

Implementation Of A Web-Based Customer Relationship Management Application At The Diana Tupperware Store

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Abstract: This research aims to design and implement a web-based Customer Relationship Management (CRM) system at the Diana Tupperware Store. The problem identified is the need for a system that can facilitate the management of customer data, goods data, transaction data and handling complaints efficiently to improve the quality of customer service. This research uses the waterfall system development method which involves the stages of analysis, design, implementation and testing. Design implementation is carried out by taking into account the minimum hardware and software specifications that support optimal system performance. Testing was carried out using black box testing techniques, and the test results showed that this CRM system was functioning well and it was hoped that an increase in the quality of customer service could be achieved, and the store could provide more responsive service, which had the potential to increase customer loyalty..

INTRODUCTION

In today's digital era, information technology has become an important part of various aspects of life, including in the business world. One of the increasingly important technologies is Customer Relationship Management (CRM). Customer Relationship Management (CRM) is a system that controls the relationship between customers and business owners by combining humans, technology and processes in transactions (Masrina et al., 2022). At the Diana Tupperware Store, customer relationship management is still done manually, which includes recording customer information, purchase history, and communication with customers. This manual system often causes delays in responding to customer needs and loss of important data.

The implementation of CRM strategies can be developed to acquire new customers, improve customer relationships, and retain customers which will ultimately lead to customer loyalty (Fitriany et al., 2023). To overcome the problems at the Diana Tupperware Store, a web-based CRM will be developed using the waterfall method. This application will include features for recording customer information, product

information, articles, handling customer complaints to handling transactions. With web-based CRM, customers can always get the latest information about product availability, product promotions, and make transactions, so that services can be faster and more accurate.

Based on previous research entitled "Implementation of e-CRM to Increase Product Sales at Web-Based Matrix Cellular Stores," the implementation of Customer Relationship Management (CRM) can significantly increase product sales. (Masrina et al., 2022). Another study entitled "Development of a Web-Based CRM System Using the Agile Method for E-Commerce Companies" developed a web-based CRM system for e-commerce companies using the Agile method. The results of the study showed that Customer Relationship Management (CRM) helps companies increase customer retention and speed up the customer service process (Agus et al., 2023). In addition, a study entitled "Designing a Customer Relationship Management (CRM) Application to Improve Customer Service at the Lusi Ana Gorden Lubuk Alung Web-Based Store Using PHP and MySQL" shows that the web-based Customer Relationship Management (CRM) application can improve the efficiency of customer service and customer data management at the Lusi Ana Gorden Store. This study uses PHP and MySQL (Mardiah et al., 2018).

RESEARCH METHODS

At the research stage, a design is needed which will later become a reference in carrying out the research. The research stages that have been described are as follows :

1. Formulation of Problems, Goals and Benefits

Problem identification is an important step in improving the quality of research. In this research, the author identified the main problems related to Diana Tupperware Store's Customer Relationship Management (CRM) which is still done manually. The aim of this research is to design and implement a web-based Customer Relationship Management (CRM) application that can integrate various important aspects such as managing product, customer, complaint, transaction, report and goods data. By adopting the waterfall development methodology, this application aims to optimize customer service performance by providing real-time information, reducing the risk of data loss, and increasing the efficiency of transaction data with customers. The expected benefit of this

research is to create a system that allows the Diana Tupperware Store to respond to customer needs more quickly, increase satisfaction, and manage customer relationships effectively.

2. Literature Study

At this stage, the author carries out a study and understanding of theories that are relevant to the problem to be researched. These theories were obtained from various sources, such as journals, the internet, and other references. The theories studied include the development of Customer Relationship Management (CRM) applications and the waterfall method, as well as other supporting theories that will be applied in this research report, so that they have a good scientific basis.

3. Data Collection

The data collection stages were carried out to obtain the information needed for the research. At this stage, observations or reviews were carried out as well as interviews with representatives of the Diana Tupperware Store. The goal is to understand the system currently running and compile a list of requirements for the Customer Relationship Management (CRM) application that will be designed, including what information and features are desired to be displayed in the application system.

