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## **DESIGNING E-COMMERCE FOR UMKM RIED KANTONGKU BASED ON A WEBSITE USING LARAVEL FRAMEWORK**

**Dzulfikar Mudzakkir Rohendi<sup>1</sup>, Nana Suryana<sup>2</sup>, Adam Husain<sup>3</sup>, Purwadi<sup>4</sup>**

<sup>1,2,3,4</sup>Department of Information System, Univ. Kebangsaan Republik Indonesia, Indonesia

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### **ABSTRACT**

With the rapid development of the internet, many companies are utilizing it to market their products, expanding their marketing reach. There are small and medium-sized enterprises (UMKM) in Bandung that still follow conventional selling methods, such as Ried Kantongku UMKM, which operates in the field of fashion bags. However, in this digital era, UMKM entrepreneurs are urged to adapt to technological advancements. One of the efforts that can be made is to engage in digital marketing by creating a website for selling their products. Therefore, considering the various issues in this research, a web-based application will be developed to facilitate the digitalization of the sales process. The framework used for this will be Laravel, and the programming languages employed will be HTML, PHP, and Javascript. The implementation of the Ried Kantongku website represents a step toward digitization in the business. Manual information processing and presentation can be replaced with a computerized system design.

### **Corresponding Author:**

#### **Dzulfikar Mudzakkir Rohendi,**

Information System Department, Faculty of Computer Science and Information Systems,  
Univ. Kebangsaan Republik Indonesia.

Jln. Terusan Halimun No.37 (Pelajar Pejuang 45) Bandung, Jawa Barat, Indonesia. 40614

Email: dzulfikarmudzakirrohendi@gmail.com

## **1. INTRODUCTION**

E-commerce is one of the uses of digital media for Micro, Small, and Medium Enterprises (UMKM) who wish to sell or market their products on the internet. With the use of E-commerce, marketing will become broader, thus providing significant benefits to entrepreneurs who utilize E-commerce as a medium [1].

However, alongside these challenges, there are opportunities or potential gaps that can be leveraged by business actors. This involves harnessing digitalization by transitioning from conventional sales to digital platforms. One of the mediums that can be used is E-commerce, which can assist business actors in marketing their products even more extensively and expanding their business reach.

In a Micro, Small, and Medium Enterprise (UMKM) named Ried Kantongku, operating in the field of bag manufacturing, there is certainly significant potential for growth. However, efforts are needed to achieve this goal. The use of digital marketing, among other strategies, can be a solution to ensure the continuous advancement of this business. Leveraging increasingly sophisticated technology,

there are solutions available to address these challenges, such as creating a website-based E-commerce platform[2]. This can assist in expanding the business and reaching a wider audience.

## 2. METHOD

### 2.1. Research Methodology

To obtain the required data for this research, the author used a data collection technique consisting of three stages, including interviews, field observations, and literature reviews.

#### 1. Interview

This method is a data collection technique involving a series of question-and-answer sessions with relevant sources, in this case, Mr. Andi Rohendi, the business owner. Based on the interviews conducted by the author, the author obtained information regarding:

##### a. Establishment History

The Ried Kantongku business has an interesting history. Initially, Mr. Andi worked at one of the bag manufacturing factories for nearly 10 years. This experience became a crucial foundation for understanding the bag industry. After working diligently and accumulating knowledge for years, Mr. Andi decided to take a bold step by starting his own business.

In the beginning, this business did not have a name; it was simply a bag manufacturing and repair service shop. In 2010, the name "Ried Kantongku" was conceived as the brand for the business, and in 2018, the logo shown in Figure 3.1 for Ried Kantongku was created.

##### b. Company Products and Services

###### i. Bag Manufacturing Service

Customers have the flexibility to order bags in any quantity, whether it's one, two, hundreds, or even thousands. These bags will be custom-made according to the customer's specifications, including any specific materials, colors, or unique designs they may request. For larger-scale orders, a sample will be created to showcase to the customer, ensuring that it aligns with their requirements. Once the sample is approved, the products will be produced in the quantity requested.

###### ii. Repair Services

This UMKM (Micro, Small, and Medium Enterprise) also provides repair services. If a bag is damaged but can still be salvaged, the UMKM will repair it. Common repair services include fixing problematic zippers, tears, broken straps, and other issues. As long as the damage is not too severe, the bag will be repaired according to the customer's request.

