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E-Commerce Sales of Qurban Animals at Bratajaya Farm Store Using Content Based Filtering Method

Hilman Fikri Wijaya [1], Agung Triayudi[2*], Winarsih[3]

Information System Department, Faculty of Communication and Information Technology, Universitas Nasional, Jakarta, Indonesia

Author Email: hilmanfikriwijaya2019@student.unas.ac.id[1], agungtriayudi@civitas.unas.ac.id[2], winarsih@civitas.unas.ac.id[3]

Abstract. E-commerce is a buying and selling process carried out via a digital platform, utilizing the internet as a transaction medium. The existence of e-commerce makes it easier to buy and sell online, which is the key to business development and potential profits in the future. Online business competition is increasingly intense, even reaching price competition. Bratajaya Farm Animal Shop chose to use the e-commerce platform as a way to sell their products. With this e-commerce, it is hoped that it will make it easier for customers to look for sacrificial animals without having to come directly to the shop which takes time. E-commerce technology design for the sale of sacrificial animals at the Bratajaya Farm Shop using the PHP programming language and MySQL database and testing using Blackbox testing. The method used for the E-Commerce system uses Content Based Filtering, with the Content Based Filtering method it can make it easier for customers to search for the animal category to choose.

Keyword: Blackbox Testing, Content Based Filtering, E-Commerce, RAD

1 Introduction

Livestock is part of the agricultural sector that focuses on raising livestock. Livestock activities aim to utilize livestock as a source of income. Many individuals are involved in livestock farming with a focus on sales, especially of animals used in the Qurbani ritual. Sacrificial animals are sacrificed animals such as camels, cows or goats which are slaughtered on Eid al-Adha and on Tasyrik days (11, 12, 13 Zulhijjah). This slaughter is carried out as part of worship and as a form of getting closer to Allah Subhanahu Wata'ala..

E-commerce is a buying and selling activity that occurs through a digital platform by utilizing the internet as a transaction medium. The existence of e-commerce makes it easier to buy and sell online, which is the key to business development and potential profits in the future. Online business competition is increasingly intense, even reaching price competition. To ensure the continuity and growth of online shop businesses, it is important for them to segment the market and provide unique added value in their services. Providing better service is the key to maintaining customer trust and consistency in the Online Shop [1].

The global E-Commerce industry continues to experience rapid development. To stay relevant and competitive, online businesses need to keep up with the latest developments in E-Commerce as well as understand changes in customer expectations. If you don't keep up with these developments, the risk of losing sales increases. E-Commerce is defined as a platform for carrying out buying and selling transactions, marketing and purchasing goods or services by using electronic systems, such as the internet, television and other network technologies [2].

Currently, business competition between the sales of sacrificial animals is increasing, therefore there is a need for innovation from business actors to expand sales areas. There are also many sacrificial animal shops that utilize technology. Bratajaya Farm Animal Shop utilizes the e-commerce platform as one of their sales methods. With e-commerce, it is hoped that customers can easily search for sacrificial animals without having to visit the shop directly, thereby saving time.

One of the obstacles in selling livestock is the difficulty in obtaining information regarding quality and appropriate prices. This challenge is an obstacle for both sellers and buyers, especially for people who need sacrificial animals. To overcome this problem, the use of technology is proposed as a solution, as in the situation above. One implementation of this solution is the development of a web-based application that provides information regarding the sale of livestock for Qurban and Aqiqah. The aim in question is to ensure that consumers and livestock sellers can carry out buying and selling transactions through a connected system. This system provides non-cash payment method options (transfers) that can be adjusted to the buyer's choice [3].

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According to research conducted by [4] the implementation of the application for selling Qurban and Aqiqah animals via the website makes a positive contribution to increasing sales results. This is due to the system's ability to facilitate sales not only directly, but also via online platforms. By adopting this system, data management can be carried out more efficiently and accurately. This online system was created with the aim of expanding the reach of sales of sacrificial animals and aqiqah. Complete details regarding sacrificial animals and aqiqah, as well as their availability, are presented clearly to make the ordering process easier for customers.

