



DOI: <https://doi.org/10.38035/dijdbm.v6i1.4029>
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Design of Antique Shop Management Information System Based on Web Using Laravel 8

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Abstract: Cikapundung Antique Market is a business located in Bandung that sells antiques. Because sales are still done manually, one of the traders in the market has difficulty marketing his products. The purpose of this study is to create an antique shop website using the Laravel framework that can be used to promote antiques to collectors in various regions. This study uses the waterfall method and uses the tailwind css system modeling. The results of this study will be an antique shop website software for one of the traders in the Cikapundung Antique Market which functions to expand product marketing and make consumers faster and more comfortable in interacting with them.

Keyword: Information System, Management, Web-Based, & Laravel

INTRODUCTION

Antiques are only sought after or desired by fellow antique collectors. The processes carried out in society or organizations, especially in the business sector, can be influenced by rapid technological developments. The city of Bandung has many valuable historical relics. Antique lovers can find the treasures they are looking for here. This antique shop is located at Jl. ABC Blok U-1, Braga, Sumur Bandung, Bandung City. This shop sells antiques such as clocks, lamps, teapots, paintings, vases, and colonial bullet remains.

According to (Resi Alpiana, Widantia Mustika, Rini Tisnawati 2021), many companies, especially sales companies, need to adapt to rapid technological advances. As a result of rapid technological developments, many businesses are concentrating on sales activities to gain profits. Abah Kepret is a seller and collector at the Cikapundung antique market. His nickname is "Abah Kepret", and he has been selling antiques for twelve years. Abah Kepret's shop sells various antiques, ranging from historical, ancient, magical, variations, to creative paintings, with an average price of hundreds of millions of rupiah. Because Abah Kepret's shop is only interested in fellow collectors, customers must come to the shop to find out information and the types of goods available. This causes the marketing of available goods to be less effective and efficient because it takes a relatively long time to sell them. Seeing the less effective system

in serving customers, an optimal information site is needed that helps customers get information and find out the types of goods available so that customers do not need to come to the place. In addition, this system can help business owners promote their products to various regions.

METHOD

Waterfall Method

In a project, SLDC (Systems Development Life Cycle) is a very important and crucial decision-making point. When the project manager chooses which SLDC model to use, the success of the project can be predicted. Large companies and governments often use the Waterfall model. Because this model is important for documentation, it is suitable for projects that prioritize quality (J. Yoki Firmansyah, 2018). The System Development Life Cycle (SDLC) or system development life cycle in systems engineering and software engineering is the process of creating and changing systems and the models and methodologies used to develop the system. SDLC is also a software system development pattern consisting of the stages of planning, analysis, design, implementation, testing, and management (Aceng Abdul Wahid, 2020).