###### iii. Consultation Services

Ried Kantongku also offers consultation services for customers who are unsure about the type of bag they want to create. They will provide recommendations for bags that can be ordered based on the customer's needs.

##### c. Problem Analysis

This convection business has been running for 21 years and has produced a variety of bag products such as school bags, work bags, event bags, wallets, and various other types of bags. These products are handcrafted with diverse quality standards tailored to customer orders.

One of the challenges faced by this business is the conventional nature of its business processes, relying on word-of-mouth information and existing relationships. This is perceived as less effective in reaching a wider audience or maximizing business potential.

d. Analysis of the Current System

The analysis of the current system is conducted to provide a foundation for designing a better system. From the results, weaknesses or deficiencies in the old system can be identified, and improvements or the design of a new and better system can be initiated.

Here is the current process flow:

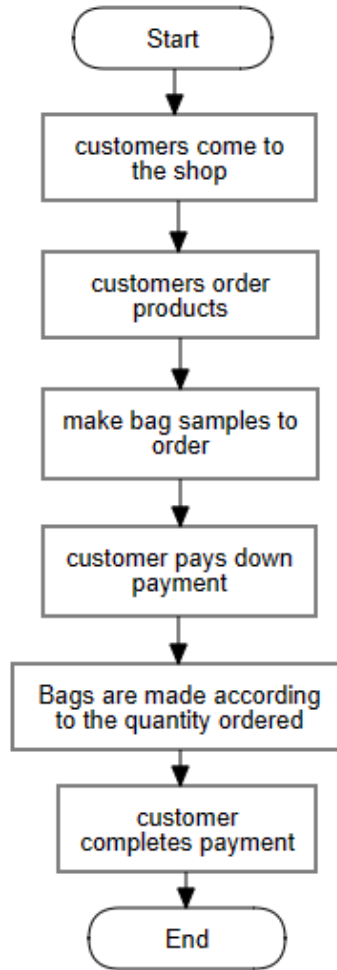


Figure 1. Business Process Flowcharts

The business process that occurs at UMKM Ried Kantongku involves customers visiting the store, then ordering the desired bag according to their preferred materials and quality. Following that, a sample will be created and shown to the customer. The customer makes an upfront payment to initiate production once the sample is approved. After the terms are agreed upon, the bags will be produced in the quantity desired by the customer. Once the production is completed according to the customer's requirements, the customer will make the final payment to settle the order. Subsequently, the bags can be shipped to the customer's address, or the customer can choose to pick up the bags directly from the store.

**2.2. Design Methodology**

The method used in this research is the RAD method. RAD (Rapid Application Development) method is a software development process that emphasizes a short development cycle. Another definition states that RAD software development method is a method that employs an object-oriented approach for system development, encompassing both hardware and software development[3].

The stages or phases found in the RAD (Rapid Application Development) method can be classified into four phases: Requirements Planning, System Design, Development Process, and Implementation[4].

The RAD cycle diagram can be seen in the following figure :

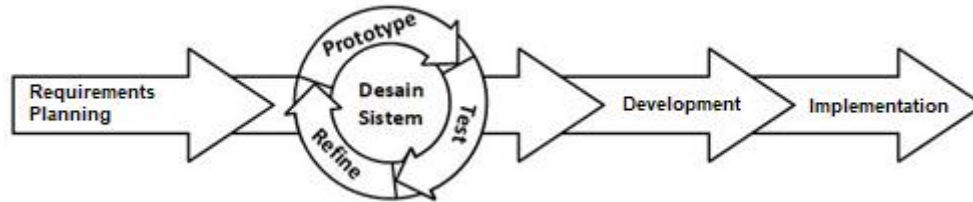


Figure 2. RAD Cycle Diagram

#### 1. Requirements Planning

This stage is the initial phase in the development of a system, where the identification of problems and data collection from users takes place. The purpose is to identify the system's objectives and the desired information needs.

#### 2. System Design

In the system design stage, the involvement of users is crucial in achieving the objectives. During this phase, the design process and design improvements are iteratively carried out, especially if there are discrepancies between the design and the user needs identified in the previous stage.

