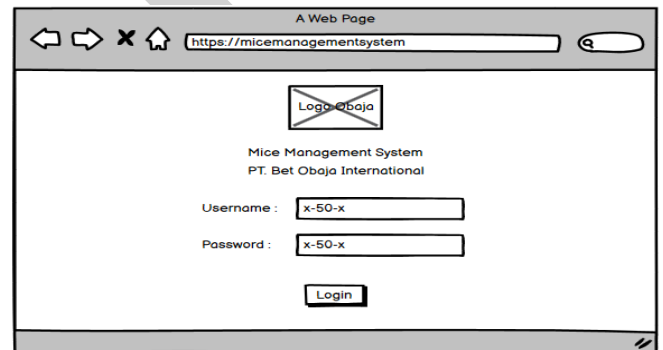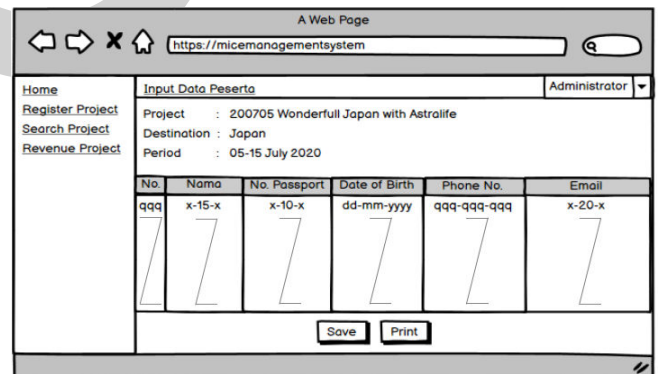| No.	Field Name	Data Type	Length Data	Remarks
1.	Code_inv	Int	15	Invoice Code

Fig. 5 Screen Design of Login

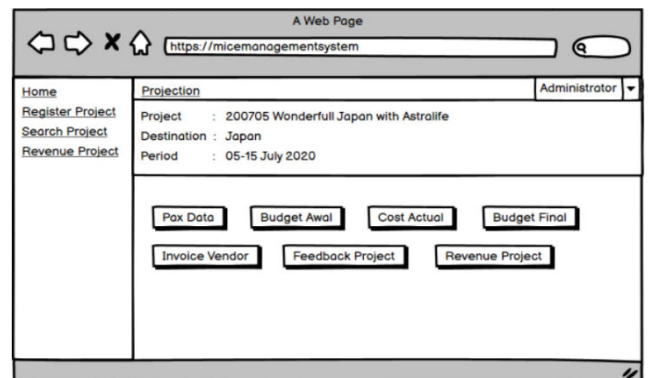Fig. 6 Screen Design of Pax Data Form

Fig. 7 Screen Design of Project Appearance

After the screen design, the following is the class diagram in Figure 8.
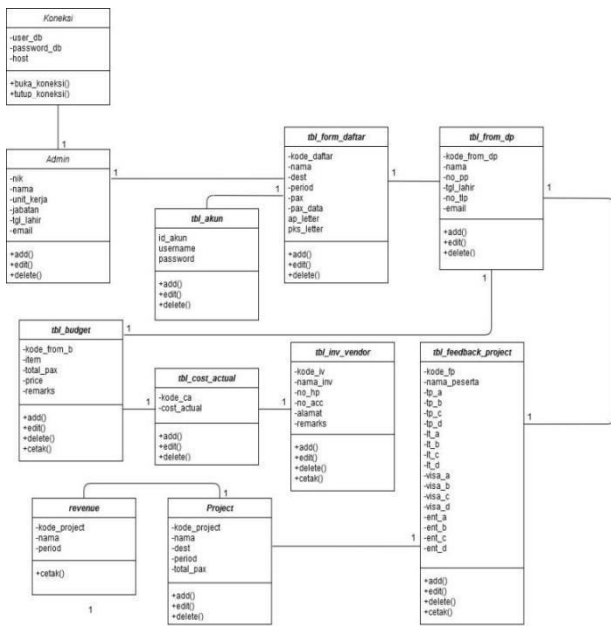