Apart from that, [5] conducted research regarding the design of an e-commerce system for buying and selling sacrificial animals and their distribution in the Jabodetabek area. This system is designed to simplify the process of buying and selling sacrificial animals, starting from selecting the animal, ordering, paying, to distributing it. It is hoped that this system can help the community in getting quality sacrificial animals at affordable prices, as well as simplify the process of distributing sacrificial animals to those in need. This research utilizes qualitative methods which involve the application of field observation techniques, interviews and documentation studies. The conclusion is that the aim of the Qurbanku application is designed to simplify the process of selling, purchasing and distributing sacrificial animals at the Haji Ugan farm.

Based on the above background, a website design for the sale of sacrificial animals was created, with this website being able to help sales at the Bratajaya Farm shop, then research was carried out entitled "E-COMMERCE SALES OF QURBAN ANIMALS IN THE BRATAJAYA FARM SHOP"

2 Literature Study

E-commerce is a system that allows buying, selling and marketing goods and services via electronic networks. This system can be accessed via various devices such as television, radio, computers, and most commonly, the internet. E-commerce transactions generally occur online, where individuals with internet access can participate and carry out various trading activities[6].

MySQL is known as a very popular database server and is included in the RDBMS (Relational Database Management System) category. MySQL supports the PHP programming language following the SQL standards set by the ANSI organization. MySQL is software that functions as an RDBMS server that allows database users to create, manage, and utilize data in relational form. In other words, there are relationships between tables in the MySQL database[7].

The RAD (Rapid Application Development) model comes from an approach to prototyping and iterative development without requiring too detailed planning. In the software development process, there is planning required to create the desired product[1].

In this research, it refers to relevant journals to support the literature study. The following are related studies that also examine E-Commerce website design:

a. Journal written by Andika Bayu Shantya Budi, Galih Priambodo, Sony Wirdianto Saputra, Yudo Devianto, with the title "Designing an Information System for Buying and Selling Sacrificial Animals and Distribution in the Jabodetabek Area". The conclusion of this research is that the purpose of the Qurbanku application is to simplify the process of selling, purchasing and distributing Qurban animals at the Qurban Haji Ugan animal farm[9].
b. Journal written by Roys Pakaya, Abdul Rahman Tapate, Salman Suleman, with the title "Designing an Application for Selling Livestock for Qurban and Aqiqah Using the Unified Modeling Language (UML) Method". This research aims to develop an application that makes it easier for buyers and sellers of Qurban and Aqiqah animals, as well as increasing sales revenue. Unified Modeling Language (UML) was chosen by researchers as the method for designing the system[3].
c. Journal written by Naufal Rasyid, TB Nawaf Musyaffa, Gagas Ananta Mohammad, Ahlijati Nuraminah, with the title "Design and Implementation of Sacrificial Animal E-Commerce at QurbanFactory Using the Rapid Application Development Method". There is a problem with this research, namely that recapping sales data takes a long time, besides that potential customers have to wait for the admin to serve them manually. To overcome this problem, the author designed an E-Commerce system to facilitate the transaction process[8].
d. Journal written by Wulandari, Indiarto Prayoga, Bayu Hasmoro Putro, Resita Sri Wahyuni, with the title "Design of Application for Sales of Sacrificial Animals and Aqiqah at Raisha Farm to Expand Sales Area". In this research, a prototype method was used with system testing that implemented a Black-Box Testing approach to evaluate the success of the program. Implementing this application online brings significant benefits for Raisha Farm in improving sales performance, especially through the presence of an online system via the website. This system not only contributes to increasing sales, but also provides assistance in managing data more efficiently and accurately for Raisha Farm[5].
e. Journal written by Yorissa Silviana, Sutarmin, entitled "Designing Website-Based Software for Selling Sacrificial Animals and Aqiqah". Based on the analysis carried out, the implementation of the application

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for selling Qurban and Aqiqah animals via the website has proven to be useful in increasing sales results, not only from direct transactions but also from online sales. The aim of this online system is to expand the reach of sales of Qurban and Aqiqah animals. Detailed information about Qurban animals and Aqiqah is presented to make it easier for potential buyers to make decisions[4].