#### 3. Development Process

In this stage, the system design that has been created and agreed upon is transformed into an initial application version up to the final version. During this phase, programmers must continuously develop and integrate with other components while considering feedback from users or clients. If the process runs smoothly, it can proceed to the next stage. However, if the developed application does not meet the requirements, programmers will go back to the system design phase[5].

#### 4. Implementation

This stage involves the application of the approved system design by programmers. Before the system is implemented, testing is conducted to detect any errors in the developed system. During this phase, feedback is typically provided on the system that has been created, and approval is obtained for the system.

### 2.3. System Requirements Analysis

System requirements analysis is the requirements that must exist in the system in order to meet user needs. System requirements analysis contains information about software requirements outlined for the purpose of software design[6]. These software requirements include external interface requirements, functional requirements, and non-functional requirements.

#### 1. External Interface Requirements

The User Interface of this system are Admin and User, with varying levels of proficiency in using the application. Therefore, the user interface design must be simple and user-friendly. This e-commerce application is web-based. Menu navigation and input can be done using a keyboard and mouse, and a monitor is required. Additionally, internet access is necessary to connect to the website via a Local Area Network (LAN) Card.

2. Functional Requirements

Functional system requirements are the services that a system must have. System requirements that need to be met for it to function properly include:

- a. Product input by the admin.
- b. Users can view available products.
- c. Users can order products.
- d. Calculation of the quantity of purchased products.
- e. Users can view purchase history.
- f. Users can view a list of favorite products.
- g. User account registration.

3. Non-Functional Requirements

In this website, non-functional requirements that support the main functions as previously described include:

Table 1. Non-Functional Requirements

Parameter	Requirement
Availability	24 hours, except for maintenance (system repairs).
Reliability	Tolerable failure rate is approximately 5%.
Ergonomy	The website must be user-friendly.
Portability	This application runs on a platform or operating system that supports the website.
Memory	Minimum memory of 128 MB.
Response Time	Response time should not exceed 5 seconds.
Language:	Using the Indonesian language to facilitate website usage.
Homepage:	The main page displaying available products on the website

3. RESULT AND DISCUSSION

3.1. System Design

The design of this website is a representation of the model and systematics, using UML (Unified Modeling Language) and ERD (Entity Relationship Diagram). It also employs the RAD (Rapid Application Development) design methodology in creating the website. UML depicts the design model of the website to be built[7].

In this phase, we will explain the stages in creating the system for the website using diagrams as references before the website is implemented[8]. This ensures that each feature is organized neatly and structured, making it easier for programmers to identify errors or bugs in the website[9]. Additionally, it facilitates the addition of new features or removal of unnecessary ones in the future.

3.1.1. Usecase Diagram

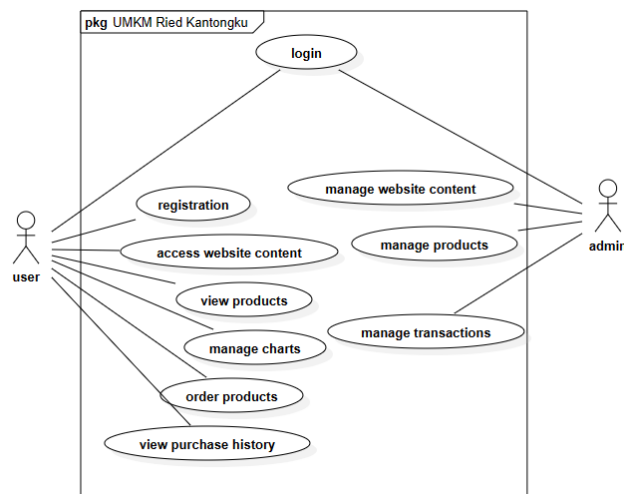


Figure 3. Use Case Diagram

The process involves two actors, namely the user and the admin. The admin has full control over the website, including logging in, managing website content, handling products, managing transactions, and verifying payments. Users can log in, register, view website content, and perform transactions. After the user completes the checkout process, the payment will be verified by the admin, and then the ordered products will be prepared and delivered to the user.

