

E-Commerce at Haziz Furniture Limited Company Website-Based Digital Marketing

Mohammad Aziz Nurritanto¹, Azizah Fatmawati, S.T., M.Cs.²

Universitas Muhammadiyah Surakarta, Indonesia

E-mail: azizjackmania1928@gmail.com¹, azizah.fatmawati@ums.ac.id²

Abstract

PT. Haziz Mebel is a company engaged in specialized furniture. The problems that occur at PT. Haziz Furniture is in managing branding and buying and selling goods with the aim of increasing company revenue. All activities carried out at PT. Haziz Furniture is still done manually and in receiving goods that are not in accordance with the stock of goods in the warehouse. Therefore, the purpose of this study is to provide a solution to PT Haziz Furniture with a web-based application to promote and buy and sell more systematically. The sales and promotion system that still uses the conventional system makes PT. Haziz Mebel experienced various forms of difficulties in the company's operations. In this study using the Waterfall Method and the results of the research conducted resulted in a web-based furniture e-commerce information system at the Haziz Furniture furniture store. The expected result of this study is that by creating an information system, the manager of the Haziz Furniture company can increase revenue and can reduce miscommunication in company management.

Keywords | digital marketing, e-commerce, waterfall

INTRODUCTION

The development of information system technology in people's daily lives today has a very big influence on each of their activities. Advances in technology, computers, and telecommunications support the development of internet technology. With the internet, businesspeople no longer experience difficulties in obtaining any information to support their business activities, even now it tends to obtain various kinds of information, so that information must be filtered to obtain appropriate and relevant information. (Irmawati 2011). The existence of precise and accurate E-commerce can reduce the occurrence of unwanted errors so as to increase sales efficiency in selling a product.

Furthermore, e-commerce means paperless transactions in which innovations such as electronic data interchange, electronic mail, electronic bulletin boards, electronic fund transfers and other network-based technologies are implemented on a network-based basis. (Mahir 2015). E-commerce is a new approach in the world of business electronically and using networks and the internet. In the current era of computerized technology is needed to be more precise and fast in doing a job (Nur Azizah 2021). Computerized inventory systems produce more significant and stable results with less effort (Tejesh 2018). Haziz Mebel Limited Liability Company (PT) is a shop located in Dagen, Jaten Karanganyar District, which was founded in 2007. This Haziz Mebel shop is engaged in the furniture business. Furniture that is traded such as sofas, spring beds, tables and other furniture items. Toko Haziz also has a furniture warehouse located in Palur Village, Dusun Dagen Karanganyar.

Problems that occur in the process of daily service to customers, Haziz Mebel still uses manual methods for transaction processing, warehouse inventory and promotions. As in the process of buying and selling transactions, customers have to come directly to the store to



order products or goods. If the consumer lives far from the store, it will cause the consumer's buying interest to come to the Haziz Mebel store to decrease because the distance traveled is far and it will also take a very long time. In addition, during the conventional service process, customers and employees find it difficult to find out product prices, both from the field of promotions or discounts, because there are no prices listed on the items being sold.

This study aims to make it easier for employees and customers in the buying and selling process, namely by building an E-Commerce application which will make it easier for customers to order products or goods. With this sales web, customers don't need to come to the store to make a purchase or ask about prices that are being promoted or prices that are being discounted. Even in the bargaining process, it can be done online directly to the store admin.

Based on previous journal research that has been carried out by (Adi 2022) the existence of a reciprocal relationship between companies and consumers will provide an opportunity to find out and fulfill what is the need and expectation in an effort to increase purchasing decisions. The system is also a series of components that are interconnected and work together as an organic unit to achieve a common goal and can affect a part that will affect the whole. (Berry 2023). The renewal element in the system that will be made is a system for checking data validity by making admin transaction features and product branding by making this branding consumers will understand and understand about the products purchased and help companies to develop in the community at large.

