

## Implementation of Customer Relationship Management (CRM) at Giant Supermarket Pagar Alam Lampung WEB-Based

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### Abstract

Giant Supermarket Pagar Alam Lampung is a company engaged in the sale of goods in Bandar Lampung. In marketing its products, it is still done by distributing sales catalogs and advertisements, so that many consumers cannot find out information about the stock of goods available at Giant Supermarket Pagar Alam Lampung. Consumers must come directly, if consumers want to get information or want to make purchases of goods, and do not improve sales and marketing strategies. CRM is a type of management that specifically discusses the theory of handling the relationship between a company and its customers, with the aim of increasing the value of the company in the eyes of its customers. CRM design will be discussed about ordering goods, purchase transactions, and service to consumers. The purpose and benefits of this research is to implement CRM in order to improve information services and customer satisfaction for Giant Supermarket Pagar Alam Lampung. The results of this study are a Customer Relationship Management (CRM) system in sales at Giant Supermarket Pagar Alam Lampung, this system can improve the company's service to customers through the sales provided, and this system can display information on goods sold, and can facilitate Giant Supermarket Pagar Alam Lampung in sales reporting.



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## I. INTRODUCTION

At the present time the business competition situation requires companies to always be very careful about the target market they are trying to achieve and the level of quality of their products and services. Apart from that, a very important factor that must be considered for companies to face business competition is the level of value that can be given to customers and how to treat customers from time to time[1]. E-CRM is

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an activity to manage relationships between companies to customers in an effort to increase loyalty to the products produced by the company by utilizing electronic media such as Radio, Television, Telephone and the Internet [2]. The function that integrates sales, service and marketing strategies which aims to increase revenue from customer satisfaction[3]. Based on previous research such as research conducted by adiyanto [4] explains that reliable organizational based on web performance greatly influences the implementation of CRM. Furthermore, it is explained in research conducted by Muhamad Rifai [5] that the e-CRM system in the form of a website provides an overview to a company about how the new system can maximize the service sector to consumers and customers.

Giant Supermarket Pagar Alam Lampung is a Retail company that is a company that sells goods and daily necessities located in Bandar Lampung. Not having special activities and strategies in ordering and selling goods makes it less able to compete with similar companies. Giant Supermarket Pagar Alam Lampung in marketing its products is still done manually, namely the distribution of sales catalogs and advertisements, so that many consumers cannot directly know about stock information available at Giant Supermarket Pagar Alam Lampung. Consumers must come directly, if consumers want to get information or want to make purchases of goods, and do not improve sales and marketing strategies.

The strategy of selling goods that take advantage of the development of information technology must be implemented. By applying a CRM concept or Customer Relationship Management to improve service to customers. Management where the theoretical discussion is carried out specifically about how to handle the company's relationship with its customers, which aims to increase the value of the company to its customers is the understanding of CRM according to [6], [7]. With the application of the CRM concept in sales transactions online, it is hoped that it can increase consumer loyalty, it is easy to inform the goods sold and the receipt of this information allows the service at Giant Supermarket Pagar Alam Lampung to be better.

## **II. RELATED WORKS**

There are several research that focus on customer relationship management such as the impact of customer relation management on entrepreneurial marketing[8], the effect of customer relationship management on customer satisfaction[6], and also one of the strategy's business in company's success [9] that has a major role in increasing productivity[10], environmental business exchanges like product development management [11] and also improved customer loyalty if the information of CRM can make the customer needs and satisfied[7]

## **III. METHODS**

The research method used in this research is to use the system development method and the system design method.

### **3.1 . Data Collection Techniques**

In order to achieve the objectives of this research, data collection techniques were carried out to obtain information. Observations and Interviews to collect data.

1. Observation

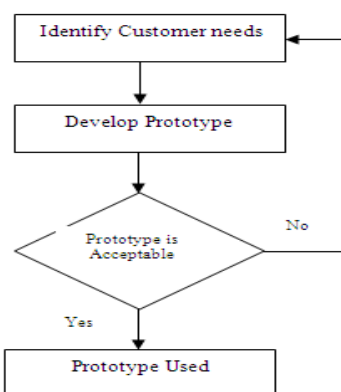
The collection of data by observing or observation which is a technique to obtain data by direct observation and record activities that occur in the process of ordering and transactions taking place in the Giant Supermarket Lampung Pagar Alam.