3 Research Method

3.1 Location and Time of Research

The research process was carried out at the Bratajaya Farm sacrificial animal sales location located in Kandang B, Faculty of Animal Husbandry, IPB University, Bogor. The data obtained in this research can help researchers in the process of preparing their final assignment. In this research process, the researcher carried out writing and system design over a period of 4 months starting from October 2023 to January 2024. The research table is as follows:

Table 1. Research Time

Name of activity	Time															
	October				November				December				January			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Identification																
Literature review																
Data collection																
Design Concept Design																
Mockup Design																
Preliminary Session																
System planning																
Application Testing																
Final Session																

3.2 Determining Research Subjects

In this study, the research subject was determined, namely the Bratajaya Farm shop, by creating e-commerce technology to make it easier for buyers not to have to come directly to the location, apart from that, this technology can expand the scope of sales at the Bratajaya Farm shop.

3.3 Research focus

This research focuses on designing e-commerce technology at the Bratajaya Farm shop to make it easier for users to order sacrificial animals without having to come directly to the location, make it easier for shop owners to manage transaction data, and can also expand the scope of sales at the Bratajaya Farm shop.

3.4 Data source

The data obtained in this research is sourced from the Bratajaya Farm shop including user data, transaction data and product data.

3.5 Data collection technique

The data collection techniques used in this research are as follows:

a. Observation
   Researchers made direct observations at the Bratajaya Farm Shop research site to obtain the required information and data. Apart from that, researchers looked for references to existing e-commerce designs.
b. Interview
   Researchers carried out a question and answer process with the Bratajaya Farm shop owner to fulfill all the needs needed to design an e-commerce system. So researchers can design an e-commerce system according to the needs of the Bratajaya Farm shop.

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c. Literature Study
In conducting literature or literature studies, researchers add the theories needed in the research by taking references from journal sources which can be used as references for writing, system design, and comparing with previous research.

3.6 Research Design

3.6.1 Research Stages

In designing e-commerce technology at the Bratajaya Farm shop, it is structured through several stages which are carried out with the aim of making writing easier. The following are the research design stages carried out by the researcher:

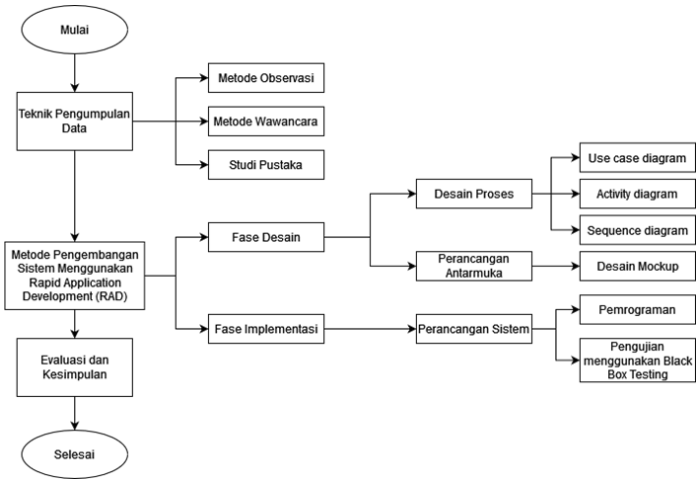

Figure 1. Research Stages

In the picture above are the research stages for writing. The following is an explanation of the research design above:

a. Data collection techniques
Is a collection of information or facts needed in a research or study.
b. Rapid Application Development (RAD) Method
The RAD (Rapid Application Development) model is based on prototyping and iterative development without involving specific planning. The process of writing software itself involves the planning necessary to develop the product. Rapid Application Development focuses on gathering customer requirements through workshops or focus groups, initial testing of prototypes by customers using iterative concepts, reuse of existing prototypes (components), continuous integration and rapid delivery. [1]
c. Design phase
In this step, collaboration occurs between the analyst and developer teams for the construction of a visual representation of the design. This representation takes the form of an initial prototype of the system which is then demonstrated to users for evaluation. Based on user feedback, the development team made improvements to the prototype iteratively. This process repeats itself to create a prototype that meets the user's needs.
d. Implementation phase
After the design phase is complete, implementation and testing are carried out.
e. Use case diagrams
Use Case Diagrams are a form of diagram in the Unified Modeling Language (UML) which are useful for illustrating system functionality from the user's perspective. Use Case Diagrams provide a visual representation of system interactions with various stakeholders and how users are involved in interactions with the system.
f. Activity diagrams
Activity diagrams, which are included in the Unified Modeling Language (UML), are a form of visualization used to represent activities or actions in a system or business process. Through activity diagrams, we can observe visualizations of the workflow of an activity or process, providing an overview of how various activities interact with each other and how the process is carried out.

