

Analysis of Online Sales Applications in Rendang Mala Business at Payakumbuh City

Andi Putra¹, Khairul Annisa², Arif Rizki Marsa³

^{1 2 3}Sekolah Tinggi Teknologi Payakumbuh, Indonesia

Corresponding Author: drandiputra@gmail.com

Abstract

Rendang Mala is one of the rendang businesses in the city of Payakumbuh. So far, the business of selling Mala rendang is still done manually, that is, buyers go directly to the store to get the product. In today's all-online digital era, internet-based innovation is needed that can support the business world to facilitate buying and selling transactions, streamlining time and distance so that buyers don't have to come to the store to get products. The web-based online sales application is designed to make it easier for consumers to get Mala rendang products. Web-based online sales application for Mala's rendang business developed with use Language programming databases, PHP, and MySql. For know satisfaction user to application This done study with use model PIECES analysis. Based on the results of the study using PIECES analysis, an average score of 4.4 . Which showing that application online sales give results "Very Satisfied" for user.

Keyword : Databases , MySQL and PHP .

INTRODUCTION

Development of the internet is a phenomenon that attracts attention in development world technology Which happen moment This, Because The internet is an example of the largest network that is connected to millions of computers spread all over the world and is not tied to any organization.

Anyone can join the internet by using the network. All organizations can exchange information externally. One aspect that needs to be supported is the business world. The buying and selling process can be completed without having to meet face to face between

the seller and the buyer. Application This use Language programming PHP and MySQL databases. There are many applications and websites programmed with use Language PHP, because it is a language that encrypted and easily extensible, dynamic and flexible. Performance testing in this application use GTmetrix.

OVERVIEW LIBRARIES/RESEARCH PREVIOUSLY

System analysis

System analysis is a preliminary activity before moving on to the next stage of system development. So system analysis is very closely related to system design and the next is writing programs for information system applications (Mujilan, 2017).

Website

Website is a collection of data and information based on topic Which provided in a manner individual, group or organization Which can accessed by all public in a manner free And practical (Maeda, 2014).

GTmetrix

GTmetrix is a tool developed by GT.net, a Canadian company, which aims For help customers hosting they For see performance website they with easy. (Suliman, 2020).

Blackbox Testing

Black box testing or also known as behavioral testing is testing that is carried out to observe the input and output results of the software without knowing the code structure of the software. This test is carried out at the end of making the software to find out whether the software is functioning properly. To perform the test, the tester does not have to have the ability to write program mode.

Method PIECES analysis

According to Wukil Ragil (2010), the *PIECES method* is method as a basis for obtaining the main points more specific problems. This analysis is called with *PIECES analysis* (*Performance, Information, economy, controls, efficiency*).

a) Performance _

Performance is variables First in the method *PIECES* . Where it has an important role to assess whether existing processes or procedures can still improve their performance, and see how far and how reliable an application is in processing to produce the desired goals.

b) *Information* _

Judging a whether existing procedures can still be improved so that the quality of the resulting information is getting better . The information presented must really have useful value

c) *Economics* _

Evaluate is procedure This Still can improved the benefits or lowered cost maintenance.

d) *control* (control)

Assess whether the current procedure can still be improved so that quality control become the more Good, And ability For detect error/cheating becoming increasingly Good also.

e) *Efficiency* _

Judging whether procedure which exists at this time Still can repaired, so that achieved enhancement efficiency operation, And must more superior from on system manuals

METHODOLOGY STUDY

Types of research this is quantitative. Research development intended to produce or develop a feasible system with the waterfall method as stated by Nana Syaodih (2006:164) . The quantitative method was chosen in this study, because of the data Which processed And researched is data in the form of number or numeric.

Variable PIECES used For study namely: *performance* , *information*, *economy*, *control*, *efficiency*. Analysis pieces are technique to identify and prevent problem Which happen on system information.below is identification problem from.

a. Analysis Performance system (*Performance*)

b. Analyze Information (*Information*)

c. Analysis Economy _ _

d. Analysis Control (*Controls*)

e. Analysis efficiency (*Efficiency*)

To measure variables, a Likert scale is used. According to Sugiyono (2012), the Likert scale is used to measure attitudes, opinions and perceptions of a person or group of people about social phenomena . By using a Likert scale, the variables to be measured are translated into indicators and sub-indicators. Then the sub-indicators are used as a starting point for compiling instrument items in the form of statements that need to be answered by respondents. Study This own 5 dimensions score. Which there ison table 3.1.