2. Interview

The technique is done by asking questions to the Manager of Giant Pagar Alam on problems that are directly related.

### 3.2 System Development Method

For the sake of developing a CRM (Customer Relationship Management) system at Giant Supermarket Pagar Alam Lampung, modeling will be used prototype. In the Figure 1 shows of the stages prototype.



**Figure 1.** Development on the prototype

**Source:** (McLoad, 2014)[12]

#### 1. Problem Identification

Stage This stage is to identify the problems that exist in the Giant Supermarket and the needs of users. The steps are :

- a. Conducting observations and interviews
  - b. Studying the references or documents used.
2. The stage of building and designing a prototype is the stage of building or designing a system using UML using the application Sublime Text and MySQL database. An application for editing code and text which can be operated on all information systems using Python API technology is the meaning of Sublime Text. (Sadeli, 2014)[8].
  3. The stage of analyzing whether the prototype is accepted or not is by testing the system that has been implemented using testing BlackBox.
  4. The stages of using the prototype are implementing a CRM application at the Pagar Alam Giant Supermarket.

### 3.3 System Design Method

To design a CRM system at Giant Supermarket Pagar Alam Lampung, it will be designed using UML. Unified Modeling Language (UML) is a standard language used to write software or software in the form of images. A modeling language for system development and is a standard language which is widely used in the industrial world to define a requirement, compile an analysis and make a design, and describe an architecture in a programming where the orientation is object-based[13]. In addition, UML can be used to visualize, build, define, and document system software or software. The following is the design of ainformation system Customer Relationship Management (CRM) at the Giant Supermarket Pagar Alam Lampung, there are:

### a. Usecase Diagram

To help determine the features and functions of the software, use case used diagrams are. In diagram usecase this also an actor will be linked by a line to use case is done. Usecase also serves to visualize an interaction of one or more actors and the system to be built. In this system the actors involved are Admin, Customers and Leaders.

### b. Activity Diagram Activity diagram

Describes the dynamic pattern of a system or part of the system with a flow of control between actions which are carried out by the system. This is the same as a flowchart but different if an activity diagram can show flows simultaneously. This activity diagram will describe the activities carried out by Admin, Customers and Leaders.

### c. Class Diagram

In the class diagram there is a box which is the main element of this diagram and is an icon that serves to represent the class and the interface. The box in each class diagram is divided into horizontal sections, where at the top will contain the name of the class and in the middle will contain a list of the attributes of that class and at the bottom are the operations of that class. Where in the class diagram will be discussed about the tables related to data and systems.

## IV. RESULTS AND DISCUSSIONS

In this study, applications, CRM system maintenance is performed in accordance with user needs by updating the system will be up to date on the system are made continuously making this system using the prototype will be made by UML or Unified Modeling Language, among others usecase, class, activity and the sequential diagram.

### 4.1 Result System Design

#### a. Usecase Diagram

Usecase also serves describe an interaction between one or more actors on the system to be built is attached in the Figure 2.