Fig. 8 Class Diagram

IV. RESULT AND DISCUSSION

A. User Interface Design

The display of the implemented application is based on the interface design and system design below :
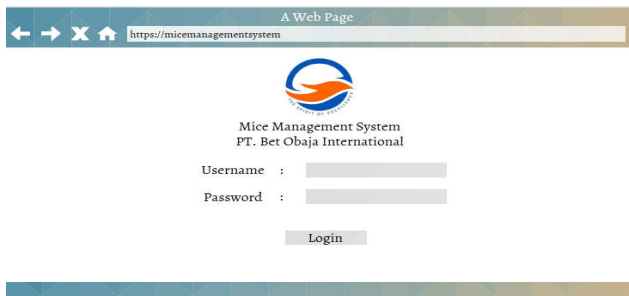

Fig. 9 Login Page

The Login page contains a username and password input page to enter the system.

Fig. 10 Home Page

Figure 10, Home page which contains information about the Vision and Mission of PT. Bet Obaja International which is an important pillar for all employees of PT. Bet Obaja International.
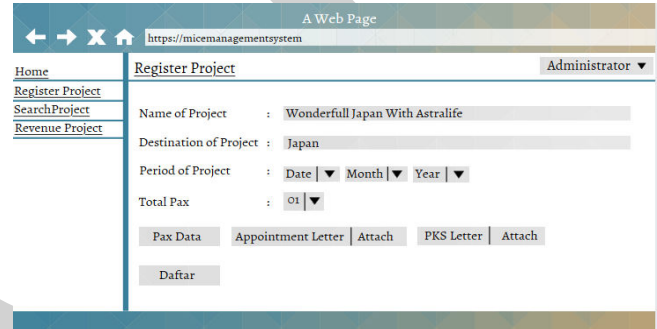

Fig. 11 Register Page

Figure 11, which displays the project register page, contains a form for data that will be input into a benchmark data before the process of printing the budget reaches revenue. At this stage, the data that must be completed are the name, destination, period, and number of participants of the project.
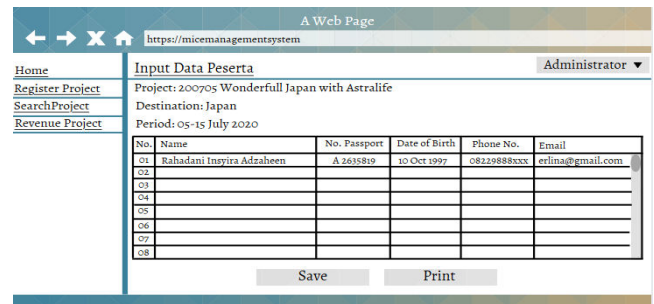

Fig. 12 Pax Data

Figure 12, which shows the participant data page, contains a form to enter general information for all project participants, which becomes data before the initial budget input process. At this stage, the data that must be completed are the name, passport number, date of birth, telephone number and email of the participant.

Fig. 13 General Budget

Figure 13 which displays the initial budget page contains a form for entering initial budget information which becomes a benchmark data before the process of inputting actual costs. At this stage, the data that must be completed are the component and nominal items of the project.

Fig. 14 Cost Actual

Figure 14 which shows the actual cost page contains a form for entering actual budget information which becomes a benchmark data before the process of generating project profit. At this stage, the data that must be completed is the actual nominal value of the initial project component budget.

Fig. 15 Final Budget

Figure 15 which displays the actual cost display page contains information on project profit that has been calculated from the initial budget and the cost atual previously entered, in this data it will generate project revenue.

Fig. 16 Invoice Vendor

Figure 16, which shows the vendor invoice page, contains a form to enter vendor invoice data which will be printed and made payments to the vendor. At this stage, the data that must be completed are the name and contact of the vendor, the nominal invoice, the vendor account number, the vendor address and the remarks of the invoice.