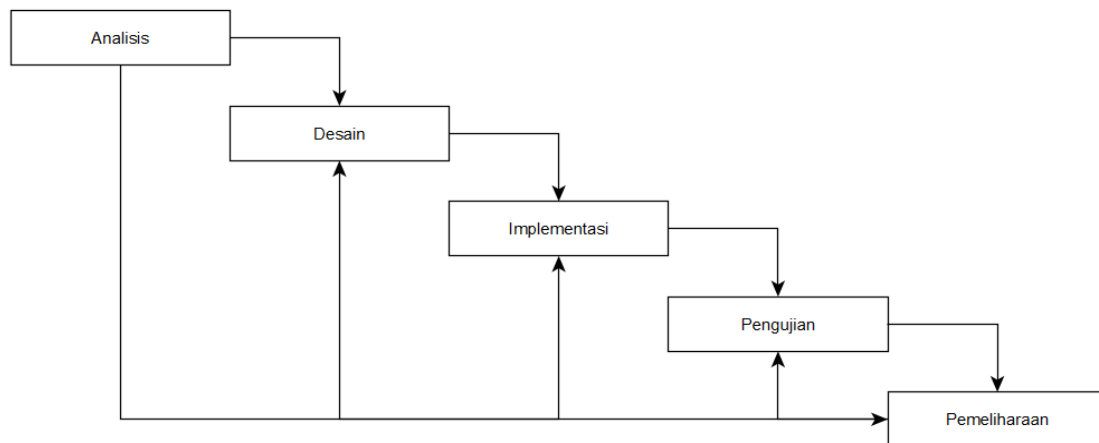


Figure 1. Waterfall Method

Data Collection Methods

The data collection method used in this study is by using the observation method, interview method and literature study method. The steps used in the data collection or collection procedure in this study are:

a. Observation

According to Nazir Moh (2013) in his book entitled Research Methods, Observation is data collection by going directly to the field in an activity or job faced by making observations so as to obtain the truth of the data. In this study, observations were carried out by interviewing one of the traders at the Cikapundung Bandung Antique Market to obtain accurate information.

b. Interview

After conducting an interview with One of the traders in the Cikapundung Bandung antique market, it was found that they use conventional media rather than websites to market and sell their goods. In addition, they use brochures rather than websites to market their goods. Therefore, their services are still not optimal.

c. Literature Study

In this study, data, books, and journals were searched to obtain information about e-commerce and marketing strategies.

System Developer Method

According to Gultom et al. (2020), the waterfall method is used because it is simple and systematic. This method consists of five stages that must be completed to design software: analysis, design, implementation, testing, and maintenance.

a. Software and Requirements Analysis.

At this stage, we learned more about the needs of a web-based antique shop management information system by conducting interviews with several traders at the Cikapundung antique market in Bandung, including Abah Kepret.

b. System Design.

This step-by-step process focuses on four different program attributes: data structure, architecture, software, interface representation, and procedural (algorithmic) details. The analysis phase will result in the use of UML (Unified Modeling Language) to design this Antique Shop System, which will later be modified to meet the requirements of the Antique Shop.

c. Program Code Writing.

This step is to translate the design into a form that can be read by a computer machine. PHP is a programming language used to write program code and create database systems with MySQL.

d. Program Testing.

The black-box method is used to test the Antique Shop information system as a trial to the administrator. Black-box testing focuses on the logical internals of the software, meaning that all statements have been tested, and on the functional externals, meaning that testing is done to find errors and ensure that the specified input will produce actual results that are consistent with the results required in the Antique Shop System.

e. Maintenance.

If errors are found, the software that has been created and sent to the Antique Shop may be changed. Therefore, the purpose of the maintenance process is to make changes and improvements to the Antique Shop system.

RESULTS AND DISCUSSION

UML Implementation

Thanks to the modeling provided by UML, developers can build systems that can communicate well between plans. This makes UML one of the most useful tools in the field of object-oriented system development. To perform testing, UML modeling methods include ERD Diagrams, Use Case Diagrams, and Activity Diagrams (F. Liantoni and A. Yusincha, 2018).

a. ERD Diagram

The database in the web-based antique shop management information system is shown in Figure 2. The database consists of three tables: products, users (admin), and categories. Each table and relation in this database contains data variables needed to design the antique shop system.