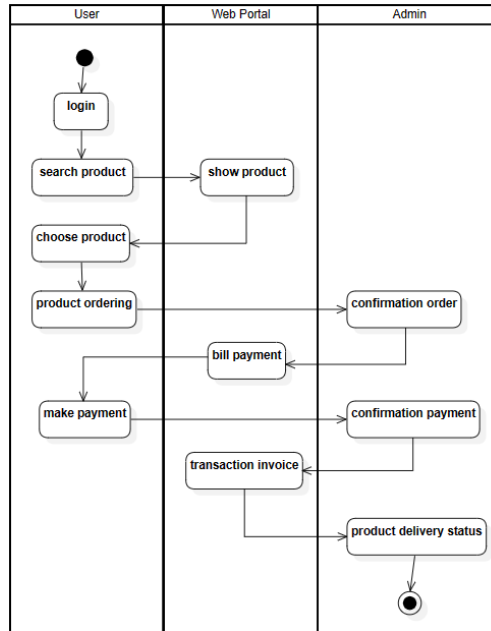


Figure 4 Activity Diagram

The process depicted in this activity diagram in Figure 4.2 serves as a reference for the general process that occurs within the system. This helps in understanding the steps that a user goes through when they want to make a transaction within the application, which is connected to the admin as the manager of the store.

3.1.3. Class Diagram

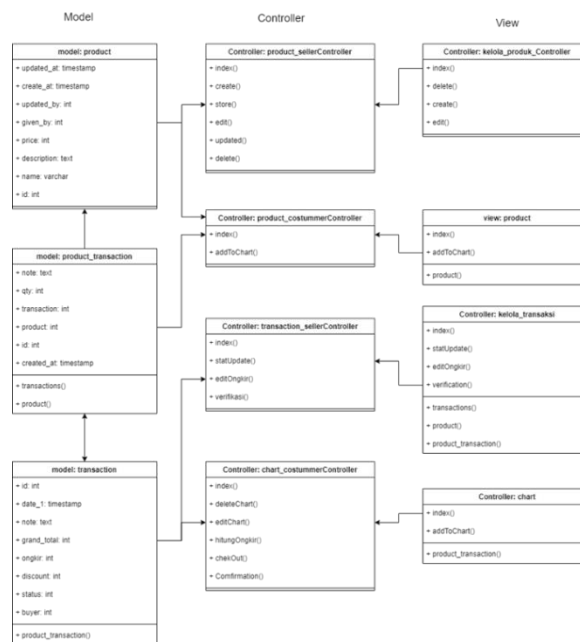


Figure 5 Class Diagram

The class diagram in the E-commerce website is shown in Figure 5, which illustrates the relationships between the MVC (Model, View, Controller) classes in the Laravel framework used on the E-commerce website[10][11]. The class structure is divided into three parts: model, controller, and view. All content within the view classes represents user interfaces containing data processed by functions within the controller classes. These controller classes manipulate data through the model classes, which are responsible for processing and communicating with the database.

**3.2. Prototype**

From the system design, a prototype is then created to describe the layout of the features and buttons that will be included on the website.