METHOD

The method used for system design at PT. Haziz Furniture is Waterfall. Waterfall is a method that uses a system approach, each stage of the system will be carried out in descending order from requirements analysis and definition, system and software design, implementation, system and software design, implementation, system testing, maintenance. In making an information system that is easy to use, with this system it is hoped that it can solve the problems that exist at PT Haziz Mebel. The waterfall model can be seen in Figure 1.

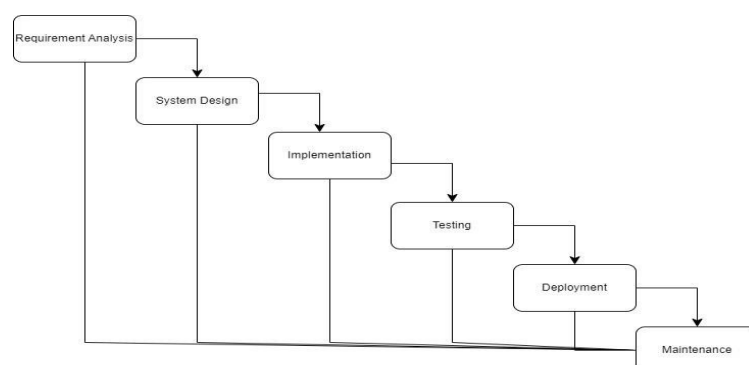


Figure 1. Waterfal Mode Process (Pfleeeger & Atlee, 2009)

System/Software Requirement Analysis

The needs analysis stage is carried out by analyzing what is needed by the system. The analysis was carried out by conducting interviews with furniture agency owners as well as

direct observation. Data from interviews and observations will later be used to analyze the needs of building an information system.

a. Functional Requirements

There are 2 functional requirements for the system to be developed, namely the needs of the admin side and the needs of the user (consumer) side. The admin side requires access to manage existing data in the system, add products, process sales transactions, and access the consumer user side. The consumer user side can access information about products, place orders and make payments.

b. Non-functional requirements

Non-functional requirements required by the system in the form of hardware and software. The system will run on computers with Windows, Linux or MAC operating systems and can run on Android or IOS as long as it has browser software such as Chrome.

System/Software Design

This stage provides an overview of what must be done and how the input looks and provides the overall structure of the information system that is created.

Entity Relationship Diagram (ERD)

Relational databases are often used in various fields. The erd creation technique is a technique commonly used for data structures and database system designs(Li 2009). For the ERD used in this research process can be seen in Figure 2.

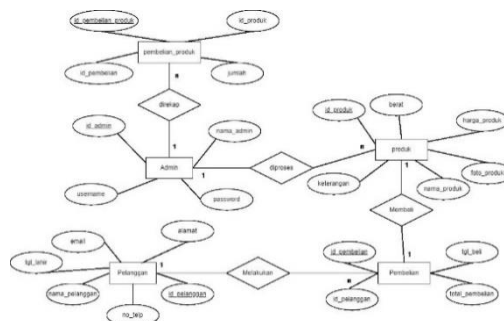


Figure 2. Entity Relationship Diagrams

Use Case Diagrams

System design is an important step in the software development process. There are various ways to ensure a good system requirements analysis, one of which is a use case diagram. Use case diagrams are a very important tool in the analysis and specification of functional system requirements(Essebaa 2018).

For use cases made in the process of doing research can be seen in Figure 3.