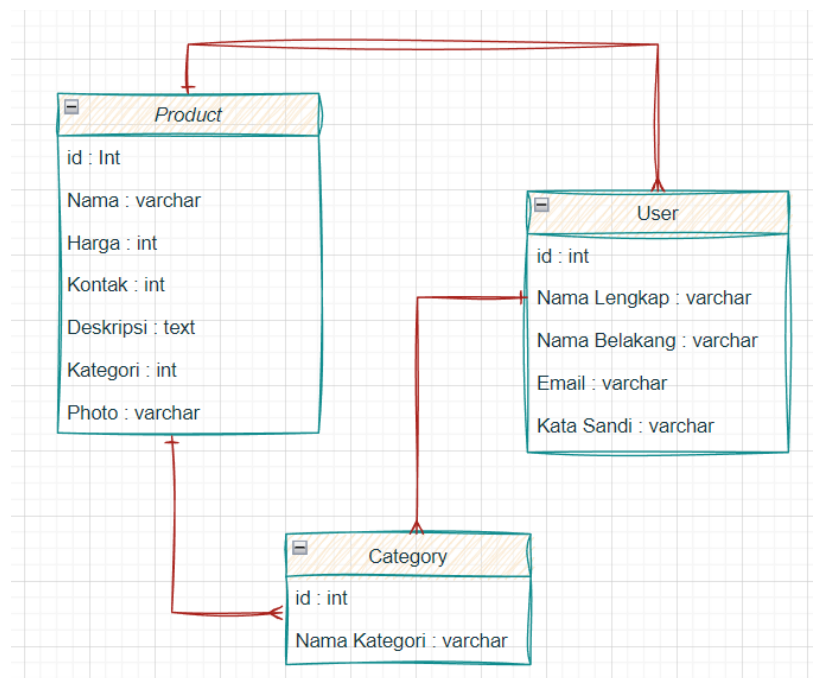


Figure 2. ERD Diagram

b. Use Case Diagram

The use case diagram created in Figure 2 shows the various ways users can interact with the system to improve understanding of performance. Viewing the use case diagram helps you understand the key features of the system and how managers can use them to achieve their goals. This diagram can also be used as a guide in the system development process to ensure that all user needs are covered in the design and implementation of the system that has been created.

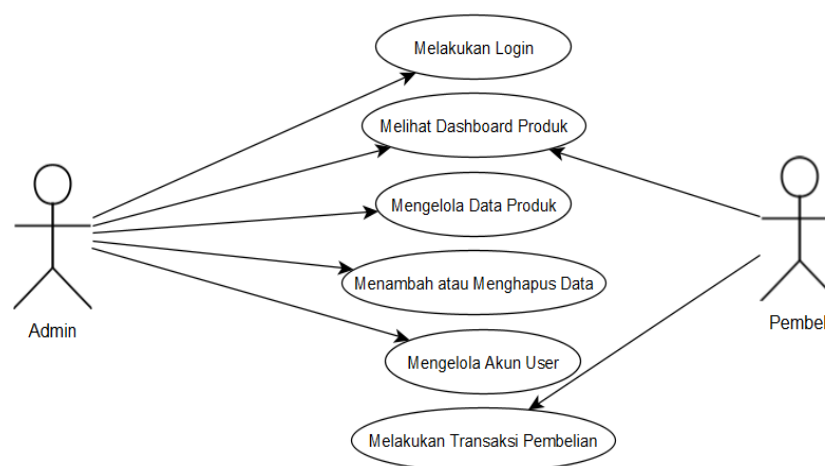


Figure 3. Use Case Diagram

c. Activity Diagram

To teach users about the system as a whole, Activity Diagram is a design of the system activity flow performed by the user from start to finish. How the store admin logs in is shown in Figure 4. If correct, the system will display the dashboard page, where they can add, change, and delete data; if incorrect, the login page will be displayed.