Table 1 Score Scale Likert

No	Answer	Code	Score
----	--------	------	-------

1	Very Don't agree	STS	1
2	No Agree	TS	2
3	Hesitant	RG	3
4	Agree	S	4
5	Very Agree	SS	5

Source : 11. Sugiyono 2013.

Data Study

Sources of data in this study are grouped into 2, namely:

a. Questionnaire

Testing is done by making a number of questions or questionnaires related to existing aspects

b. Interview

Conducting interviews with employees of the Rendang Mala shop in Payakumbuh city to find out the needs of the sales system that will be designed.

Population and research sample

a. Population

In research, steps are needed to obtain data. The first step is to determine the population so that research gets clarity about the research subject. Population is a generalized area consisting of objects or subjects that have certain qualities and characteristics determined by research (Sugiyono, 2016).

b. Sample

The research sample is part of the general description of the population.

Research Instruments

Questionnaires are a data collection method that is carried out by giving a set of written statements or questions to respondents to respond according to user requests.

Object of research

The research object is the core of the research problem

Stages of research implementation

a. Formulation of the problem

The problem discussed in this study is what information is displayed in this e-commerce application. How to design and create a web-based online sales e-commerce application

b. Research purposes

The research objectives achieved from this research are based on the problems that have been defined in the previous chapter .

I. DEVELOPMENT APPLICATION

1. Design Use case Diagrams

Use case The e-commerce application diagram is designed based on the identification of existing data user actors.

2. Flowchart Design

Displays the steps and decisions to perform a process of a program. Each Step is depicted in diagrammatic form and connected by lines or arrows.

3. DFD design

A diagram that describes the flow of data from a process that is often called an information system. In the data flow diagram also provides information about the input and output of each entity and the process itself.

4. Database Design

Databases Application Web-based online sales in the rendang mala business designed using 10 tables consisting of: order details table, payment table, product category table, contact table, city table, report table, payment table, product table, user table.

5. Development

This stage is the process of developing and implementing a web-based online sales application design for the Rendang Mala business that has been made into an application. In the process of developing and implementing a web-based online sales application, several main pseudocodes are needed so that the system can run and function properly.

a. Implementation

Admin login forms

The login form is an admin login display in this application which contains data management

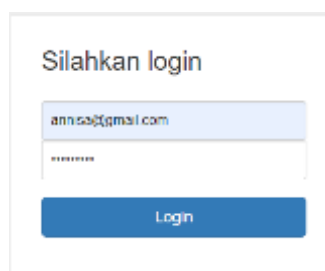


Figure 1 Admin login form

b. Testing

Testing is done to review or test the result of a system is running well or not.

Table 2

Testing Activity	Expected Realization	Test result	Conclusion
Login With Admin and User Accounts	Connect With Pages	According to expectations	[V] Accepted [] Rejected
Add Data to Admin Data	Can Add Data	According to expectations	[V] Accepted [] Rejected
Displays the Product Menu	Can Display Product Menu	According to expectations	[V] Accepted [] Rejected
Displays Order List	Can Display User Order List	According to expectations	[V] Accepted [] Rejected
Create an Account on the User	Can Create User Accounts	According to expectations	[V] Accepted [] Rejected
Doing Goods Coding on the User	Can Order Goods	According to expectations	[V] Accepted [] Rejected
Make Payments to Users	Can Pay Goods	According to expectations	[V] Accepted [] Rejected
Logout Admin and User	Can Logout	According to expectations	[V] Accepted [] Rejected

c. Deployments

The deployment stage is the stage where the user operates the system that has been created. At this stage it is necessary to verify with application users, whether the application has been made according to user requirements or not. If the application made is in accordance with the wishes and needs of the user, then the application can be submitted and operated by the user. To run this *e-commerce application*, users do not need to install or download certain other applications because *e-commerce applications* are presented in the form of a website. *E-commerce applications* can be accessed by users anytime and anywhere via the internet using computers, laptops and Android.

d. Maintenance

Maintenance is the process of maintaining a system or application. The *maintenance phase* needs to be carried out to improve the system if errors or system errors are found after being used by the user. Application maintenance also allows application development to make improvements to errors that were not detected in the previous stages, so that applications can run properly.