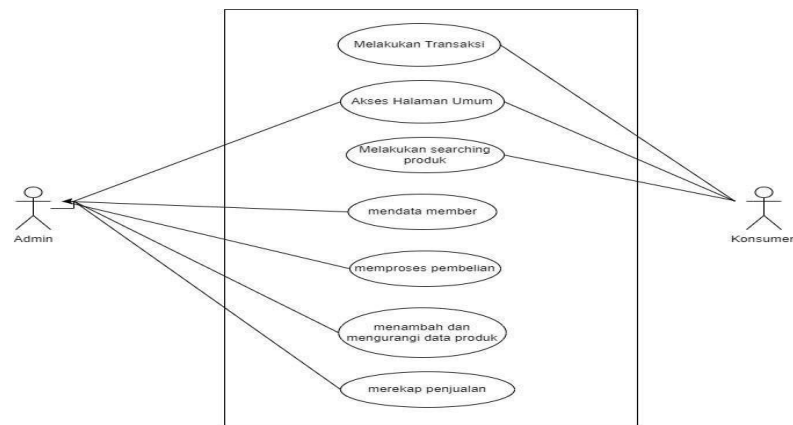


Figure 3. Use Case Diagrams

The system is seen to have 2 actors. Actors from the system consist of admin actors and consumer user actors. Admins can log in, access public pages, collect member data, process purchases, add and remove products and recap sales.

Activity Diagrams

Activity diagrams are a flexible tool used to describe system behavior and the internal logic of complex operations (Al-Fedaghi 2021).

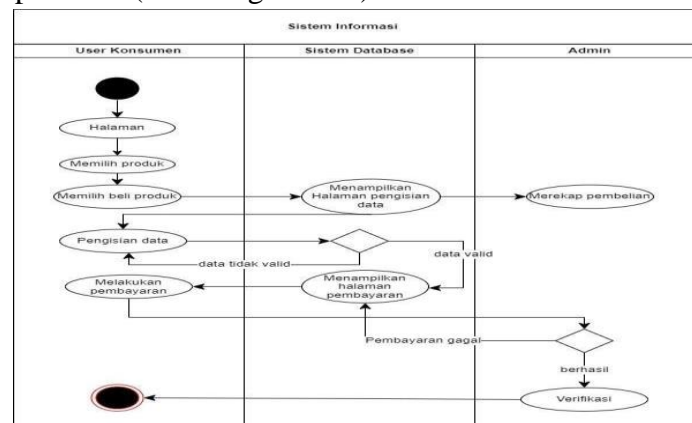


Figure 4. Activity ordering chart

Figure 4 illustrates the ordering activity diagram. Orders are made by customer users by accessing pages, selecting products, filling in consumer data, and making payments. The system will display a product page or payment page after the consumer checks out the item. This process ends with the admin verifying payment through proof of transfer that has been sent by the user.

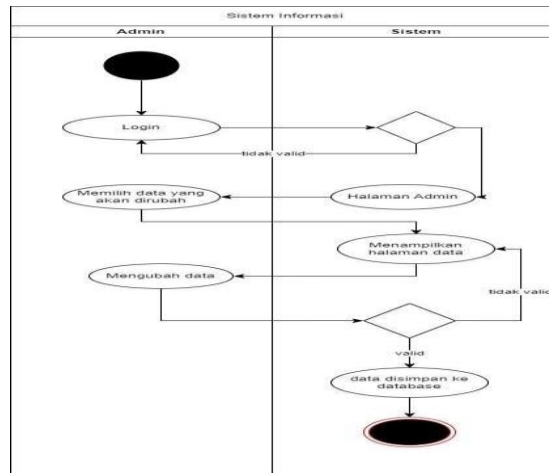


Figure 5. Activity Data management charts

Data management activities can be seen in Figure 5 which illustrates a diagram of data management activities. The admin will login first and enter the admin page, after that select the data to be changed, display the data page, change the data if the data is valid then the data will be stored in the database, if the data is not valid it will return to the data page. The system will display the data page according to the admin's request.

Interview

Interviews are data collection methods that are carried out face-to-face or directly asking people involved in the object being observed. In this case the researcher conducted interviews with the product owner at the company.

Implementation

Next, implementation is carried out on a system created by building a website that is programmed using the PHP programming language with the Bootstrap framework and MySQL DBMS. Implementation will be carried out using visual studio code.

Testing

This stage is carried out by testing the system that has been made, the system that has been made will be tested which will later be useful for system operation and also system evaluation. From the results of testing later can be repaired again to improve the system to be tested. This test will be carried out using black-box testing. Black-boc testing is a software quality test that focuses on software functionality. (Gultoms 2020).