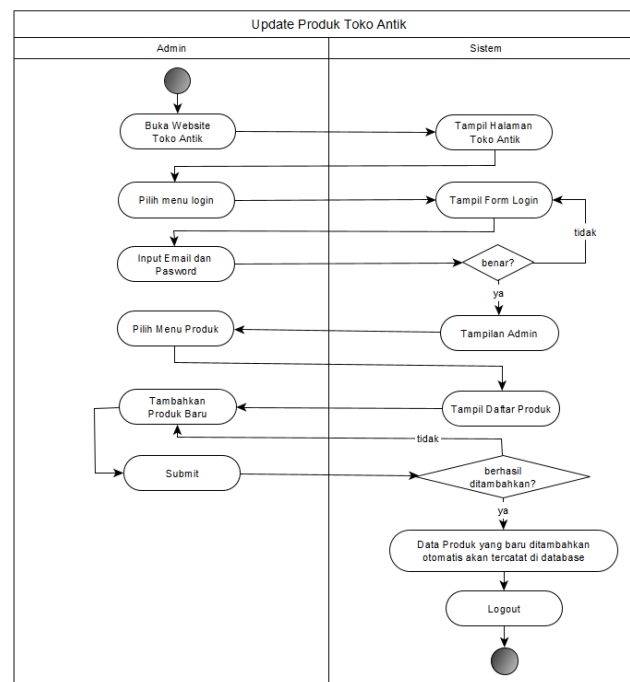


Figure 4. Activity Diagram

If a buyer visits the Antique Shop website, the system will display a dashboard page with product details. If the buyer is interested, they can start the purchase process by following the instructions in figure 5 below.

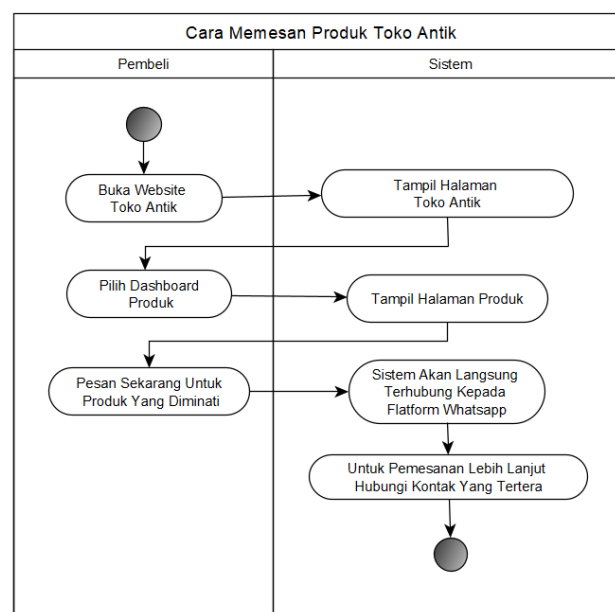


Figure 5. Activity Diagram

Implementasi

Once the system design is complete, the next step is to build the user interface. This stage involves implementing the previously created user interface design and integrating all the system components to create a ready-to-use application or product. Screenshots from the laptop used as a research tool and source show the implementation of the interface:

a. Admin Login Page

In this menu, the administrator is asked to enter an email address and password to be able to log in. If the administrator's email address and password are correct, the dashboard page will appear, while if the administrator's email address and password are incorrect, the system will remain on the login page.

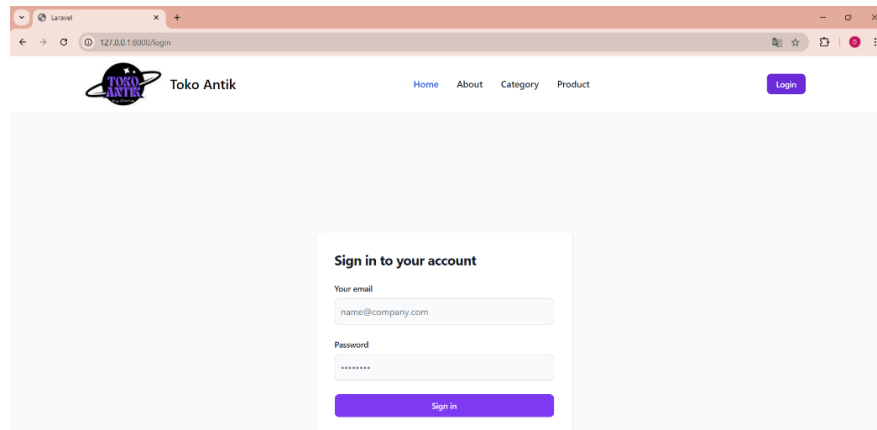


Figure 6. Admin Login Page

b. Admin Dashboard Page

After Admin enters email and password correctly, this Main Menu display will appear. There are user, product, and category menus on this page.