e. Results Processing Data Questionnaire

Writer distribute questionnaire through *Google drives* Which later filled in by respondents, respondents for this study were limited because of the large number consumers, the authors take only a few respondents for research online sales application for web-based mala rendang business . Before respondent fill in questionnaire,respondent must try application on *the website* especially formerly And see provision filling in the answers to the questionnaire as follows:

1. Very No Agree(STS) (1)
2. No Agree(TS) (2)
3. Doubt(RG) (3)
4. Agree(S) (4)
5. Very Agree(SS) (5)

f. Perception Respondents

Respondent is someone who provides responses or answers to the questions asked. They are tasked with filling out a questionnaire or being a resource person (the person being interviewed) in a study . In this study, the authors distributed questionnaires to 9 0 respondents, where each respondent has to answer 27 questions, each question item will own score in accordance calculation use scale likert.

Perception respondent will used For know how much big respondent give answer Which will used For help do discussion results. This respondent description is a process of describing the respondents based on name, gender, age and address . In the study, there were 80 respondents where these results were known from the number of questionnaires distributed. After distributing and collecting answers from respondents, calculations will be carried out to get results from respondents' satisfaction with application performance. After calculating the answers from the respondents, the results of the calculations will be obtained.

RESULTS AND DISCUSSION

Research Results

After conducting research from interviews, observation and documentation, so furthermore researcher will analyze data Which collected. Matter This done so that data Which generated the can done interpretation so that can take conclusion study in accordance with formula problem filed. On chapter This will discuss results analysis descriptive, analysis data quantitative and explanatory. Descriptive will explain the characteristics of the respondents through answer respondent on question questionnaire Questionnaire distribution with send link Which filed to 80 person respondent And do test try *performance* application use GTMetrix .

Biodata that needs to be filled in by respondents can be seen in Figure 5.1 to with Figure 5.4 below:

1. Name

Picture 2 explain data Name respondent Which has do filling out a questionnaire on the online sales application for the web-based rendang mala business .

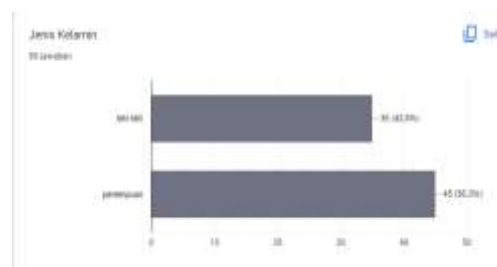


Nama
Nurhalimah
annisa
budiman
Rendy permans
Arif Rizki Marsa
Silvia Dona Putri
Yonal efendi
Anisa Rahma Sadika Putri
Dina putri

Picture 2 Name Respondents

2. Type Sex

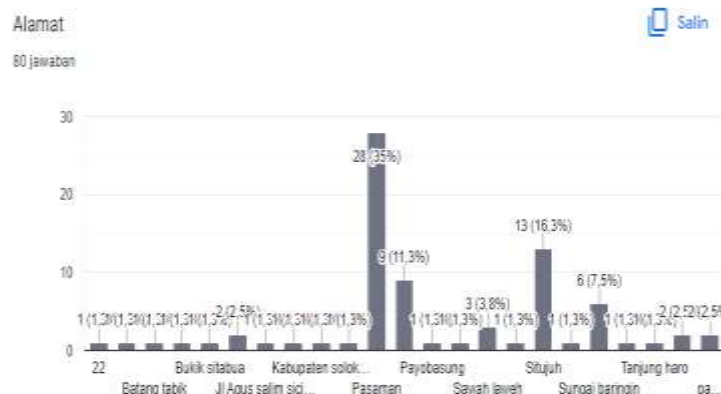
Figure 5.2 explains the data on the sex of the respondents who did it filling out a questionnaire on the online sales application for the web-based rendang mala business .



Picture 3 Type Sex Respondent

3. Address

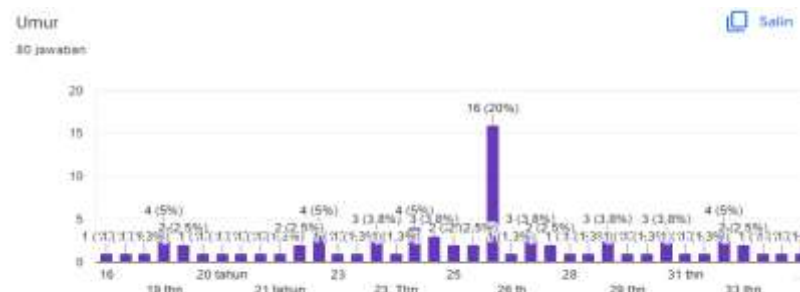
Picture 5.3 explain data address respondent Which do filling out a questionnaire on the online sales application for the web-based rendang mala business .