1. Operation and Maintenance

This final stage is carried out on the system when it has passed the testing stage and can operate the system, at this stage a re-examination is also carried out to maintain system mobility. When in operation bugs or errors are found in the system, maintenance can be carried out to repair the system.



RESULTS AND DISCUSSION

The results of this study are a website-based digital marketing company application that has its own function. This website has 2 roles, namely consumer and admin pages which are distinguished through an authentication system on the login page.

Haziz Furniture Limited Liability Company Digital Marketing Website

1. Registration page

The register page is intended for consumers who don't have an account to log in. Consumers are required to fill in their full name, address, date of birth, telephone number, email and password which will later be used as a login. After successful registration, the borrower will be redirected to the login page for the authentication process. The display of the register page can be seen in Figure 6.

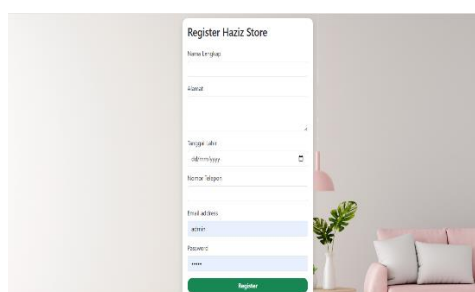


Figure 6. Registration page

2. Login Page

The first page that appears when opening the website is the login page. The login page contains an email address and password for the confirmation process. Admins and consumers fill in the email and password that have been registered on the website after which they will be redirected to the website's main page.

The display of the login page is shown in Figure 7.

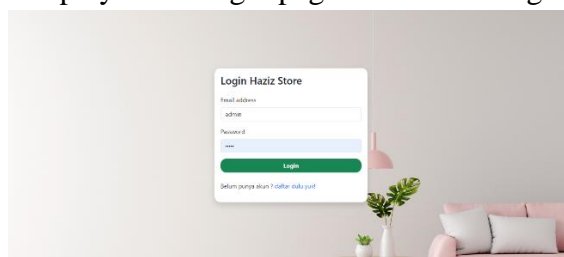


Figure 7. Login Page

3. Main page

On this main page, there is a navigation bar at the top which has menus that can be accessed by consumers. The contents of the navbar are home, about us, cart, contact, maps, logout. The display of the page can be seen in Figure 8.

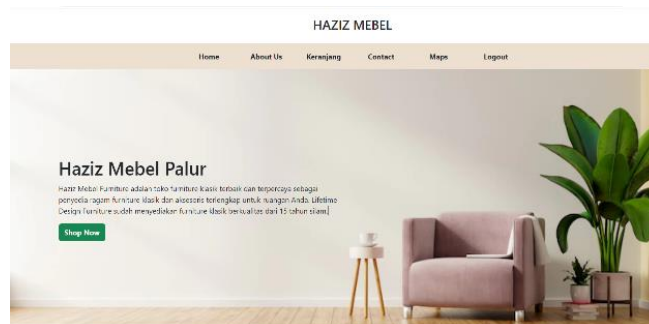


Figure 8. Main page

The main page contains several furniture products owned by haziz furniture stores. Consumers can choose what product they want to buy and can also see the details / specifications of the product. Consumers can only buy goods that have stock inventory, if stock inventory is not available then consumers are required to wait until the admin provides information on the availability of goods to be purchased by consumers. The product main page display can be seen in Figure 9.