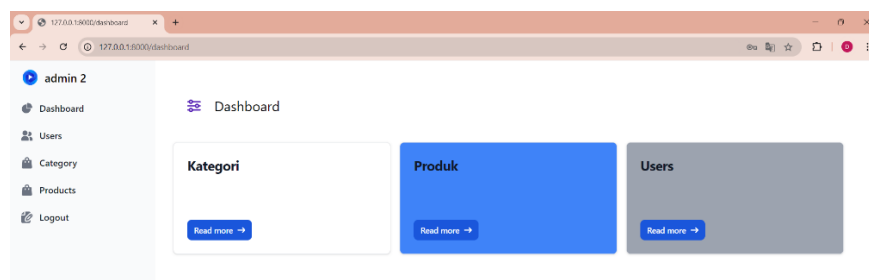


Figure 7. Admin Dashbord Page

On the Dashboard page, admins can add products and edit product and account data, as well as delete access. Here are some menu displays on the dashboard page below.

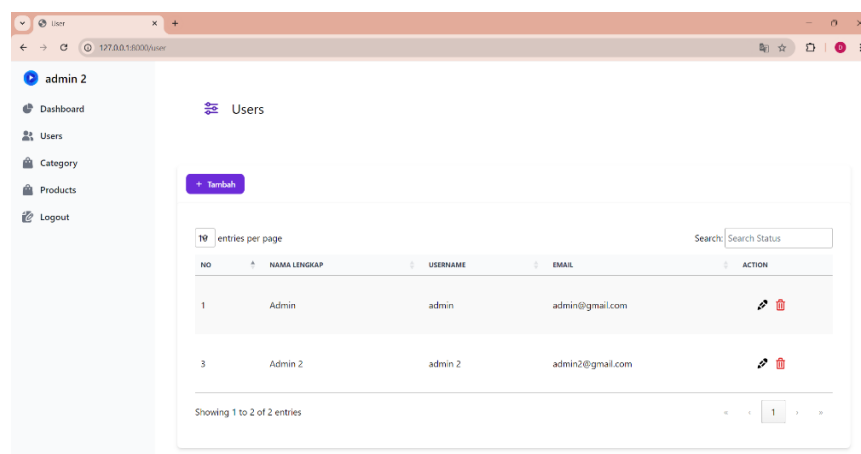


Figure 8. User Menu Page

The screenshot shows the 'Tambah User' form in the admin dashboard. The left sidebar contains links for Dashboard, Users, Category, Products, and Logout. The main content area has a form with the following fields: Nama Lengkap, Username, Email, and Password. At the bottom of the form are two buttons: 'Submit' (blue) and 'Batal' (red).

Figure 9. Add User Form

The screenshot shows the 'Category' menu in the admin dashboard. It features a table with the following data:

NO	NAMA KATEGORI	SLUG	ACTION
7	CLOCK	clock	[Edit] [Delete]
9	LUKISAN	lukisan	[Edit] [Delete]
10	GUCCI	gucci	[Edit] [Delete]
11	LAMP	lamp	[Edit] [Delete]

Figure 10. Category Menu

The screenshot shows the 'Tambah Category' form in the admin dashboard. The left sidebar contains links for Dashboard, Users, Category, Products, and Logout. The main content area has a form with the following field: Nama Kategori. At the bottom of the form are two buttons: 'Submit' (blue) and 'Batal' (red).

