Ann PUBLISHER
Journal of ImproSci
e-ISSN: 0000-xxxx
p-ISSN: 0000-xxxx
ann4publisher@gmail.com

Web-Based Furniture Sales Information System

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Abstract. The development of e-commerce in Indonesia can make something promising. Where the company is engaged in the production of furniture, wood processing production materials, multiplex and HPL finishing, with the goods produced ready for use by consumers. The goods produced are in the form of household furniture such as cupboards, tables, kitchen-sets, and other furniture items. The introduction method in marketing existing products at the company is by offering directly to consumers and also by participating in furniture and interior exhibitions held by certain activities. At this time, Teak Megah Furniture wants to expand the distribution of its sales area, namely by creating an online sales system or what can be called e-commerce. It is hoped that with this online sales system, company owners can reap more profits than usual. For this reason, the author created a system with the title in the final project "Web-Based Furniture Sales Information System".

Keywords: E-Commerce, Furniture, Marketing

INTRODUCTION

The development of e-commerce in Indonesia can make something promising. This is due to several factors, including the increasing number of internet users. Online sales or e-commerce have many advantages over manual sales. Sellers will be more easily recognized because the products offered can be seen and accessed by millions of people, both domestic and foreign. So that it spoils consumers, especially consumers who have busy and narrow times. Seeing the increasingly sophisticated development and increasingly practical human life, the importance of entrepreneurs installing online sales websites to improve the quality of sales based on fast technology and able to compete.

Jati Megah Furniture is one of the companies located on Jalan Prambanan-Piyungan KM:04. Where the company is engaged in furniture production, wood processing production materials, multiplex and HPL fining, with the goods produced ready for use by consumers. The goods produced are in the form of home utensils such as cupboards, tables, kitchen-sets, and other furniture items. The way of introduction in marketing products in the company is by way of direct offers to consumers and also by participating in furniture and interior exhibitions held by certain activities. For direct offers to consumers, owners

use market survey strategies to find out goods or models that are in great demand by consumers. After knowing that the company will produce the goods and offer them to new projects and agencies that will actually procure the goods. These methods require a lot of time and require long data management in processing.

At this time Teak Megah Furniture wants to expand the spread of its sales area by creating an online sales system or can be called e-commerce. It is hoped that with this online sales system, company leaders can reap more profits than usual. However, there is no system that is able to manage product data properly, there is no online sales and promotion system carried out by Jati Megah Furniture.

LITERATURE

E-commerce is one form of electronic business that involves online transactions between sellers and buyers. E-commerce utilizes internet technology to facilitate the exchange of goods and services without time and place restrictions. E-commerce can improve efficiency, convenience, and customer satisfaction, as well as reduce operational and logistics costs for companies. (E-commerce - Wikipedia, n.d.).

There are different types of e-commerce based on the parties involved in the transaction. Some examples are business-to-consumer (B2C), where companies sell products or services directly to consumers through websites or apps; consumer-to-consumer (C2C), where consumers sell used goods or services to other consumers through online platforms such as eBay or Tokopedia; and business-to-business (B2B), where a company sells products or services to other companies through electronic networks such as EDI or e-procurement. (E-commerce Defined: Types, History, and Examples - Investopedia, 2020).

The waterfall method is a linear and sequential approach to information systems development that requires each phase to be completed before proceeding to the next phase. This method is the earliest and less iterative and flexible system development life cycle model (SDLC). This method starts with collecting customer and stakeholder requests and creating a project plan. The phases are: conception, initiation, analysis, design, construction, testing, implementation and maintenance. The phases do not overlap and each depends on the results produced by the previous phase. This model is typical for certain fields of engineering design and originated in the construction industry (https://builtin.com/software-engineering-perspectives/waterfall-methodology).