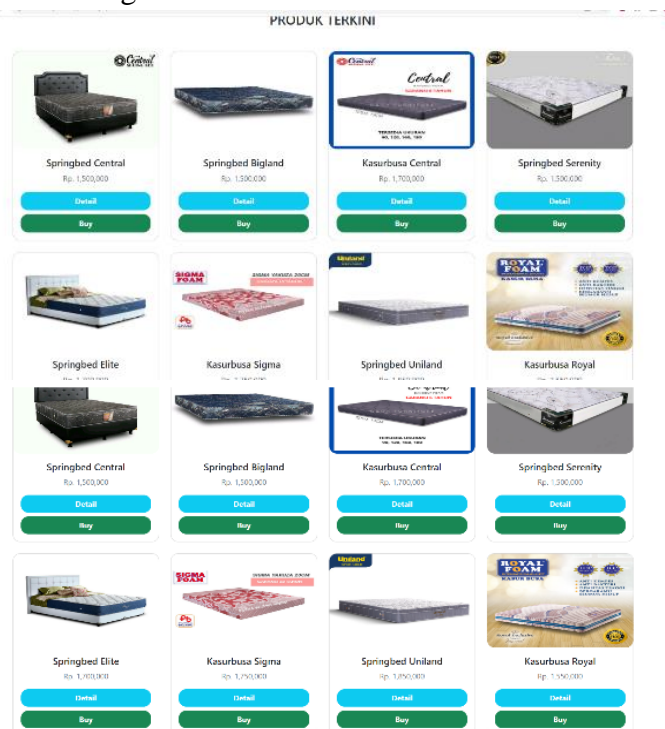


Figure 9. Product Main Page

The about us page contains the history of the establishment of the haziz furniture company and consumers will understand the ins and outs of the establishment of the haziz furniture company. The about us page also contains what properties are sold at the haziz furniture store, that way consumers will understand what products can be purchased, what products are needed and what products are available at the haziz furniture store. The about us page display can be seen in Figure 10.

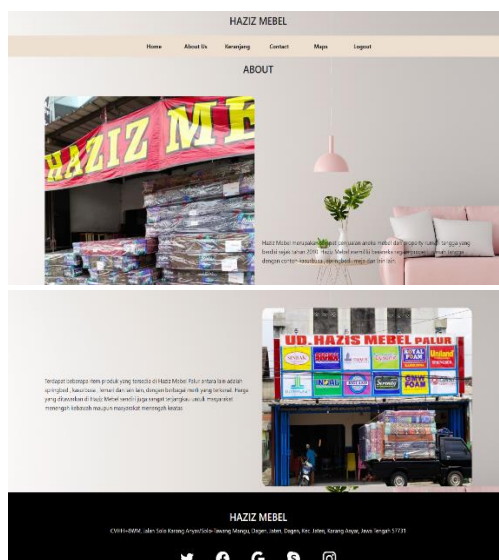


Figure 10. About Us page

On the basket page containing the number, price, amount, total purchase, description, on this page, consumers who make transactions will be directed to press the checkout button to be confirmed in the form of sending proof of transfer. The basket page can be seen in Figure 11.

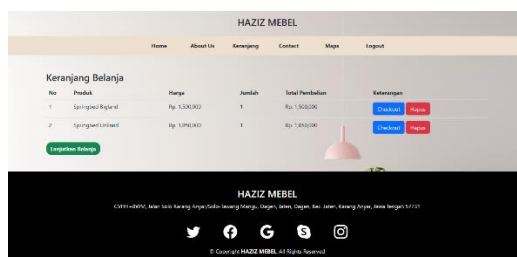


Figure 11. Basket Page

Proof of the transfer will be validated later by the admin for further delivery by the sender. After proof of transfer has been sent by the consumer, the consumer will press pay. The Checkout page can be seen in Figure 12.

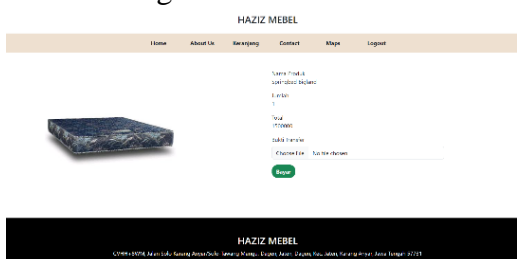


Figure 12. Checkout Page

The contact page contains email, telephone office and Whatsapp with the aim of providing directions for consumers later to ask questions, complain and also ask about the warranty of the products they have purchased, consumers will be able to comfortably ask questions without fear of being constrained by time. The contact page can be seen in Figure 13.

