Design and Construction of a Website-Based Animal Equipment Sales Information System

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Abstract

Selling pet supplies is an industry that continues to grow along with increasing public awareness of the needs of pets. To increase efficiency and accessibility in this business, this research aims to design and build a website-based information system for selling pet supplies. The system development method used includes user needs analysis, user interface design, system implementation, and functionality testing. Through this website, users can easily explore and buy various pet supplies such as food, toys and other accessories. This system is also equipped with inventory management and order tracking features to ensure item availability and customer satisfaction. With the adoption of web-based technology, it is hoped that this system can improve the user's shopping experience and help business owners manage pet equipment sales operations more efficiently. This research uses testing in the form of black box testing.

Keyword: Animal Equipment, Black Box, Information System, Waterfall

1. INTRODUCTION

The pet supplies sales industry has grown rapidly along with increasing public interest in pets. Demand for pet supplies, including food, toys, treats and accessories, is increasing in line with awareness of animal welfare and greater attention to pet-related lifestyles. In the current digital era, the use of web technology has become a key factor in responding to increasingly complex and diverse consumer needs.

This research aims to design and build a website-based information system for the sale of animal supplies. This system is designed to provide a comfortable, easy and safe shopping experience for pet owners. With this system, users can easily explore various pet equipment products, find detailed information, and make direct purchases through the integrated online platform. This research uses the waterfall method which consists of planning, design, coding, implementation and testing.

In this introduction, we will provide an overview of the background to the animal equipment sales industry, the problems faced, and potential solutions offered through the development of a website-based information system. Additionally, we will discuss the objectives, scope, and expected benefits of this research. By understanding the importance of online sales platforms in the context of the pet supplies industry, this research is expected to make a significant contribution in increasing efficiency and convenience in the pet supplies shopping process.Petshop is a business that focuses on selling food for pets. Humans, as social creatures, often interact with other living creatures, including pets, either to relieve stress, as a hobby, or as companions to fill free time and avoid feelings of loneliness.

Several studies related to e-commerce including Online Transactions (E-Commerce): Potential and Obstacles in the Islamic Economic Context [1], E-Commerce in 4.0 [2]. E-Commerce to increase business competitiveness [3]. Fourth research on the potential use of e-commerce [4]. Research into the five classifications of e-commerce businesses in Indonesia [5]. Sixth research on the application of e-commerce on cloud computing UMKM Kudus [6]. Seventh research on the application of e-commerce to the defense economy [7]. Eighth research on the application of e-commerce during the Covid 19 pandemic [8]. ninth research on the application of e-commerce in Denpasar computer shops [9]. Tenth research on the influence of e-commerce on trade from Indonesia to ASEAN[10]. Eleventh research on the articles of e-commerce agreements in Indonesia [11]. Writing of the twelve e-commerce purchasing decisions with a literature review [12]. Thirteenth research the impact of online shops on community consumptive behavior [13]. Fourteenth research on the effect of price on shopping convenience in e-commerce [14]. Fifteenth research on e-commerce

as a promotional media for small and medium enterprises in Gampong Lengkong Aceh [15]. Sixteenth research on E-COMMERCE at CV. Selaras Batik [16]. Seventeenth research on legal protection in E-COMMERCE trading [17]. Eighteenth research on the use of E-COMMERCE in the business world [18]. Sales Information System in Islam [19]. E-commerce in the business world [20]. The nexus of socio-technical systems and trust transfer in live streaming e-commerce [21]. Digital marketing area for e-commerce business [22]. Smart e-commerce systems current status and research challenges [23].

Petshops are still manual, using books, calculators and notes as transaction tools. Sales reports are created by reviewing copies of receipts collected each month, which often results in errors in recording and calculations. Stock management is still done manually. Based on these problems, the author designed an information system that aims to help stores in recording food stock.

2. MATERIALS AND METHOD

This research uses a flowchart consisting of identification, design, implementation, testing. Identification is the research team identified a need for a platform that could be accessed online. Design is After identifying the requirements, the team starts planning and designing the application. They create conceptual designs based on user input and market analysis. This design includes the user interface structure and key features that will be added. The next step is to implement the design into program code. The development team worked to translate the conceptual design into a fully functional application. They use the latest technologies to ensure application reliability and scalability. After implementation, the application undergoes a series of functionality tests. This includes testing all the features, functions, and interactions that have been defined in the design. Any bugs or technical issues are found and fixed by the development team. The Research Methodology can view figure 1.
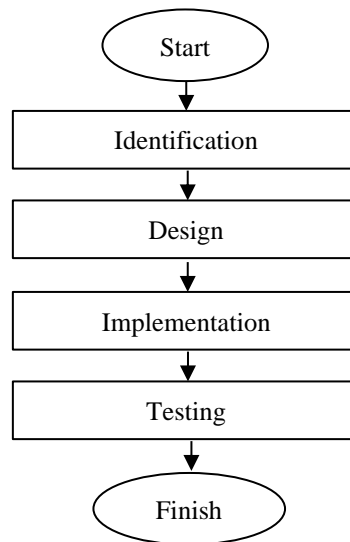