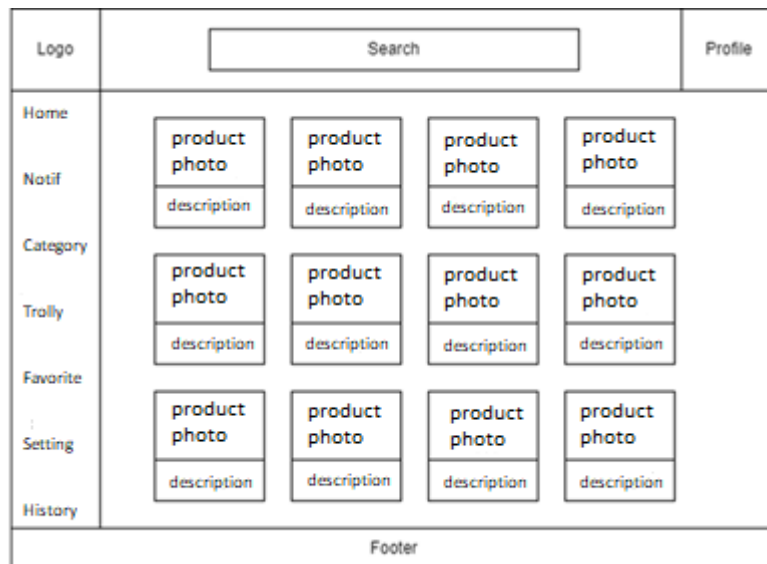


Figure 6 Homepage

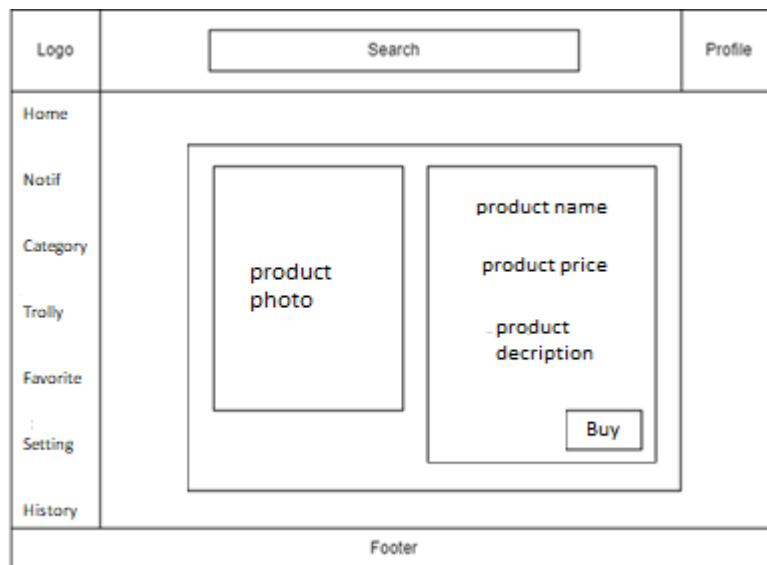


Figure 7 Product Page

**3.3. Implementation**

In this display, there are screenshots of various pages on the website that have been created with various available features. These include screenshots of the homepage, product page, login page, registration page, profile page, cart page, favorite page, and purchase history page. The displays of the website pages that have been created include the following:

## 1. Homepage

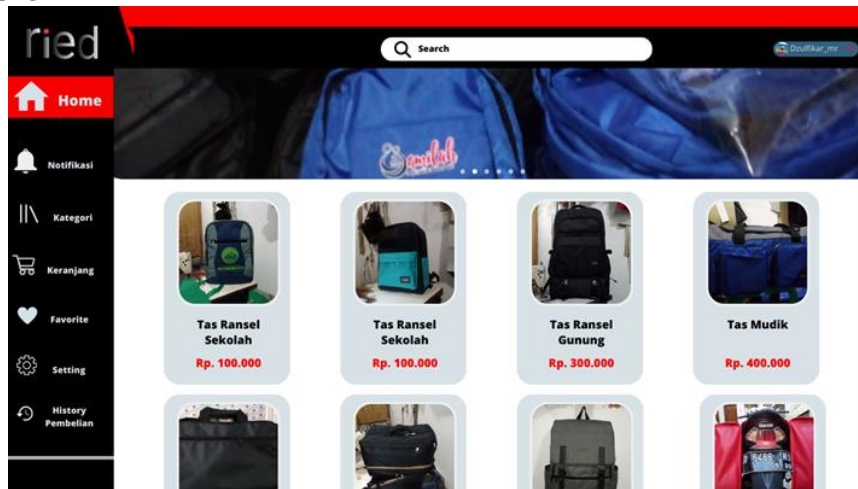


Figure 8 Homepage

On this page, the initial display on the website shows available products, allowing users to directly view and select the products they desire.

## 2. Product Page



Figure 9 Product Page

This page displays details of the selected product, and users can also initiate transactions by adding the product to their cart or selecting the purchase menu.

## 3. Login Page

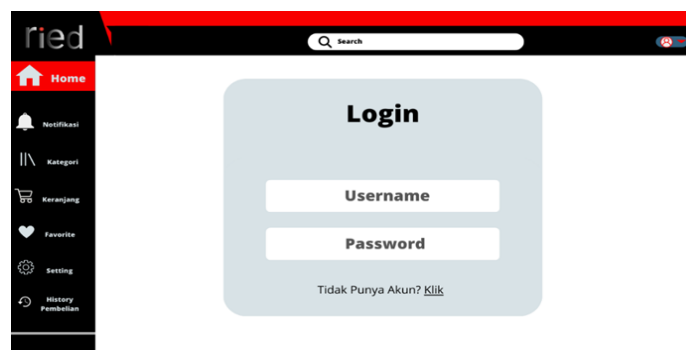


Figure 10 Login Page

On this page, users will log in with an account that has already been registered by entering their username and password. If they don't have an account, they can click "Don't have an account" to be directed to the registration process.