4. System Analysis

The results of data collection carried out at the Diana Tupperware Store are Analysis of the Current System Based on the results of field studies through observations and interviews with the Diana Tupperware Store, it was found that the system in the store still uses a manual system and has not been computerized. Administrative processes such as recording transactions, outgoing goods and incoming goods are still carried out conventionally by recording everything in books. This manual administration system causes various difficulties, such as difficulty in tracking lost, damaged or scattered books, as well as the risk of recording errors which can affect data accuracy and operational efficiency.

RESULTS AND DISCUSSION

1. Analysis and System Design

Designing Unified Modeling Language (UML) including use case diagrams, activity diagrams, and class diagrams.

1. Use Case Diagrams

The use case diagram designed for the Customer Relationship Management (CRM) application is divided into 2 (two), namely:

a. Customer Use Case Diagram

Use case diagram for customers can access the Home page, articles, FAQ and view the shop, to add products to the basket, a login is required to process the order, while for the profile a login is also required to be able to load information from the customer, customers can access personal data information, address information, order history information and complaint history information, and there is also a complaint feature where customers can contact the authorized admin to ask about something related to the product or ask about problematic matters. The following is a customer use case diagram for website-based Customer Relationship Management (CRM) that will be designed:

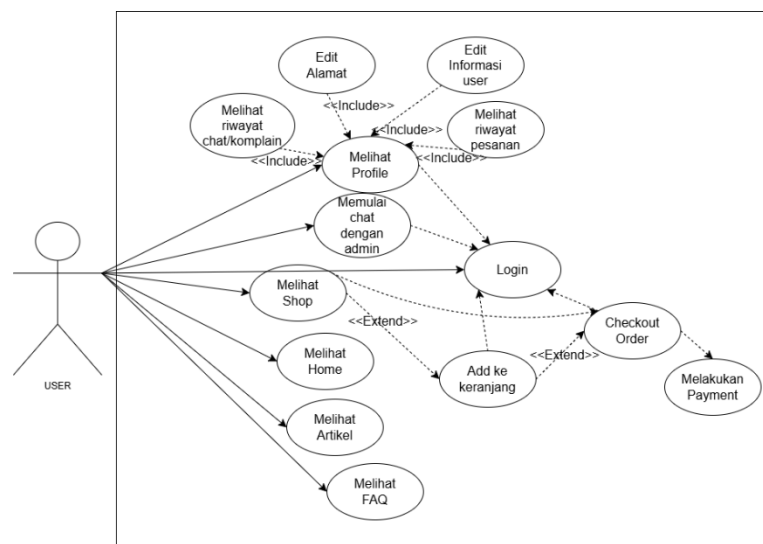


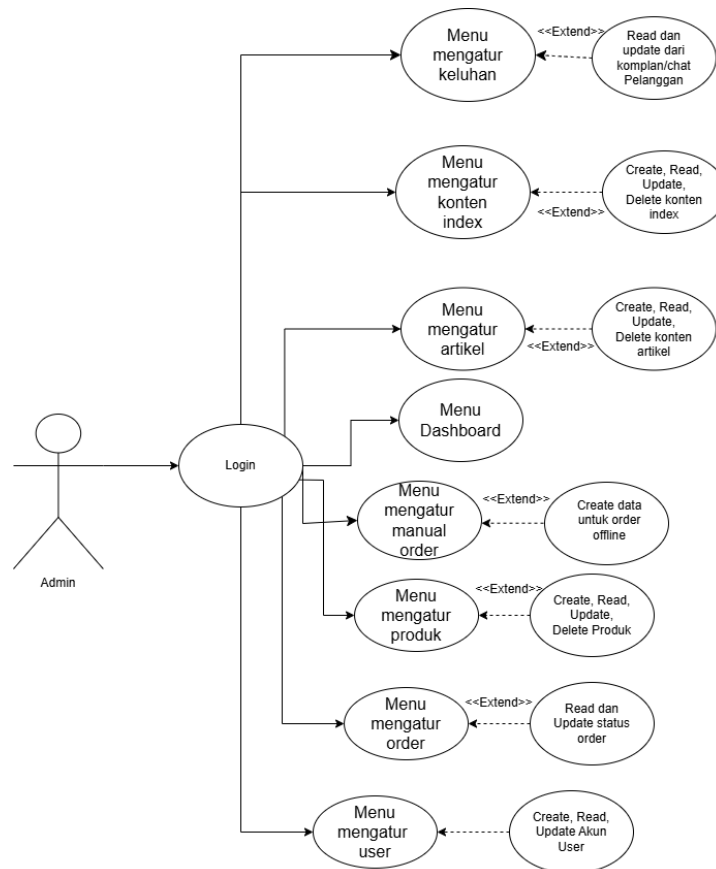
Figure 1. Use Case Diagram User

b. Customer Use Case Diagram

Use Case Diagram Admin

Use Case Diagram Admin can access several menus to manage the website, such as the menu for managing user data, in this menu the admin can see user information, then the menu for managing content on the home page or index, this menu is for managing the content of the front page when customers or users open website, menu to manage online order status, menu to manage transaction data directly, menu to manage products, menu to manage articles and menu to manage complaints, in the complaints

menu, admin can communicate with customers or users