Figure 1. Research Methodology

This research also uses the Waterfall method or often called the waterfall method, an SLDC approach that was originally used in commonly used software. This method is carried out with a systematic approach starting from the system requirements stage then moving on to the analysis, design, coding, testing/verification and maintenance stages.

Waterfall is a method that has been used for a long time, the use of the waterfall method was first introduced by Herbert D Benington at the Symposium on Advanced Programming Method for Digital Computers on June 29 1956. The waterfall development method can be analogized to a waterfall where each stage is sequential starting from the top down. The Waterfall Model is a sequential development model. The Waterfall model is systematic and sequential in building software. The manufacturing process follows a flow from analysis, design, code, testing and maintenance. "The waterfall model provides a sequential or ordered software life flow approach starting from analysis, coding design, testing and support stages."
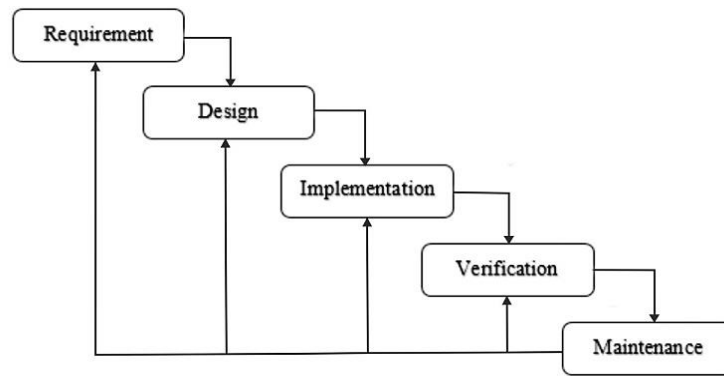The following is an example of the waterfall method on figure 2.

Figure 2. Waterfall Method

3. RESULTS AND DISCUSSION

Petshop is a business that operates in the field of selling pet supplies. Humans are social creatures who have to interact with living creatures, sometimes humans also interact with animals, whether wild animals or pets. Habibi Petshop still uses a manual purchasing and payment system which only uses books, calculators and notes for proof of transactions. To check the sales results report, the shop looks at a copy of the notes collected to recap the sales report data every month, which causes problems such as errors in calculations and recording, to stock goods, they still use it manually.
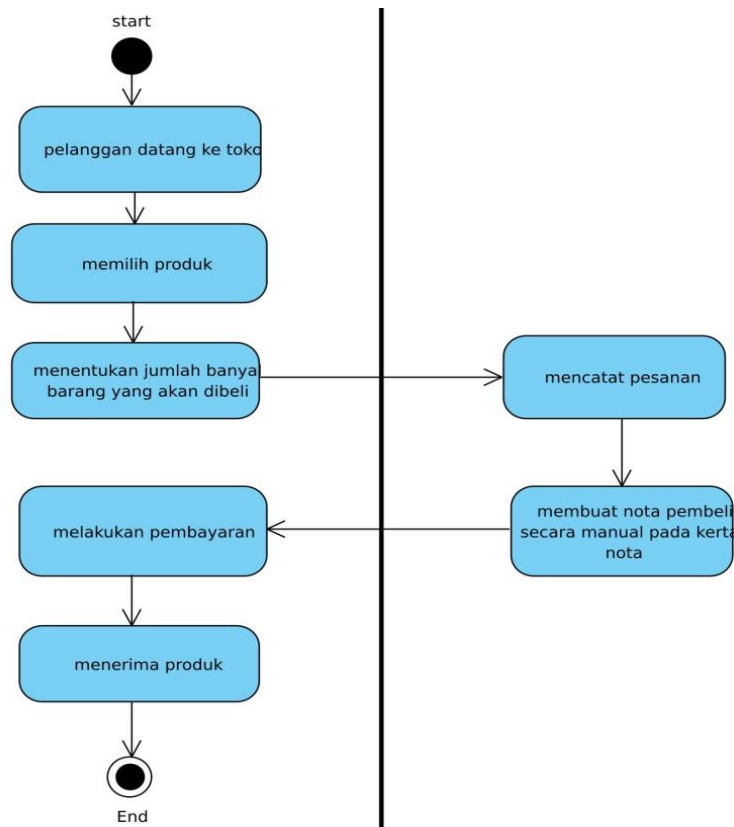

Figure 3. Running System

Figure 3 above explains the process of purchasing pet supplies, generally making purchases directly by visiting the Habibi Petshop and buying the items the consumer wants.