4. Registration Page

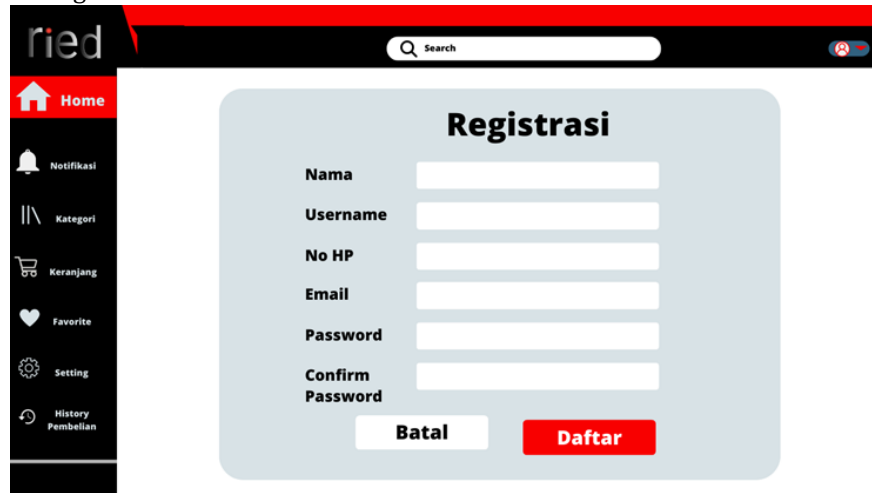


Figure 11 Registration Page

This page displays the registration page for users who do not have an account yet. Users can register by filling out the available form fields, including name, username, phone number, email, password, and confirm password. Once all the required information is filled in, the user can proceed with account registration.

5. Profile Page

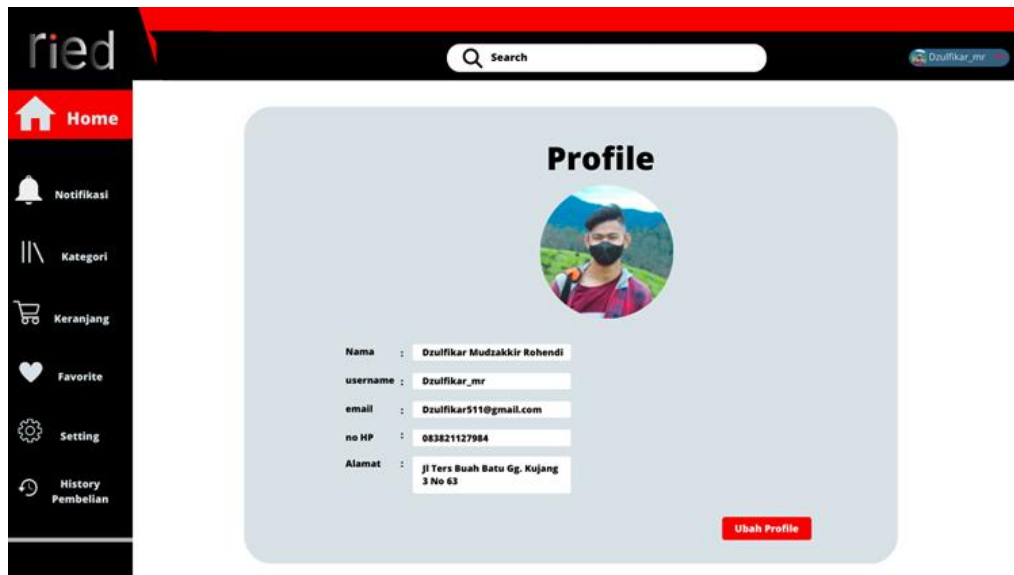


Figure 12 Profile Page

On this page, the user's profile is displayed, including entered information such as a photo, name, username, email, phone number, address, and an option to update the profile by clicking "Edit Profile."