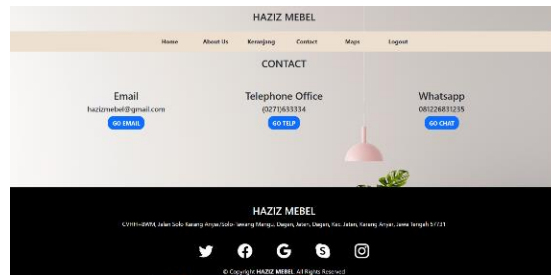


Figure 13. Contact page

On the maps page contains a map of the location of the haziz furniture store, with these maps it will provide information to consumers regarding the location of the store, by making these maps online consumers who will see the goods directly can check the details of the goods to provide consumer satisfaction with the goods they buy Later. The maps page can be seen in Figure 14.

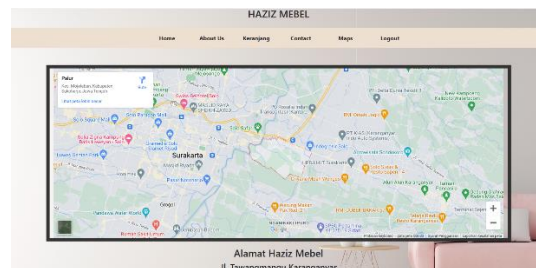


Figure 14. Maps page

4. Admin page

On the admin page, there are several sidebar menus that have their respective functions according to how they work. Admin can add products, enter the website, confirm purchasing and also add members. On that page the admin will validate the data that has been sent by the consumer on the checkout menu. The display details of the admin menu page can be seen in Figure 15.

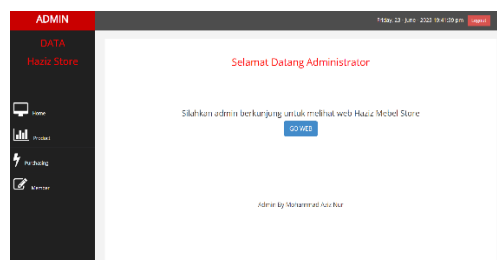


Figure 15. admin page

On the Product page the admin can add products by filling in the product name, item weight, item price, item photo, item description, item quantity, and also the admin can edit and delete items that have been uploaded on the website's main page. The Product page can be seen in Figure 16.



Figure 16. product page

After completing filling in the product by the shop admin, the data that has been filled in will be input and entered on the website according to the results from the product page. The product page results can be seen in Figure 17.

No	Nama	Brand	Harga	Foto	Kategori	Jumlah Produk	Aksi
1	Table (g)	Brand	100000	[Image]	Produk	5	[Edit] [Hapus]
2	Chair (g)	Brand	100000	[Image]	Produk	5	[Edit] [Hapus]
3	Chair (g)	Brand	100000	[Image]	Produk	5	[Edit] [Hapus]
4	Chair (g)	Brand	100000	[Image]	Produk	5	[Edit] [Hapus]
5	Chair (g)	Brand	100000	[Image]	Produk	5	[Edit] [Hapus]

Figure 17. Product page results

On the purchasing admin page, you can add customer purchases by entering customer data. The data consists of the customer's name, purchase amount, purchase date, and entering the product ID to validate customer data. The purchasing page can be seen in Figure 18.

Figure 18. Purchasing page.

The results of the purchasing page input 2 conditions, namely conditions that have been confirmed and have not been confirmed, the admin will confirm consumer payments through proof of payment and also the admin can add payments through the offline store transaction process, by inputting data including number, customer name, date of purchase, address, and action. The results of the purchasing page can be seen in Figure 19.

No	Nama Pelanggan	Tanggal Pembelian	Alamat	Aksi
1	Brand	2023-10-10	pengiriman	[Edit] [Hapus]
2	Brand	2023-10-10	pengiriman	[Edit] [Hapus]
3	Brand	2023-10-10	pengiriman	[Edit] [Hapus]
4	Brand	2023-10-10	pengiriman	[Edit] [Hapus]

Figure 19. Purchasing page results

On the admin member page, you can add customer members who have made more than 1 transaction by entering member data consisting of name, address, date of birth, telephone number, email and password. The member page can be seen in Figure 20.