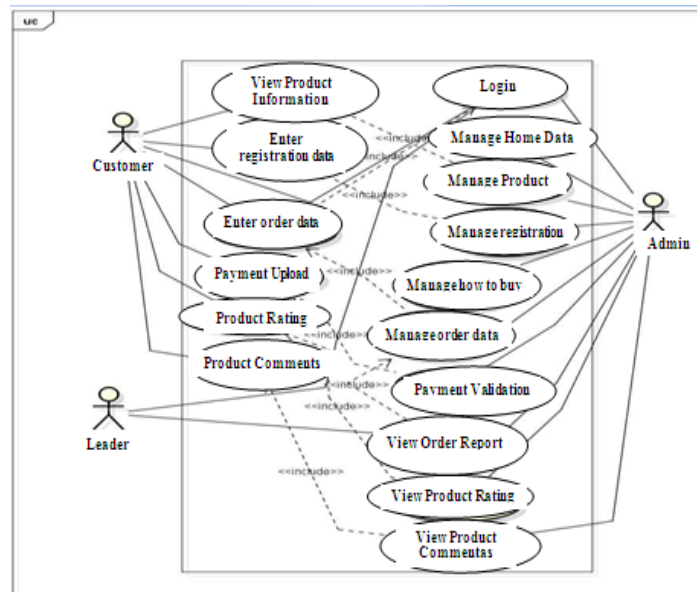


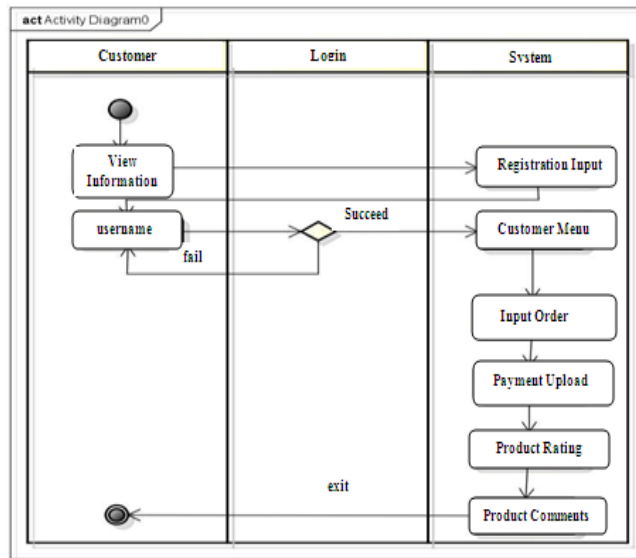
Figure 2. Usecase Diagram

Actors involved in the system are Admin, Customers and Leaders. Where the admin can manage the system both managing product data, order data and managing purchasing methods. Customers can view product information, make purchases and make payments. Mean while, the leader can only view item data and view order reports.

**b. Activity Diagram**

Describes the dynamic pattern of a system or part of the system through a flow of control between actions performed by the system. This is the same as a flowchart but different if an activity diagram can show flows simultaneously. Below is explained about the Activity Diagram of Admin, Customers and Leaders. Activity Diagram attached the following Figure 3.

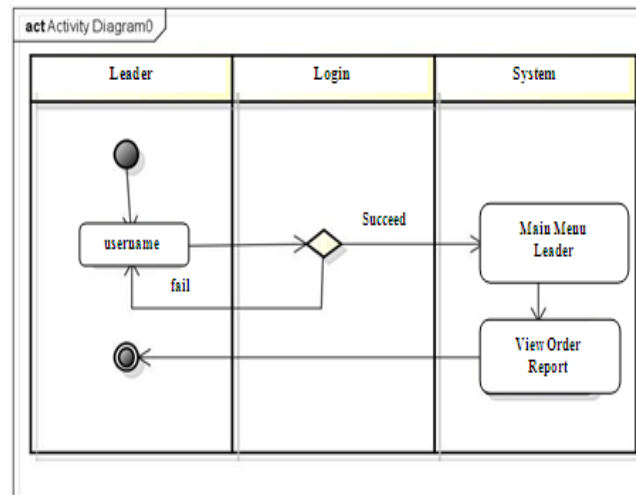
**Activity Diagram Customer**



**Figure 3. Activity Diagram Customer**

In the activity diagram, before making a transaction such as view product information is available, make purchases and payments, customers need to register first, followed by logging into the system.

**Activity Diagram Leader**



**Figure 4. Activity Diagram Leader**

In Figure 4, show the description of Activity Diagram Leader that in the system, the leader can only perform activities, namely viewing reports on orders that have been made by customers.

