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Development of a Web-Based Administrative Information System for Owned Enterprises (BUMDes) in Macollililoloe Village

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ABSTRACT

This study aims to determine the results of developing a web-based BUMDes administrative information system in Macollililoloe Village and testing a website-based BUMDes administrative information system using the ISO 25010 standard. This study is a Research and Development (R&D) research. It uses a prototype development model consisting of the stage of gathering requirements, building prototypes, evaluating prototypes, coding the system, testing the system, evaluating the system, and using the system and collecting data in this study using interviews, questionnaires, measurement software, and documentation. System testing in this study uses several quality standards for software development, namely ISO 25010, including the functional suitability aspect with the results of a decent and acceptable category, the performance efficiency aspect with class B results, the usability aspect with excellent category results, the reliability aspect with the acceptable category results. Received is worth 100% without errors and portability with very decent results. Based on the results of this study, a web-based BUMDes administrative information system development was produced in Macollililoloe Village. It could be used to manage BUMDes administration using the prototype method with aspects of the ISO 25010 standard.

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1. INTRODUCTION

Information is essential for everyone, especially information technology, which brings many changes in both the organization and the progress of business processes. Usually, information technology demands increased performance in almost all fields, and the resulting speed and accuracy will obtain information that makes all activities easier. Information systems will help companies to present financial reports in the form of accurate and reliable information so that many parties use information systems to achieve excellence for the company.

Based on the rapid development of the technology sector, the business sector is the sector most affected by the development of information technology and telecommunications. Through e-commerce, we can have the same opportunities to compete and succeed in business in cyberspace. E-commerce lately has been booming that offering merchandise on the website.

The website itself has an administration that helps the preparation and recording of information data can be done systematically to provide information and ease of obtaining comprehensive information in the relationship between each other [1].

Financial administration consists of several components: planning, budgeting, management, search, storage, control, and financial audits. The government optimizes village functions through Law no. 6 concerning village-owned enterprises are business entities that all or most of their capital comes from the village. The establishment of BUMDes aims to encourage village economic potential, increase original village income, encourage the development of rural community economic activities, increase creativity and village business opportunities and encourage the development of informal micro-enterprises to absorb labor for rural communities. BUMDes has a role in regulating the village economy [2]. BUMDes can carry out the business potential in this effort, including simple social, e.g., rent, financial, financial, and joint ventures. Each type of business mentioned can be run in the village by adjusting the conditions and potentials that exist in the village. One of the villages that have BUMDes is Macollililoloe Village, Wajo Regency.

The BUMDes in Maccollililoloe Village is headed by a BUMDes unit head whose task is to manage business units under the BUMDes and report profits and losses to the village head. However, in Macollililoloe Village, there are still several obstacles in empowering BUMDes, including the lack of adequate human resources in the management of BUMDes, and the recording and reporting of BUMDes are still in the form of archival bookkeeping. To achieve this goal, the governance that must be fulfilled, such as the BUMDes administration report, is neatly arranged. Reports of capital, expenditure, and results from the BUMDes business unit can be appropriately accommodated. This report can certainly be used as a guide for the village to manage BUMDes.

Therefore, to overcome the problems that occur, a website-based information system is needed that can be used as a means of supporting BUMDes activities. In this case, it is essential because a website can help consumers convey detailed product and price information. In addition, the website will also be able to access the information needed anytime and anywhere. The existence of a website also expands the reach of marketing because it is not only within the village but can reach other villages or even more than that. It is hoped that this can be realized with a Website-based information system using PHP and CSS programming using the programming language. The information system will help the effectiveness of BUMDes business activities.

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Based on the background described, this study aims to produce a website-based BUMDes administrative information system and to determine the feasibility test of the information system using ISO/IEC 25010

2. METHODS

The discussion in part II describes the type of research, development model, time and place of research, research procedures, needs collection techniques, and data analysis techniques.