Fig. 17 Print Invoice

Figure 17, which shows the vendor invoice display page, contains invoice information that will be printed and given to finance to be paid.

Fig. 18 Feedback Project

Figure 18, which displays the Feedback Project page, contains a form for entering questionnaire data for participants who participated in the project for subsequent recapitulation of review feedback for future collaborative relationships between the two companies.
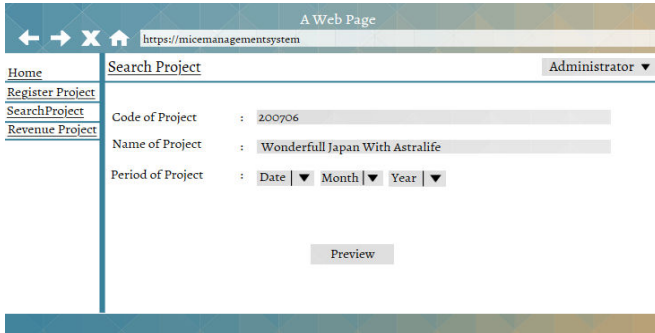

Fig. 19 Project Search

Figure 19 which shows the project search page contains a form to enter project search data so that it can make it easier for the admin to find the project data needed at a later date. At this stage, the data that must be completed are the code, name, and period of the project.
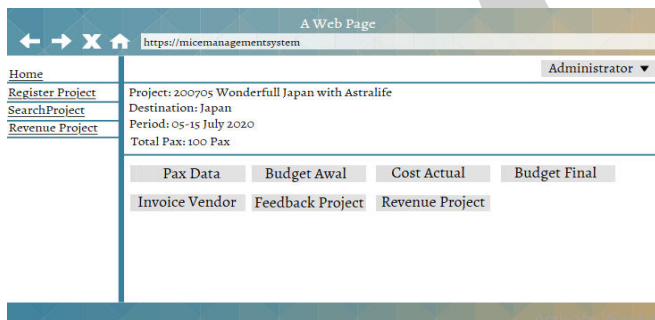

Fig. 20 Project Appear

Figure 20 which shows the project data display page contains a button to display all data from the project.
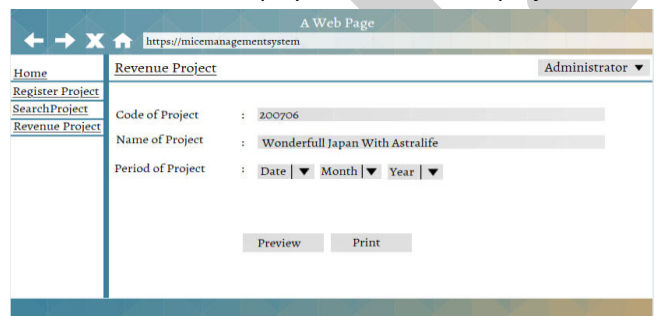

Fig. 21 Project Revenue Appear

Figure 21 which displays the project revenue print page contains a form to print project revenue to find out the

revenue from the project that has been obtained. At this stage, the data that must be completed are the code, name, and period of the project.

B. Quality Testing

Using quality testing from ISO 9126. And to get accurate quantitative data, a questionnaire was made with a measurement scale using a Likert scale[1]. The Likert scale is designed to assess the extent to which respondents agree or disagree with statements on a 5-point scale with this arrangement.

TABLE V
MEASUREMENT SCALE

Answer	Score
Strongly Agree	5
Agree	4
Doubtful	3
Disagree	2
Strongly Disagree	1

The ideal score is the highest score or weight or all respondents are assumed to choose the answer with the highest score. To explain the weight of the actual score, we can see it in the table below:

TABLE VI
CRITERIA FOR PERCENTAGE OF RESPONDENTS' RESPONSES

Total Score	Criteria
20.00% – 36.00%	Bad
36.01% – 52.00%	Weak
52.01% – 68.00%	Good Enough
68.01% – 84.00%	Good
84.01% – 100%	Very Good

1) Profile of Respondents

In filling out the questionnaire the writer involved several respondents to get the value from the results of the design model made.