Figure 11. Add Category Form

The screenshot shows the 'Product' menu in the admin dashboard. It features a table with the following data:

NO	NAMA PRODUK	KATEGORI	HARGA	FOTO	DESKRIPSI	KONTAK	ACTION
2	Beker ANTIK KLASIK Jam Alarm Clock / Weker Dering CLASSIC Free Baterai - PARIS	CLOCK	150000		Jam beker berkualitas MODEL KLASIK. SANTIK Bunyi alarm nyaring (kriingggggggg) Terdapat tombol lampu Dimensi: 9 cm x 5 cm x 13 cm Menggunakan 1x Baterai AA (A2) Dikemas rapi dengan kotak (dus) dari masing-masing Barang	6281933836615	[Edit] [Delete]
3	Jam Weker Vintage SEIKO CORONA Japan made mesin SEIKOSHA fungsi normal	CLOCK	700000		Jam Weker Vintage SEIKO CORONA buatan Jepang berfungsi normal. Kondisi terlihat masih sangat terawat dan cantik sebagai dekorasi sekaligus berfungsi sebagai penunjuk waktu dan alarm pengingat waktu. Dial hitam legam dengan casing chrome	6281933836615	[Edit] [Delete]
4	jam dinding bandul antik bunyi periam	CLOCK	190000		jam dinding esa bandul antik bunyi perjam ada musik tiap jam mesin Quartz pemukulan motif kavu vana unik vana cocok untuk	6281933836615	[Edit] [Delete]

Figure 12. Product Menu

The screenshot shows a web browser window with the URL `127.0.0.1:8000/product/create`. The page title is 'Tambah Produk'. On the left is a sidebar with 'admin 2' and links to Dashboard, Users, Category, Products, and Logout. The main form has the following fields:

- Nama Produk:** A text input field with placeholder text 'Masukkan Nama Produk'.
- Kategori:** A dropdown menu with 'Pilih Kategori'.
- Harga:** A text input field with placeholder text 'Rp. xxxxxx'.
- Foto:** A file upload area with a 'Pilih File' button and the text 'Tidak ada file yang dipilih'.
- Kontak:** A text input field with placeholder text '085xxxxxxx'.
- Deskripsi:** A large text area with placeholder text 'Write your thoughts here...'.
- Submit:** A blue button at the bottom left of the form.

Figure 13. Add Product form

If data is changed or deleted, the database will be saved automatically, and a warning will appear. as shown in the example image below.

The screenshot shows a web browser window with the URL `127.0.0.1:8000/user`. The page title is 'Users'. On the left is a sidebar with 'admin 2' and links to Dashboard, Users, Category, Products, and Logout. The main content area shows a success message 'Data Berhasil Diupdate!' and a table of user data.

NO	NAMA LENGKAP	USERNAME	EMAIL	ACTION
1	Admin	admin	admin@gmail.com	Edit Delete
3	Admin 2	admin 2	admin2@gmail.com	Edit Delete

Showing 1 to 2 of 2 entries

Figure 14. User Data Successfully Updated

The screenshot shows a web browser window with the URL `127.0.0.1:8000/user`. The page title is 'Users'. On the left is a sidebar with 'admin 2' and links to Dashboard, Users, Category, Products, and Logout. The main content area shows a success message 'Data Berhasil Ditambahkan!' and a table of user data.

NO	NAMA LENGKAP	USERNAME	EMAIL	ACTION
1	Admin	admin	admin@gmail.com	Edit Delete
3	Admin 2	admin 2	admin2@gmail.com	Edit Delete
5	Dona Ayu Lidya	Mit Dili	Donaayulidya70@gmail.com	Edit Delete