### Activity Diagram Admin

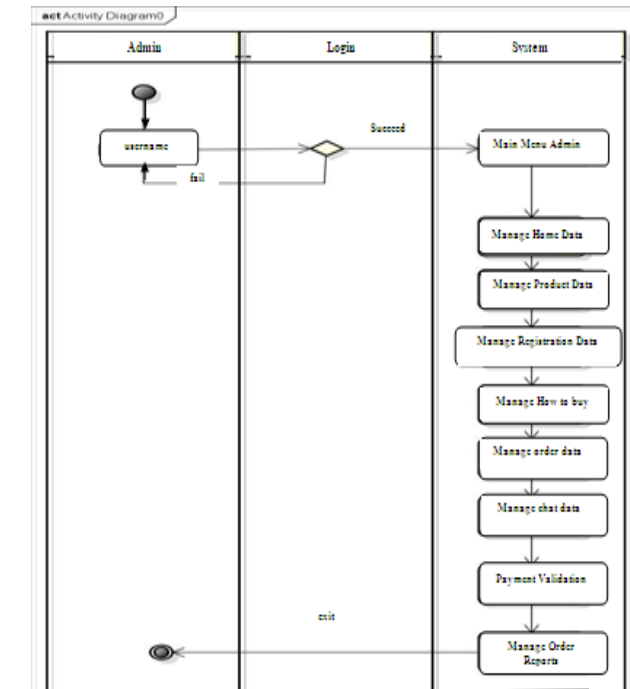


Figure 5. Activity Diagram Admin

In Figure 5 show that in the system, admins can carry out activities consisting of product data management, customer registration data, then managing purchasing methods, payment validation followed by managing order reports.

### c. Class Diagram

The box in each class diagram is divided into horizontal sections, where at the top will contain the name of the class and in the middle section will contain a list of the class's attributes and at the bottom are the *operations* for that class. *Class Diagram* is attached in the following on Figure 6.

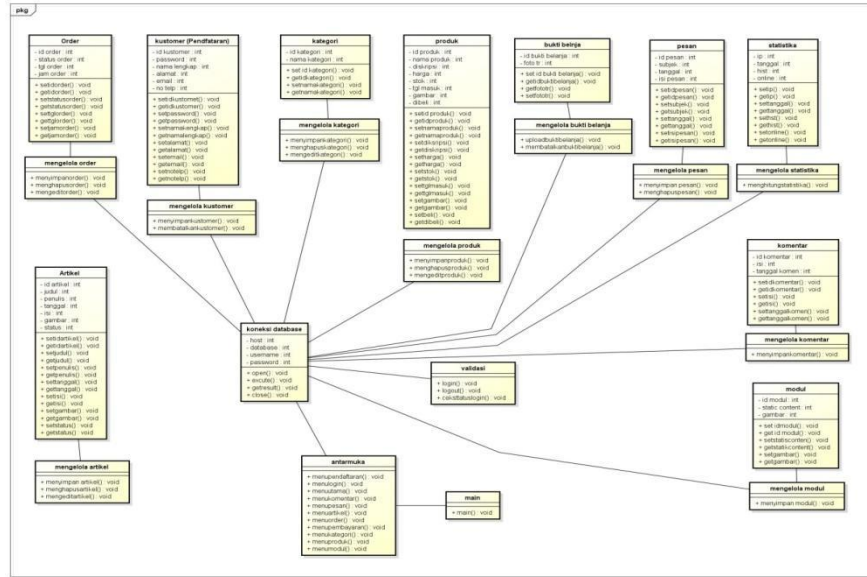


Figure 6. Class Diagram

In the *class diagram* the existing tables are the product table, orders, categories, proof of shopping, validation and others where the tables are interrelated with each other.

#### 4.2 Research Results

Contains an explanation of how to create a CRM program with a display *form* as an example. Implementation is the step where the system is ready to run with the actual stage, then it is known whether the system built is correct and can produce goals as expected. The web-based system show the view of the system that has been built.

#### Implementation of the Main Menu The main

Menu page on the *website* is the homepage display regarding the overall and outline of the contents as well as the content *on the website* for information see the products on offer. The following display show in the Figure 7.



Figure 7. Main Menu Page

#### 4.2.1 Implementation of the menu contained in the customer menu:

##### a. Implementation of the Main Menu for Customers



The main menu for customers is a display that displays the display at the beginning of the program, customers can see the products offered and the types of product categories offered. for sale. Customers can place an order by clicking on the menu add to card and will enter the shopping cart menu. The menu detail view is explain the displays menu information products sold.



Figure 8. Display of the Main Menu Customers

#### b. Implementation of the Product Comments

Menu This product comments menu is a menu that can comment on the products being sold. In the Figure 9 shows the product comments menu display and category.