Picture _ 4 Address Respondents

age

Picture 4 explain data age respondent Which do chargingquestionnaire to the online sales application for the rendang business is web-based.



Picture 4 Age Respondents

Calculations And Analysis Data

Based on results spread questionnaire to 80 respondent with using a Likert scale to determine the level of satisfaction of application users web-based online on business rendang mala city of Payakumbuh with answer choices and the score, so For get average level satisfaction withuse formula:

$$RK = \frac{JSK}{JK}$$

RK = Average Satisfaction

JSK = Total Questionnaire Score

JK = Number of Questionnaires

Description Data

Description of research results is a series of writing techniques created to compile and display existing summaries so that later it can make it easier for readers to understand and at the same time understand the substance and meaning of the research reports made. Respondents in this study are all consumer users applications that carry out buying and selling transactions in online sales applications in web-based rendang mala businesses The number of respondents in this study were 80 respondents. The questionnaire was distributed using the *google form* , which using the *google form* has been given, so that respondents can easily easy access the questionnaire at any time and wherever. The aim is to be able to provide a detailed picture or description of the nature, character, background of a case, then relate it to general matters.

Performance GtMetrix

Performance application online sales of web-based rendang mala businesses tested use GTMetrix. GTMetrix is application web Which offer a suite of tools to help authors analyze and optimize sites author web analyze and optimize the author web site. Developer offer version free with a number of feature base No locked can use without more account registration to be a free user.

Analysis performance

Based on testing using *GTMetrix* can seen in the picture under This:



Picture 6 *GTMetrix* Mala rendang online sales application

Results from *gtmetrix grade* that is B with *performance* his 85 % Dan *Structure* 92 %. Results This got based on results *performance metrics* . Or the result of how long it takes to enter our website Stage testing done To use test something system. testing system on application library School Tall Technology Payakumbuh done using blackbox testing that

focuses on process of login, logout, input, and some basic functions other Which there is in the system.

Analysis Results Testing *performance Application website*

Performance testing is done on every page that is in application *website* . Page Which tested consists from: page login or dashboard, menu page, contact page, page payment info, logout page and cart page . Analysis of the results of *website application performance* testing can explained as follows:

Testing Page Login

1. Summary



Picture 7 Results *Summary* Page Login

The results of the online sales application *summary* for the mala rendang business on page login get mark *grade* “B”, Which It means performance Which generated Good. From picture 5. 6 can seen that mark from *performance* system that is 87% and *structures* 91%. The results of the *Speed Visualization* for the *login page* can be seen in figure 5. 7 . The *Time to First Byte (TTFB)* obtained from testing page login is 1.1 s. Whereas time for *fully Load time* from testing login page was 1. 8 s.



Figure 8 Results *Speed Visualization* Page *log n*

2. Performance Metrics



Picture 9 Performance Results Metrics Page Login

a. First Contentful Paint

The results of the *FCP* for the login page can be seen in Figure 5. 8 . As for *First Contentful Paint* value obtained is 1.6s. Based on *FCP ranges* , this value is included in the *range* of 1206-1600ms, which states that the *FCP* is longer than recommended.

b. Speed Index

Mark *Speed Index* Which obtained from page login is 1. 6 s. Based on range SI, mark This including into the range 1 311 - 1711 ms Which state that mark SI ok, but consider upgrading .

c. Largest Contentful Paint

The result of the *LCP* for the login page is 1.6 s . Based on the limit *range LCP* this value is included in the range of 1200 -1666 ms, which states that the *LCP* ok, but consider upgrading.

d. time to interactive

The result of the *time to interactive* for the login page is 1. 6 s. Based on TTI limit range this value falls into the <1200ms range, which states that TTI it's good and nothing Which need to be fixed.

e. Total Blocking Time

As for the TBT value obtained from the page login is 0ms, that is interpret that No There is time Which in block during process loading website. Based on the threshold TBT, this value included in the range < 150ms, which indicates that *Total Blocking Time*, is good or not There is which needs to be fixed.

f. cumulative Layouts Shifts

The result of the *cumulative layout shift* from the login page is 0. Based on CLS threshold, this score is included in the range <0.1, which indicates that results *cumulative layouts shifts* , Already Good And No There is Which need repaired.