Figure 15. User Data Successfully Added

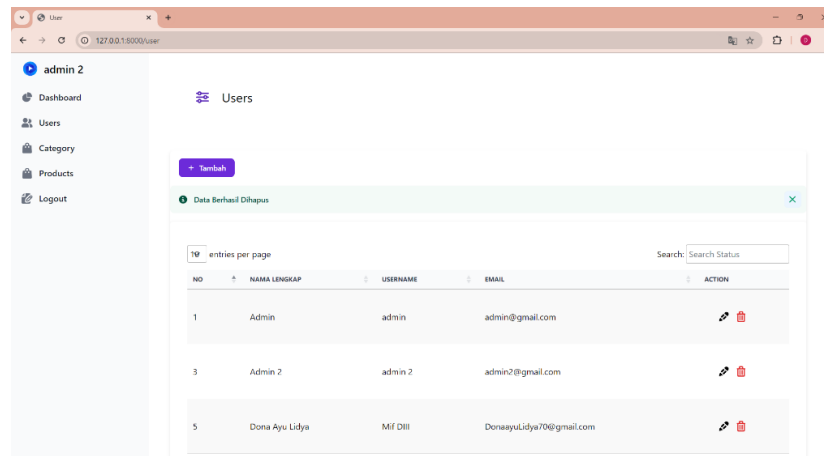


Figure 16. User Data Successfully Deleted

c. Visitor Page

When you open this website, this is the page you will see. You will find the home menu, about, categories, products, and login. In addition, there is a product category view that displays product images and details, as well as the prices and details available for each product. You can see the product categories, prices, and descriptions without having to log in. You can press the "order now" button directly when making a purchase, and the system will connect to the WhatsApp platform.