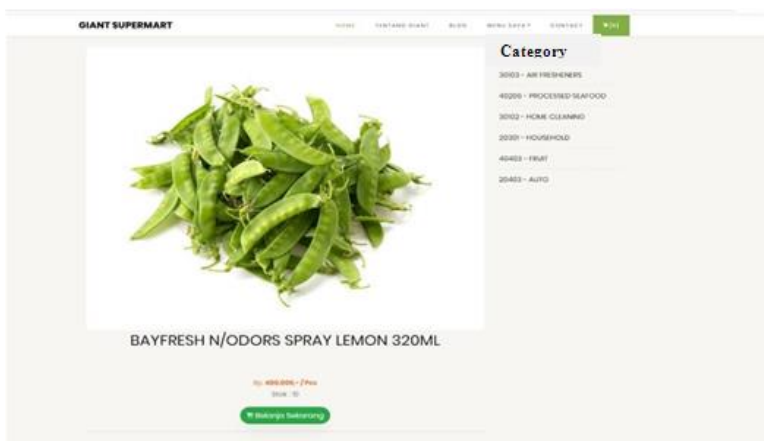


Figure 9. Display Product Comment

#### c. Menu Implementation of Customer Order

Menu The ordering menu is a display that displays ordering information on products. There is product information you want to buy such as product name, qty, price, sub total, and there is a delete menu to delete the data you want to buy. This menu displays the total cost of the number of items purchased. If the customer will continue to shop then please click the continue shopping button and if you want to finish shopping then please select the finished shopping menu. In Figure 10 shows customer order menu display.



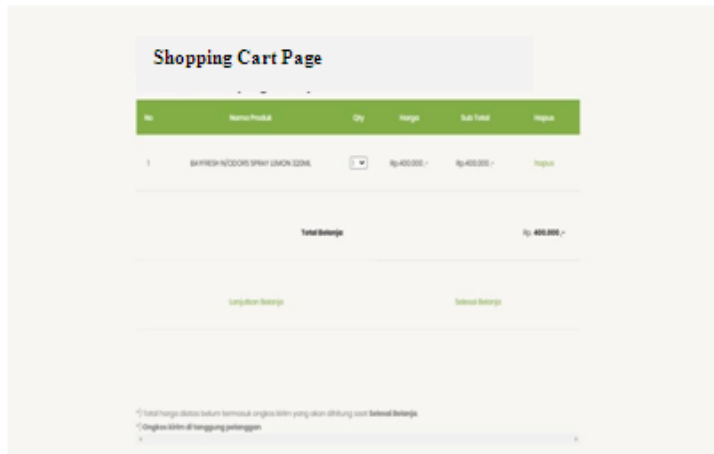


Figure 10. Display Customer Order Menu

#### 4.2.2 Admin Menu

Implementation Implementation of the menu managed by the Admin consists of a customer menu that has registered, product data and data ordering goods.

##### a. Implementation of the Customer Data

Menu The customer data menu is a menu that serves to display customer data that has registered an account and made previous purchases. There is a delete menu which is used to delete customer data.