Analysis Results Testing *black box testing* Application website

System testing is a very important thing that aims to find errors or deficiencies in the software to be tested, by using the *blackbox testing method* the system will be better and errors or deficiencies can be minimized . The following is the system testing process:

a. Testing on the Register Page

Table 3 *black box testing* results of registration page

No	Scenario Testing	test cases	Results that expected	Results Testing
1.	Enter the registration page	Fill in the data according to the column that has been provided	The system will accept user access and display the register page	According to expectations
2.	Do the registration first	Name: Annisa Email : annisa@gmail.com Tel: 098776 Password : bnb123 Address: pass	The system will receive user access and will display please register	In accordance Hope
3	Do not fill in any of the columns or all of the columns in the register and then click the register button	Name (blank) Email : annisa@gmail.com Tel: 098776 Password : bnb123 Address: pass	The system will reject the user and display the name cannot be empty and the same goes for the other columns	In accordance Hope
4.	Fill in a password that does not match the password, then click the login button	Password: bnb123 (Correct) Password: bmb123 (Wrong)	The system will deny user access and display inappropriate passwords	In accordance Hope

5.	Fill in the fields correctly and then click login	Name: Annisa Email : annisa@gmail.com Tel: 098776 Password : bnb123 Address: pass	The system will receive user data and store in user data entered and registered successfully	In accordance Hope
----	---	---	--	--------------------

Source: 2017 research results

Based on the results of *black box testing* on the user register page , it can be concluded that the test results are as expected.

b. Testing on the Login Page

Table 4 test results *black box testing* login page

No	Scenario Testing	test cases	Results that expected	Results Testing
1.	Do not fill in any of the columns or all of the columns in the from login user then click the login button	Email: annisa@gmail.com password:(empty)	The system will deny user access and display an empty field for the password	According to expectations
2.	Type one of the conditions correctly in the email or password then click the login button	Email: annisa@gmail.com (Correct) password:bmbm123 (Wrong)	The system will deny user access and display an incorrect email or password	In accordance Hope
3	Type your email and password correctly then click the login button	Email: annisa@gmail.com password: bnb123 (Correct)	The system will receive user login access then displays a successful login and will display the main page	In accordance Hope

Source: 2017 research results

Based on the results of *black testing box testing* on the login page it can be concluded that the test results are as expected . From the tests that have been carried out, it can be concluded that the application can run as expected, where the features and functions of each menu or object function properly in accordance with the design objectives, can be seen in the conclusion table below:

Table 5. concludes the results of *black box testing*

Tested features	Conclusion
Registration menu	Succeed
Login Menu	Succeed
Logout Menu	Succeed

Source: 2017 research results

5. 2 . 6 Analysis Results Application questionnaire testing *website*

From the calculation of the descriptive analysis and the Likert scale above, the response from respondents regarding the questions posed by researchers obtained answers with explanation to application based on Method PIECES as following:

Question 1 :” This application is easily accessible to users ”.

Table 6. Results Analysis Data Testing Q1

Answer	Weight Mark	Frequency	Score
SS	5	64	320
S	4	16	64
RG	3	0	0
TS	2	0	0
STS	1	0	0
Amount (n)		80	384
Score Average (x)		$X = (384 / 80) = 4,8$	

Based on table 6 testing from indicator Q1, obtained answers from respondents who stated "Strongly agree" as many as 64 people "Agree" as many as 16 people "Undecided" as many as 0 people, "Disagree" as many as 0 people and "Strongly disagree" as many as 0 , and results calculation score average Which obtained of 4.8. The range of values is in value 4,2 - 5 , which showsthat satisfaction level user can be categorized " Totally Agree".