TABLE VII
PROFILE OF RESPONDENTS

No.	Respondents	Total	Age Range
1.	General Manager	1 Person	40 Years
2.	Sales Team	1 Person	27 Years

3.	Operation Team	1 Person	25 Years
4.	Admin	1 Person	25 Years

2) Respondent's Answers

TABLE VIII

RESPONDENT'S ANSWER

Butir Uji	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Responden 1	S	S	R	R	SS	R	S	S	S	S	S	S	S	S	S
Responden 2	S	S	S	R	S	S	S	R	S	R	R	R	R	R	S
Responden 3	S	S	R	R	SS	R	R	R	S	R	S	S	S	S	S
Responden 4	SS	SS	S	R	SS	S	SS	R	S	SS	R	R	SS	SS	S

3) Respondents' Answers in a Likert Scale

TABLE IX

RESPONDENTS' ANSWERS IN A LIKERT SCALE

Butir Uji	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Responden 1	4	4	3	3	5	3	4	4	4	4	4	4	4	4	4
Responden 2	4	4	4	3	4	4	4	3	4	3	3	3	3	3	4
Responden 3	4	4	3	3	5	3	3	3	4	3	4	4	4	4	4
Responden 4	5	5	4	3	5	4	5	3	4	5	3	3	5	5	4

4) Percentage of Model Scores for Functionality

TABLE X

PERCENTAGE OF MODEL SCORES FOR FUNCTIONALITY

Kriteria Jawaban	Bobot	Functionality						Total
		Suitability	Accuracy	Security	Interoperability	Compliance		
		1	2	3	4	5	6	
SS	5	1	1	0	0	3	0	5
S	4	3	3	2	4	1	2	15
R	3	0	0	2	0	0	2	4
TS	2	0	0	0	0	0	0	0
STS	1	0	0	0	0	0	0	0
Jumlah Responden	4	4	4	4	4	4	4	
Skor Aktual		17	17	8	16	19	8	85
Skor Ideal		20	20	20	20	20	20	120

5) Percentage of Model Score for Usability

TABLE XI

PERCENTAGE OF MODEL SCORE FOR USABILITY

Kriteria Jawaban	Bobot	Usability						Total
		Understandibility	Learnability	Operability	Attractiveness			
		7	8	9	10	11	12	
SS	5	1	0	0	1	0	0	2
S	4	2	4	4	1	2	2	13
R	3	1	0	0	2	2	2	5
TS	2	0	0	0	0	0	0	0
STS	1	0	0	0	0	0	0	0
Jumlah Responden	4	4	4	4	4	4	4	
Skor Aktual		16	16	16	9	12	12	69
Skor Ideal		20	20	20	20	20	20	100

6) Percentage of Model Score for Efficiency

TABLE XII

PERCENTAGE OF MODEL SCORE FOR EFFICIENCY

Kriteria Jawaban	Bobot	Efficiency		Total
		Time behavior	Resource behavior	
		14	15	24	
SS	5	2	2	0	4
S	4	1	2	4	7
R	3	1	0	0	1
TS	2	0	0	0	0
STS	1	0	0	0	0
Jumlah Responden	4	4	4	4	
Skor Aktual		14	18	16	48
Skor Ideal		20	20	20	60

C. Conclusion of Test Results

From the tests carried out, the results obtained can be seen in the following table:

TABLE XIII

TESTING RESULT

No.	Aspect of Testing	Success	Criteria
1.	Functionality	70,83%	Good
2.	Usability	69%	Good
3.	Efficiency	80%	Good
	Total	73,28%	Good

The results of the testing based on questionnaire using ISO 9126 Framework shown that the application is catergorized by "Good" mark with percentage of value 73.28%.

V. CONCLUSION

From the discussion on the analysis of mouse management information system design, it can be found that this design is made based on admin needs such as to manage project data that is easy and efficient and can be accessed anywhere using the internet network.

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