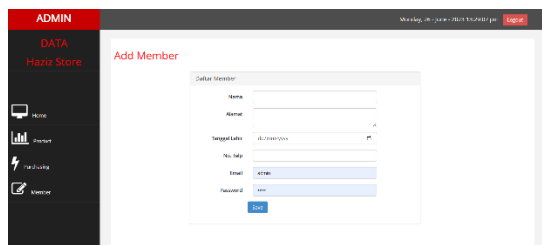


Figure 20. Add member page

Black Box Testing

This test is carried out by trying all the buttons and their functions on each page. If the button when pressed will carry out certain functions and display the expected feedback, then it can be said that the test is valid. The black box test results can be seen in Table 1.

Table 1. Black box testing

No	Process	Condition	desired result	Information
1	Register	a. Fill in full name	Return to registration page	Valid
		b. Fill in Address	Return to registration page	Valid
		c. Fill in the date of birth, day month year	Return to registration page	Valid
		d. Fill in the phone number	Return to registration page	Valid
		e. Fill Password	Return to registration page	Valid
		a. Register	Successful Registration (Back To Login Page)	Valid
2	Login	b. Email Name and Password are correct	Enter the Haziz Furniture Store page	Valid
		c. Email name and password are wrong	Return to login page	Valid
Admin page				
3.	Displays the Admin Page	Login as admin	Enter the admin page	Valid
4.	Add product data	Pressing the product menu, adding product name, weight, price, description, number of products, photos	Displays the product to be added	Valid
5.	Add purchasing data	Pressing the button to fill in manual purchases (customer name, purchase amount, purchase date, product ID) and automatic confirmation.	Displays the data that has been entered	Valid
6.	Save member data	Pressing the Add member button	Data goes to database	Valid
7.	Add members	Pressing the add member button and filling in the data	Displays the data that has been entered	Valid
8.	Delete products	Pressing the delete button	Data deleted successfully	Valid
9.	Editing products	Press edit product	Edited data is saved	Valid



No	Process	Condition	desired result	Information
10.	Looking for member data	Click on the member's name	Displays the name of the member being searched for	Valid
11.	View purchasing data details	Pressing the details button on the purchasing feature	Displays purchasing data that has been filled in by consumers	Valid
12.	Confirm consumer evidence	Pressing details	Displays confirmed data	Valid
Main page				
24.	Check the shop now button	Pressing shop now	to product	Valid
25.	Check the view more button	Pressing view more	Back up to shop description	Valid
26.	Check product details	Press product details	Displays product details	Valid
27.	Buy stuff	Pressing the buy button	Charging consumer data	Valid
28.	View the about us feature	Pressing about us feature	Display store data	Valid
29.	See basket features	Hitting the basket feature	Displays a data page that has been filled in by consumers	Valid
30.	Check checkout feature	Pressing checkout and filling in the proof of transfer	Data saved	valid
31.	Delete cart data	Pressing the delete button	Data deleted	valid
32.	See the contact feature	Pressing the contact feature	Generate contact data	valid
33.	Check the email button	Hit e-mail	Login to gmail	valid
34.	Check the Wa button	Pressing wa	Enter Wa	valid
35.	Check out the maps feature	Pressing the maps feature	Shows haziz shop floor plan/map	Valid

SUS testing

SUS is used to determine the level of user satisfaction in digitizing the library system. The SUS test uses a questionnaire consisting of 10 questions and 5 answer choices with a Likert scale ranging from "Strongly Disagree" to "Strongly Agree" (Mahendra & Asmarajaya, 2022). There were 30 respondents who gave their responses, including teachers, students, and students. Figure 21 is an assessment of the SUS score.