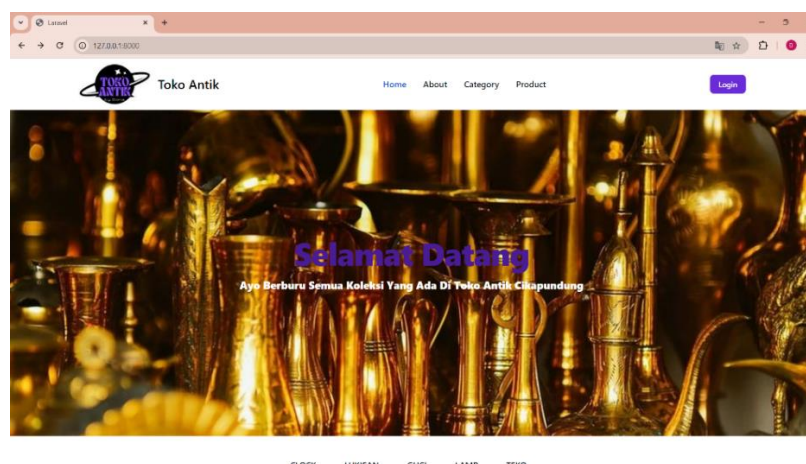


Figure 17. Visitor Page

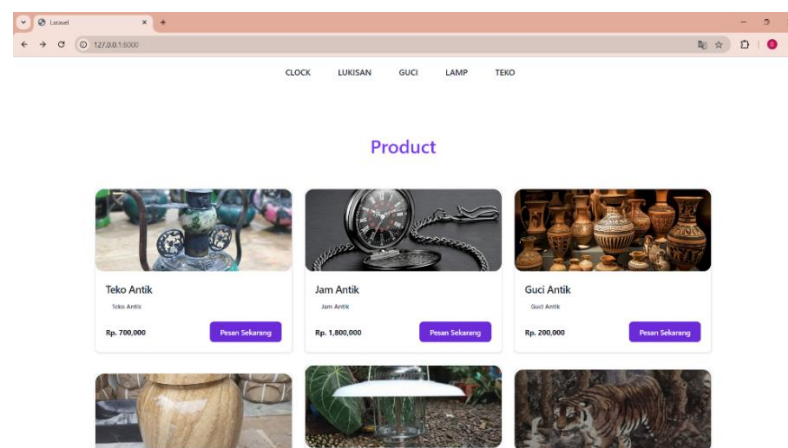


Figure 18. Product Page

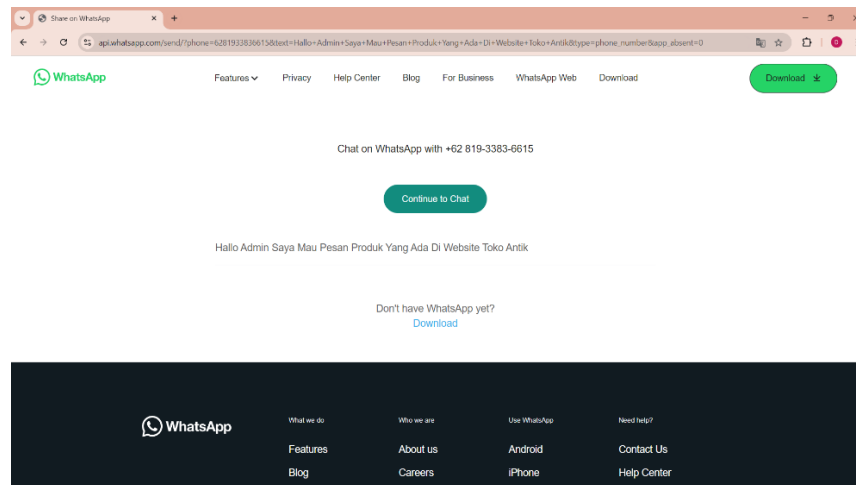


Figure 19. Connected Platform Page

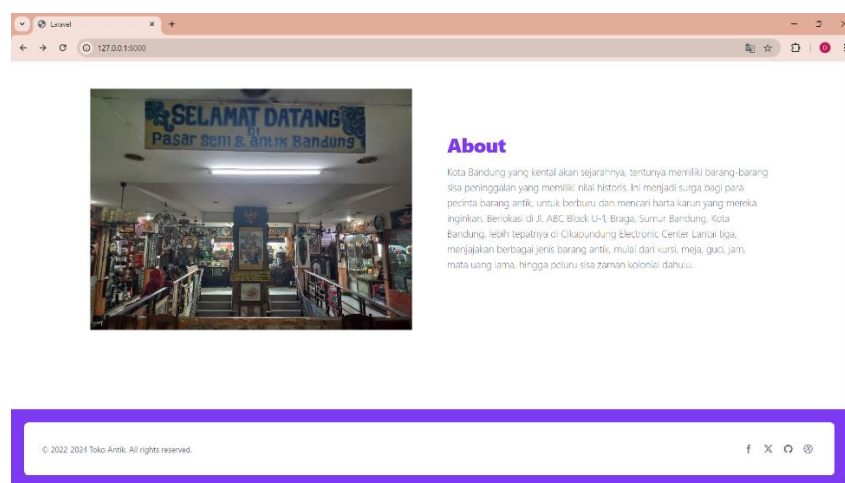


Figure 20. About Page

Testing

The black box method is used to check whether the processed input can produce the correct output. After completing the testing procedure to ensure that the system meets the requirements and functions properly, the administrator has access to the entire system. The admin feature testing is shown in Table 1.

Table 1. Admin Trial

No	Menu	Test Description	Expected Results	Results
1	Dashboard Menu	Displaying the dashboard page after login	Displaying the dashboard page	Valid
2	User Menu	Click the user menu	Displays user data list	Valid
		Add new user button	Display user form and save	Valid
		Action buttons: 1. Click the edit button 2. Click the delete button	1. Display the product edit form 2. Delete a product	Valid
3	Category Menu	Click the category menu	Displaying category list data	Valid
		Add category button	Displays category and save form	Valid
		Action buttons: 1. Click the edit button 2. Click the delete button	1. Display the category edit form 2. Delete a category	Valid
4		Click on the product menu	Display product list data	Valid

No	Menu	Test Description	Expected Results	Results
		Add product button	Display product form and save	Valid
		Action buttons: 1. Click the edit button 2. Click the delete button	1. Display the product edit form 2. Delete a product	Valid
		Click the logout menu	Displaying the front page of the website	Valid
5	Logout Menu			

CONCLUSION

The system trial using the Black-Box method shows that all system features run well and are in accordance with user needs. With this system, it is hoped that marketing of antique products can reach more collectors and increase business efficiency in the digital era.

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