3.1 Proposed System Analysis

From the results of the current system analysis, the author provides this proposed system. It is hoped that it will make it easier for admins in the process of checking the availability of goods, purchasing goods, sales data and goods reports so that admins no longer record manually, so it can be depicted in the activity diagram as follows.
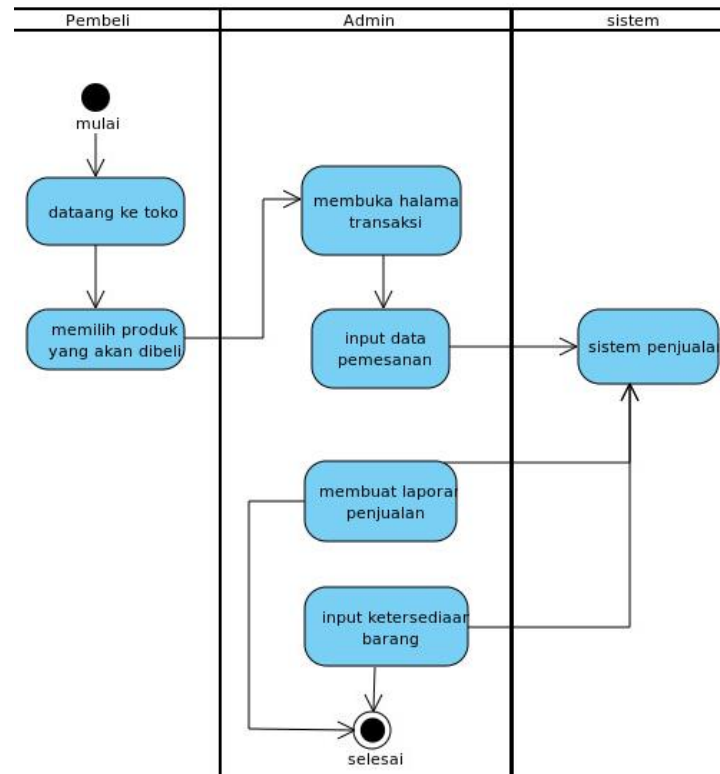
Figure 4. Activity Diagram of the Proposed System

Class Diagram is a type of static structure diagram in UML that describes the system structure by showing system classes, attributes, methods and relationships between objects. The following is a class diagram for this system in Figure 5.
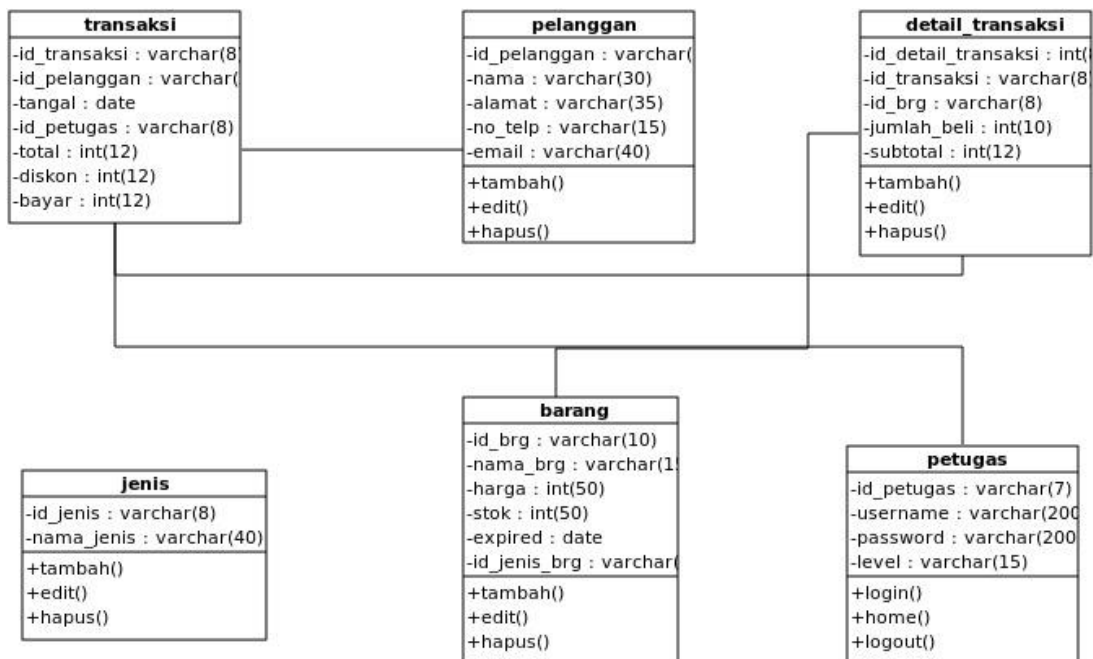