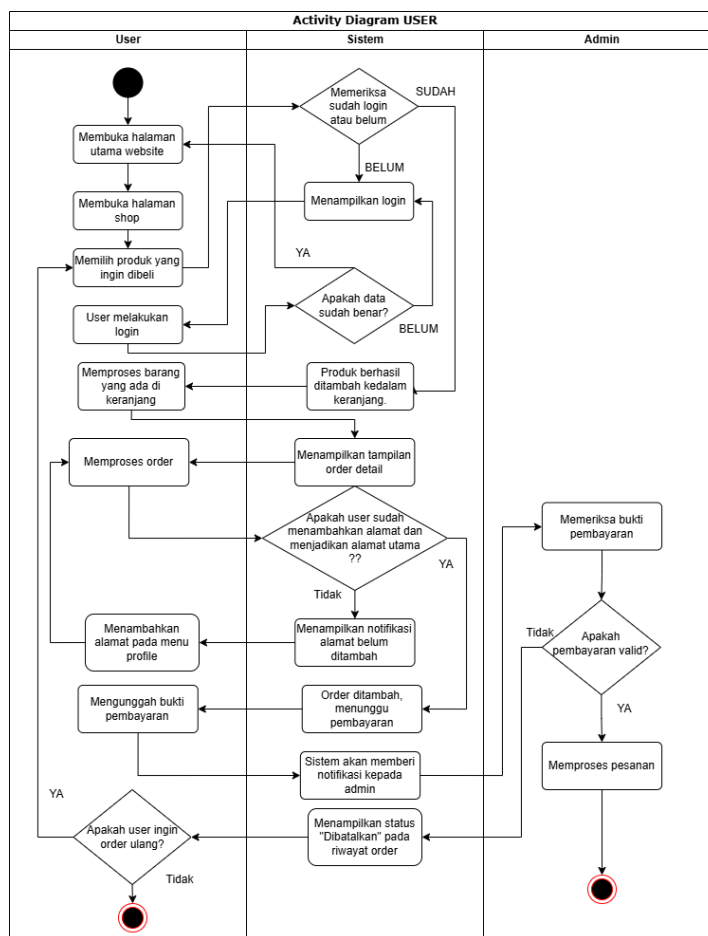
2. Activity Diagram

Below are several activity diagrams on the designed website, namely:

a. Activity Diagram of User

The activities carried out by users or customers in the activity diagram below can be explained in the following steps, first the customer or user is on the home page or start page of the web, then the user opens the shop page, then the user selects the product they want to buy, then the system will check whether you have logged in or not, if not, displays the login menu, the user logs in, if the data is correct, it will return to the main page, if not then return to login. Again try to select the product you want to buy, if the user has logged in, the system will notify you that the product has been successfully added, then the user processes the items in the basket, the system then shows the order details. Then the user processes the order, the system will check whether the user's address exists or not, if not, the system will display a notification that the address has not been added. Then the user will add the address to the profile menu, then process the order again, if the

address already exists, the system will add the order and wait for payment by the user, the user uploads proof of payment. Then the system will notify the admin, the admin checks the proof of payment, if the proof of payment is invalid, the system will display the status "Canceled" in the order history, then the user will be asked, do you want to reorder or not? if not, then, the activity ends, if yes, then the order will be re-ordered. Check the proof of payment again, if the payment is valid, then process the order and the activity ends.



b. Activity Diagram of Admin

In the Admin Activity Diagram, it starts with logging in, if logging in is unsuccessful, the admin will log in again. If the login is successful, the system will display a dashboard page. The admin chooses which menu to open, then the system will display the menu selected by the admin. The admin adds/changes/delete data at that address, then the system will check whether the data was successfully added/changed/deleted, if not successful, then the system displays a failure message to the admin and returns to the

page selected by the admin, but if successful, it will displays a success message. Then if you want to add/change/delete data again, the admin will be directed to the menu that was initially selected, if not, then the activity is finished.