2.1. Research Type

Research and development (R&D) is a series of processes or steps to develop a stone product or improve existing products [3-6].

2.2 Development style

In the manufacture and development of the BUMDes information system, a system development model is needed to determine the process of completing software engineering. The system approach used is the prototype method. A prototype is a rapid development and testing of a new application's working model (prototype) through an iterative and interactive process commonly used by information systems experts and business experts [3-6].

2.3 Place and time of research

This research was conducted at the Maccollililoloe Village Office, Wajo Regency, South Sulawesi. This research was carried out for two months, January 2022 - March 2022.

2.4. Research procedure

Based on the selected development model, the stages in this research are shown by **Figure 1**.

2.4.1. Needs Collection

The client and developer define the software's format and identify the requirements for the system created.

2.4.2. Building Prototype

Build a prototype by making temporary plans to present to customers, e.g., making input and output formats.

2.4.3. Prototype Evaluation

At this stage, the customer will evaluate the prototyping that has been made. If inappropriate, the prototyping will be revised by repeating the previous steps. However, if appropriate, the next step will be implemented.

2.4.4. Encoding System

The agreed prototype is translated into the appropriate programming language.

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2.4.5. Testing System

After the system has become ready-to-use software, the software must be tested before use to minimize software errors.

2.4.6. System Evaluation

At this stage, the customer or client evaluates the system that has been made and whether it is as desired. If not, then the developer will repeat steps four and five, but if yes, then step seven will be performed.

2.4.7. Using the system

The software tested and accepted by the client or customer is ready for use.

2.4.8. Using the system

The software tested and accepted by the client or customer is ready for use

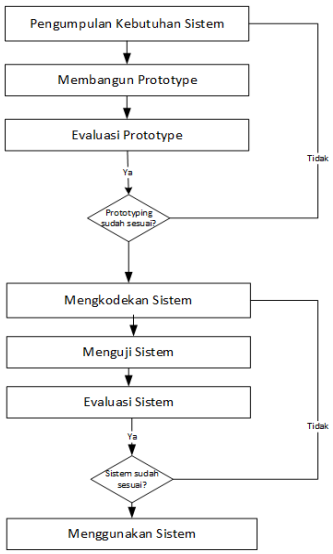

Figure 1. Research Procedure.

2.5. Data collection technique

There are several ways to collect needs, namely:

2.5.1 Interview

Interviews are used as a data collection method if the researcher wants to conduct a preliminary study to find problems that must be investigated. This study requires a data collection method to dig deeper into the problems in the BUMDes administration application in Macollililoloe village.

2.5.2. Questionnaire

The questionnaire is a data collection technique that gives respondents a set of questions or written statements to answer. In order to gather useful and relevant information it is essential that careful consideration is given to the design of your questionnaire [10]. This study uses a questionnaire method to test the functional suitability and usability

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characteristics of the website-based BUMDes administration application in Macollililoloe village [10].

2.5.3. Measurement Software

Software is used to assist the data collection process in testing aspects of functionality suitability, performance efficiency, usability, reliability, and portability. For observations, suggestion were based on measurements typically done infrequently by human observers, either systematically, such as counting vehicle or pedestrian traffic at intersections, or through ad hoc mechanisms, such as residents reporting street flooding. [11]

2.5.4. Documentation

Documentation is a record of events that have passed. Documents can be in the form of writing, pictures, or monumental works of someone. In this study, the authors took from the village office

2.6. Research Instruments

2.6.1 Instrumental Functional Suitability

Functional characteristic test suitability using test cases and guttman scale. This test is carried out to determine whether the function of the information system has been running as expected.

2.6.2. Performance efficiency research instrument

Performance efficiency testing is done using GTMetrix software. Testing is done with the GTMetrix web service. GTMetrix provides a complete picture of site load and helps detect where data flow density lies. DTMetrix measures page load time, total page size, and the number of HTTP requests.