Figure 5. Class Diagram of the Proposed System

This class diagram consists of the Product class which represents animal equipment sold on the website, such as food, toys and accessories. Each product has attributes such as name, description, price, and stock quantity. The Cart class represents a shopping basket used by users to accommodate the products they want to purchase. This shopping cart contains a list of products and their quantities. The Order class represents orders

placed by users after they complete a purchase. Each order has attributes such as order number, order date, total price, and order status. The Payment class represents payments made by users to complete a purchase. This payment can be made via various methods such as bank transfer, credit card, or other electronic payments.

Relationships between classes are shown through associations that describe how the classes interact with each other. For example, the relationship between the User and Order classes indicates that a user can create one or more orders. Likewise with the relationship between the Order and Product classes, which indicates that one order can contain one or more products.

With this class diagram, developers can have a clear understanding of the basic structure of a website-based animal equipment sales information system, as well as the relationships between the classes contained in it. This will facilitate the process of development, maintenance and further development of the system.

3.2 Implementation

The system implementation stage is a process carried out after the system design stage has been completed and no errors have occurred. Then carry out testing aimed at finding deficiencies so that they can be repaired or developed. The aim of this stage is to realize the results of the system design that has been carried out.

The software used to implement the system in this research consist of Windows 7, Web Browser: Google Chrome, Xampp for Windows Version 3.3.0, PHP version 7.4.24, MySQL. The hardware used to implement the system consist of Intel Celeron CPU N280 processor, Ram capacity 2 GB, Windows 7 64-bit Operating System. The hardware used to implement the system consist of Processor Intel Celeron CPU N280, Ram Capacity 2 GB, Windows 7 64-bit Operating System.

The following is an application designed by the author:
1. User Page

Figure 6. User Page

The user page in the design of a website-based information system for selling animal supplies is one of the key components that allows interaction between users and the system. User consists of Officer ID, username, password, level and action in the form of delete and edit.

2. Item Page

Figure 7. Item Page

In Figure 7, this page displays This page is an item page. When users click on one of the products, they will be directed to the product details page. Here, they can see more information about the product, such as a complete description, specifications, and user reviews. Users can also add products to the shopping cart from this page. This page consists of Item ID, item name, price, stock, expiration date, item type.

3. Implementation of the Item Page

Figure 8. Implementation of the Item Page

In Figure 8, the item page is available to insert items to add items, refresh items to reload the page, sort items to sort remaining items and display items as well as detail, edit and delete.

4. Testing
Testing consists of testing the login form, testing the item menu, testing the user menu, testing the customer menu, testing the transaction menu. The following is a test of the item menu in Table 1.

Table 1. Black Box Testing for Item Menu

Testing Scenarios	Expected results	Result
Clicking the "customer" menu button	Displays customer data	Suitable
Click the "add" button then enter customer data then click "save"	Add customer data successfully	Suitable
Clicking the "edit" button then changes the data you want to edit	Data editing was successful	Suitable
Clicking the "delete" button	Erase data successfully	Suitable

4. CONCLUSION

In this research, a website-based information system for the sale of animal equipment has been designed and built. This system aims to increase efficiency and accessibility in the pet equipment sales business, as well as provide a comfortable and safe shopping experience for users. Through the use of web technology, this system allows pet owners to easily browse and purchase a variety of pet supplies such as food, toys, treats and accessories online. Features such as product listing, shopping cart, payment processing, and user account management are provided to better meet user needs. In developing this system, a structured development method has been used, starting from user needs analysis to system implementation and functionality testing. This process involves collaboration between various teams, including software developers, user interface designers, and system administrators. Through this research, it is hoped that the website-based information system for selling pet equipment can make a positive contribution in improving operational efficiency for business owners, as well as providing a better shopping experience for users. Apart from that, this system can also open up new opportunities in expanding market reach and increasing competitiveness in the animal equipment sales industry as a whole. By continuing to develop and improve this system based on user feedback, we can ensure sustainability and success in responding to the ever-growing needs in the pet equipment sales business.

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