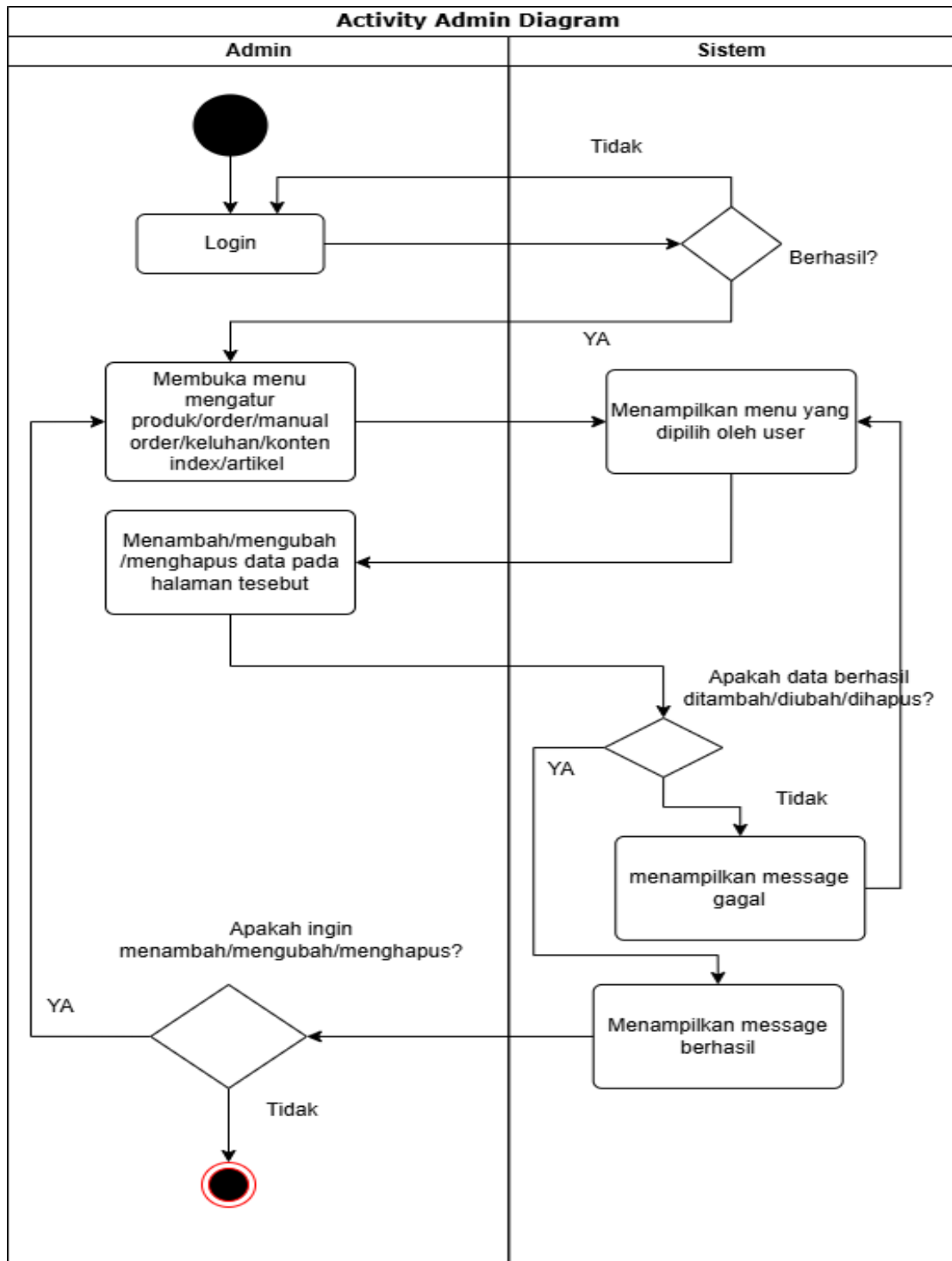


Figure 4. Activity Diagram of Admin

3. Class Diagram

The following is a class diagram for the web-based Customer Relationship Management (CRM) application that was designed:

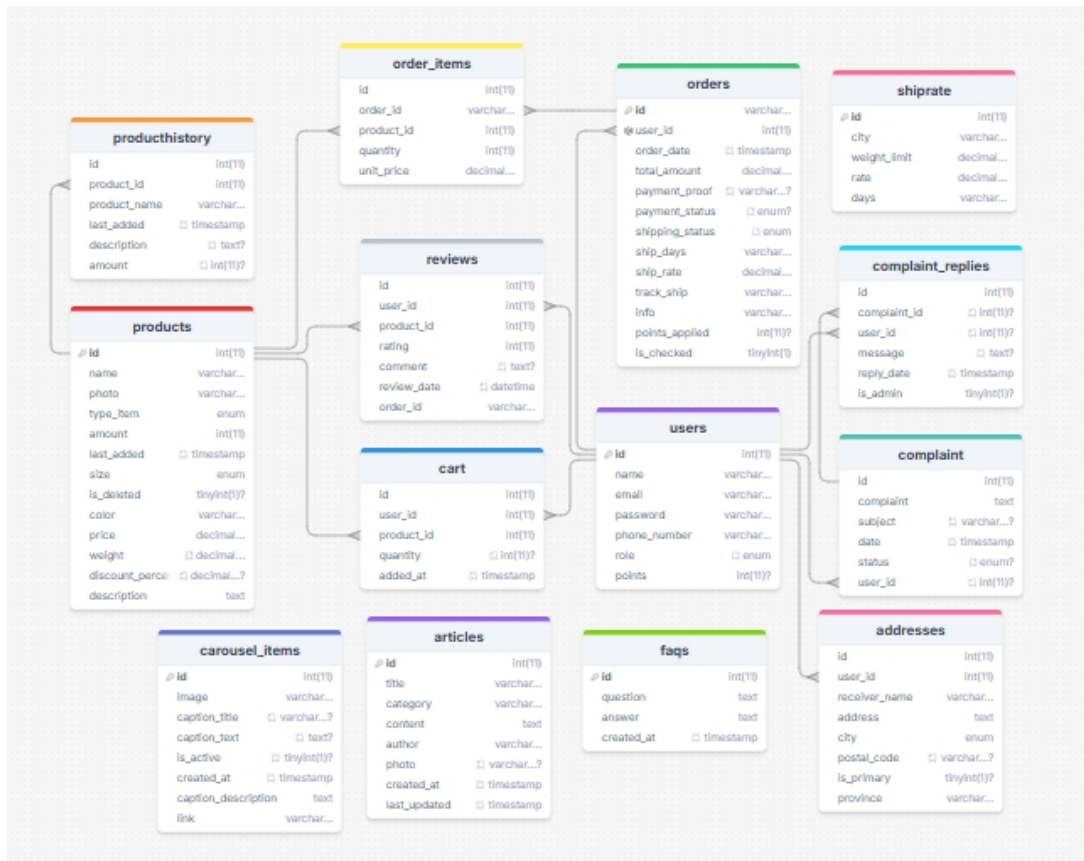
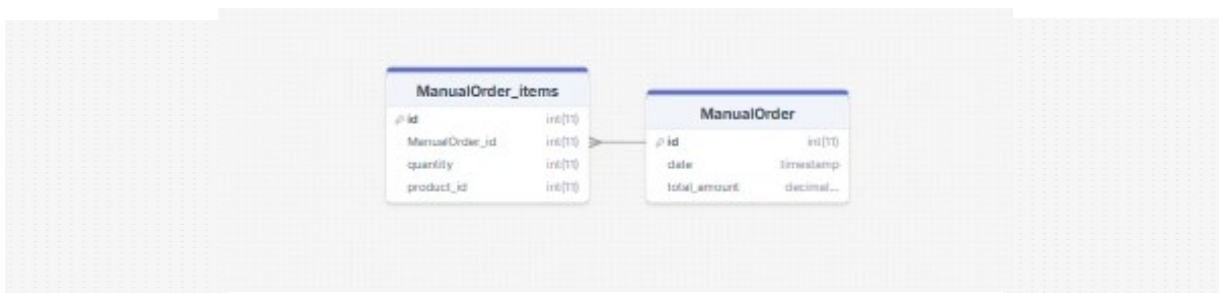