2.6.3. Usability research instrument

Usability testing is carried out using questionnaires or questionnaires by employees and the public directly after trying the information system. The questionnaire used is the U SE Questionnaire. The questionnaire questions are divided into four criteria: usability, ease of use, ease of learning, and user satisfaction. The questionnaire used the Likert scale method with five answers, namely Strongly Disagree (STS), Disagree (ST), Disagree (KS), Agree (S), and Strongly Agree (SS).

2.6.4. Research Instruments Reliability

Reliability is an indicator of the stability of the measured values obtained in repeated measurements under the same circumstances using the same measuring instrument [12]. Reliability testing is done by using the Web server stress tool to test the resilience or capability of the software and whether the software can run well when given a load.

2.6.5. Portability Research Instruments

Portability testing is done by cross-browsing compatibility testing on the desktop to test the quality of the software running correctly and whether no errors occur when run on different browsers, such as Mozilla Firefox, Opera, Google Chrome, and Internet Explorer.

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2.7 Data analysis technique

2.7.1. Functional Suitability Analysis Techniques

This website-based testing uses instruments in the form of checklists. The Guttman scale is used if we want a firm answer to a problem being asked and the answer to each item uses an answer that is "Yes" or "No", as seen on **Table 1.**

Table 1. Guttman Assessment Criteria.

No.	Information	Score
1.	Yes	Score 1
2.	Not	Score 0

Source: Sugiono,2011

The test results are calculated by the formula of the features completeness matrix, which measures the extent to which the function can be implemented correctly. The following is the formula for calculating the questionnaire, namely Equation [1]:

$$X = \frac{Q}{I} \times 100\% \quad (1)$$

X: Value obtained
Q: Number of functions designed
I: Number of successfully implemented functions
features completeness matrix, the software can be feasible if the function items' calculation results are close to one.

2.7.2. Performance Efficiency Analysis Techniques

This test was carried out by analyzing the performance efficiency data, and the system was tested with tools. The conditions needed in the test are web addresses on different system pages. The results are as seen on **Table 2.**

Table 2 Assessment of *performance efficiency.*

Score %	Grade
90-100	A
80-89	B
70-79	C
<69	D

Source: Zumrotul, 2016

2.7.3. *Usability* Analysis Techniques

Testing usability characteristics on information systems using a USE Questionnaire and a Likert scale. Likert scale is applied as one of the most fundamental and frequently used psychometric tools in educational and social sciences research [13]. The Likert scale is a type of scale that can be used to measure a person's attitudes, opinions, and perceptions. The score criteria for the answer items are seen on **table 3**. :

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Table 3. *Likers . Scale Assessment Criteria.*

Answer	Score
Strongly Disagree	1
Don't agree	2
Just Agree	3
Agree	4
Strongly agree	5

Source: Sugiono, 2017

The score is calculated using the conversion formula to score percentage to find the interpretation criteria for usability test scores. The scores obtained from the respondents were then searched for the criteria for the presentation of the percentage of usability test results with the feasibility percentage formula on Equation [2] :

$$\text{Eligibility Percentage:} \frac{\text{skor yang diperoleh}}{\text{skor yang diharapkan}} \times 100\% \quad (2)$$

After obtaining the percentage of answers, the respondent is then given an interpretation or assessment of the research results.

Table *4.* *Usability* Assessment Categories.

No	Eligibility Percentage (%)	Interpretation
1	0% - 20%	Very Not Good
2	21% - 40%	Not good
3	41% - 60%	Pretty good
4	61% - 80%	Well
5	81% - 100%	Very good

Source: Guritno, 2011

Reliability testing is an analysis using a stress tool application by testing stress testing, which aims to see the resilience of the software working under normal circumstances. Stress testing simultaneously simulates visitors at a particular time and shows the performance of the infrastructure when the server is serving many requests

2.7.4. *Portability* Analysis Techniques

A portable design up front can reduce porting costs, and often reduce total costs for the entire life of the product [14]. This test is carried out by direct observation by experimenting with various environmental conditions in various browsers. Programming expert responses are seen based on a questionnaire that uses the Guttman scale. This study uses a checklist form with yes-no answer choices. The respondent's answer with the highest score (yes) is worth one, and the lowest score (no) is 0 as seen on **Table 5.**

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Table 5 Guttman . Scale Rating.