The waterfall method has several advantages, such as ease of planning, documentation, and testing. This method is also suitable for projects that have clear, stable and invariable requirements. However, this method also has some drawbacks, such as lack of flexibility, adaptability, and customer engagement. This method is also high risk if errors or changes occur at the end of the project, which can cause delays or failures. Therefore, this method may not be appropriate for complex, dynamic, or innovative (https://www.projectmanager.com/guides/waterfall-methodology) projects.

METHOD

This research method is carried out by collecting data and information related to the needs of online information systems, then software development is carried out using a waterfall model approach which starts with the stages of system engineering, analysis, design, coding, testing, and maintenance.

DISCUSSION

In the construction of a system, an analysis is needed as a result of the data collection process. The results of the analysis are then used as a reference to design a system as well as to find out the extent to which the system made is able to handle problems that exist before the information system is applied.

The current system is in sales with information through social media and word of mouth. Meanwhile, reservations are made by manual means or ordering transaction activities, namely by telephone. Customers can come directly or have to call if they want to buy goods, after the goods are ordered one of the employees will check the goods where dozens of items are available and record transactions in the transaction book section, after the goods are available customers can pay for orders via transfer or cash and the goods will be sent by the furniture.

Based on the analysis obtained from the location, the author can describe the weaknesses of the system that is carried out manually such as the difficulty of checking item data because the storage media uses paper, sales promotions are less extensive, employees must record all transactions manually, consumers must come directly to see the products rented. It is hoped that the construction of a sales system can meet and help what are the obstacles of owners and customers who function as system managers and customers as well as recipients of reports, so that they can access various kinds of devices they use.

In making a system will always start from the design section first as a description of the workflow or process of a data management that runs on an application aimed at designing the system to be produced. Each system has different needs and different flows, so it is important for developers to define various design models first.

In this system design, the author uses an object-based design model of Data Flow Diagram (DFD), Entity Relationship Diagram (ERD), to manage Database Structure, Table Structure, and Relationships between Tables. This design will serve to help the process of creating a system which then becomes a database schema diagram, then normalized so as to produce a better database design.

This level 1 DFD describes the system in more detail. The entities involved include owners, customers and admins who have their own access rights. In addition, DFD level 1 also describes existing processes including login, data management, management, reports and settings. DFD level 1 can be seen in Figure 1.