Figure 5. Class Diagram



2. System Implementation

The implementation of the designed design can be seen in the stages of each page of the website, and its functions are as follows:

a. User View

Users can access the main page, shop, articles, and profile. The following are pages on the user display:

i Main Page or Home Display

The main page is the page that appears first when the website is accessed by the user. On the main or home display, there is no need to login. The following is the home page display of the CRM application :

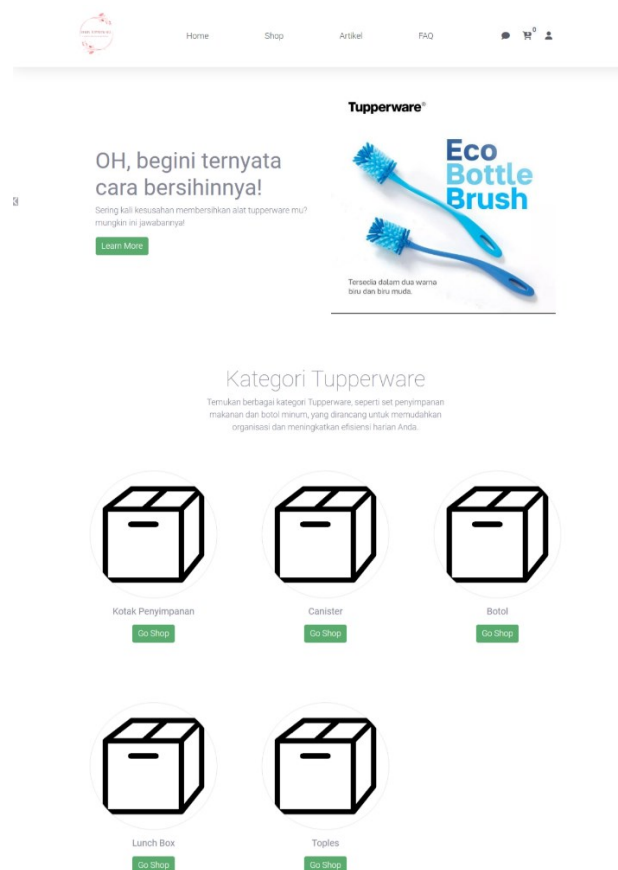


Figure 6. Main page or home

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ii. Shop Page View

Contains a list of items that users can search for and process to buy, here is the shop page :

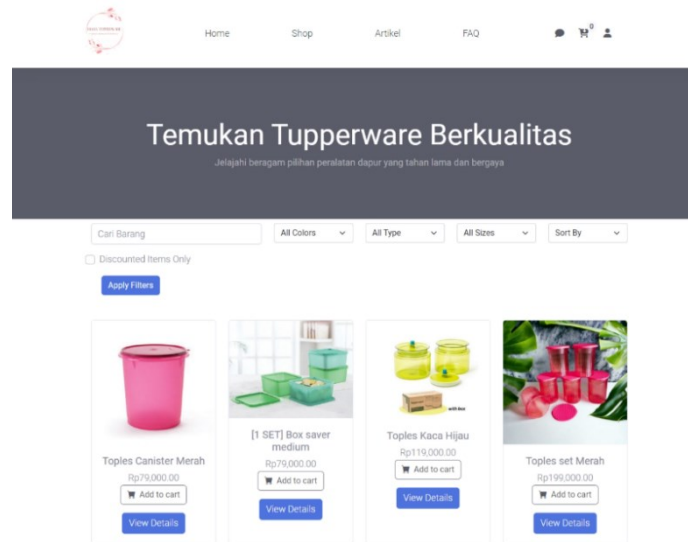


Figure 7. Shop Page View

b. Admin View

Admin can access all websites, but for the admin's special section is the dashboard, order menu, product menu, account menu, complaint menu, carousel content management menu for home, article menu and manual order menu to record offline orders. Here is the display on the admin page :

i. Dashboard Page View

Contains graphs of income and sales charts. Here is a view of the dashboard :