Answer	Score
Yes	1
Not	0

Source: Sugiono,2017

The test results are calculated by the formula of the features completeness matrix, which measures the extent to which the function can be implemented correctly. The following is the formula for calculating the questionnaire, namely Equation [3]:

$$X = \frac{Q}{I} \times 100\% \quad (3)$$

X: Value obtained
Q: Number of functions designed
I: Number of successfully implemented functions
features completeness matrix, the software can be feasible if the function items' calculation results are close to one.

3. RESULTS AND DISCUSSION

After explaining the method that will be used in part two, then in the third part, the results of the research and discussion are explained, namely:

3.1. Research result

The development of this Website-based administrative information system for Owned Enterprises (BUMDes) information system aims to facilitate the administrative process of BUMDes. The following is a description of the process of developing a Web-based Administration Information System for Owned Enterprises (BUMDes) in Macollililoloe Village that has been developed and the results of the tests that have been carried out.

3.1.1. Needs Collection

At the stage of analyzing the needs of the BUMDes information system, it is done by analyzing and collecting information by conducting interviews and direct observations to obtain the data needed for system development. The results of this stage obtained data on the needs of the BUMDes Administrative Information System as follows:

a. Users in the BUMDes information system are Admin, Head of Unit, and Customer.
b. BUMDes information system is needed in managing BUMDes data.
c. The data performed by the user to access the information system is in the form of a username and password.
d. Admin can add, edit, and delete rental, savings, loan, and sales data..
e. The unit head can see all customer data for savings, loans, and rentals.

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3.1.2. Building Prototype

Based on the results of gathering requirements, the next step is to build a prototype. This stage is done by helping the temporary design that focuses on presenting to the user. This design consists of context diagram design, DFD, Use case diagram, and interface design.

3.1.3. Prototype Evaluation

Based on the results of the evaluation by Macolllililoloe Village Office employees. Developers are asked to add several features, namely: adding a vision and mission to the profile menu, and adding a savings and loan menu, adding a rental menu, adding printing to the savings and loan rental menu. m added an e-commerce menu.

3.1.4. Encoding System

The agreed prototype is translated into the appropriate programming language at this stage. The programming languages used are PHP, JavaScript, HTML, CSS, and bootstrap programming languages.

3.1.5. Testing System

3.1.5.1. Material Test

Material testing carried out is content validation. Content validation is done to validate the content of the system. As content experts, two validators from the Macolliloloe Village Office carried out this validation. Content validation is related to content feasibility, presentation feasibility, and language assessment developed by filling out a 1-5 scale questionnaire consisting of 10 statement points as seen on **Table 6.**

Table 6. Recapitulation of content validation results.

No	Name	Earning Score	Expected score	Average (M)	Category
1	Content Validation I	39	50	78.0%	Worthy
2	Validation II	41	50	82.0%	Very Worthy
	Average	40	50	80.00%	Worthy

Data Source: 2022

3.1.5.2. ISO 25010 Testing

This testing phase is carried out after the information system has been created, which aims to determine the quality and feasibility of the information system before it is used. Software quality testing refers to the ISO 25010 testing standard by using aspects of functional suitability, performance efficiency, usability, reliability, and portability. The following are the results of testing each of these aspects.