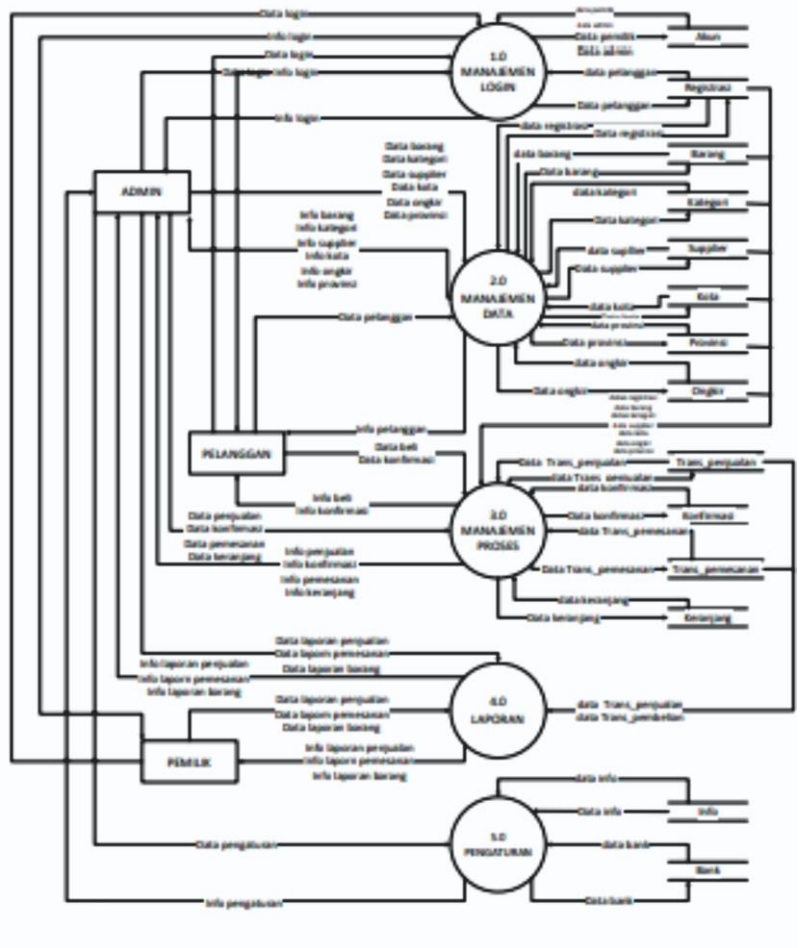

Figure 1. Data Flow Diagram level 1

In DFD level 2 Process 1 this describes the login or registration process. This process involves 2 tables, namely the account and registration tables. The design of the level 2 process 1 data flow chart can be seen in Figure 2.

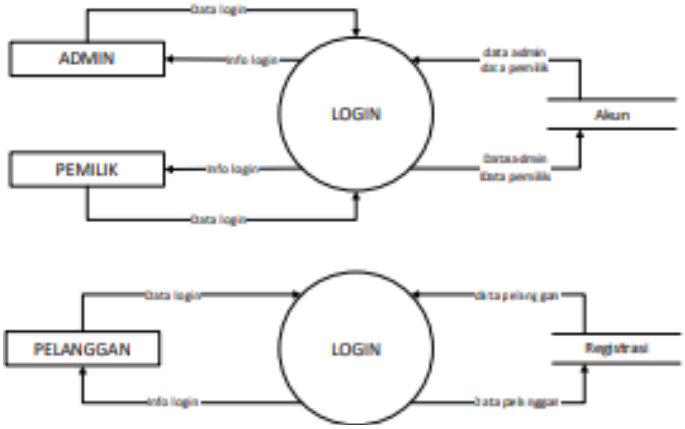

Figure 2. DFD Level 2 Proses 1

In DFD level 2 Process 2 describes the process of collecting master data. This master data collection process involves 7 tables, namely the table of goods, categories, suppliers, registration, city, shipping and province. The design of the level 2 process 2 data flow chart can be seen in Figure 3.

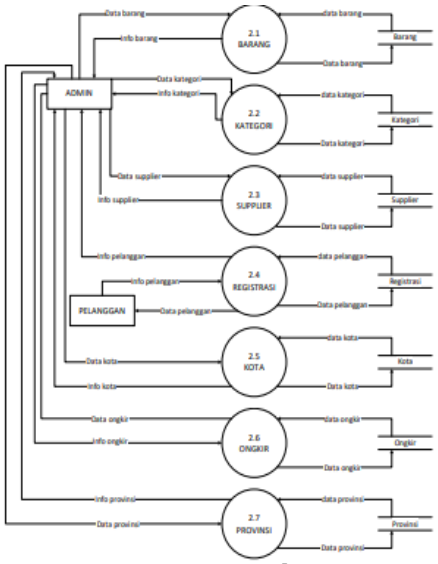

Figure 3. DFD Level 2 Process 2

At DFD level 2 Process 3 describes process management. Process management consists of 4 poses, namely sales, orders, confirmations and baskets. Explained data flow from customers can perform sales, cart and confirmation processes. Yalan then the customer gets a confirmation sent by the admin. Data flow from Admin can process payment confirmation and can process product returns. The design of the level 2 process 2 data flow chart can be seen in Figure 6.

Figure 4. DFD Level 2 Proses 3

This stage is the process of making reports. The process of making each report through one process and the results of the report output will be addressed back to the owner there are 2 reports generated from the system, namely sales and order reports, for more details can be seen Figure 5.