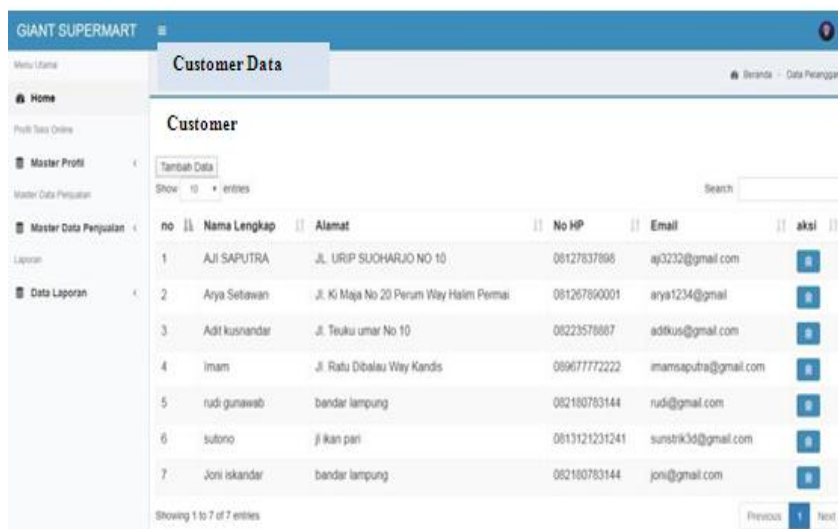


Figure 11. Customer Data Menu Page Display

##### b. Implementation of Order / Order Data Menu The order

Menu aims to view order data that has been ordered by the customer, there is information on the name *customer's*, date, time and order status whether the customer has made a payment or not, and there is action detail i.e. complete information about the order made by the customer. Figure 12 shows the display of incoming orders.

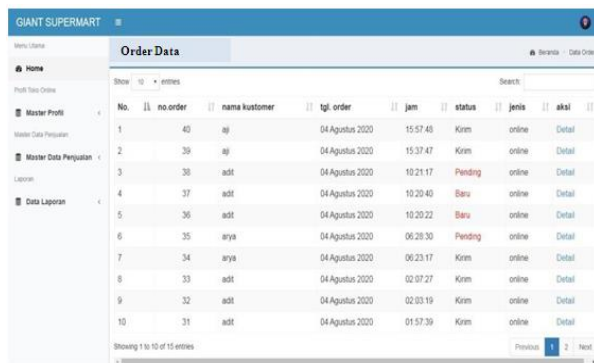


Figure 12 Display of Order Data Menu Pages

### c. Implementation of Product Data

Menu The product data menu is useful for adding item data, there is a data input menu as well as item names, product categories, prices, stock, and descriptions of products sold, and there are The save button is used to save the entered data.

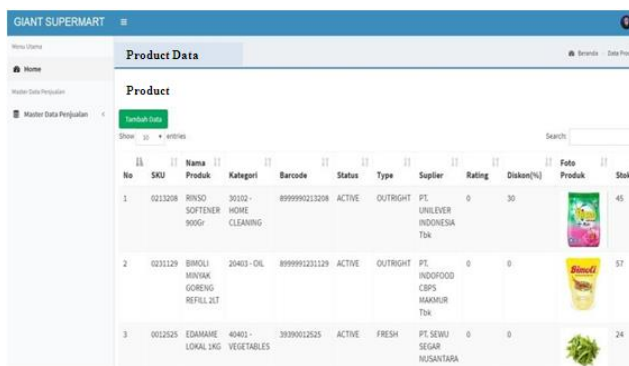


Figure 13 Display of Product Menu Pages

## 4.2.3 Implementation of the Leadership Menu

The implementation of the menu managed by the leadership consists of a menu of printing sales reports.

### a. Implementation of the Print Menu Report

Menu *report* or report is to display sales reports ordered by customers. This report can be printed according to the period by entering the date you want to print and then pressing the save button. The following is the displays for the report menu.