3.1.5.2.1. Functional Suitability Test

Functional suitability testing is carried out to validate the system from the application. Two system expert validators carried out this test. The validator will provide a checklist in the "Yes" column; if it is 1, it means that it was successfully executed. However, if the

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system fails or has an error, the validator will provide a checklist "No" section with a value of 0. Results as seen on **Table 7.**

Table 7. Functional Suitability Recapitulation.

Validator	Number of Features (P)	Number of Features Tested Successfully (1)	*Feature Completeness*	Category
System Expert I	165	165	1	Worthy
System Expert II	165	165	1	Worthy
Average	165	165	1	Worthy

Source: Data processing, 2022

Based on the calculation of Feature Completeness, if the average number is calculated, it can get a value of I = 165 and P = 165, with Feature Completeness worth one and successfully operated. This Feature Completeness means that the functionality suitability aspect of the information system develop

3.1.5.2.2. Performance efficiency test

Performance efficiency testing is the level of reloading performance on the resources used in the specified conditions. This test is done by calculating the total score of all pages and tested using web testing GTMetrix. The results obtained by the GTMetrix class get a B value with a performance of 81%, structure of 89%, and load time of 2.2 seconds. This website is said to be good if the load time is less than 10 seconds.

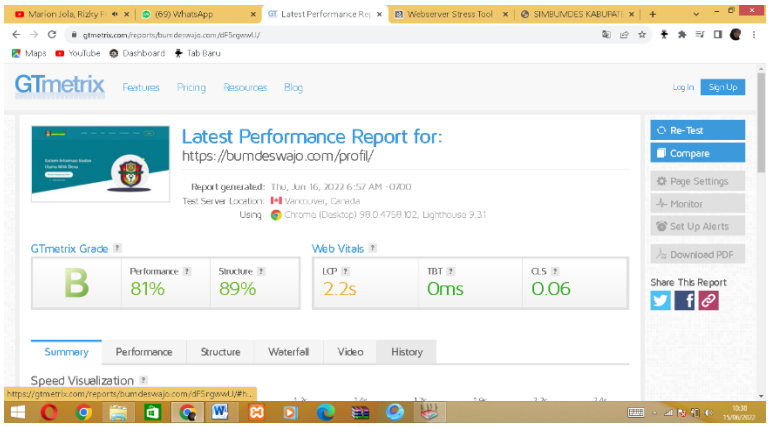

Figure 2. Performance efficiency test.

3.1.5.2.3. Usability Test

Usability testing aims to determine the user's response to the BUMDes information system that has been created. The usability test was carried out by testing the system directly to users with a total of 20 respondents and the respondents were asked to fill out a questionnaire containing 15 questions as seen on **Table 8.**

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Table 8. Recapitulation of Usability Test Results.

Respondent	Total Score	Expected Score	Percentage (%)	Category
20	1216	1500	81.1 %	Very good

Source: Data analysis, 2022

Based on the analysis of the calculations in table 4.4, the total score obtained is 1216, and the expected score is 1500 from the responses of 20 respondents to the BUMDes information system in Macollilo loe Village. The grouping level is according to the Likert scale, so a percentage of 81.1 % is obtained in usability testing. The score indicates that the quality of the software from the usability aspect is appropriate, and if it is interpreted, the feasibility is in an excellent category.

3.1.5.1.4. Reliability Test

Reliability testing is carried out on information systems, one of which is by using the stress testing method. Stress testing in this test uses the Webserver stress tool software, which has three test categories, namely click test, Time Test and Ramp Test.