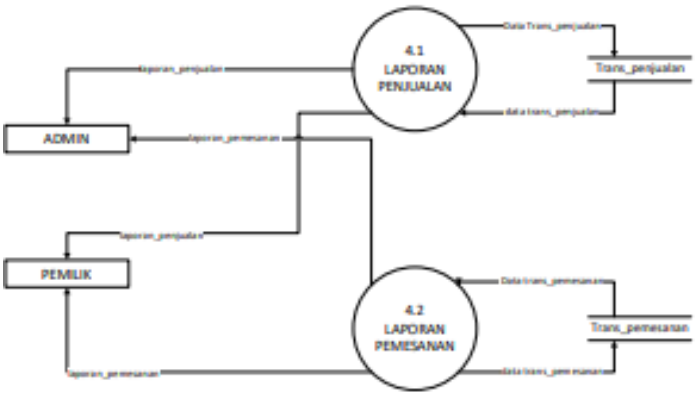

Figure 5. DFD Level 2 Process 4

ERD is a tool in the form of a chart that describes the relationships and entities of a system. ERD has a collection of objects called entities and the relationships between those entities. An entity is an object or something that can be distinguished from one another. The ERD contained in the web-based furniture sales information system in Figure 6**.**

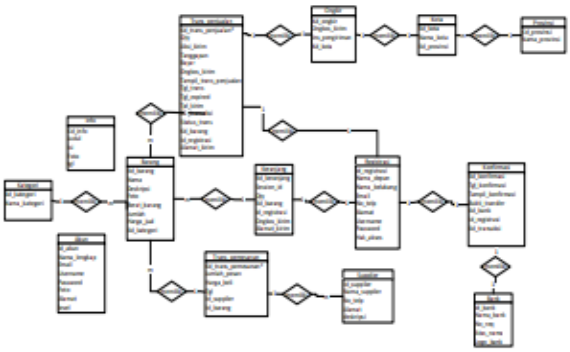

Figure 6. ERD

This stage will explain the database to be built, including the relationship structure between entities, data storage structure, data formats used and database access flows in designing web-based sales applications.

Table relationships describe relationships that occur in table objects with others that represent relationships between objects and function to regulate the operation of a database. A collection of interrelated tables that are expected to make it easier to create a system based on these tables. The design of the table relationship is shown in Figure 7.

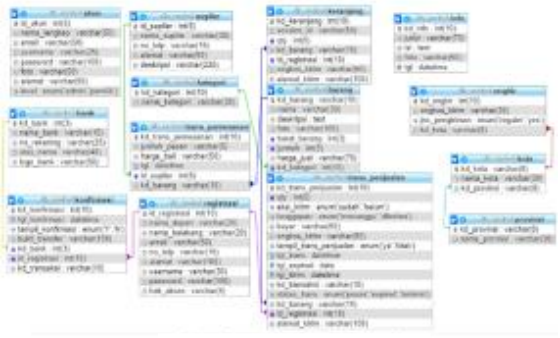

Figure 7. Table Relationships

Application implementation is an interface design describing the display plan of each form that will be used in the actual information system display. The design of interfaces in the information system created can be seen as follows:

On the login page used to access the system menus from Jati Megah Furniture and customers by filling in the username and password correctly, click on the login button to continue entering the system. The login page is shown in Figure 8**.**

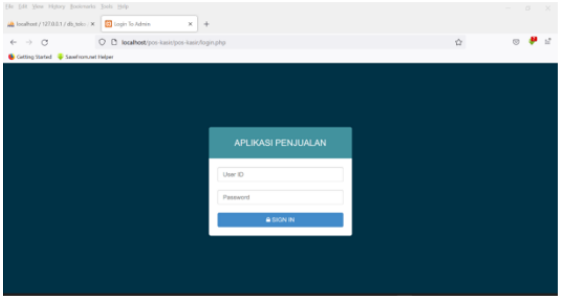

Figure 8. Login Page

The main page can be accessed by customers and customers can see the goods sold by Teak Megah Furniture. The main page is shown in Figure 9.

Figure 9. Public Home Page

On the administrator page, this is used for users to register an account to sign in to the application. The home page is shown in Figure 10.