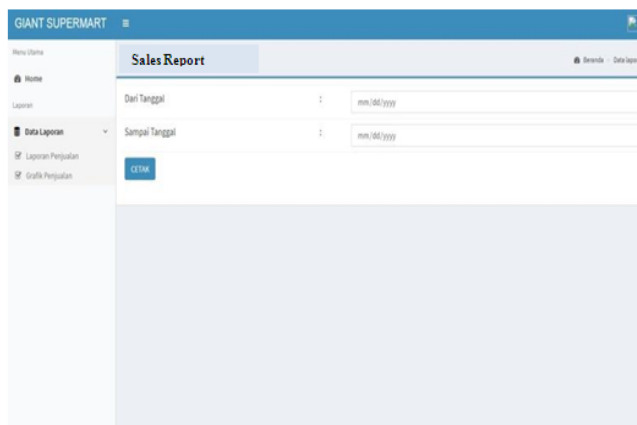


Figure 14. Display of Sales Report Menu Pages

GIANT SUPERMART						
SALES REPORT						
PERIODE 01 Juli 2020 - 31 Juli 2020						
No	Tanggal	Nama Produk	Satuan	Harga(Rp.)	Qty	Total(Rp.)
1	28 Juli 2020	NANAS HONI SUNPREDE	Pcs	15.000,-	2	30.000,-
2	28 Juli 2020	BAYFRESH N ODORS SPRAY LEMON 320ML	Pcs	25.000,-	1	25.000,-
3	29 Juli 2020	BIMOLI MENTAK GORENG REF 3LT	Pcs	24.500,-	2	49.000,-
4	29 Juli 2020	RINSO MOLOTO BUBUK 900GR	Pcs	27.000,-	1	27.000,-
5	29 Juli 2020	BIMOLI MENTAK GORENG REF 3LT	Pcs	24.500,-	1	24.500,-
6	29 Juli 2020	RINSO MOLOTO BUBUK 900GR	Pcs	27.000,-	1	27.000,-
7	29 Juli 2020	BIMOLI MENTAK GORENG REF 3LT	Pcs	24.500,-	1	24.500,-
8	29 Juli 2020	AYAM BROILER PCS	Pcs	29.900,-	1	29.900,-
9	29 Juli 2020	AYAM BROILER PCS	Pcs	29.900,-	3	89.700,-
TOTAL					13	326.600,-

Figure 15. Display of Printed Sales Reports

### 4.3 System Testing

Testing where the test method will use system testing techniques *blackbox*. *Blackbox testing* is a software system test technique which is only focused on the functionality side, especially for *input* and *output* application where the system being tested is in accordance with or not as expected. testing *Black-Box* also refers to functional testing, the test method emphasizes carrying out functions and checking input and output.

#### a. Testing the Product Menu

Testing the product menu attached in the Table 1.

Table 1. Testing Results *Blackbox* Menu Product

Menu Master Menu Product			
Data Input	Data Expected	Observation	Conclusion
Click the Product	Menu Show Product Menu	Enter the Product Menu	Accepted
Click the Add New Product Button	Show Menu to add Products Product	Data new successfully added	Accepted
Save Button	Show Product Page	Data on Product Page increased	Accepted
Cancel button	Show Product Page	Return to Product Page	Accepted
Edit Button	Show Menu Change Product	Enter Menu Change Product	Accepted
Button Delete	Displayed the following message "Are you sure you want to delete it?"	The selected data will be deleted	Accepted the
Search Column Searching	for the product data you want to search	Displayed Product data being searched	Accepted

#### b. Testing Category Menu

Testing the order menu is attached in the Table 2.

**Tabel 2.** Blackbox Menu Category Test Results

<b>Category Menu</b>			
Data that Input	Data that Expected	Observation	Conclusion
Click Menus Category	The Category Menu appears	Enter the Category Menu	Received
Click the Add New Category Button	The Add Category Menu appears	New Category Added	Received
Save button	Show Category Pages	Data On Category Pages Increases	Received
Cancel button	Show Category Pages	Return to Category Page	Received
Edit button	The Change Category Menu appears	Enter the Change Category Menu	Received
Delete button	The following message is displayed "Are you sure you want to delete it?"	Selected Data Will Be Deleted	Received
Search Column	Searching for Category Data You Want to Search	Displayed Category Data Which looking for	Received

**c. Testing Order Menu**

Testing the order menu is attached in Table 3.

**Table 3.** Testing Results *Blackbox* Order

<b>Menu Order Menu</b>			
Data Input	Data expected	Observation	Conclusion
Click the Complaints Menu	Shown Order Menu	Go to Menu Order	Received
Edit Button	Show Menu Change Order	Enter Menu Change Order	Received
Button Delete	The following message is displayed "Are you sure you want to delete it?"	The selected data will be deleted	Accepted
Search Column Searching	For Data Order Wanted	Displaying Data Order sought	Received

From the results of testing black box with the case attached above the author can draw the conclusion that the system created is free from syntax and functionally produces output as expected.

## V. CONCLUSIONS AND RECOMMENDATIONS

The development of a CRM or application system Customer Relationship Management as an information system service can improve the company's services to customers through the sales provided, and this system can display information on goods sold, and can print reports according to the period by selecting the date to be printed making it easier Giant Supermarket Pagar Alam Lampung in sales reporting. In the future, researchers who wish to develop the results of this research should use a more optimal marketing analysis and add a delivery service menu to the application program.

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