3.1.6. Click Test

Click test is an action that is carried out to test the resilience of the system, and then each click action will calculate the time lag and delivery that can be made by the server if accessed simultaneously as seen in **Figure 3.** and **Figure 4.**

User No.	Clicks	Hits	Errors	Avg. Click Time [ms]	Bytes	kbit/s	C
1	10	10	0	157	173.610	885,64	
2	10	10	0	154	173.610	900,01	
3	10	10	0	153	173.610	909,88	
4	10	10	0	148	173.610	936,96	
5	10	10	0	152	173.610	913,70	
6	10	10	0	151	173.610	916,79	
7	10	10	0	150	173.610	927,52	
8	10	10	0	151	173.610	916,94	
9	10	10	0	149	173.610	931,12	
10	10	10	0	157	173.610	883,08	

Figure 3. Reliability Test on Click Test Per User

URL No.	Name	Clicks	Errors	Errors [%]	Time Spent [ms]	Avg. Click Time [ms]
1	IKM	99	0	0,00	15.078	152

Figure 4. Reliability Test on Click Test Per URL

The results obtained in the click test per user and per URL show that the number of clicks given is ten times with the number of hits 10 with errors that occur as much as 0, for the fastest time used is 157 ms, bytes speed reaches 173,610, and access speed reaches 936, 96 kbit/s.

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- Time Test

A time test is a Run Test with a constant load at a predetermined time in **Figure 5.** and **Figure 6**.

User No.	Clicks	Hits	Errors	Avg. Click Time [ms]	Bytes	kbit/s	Cookies
1	116	115	0	183	1.996.515	759,25	
2	116	115	0	185	1.996.515	749,99	
3	116	115	0	182	1.996.515	764,13	
4	115	115	0	182	1.996.515	762,74	
5	115	114	0	181	1.979.154	766,29	
6	115	115	0	175	1.996.515	792,23	
7	115	114	0	181	1.979.154	766,85	
8	115	114	0	174	1.979.154	799,62	
9	115	114	0	167	1.979.154	831,60	
10	115	114	0	170	1.979.154	815,02	

Figure 5. Time Test Results Per URL

URL No.	Name	Clicks	Errors	Errors [%]	Time Spent [ms]	Avg. Click Time [ms]
1	IKM	1.138	0	0,00	202.375	178

Figure 6. Time Test Results Per User

The results were obtained by testing the Time Test with a constant load at a predetermined time. The Time Test was carried out by producing the most significant number of clicks, 116, a click time of 185 ms, a speed of bytes of 1,996,515, and an access speed of 764,13 kbit/s

- Ramp Test

A ramp test is a Run Test with an increasing number of loads at a predetermined time in **Figure 7.** and **Figure 8.**

User No.	Clicks	Hits	Errors	Avg. Click Time [ms]	Bytes	kbit/s	Cookies
1	173	172	0	166	2.986.092	834,83	
2	160	159	0	160	2.760.399	867,24	
3	146	145	0	170	2.517.345	818,49	
4	132	131	0	164	2.274.291	846,55	
5	118	117	0	158	2.031.237	879,14	
6	104	103	0	172	1.788.183	805,61	
7	90	89	0	159	1.545.129	873,00	
8	76	75	0	174	1.302.075	800,01	
9	62	61	0	177	1.059.021	785,87	
10	49	48	0	176	833.328	789,43	

Figure 7 Ramp Test Results Per URL.

URL No.	Name	Clicks	Errors	Errors [%]	Time Spent [ms]	Avg. Click Time [ms]
1	IKM	1.087	0	0,00	180.575	166

Figure 8 Ramp Test Results Per User.

The Ramp Test was carried out to produce the most significant number of clicks, as many as 173 with 172 hits. The bytes speed reached 2,986,092, and the access speed was 834.83 kbit/s

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Table 9 *Reliability* Test Results.