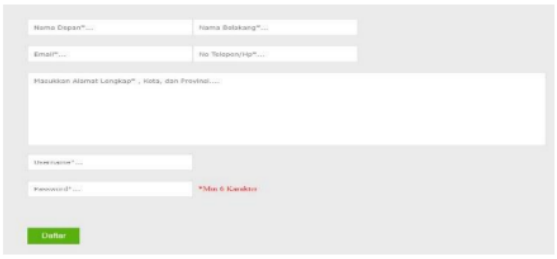

Figure 10. Register Page

Product pages are used to view the range of goods provided or offered by the app The product pages are shown in figure 11**.**

Figure 11. Product Page

The supplier page is used to view and add suppliers who are business partners of Jati Megah Furniture to stock goods, this page can only be accessed by admin users. In the action, there are edit and delete buttons. The supplier page is shown in figure 12.

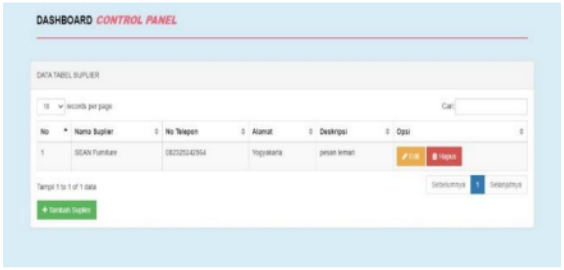

Figure 12. Suplier Page

The payment confirmation page is used to view proof of payment transactions from customers, the access rights of this page are owned by the admin. The payment confirmation page is shown in Figure 13.

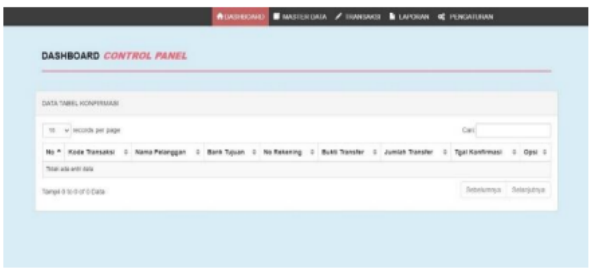

Figure 13. Admin Confirmation Page

The shopping cart page is used to view and store information on items to be purchased. The cart page is shown in Figure 14.

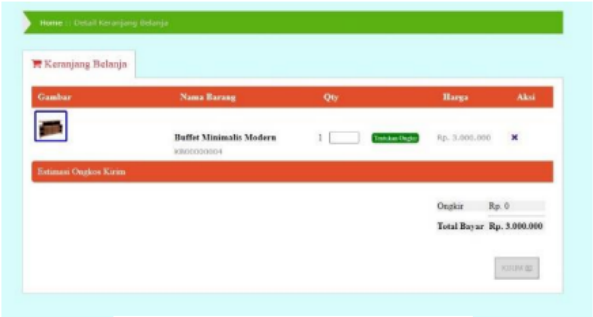

Figure 14. Cart Page

The shipping page is used to determine the shipping of goods made by customers. postage shown in Figure 15.

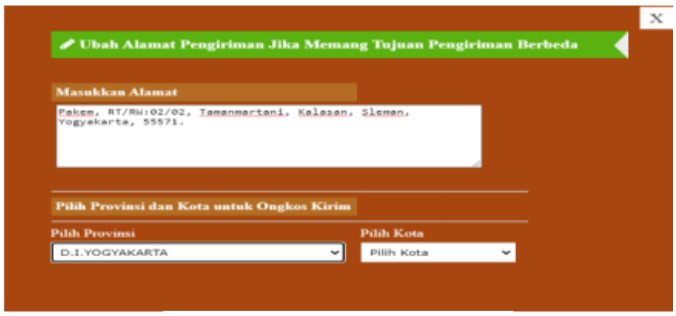

Figure 15. Shipping Page

The confirmation page is used by customers to confirm payment. The payment confirmation page is shown in Figure 16.