## 6. Chart Page

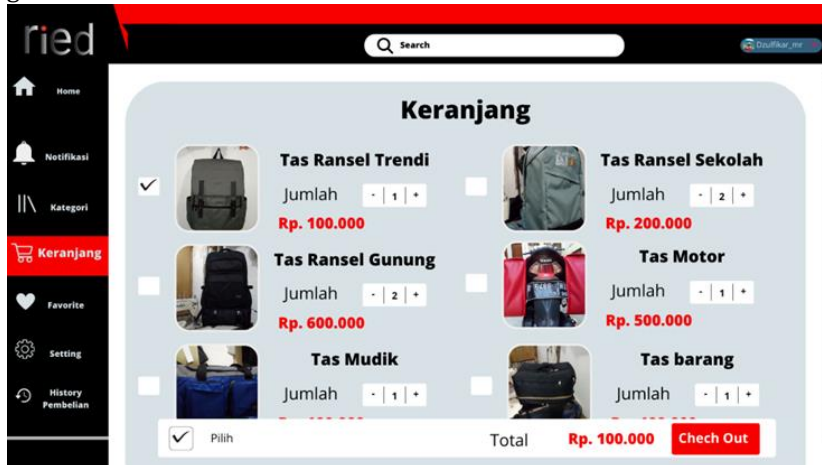


Figure 13 Chart Page

This view displays the shopping cart menu where users can see the items they have added for purchase.

## 7. Favorite Page

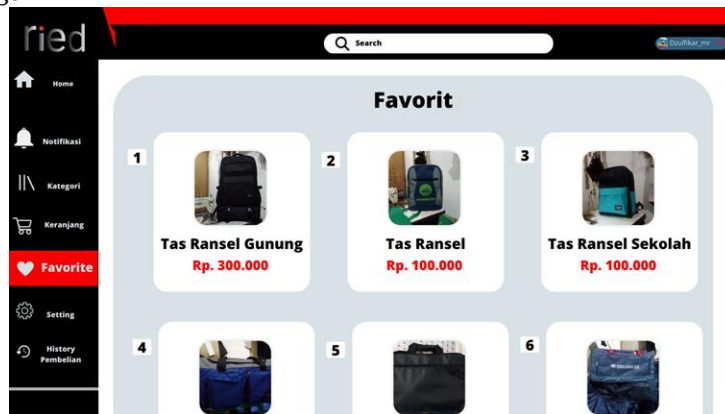


Figure 14 Favorite

On this page, the products that have been added to the favorite menu are displayed.

This feature allows users to mark products they are interested in.

## 8. History Page

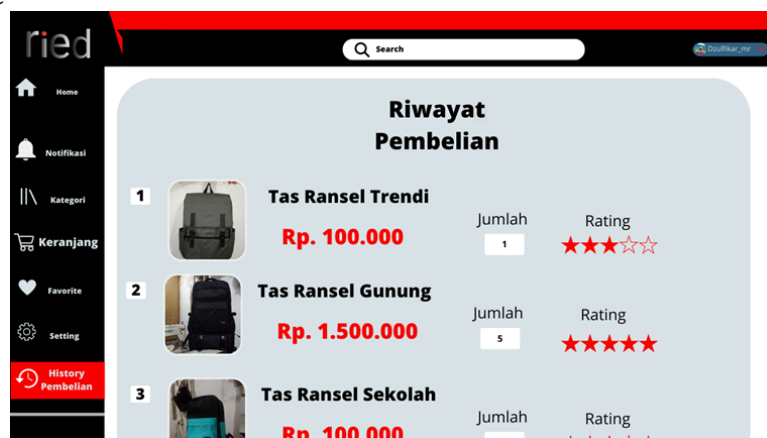


Figure 15 History Page

This page displays the purchase history made by the user, allowing them to see which products they have ordered. If they want to reorder products, they can refer to this page.

#### 4. CONCLUSION

In this research, an analysis of the business process of the SME Ried Kantongku was conducted through interviews and observations. The existing business process is still conventional, requiring customers to visit the store to place product orders. This research also utilized the RAD design methodology as a reference in the application design process, ensuring that the process from start to finish can proceed as expected. UML diagrams were used to facilitate the design process, resulting in a more structured design process. The implementation of the Ried Kantongku website represents a step toward digitization in the business. Manual information processing and presentation can be replaced with a computerized system design. It is hoped that this website will help the business market and introduce its high-quality products to a wider audience, thereby contributing to the economic growth of the business owner.

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