Test Type	Percentage *Error* per *URL*	Percentage *Success* per *URL*
Click test	0%	100%
Time Test	0%	100%
Ramp Test	0%	100%
Average		100%

Source: Data processing, 2022

Based on the table above, it can be concluded that the percentage of success of the Reliability test using the click test, Time Test, and Ramp Test is 100% acceptable without errors

3.1.5.1.5. Portability Testing

The results of portability testing of BUMDes information systems are used to measure software capabilities. Testing for portability was carried out by running the system on several different devices and on several browsers. The following portability tests were carried out on several devices:

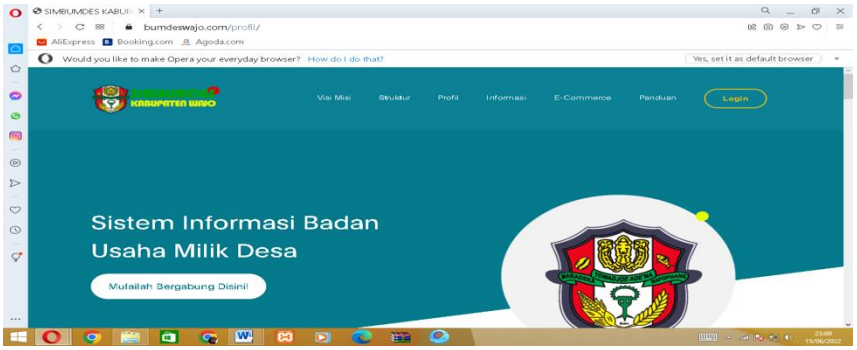

Figure 9 Testing *portability* using *Opera.*

Figure 10 Testing on Microsoft *Edge.*

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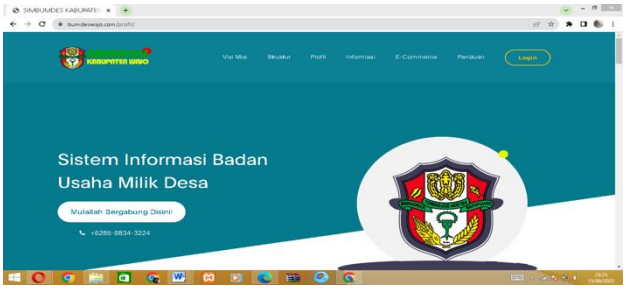

Figure 11 Portability testing on Chrome.

Figure 12 Portability testing on Mi Browser.

Figure 13 Testing portability on Safari.

Table 10 *Portability* Test Results.

No	Device	Browser	Succeed	Fail
1.	Acer Intel Celeron n2840	Chrome	1	0
2.	Acer Intel Celeron n2840	Microsoft Edge	1	0
3.	Acer Intel Celeron n2840	Opera	1	0
4.	Redmi Note 9 Smartphone	Mi Browser	1	0
5.	iPhone Xr Smartphones	Safari	1	0
	Total		5	-
	Average		1	-
	Category		**Very Worthy**	

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It can be seen in the column table that the total success values of the five operating systems tested on this system have met the portability aspect.

3.2. Discussion

The BUMDes information system at the Macollililoloe Village office is in the form of one of the business entities established by Macollililoloe Village that suits users' needs. The development of the BUMDes information system is expected to assist in managing BUMDes data.

This information system is built using HTML, PHP, and Javascript programming languages, as well as database storage using MySQL, where XAMPP is a stand-alone server (localhost) due to the advantages of HTML and PHP programming languages, which are easy to learn. Everything you need to set up a web server– is included in a simple extractable file [15]. This stand-alone server makes it easier for developers in system development. The development of the BUMDes information system uses research and development (R&D) research with a prototype development model consisting of the stages of collecting system requirements, building prototypes, evaluating prototypes, coding the system, testing the system, evaluating the system, and using the system.

The system requirements gathering stage is the stage where the developer and the client work together to determine the general objectives of the program to be made. Building a prototype is building a temporary plan that focuses on presenting it to users. This stage provides an initial overview of the system, which includes context diagrams, DFD, use cases, activity diagrams, and interface designs. Data Flow Diagrams (DFD) start from the most common form of context diagrams (context diagrams), then from this context diagrams are derived into more detailed forms [16] [17]. In addition, the client will evaluate the prototyping that has been made or built so that developers can proceed to the next stage. The coding stage of the system will translate into the appropriate programming language. The testing stage will determine the sustainability of the system that has been created. The tests carried out include the validation developed. In the system evaluation stage, the system developed is as desired. If it is not appropriate, the development will repeat steps 4 and 5, but if it is appropriate, the next stage will be using the system.