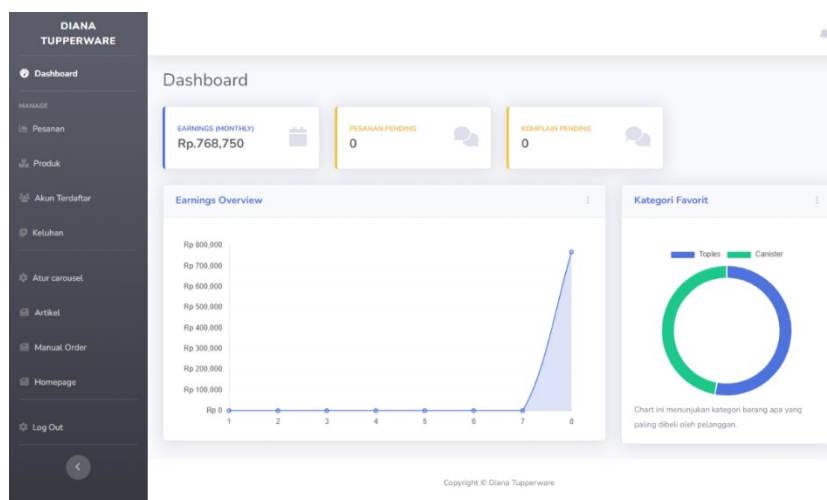


Figure 8. Dashboard Page View

ii. Manage Order Page

Contains order information from users who make online transactions on the website. Admin can check proof of payment entered by the user, then can change the status and enter the receipt number. Here is a display of the order :

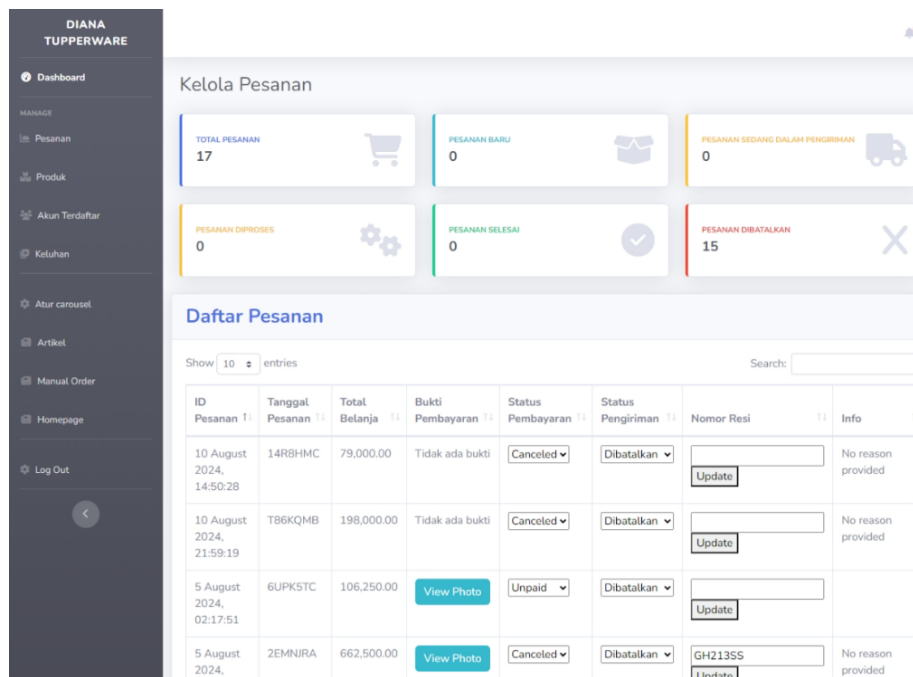


Figure 9. Manage Order View

CONCLUSION

Conclusions As for the final results of this research which discuss the design and development of a web-based Customer Relationship Management (CRM) system at the Diana Tupperware store, several conclusions can be drawn as follows Improved Customer Service Quality: This CRM application provides features to monitor interactions with customers and better manage their requests or complaints. With more accurate and easily accessible information, Diana Tupperware stores can provide more responsive service, potentially increasing customer loyalty.

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