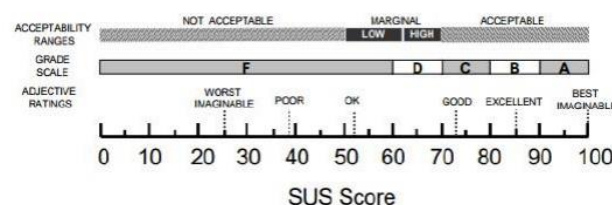


Figure 21.SUS score assessment.

After the data is collected from the respondents, the data is calculated. The System Usability Scale (SUS) has several predefined rules for calculating the SUS score. For odd questions, the user's score will be reduced by 1, while for even questions the score is obtained from the value of 5 minus the user's score. Calculation of the final result of the SUS score

uses the formula for the sum of the scores for each question multiplied by 2.5. The results of the SUS testing questionnaire can be seen in Table 2.

Table 2. Questionnaire results

No	Questionnaire Score										Amount	Total x 2.5
	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10		
1	5	1	5	1	5	1	5	1	3	1	28	70
2	4	4	4	3	3	3	4	2	3	2	32	80
3	4	4	5	2	4	2	4	1	4	2	32	80
4	5	2	5	1	5	2	5	2	5	2	34	85
5	4	2	5	2	4	2	5	2	4	1	31	77.5
6	4	4	4	4	4	4	4	4	4	4	40	100
7	4	4	4	2	4	2	4	2	4	2	32	80
8	5	4	4	2	4	2	4	2	4	2	33	82.5
9	4	4	5	2	5	2	5	2	4	1	34	85
10	4	4	5	2	4	2	4	3	4	1	33	82.5
11	4	4	4	3	4	2	4	2	4	2	33	82.5
12	4	2	4	3	4	2	4	2	3	2	30	75
13	5	2	5	1	4	1	5	1	5	2	31	77.5
14	3	4	4	3	3	2	4	2	4	2	31	77.5
15	3	2	4	3	3	3	3	3	3	3	30	75
16	4	3	4	4	2	3	4	2	2	4	32	80
17	5	1	5	1	5	1	5	1	5	1	30	75
18	5	1	4	2	4	2	5	2	4	1	30	75
19	5	2	5	1	5	1	5	2	5	1	32	80
20	4	2	4	2	4	2	4	2	4	2	30	75
21	4	2	4	2	4	1	5	1	4	2	29	72.5
22	5	4	5	2	5	4	4	1	4	5	39	97.5
23	5	2	4	2	4	2	4	2	4	2	31	77.5
24	5	5	5	2	5	2	5	2	5	2	38	95
25	5	5	5	1	4	1	5	1	5	1	33	82.5
26	4	3	3	3	3	1	4	1	2	2	26	65
27	5	2	5	1	5	1	5	2	5	1	32	80
28	5	4	4	2	5	2	5	2	4	2	35	87.5
29	4	2	3	3	4	2	4	2	3	2	29	72.5
30	5	1	5	1	5	1	5	1	5	1	30	75
Average final score												80

Based on the average score in Table 3, following the rules for scoring the SUS score, it can be assessed as GOOD, and the system is acceptable.



CONCLUSION

The conclusion explains what is expected in the Introduction section, as well as the conclusions from the Results and Discussion section. Conclusions can also be added to the development plan for the implementation of future services.

Making this digital marketing website makes it easier for consumers to see what items are available at haziz furniture stores, besides that consumers can also see details of the items to be purchased. Consumers will also get information regarding the ins and outs of establishing a Haziz Palur furniture store. The constraints experienced in making this system were in the features that were made unable to run as expected by the developer. But these obstacles can be overcome by the manufacturer. Based on the tests carried out using the black box, it shows that the system has been successfully created and there are no errors. In addition to the Black Box method, the test also uses SUS with a score that has been calculated using the SUS rules getting a value of 80 which is included in the GOOD category, so the Haziz Mebel Shop digital marketing website can be used properly and accepted by users. The advice given by the author for future researchers is that there needs to be some in-depth efforts to measure literacy.

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