Figure 16. Confirmation Page

The data info master page serves to manage the display in the application in the form of profile, bank and article info. The master page of the info data shown in Figure 17.

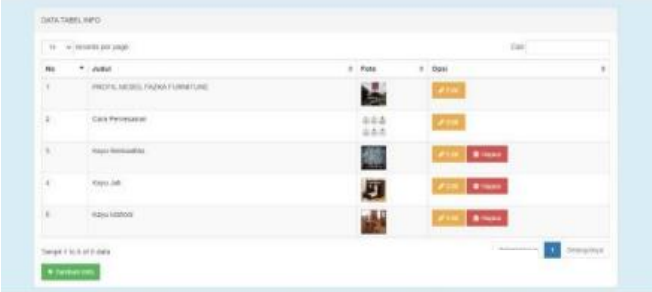

Figure 17. Master Pages and Info

The settings master data page is used to modify account data. The settings data master page shown in Figure 18.

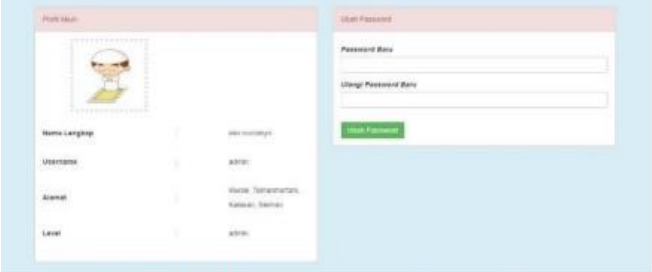

Figure 18. Master Pages and Settings

This report page is used to view and print sales reports, The permissions of this page are owned by the admin and owner. The report page is shown in Figure 19.

Figure 19. Sales Report Page

This report page is used to view and print item order reports, the access rights of this page are owned by the admin and owner. The booking report page is shown in Figure 20.

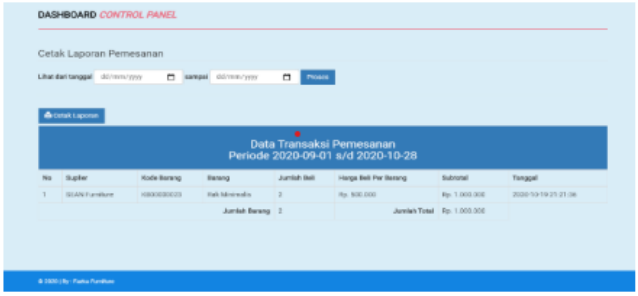

Figure 20. Booking Page

CONCLUSION

In research on building a web-based furniture sales information system that has been carried out by researchers, several conclusions were found as follows:

1. This furniture sales information system makes it easier for customers to make purchases of goods without having to come directly to the store. The process of goods transactions is easier to do, because it can be done remotely as long as you can access the internet, especially those located outside Cimahi City.
2. With the furniture sales information system, it can facilitate access to managing goods data, goods sales reports, ordering goods, and goods availability reports so that there is no mistake in accessing data.
3. This furniture sales information system can be a promotional medium for Teak Megah Furniture so that it can widen or expand the market of the furniture.

Based on some limitations in the research, we propose suggestions that can be considered for further development and research. The author makes the following suggestions:

1. For the next development, it is expected that there will be research that makes the system in the form of an android mobile application.
2. In this study, the payment system is still carried out via bank transfer, in the future it can be added using a payment gateway.
3. For the method of shipping goods or shipping costs are currently still being done and determined directly by the store, in the future it can be added using a third party that has the right cost calculation.
4. With the internet facility, there will be an opportunity for someone to commit a crime (cybercrime), so that in the future this information system needs to be equipped with an encryption technology system or SSL.

This sales information system is expected to be developed again by making some detailed data attributes that are not yet available in this furniture sales system, it can also be developed for the user interface to attract more customers.

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