The result of the development of the BUMDes information system is information that can assist in managing the administration of BUMDes based on the prototype development method by fulfilling the testing aspects of ISO 25010.

The feasibility of the BUMDes information system in Macollililoloe Village is carried out by testing the system built using the ISO 25010 standard test using five characteristics: functional suitability, performance efficiency, usability, reliability, and portability. The five aspects were chosen based on the needs of the Macollililoloe BUMDes information system.

Functional suitability testing is carried out to assess the extent to which the software can provide functions that meet the requirements that can be used under certain conditions. This test involves two experienced experts in the field of systems by testing the system directly by trying all its functions. Based on the research results of two system experts, a score of 1 was obtained with suitable criteria. The assessment is based on the Guttman scale [18]. Functional suitability testing is assessed using the Guttman scale. The test results are calculated using the feature completeness formula. A value of 1 based on the functional suitability measurement formula is categorized as feasible if it is close to or has a value of 1.

Performance efficiency testing is carried out to see the developed system's performance level. This test using online GTMetrix [19-22] obtained the results of a B value with a

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performance of 81%, structure of 89%, and load time of 2.2 seconds. The website is said to be good if the load time is less than 10 seconds. From these results, it can be concluded that the administrative information system of BUMDes Macollililoloe has met the characteristics of performance efficiency.

Usability testing uses user responses from the information system by introducing the system to respondents, then being asked to fill out a questionnaire. If interpreted, it gets an excellent category based on the feasibility percentage of 81.1%.

Reliability testing is done by using a web server stress tool to see the resilience of software in handling resource requirements beyond normal usage limits. This test is divided into three tests: a click test with 100% results without errors. Ten virtual users successfully use the buttons available on the website page according to the amount of constant load until the virtual user meets the number of clicks that have been generated. Ten virtual users used the time test with 100% results without errors, who succeeded in constant loading for 15 minutes. Ramp test with 100% results without errors, ten virtual users managed to access the application with an increasing number of loads for 15 minutes and has met the reliability aspect based on the Telcordia standard of software reliability that can be accepted if the success of the software is more than 95% or 0.95.

Portability testing measures the software's ability if it is transferred from one environment to another. Testing for portability is done by running the system on a browser from several devices. The test results are declared to run well from 3 different devices tested by several browsers and have met the portability aspect.

4. CONCLUSION

4.1. Conclusion

BUMDes administrative information system is an information system that can assist data administration on the BUMDes based on user needs using a prototype development model. This includes gathering requirements, building prototypes, evaluating prototypes, coding the system, testing the system, and evaluating the system. The system has met the aspects of the ISO 25010 testing standard with functional suitability, performance efficiency, usability, reliability, and portability.

Based on the results of the system test using the characteristics of the ISO 25010 test, which consists of functional suitability with the results of a decent category, Performance efficiency with class B results, usability with a percentage result of 81.1 in the excellent category, reliability with an acceptable category result with a value of 100% without errors, and portability with the results of the category are very feasible. It can be concluded that the BUMDes information system is suitable for use by users.

4.2.Suggestion

The researchers give the following suggestions for implementing this system: If there is a system development, it is expected to add features to the Macollililoloe BUMDes information system.

This system is expected to be able to implement this web -based BUMDes information system so that the use of the system can provide much better service information.Provide a statement that what is expected as stated in the "Introduction" chapter can ultimately result in "Results and Discussion" chapter, so there is compatibility. Moreover, the authors can elaborate the prospect of the development of research results and inspire further studies (based on result and discussion).

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5. AUTHORS' NOTE

The authors declare that there is no conflict of interest regarding the publication of this article. Authors confirmed that the paper was free of plagiarism.

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