Result Summary Analysis Utilization Application Website

Based on analysis from results analysis utilization application *website* , so can made recapitulation from results study as following:

Table 7 Recapitulation of the results of the analysis of the *website application utilization questionnaire*

Variable And Indicator	Results	Information
1. performance (Performance)		
Easy accessed by user	4, 8	Totally Agree
Operate order	4, 5	Totally Agree
Performance system walk stable	4, 5	Totally Agree
Quickly respond to a command	4, 4	Totally Agree
Can run with easyAnd interactive	4, 5	Totally Agree
Own appearance Which interesting	4,4	Totally Agree
Information Which in accordance withWhich wanted	4, 3	Totally Agree
Cancellation with easy Ifneeded	4, 3	Totally Agree
Appearance Which the same(consistent)	4,3	Totally Agree
Experience error moment used	4,2	Totally Agree
j amount variable <i>performance</i>	44,2	
Score average ($X1$) = $44.2 / 10$	4,42	Totally Agree
2. Information (information & data)		
Own decree Which tall	4, 3	Totally Agree
In accordance with need	4,3	Totally Agree
convenience For understood	4, 3	Totally Agree

Amount variable information	12,9	
Score average (X2) = 12.9 / 3	4,3	Totally Agree
3. economics (Economy)		
Cost user input data	4, 3	Totally Agree
Completion interest infield sale	4, 3	Totally Agree
Amount economic variable	8,6	
Score average (X3) = 8.6 / 2	4,3	Totally Agree
4. control and security (Control And Security)		
Limitation right access different between customer with admins	4, 5	Totally Agree
This application is guaranteed secrecy	4,5	Totally Agree
Amount Control variable / security	9	
Score average (X4) = 9 / 2	4, 5	Totally Agree
5. Efficiency (Efficiency)		
Profit for sale	4, 4	Totally Agree
For Income Sale	4, 4	Totally Agree
Save cost operational	4, 5	Totally Agree
Work become more easy resolved	4, 4	Totally Agree
Amount Variable efficiency	17,7	
Score average (X5) = 17.7 / 4	4, 4	Totally Agree
6. Service		
Application This produce results Which in accordance	4, 5	Totally Agree
This application complies with that wanted	4, 5	Totally Agree
Application This can I believe	4, 5	Totally Agree
This application can be accessed with easy	4, 3	Totally Agree
Easily accessible	4,5	Totally Agree
Very clear information	4,5	Totally Agree
Amount Variable Service	26,8	
Score X6 = average 26.8 / 6	4, 4	Totally Agree

The results of system testing show that the system has run according to expectations/in accordance with the goals when the system is run. This is based on the questionnaire testing that users have a high level of satisfaction on this website with the results strongly agree.

CONCLUSIONS

Based on the results of the analysis of the performance of web-based online sales applications in the rendang mala business of Payakumbuh city, the authors can conclude that: From the results of testing the *website* application using the *GTMetricx application*, a value of "B" is obtained for the web page being tested, while for the login page "B", menu page "B", contact page "A", payment info page "A", basket page shopping "C", page logout "B".

Based on the *black box testing method*, it can be concluded that the analysis of the *register page* (as expected), the analysis of the *login page* (as expected) and the analysis of the *logout page* (as expected). Based on the performance of the questionnaire in measuring the level of satisfaction of website application users on the rendang business in the city of Payakumbuh, the satisfaction level of the respondents was obtained, namely from 27 questions, a score of 4.63 was obtained with the rating of Very Satisfied.

REFERENCES

- Agustinus Mujilan, 2017, Analisis Perancangan Sistem Perspektif Bidang Akuntansi Edisi 1. Fakultas Ekonomi dan Bisnis Universitas Katolik Widya Mandala : Madiun.
- Maeda, David. Web Design For Authors: Every Athour Needs a Website! Kindle Edition. California: Amazon Media, 2014. 10.51717/simkom.v5i1.47
- Ragil, Wukil. 2010:17. "Analisis menggunakan Metode Pieces". Jakarta.
- Rahman, T., Rustaman, N., Syaodih, N., & Poedjiadi, A. (2006). Profil Kemampuan Generik Perencanaan Percobaan Calon Guru Hasil Pembelajaran Berbasis Kemampuan Generik Pada Praktikum Fisiologi Tumbuhan. Educare,
- Sugiyono. (2012). Memahami Penelitian Kualitatif". Bandung : ALFABETA.
- Sugiyono. (2013). Metode Penelitian Kuantitatif, Kualitatif dan R&D. Bandung: Alfabeta.CV
- Sugiyono. (2016). Metode Penelitian Kuantitatif, Kualitatif dan R&D. Bandung: PT Alfabet.
- Suliman, "Analisis Performa Website Universitas Teuku Umar Dan Universitas Samudera Menggunakan Pingdom Tools Dan Gtmetrix," Simkom, vol. 5, no. 1, pp. 24–32, 2020