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g. Sequence diagram
Sequence diagrams, a type of diagram in the Unified Modeling Language (UML), are used to represent interactions between objects or entities in a system in a time sequence. Sequence diagrams illustrate the sequence of messages or method calls that occur between objects over a period of time.
h. Design mockup
Mockup design is a visualization that depicts the appearance and arrangement of elements in a user interface (UI) or product design without considering the complete function.
i. Programming
The process of designing and implementing software.
j. Black box testing
Black box testing is a software testing approach in which experiments are carried out without requiring an understanding of the internal structure or source code of the system or application being tested.

3.6.2 Design of the Bratajaya Farm Shop E-Commerce System

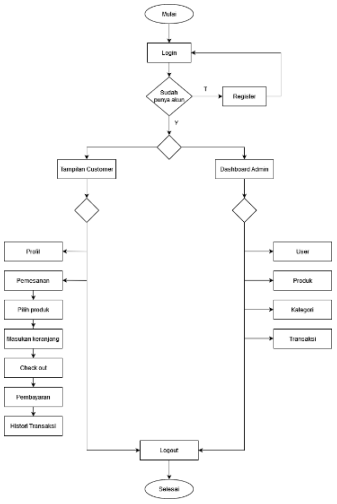

Figure 2. E-Commerce Application Flowchart

The image above is a flowchart for the Bratajaya Farm Shop e-commerce application which consists of 2 categories for display, namely customer and admin views. In the admin view, admins can manage user data, update product stock, set product categories, and view and validate user transactions. In the customer view, customers can manage their profiles and order products according to the product menu provided. Then after the user selects the product, select checkout then make payment. The admin will validate the payment if the user has made a payment.

4 Result and Discussion

In designing E-commerce technology for the sale of sacrificial animals at the Bratajaya Farm Shop using the PHP programming language and MySQL database. The following is an all product display which displays all available animal stock. Customers can view product details by selecting an animal.

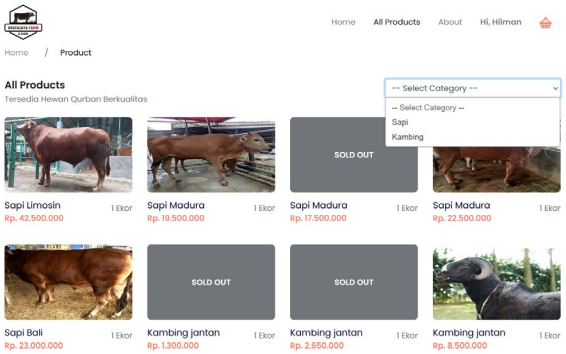

Figure 3. All Product Views

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Display product details if customers want to see product details in detail

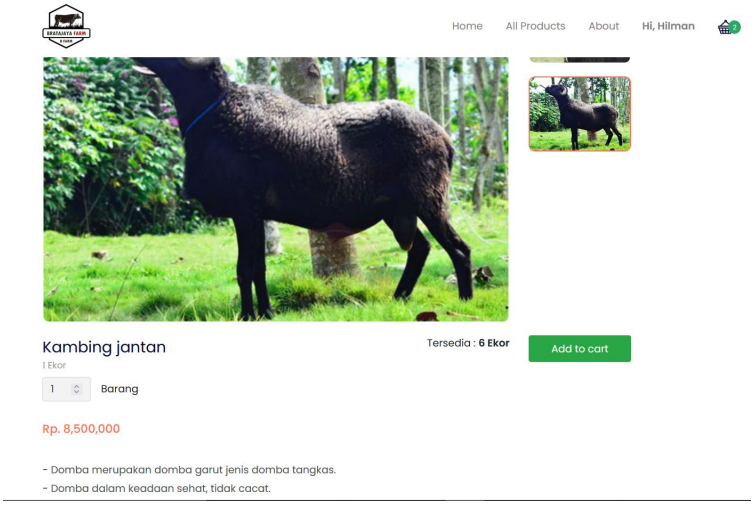

Figure 4. Product Details Display

The basket view is the display before the buyer makes a transaction

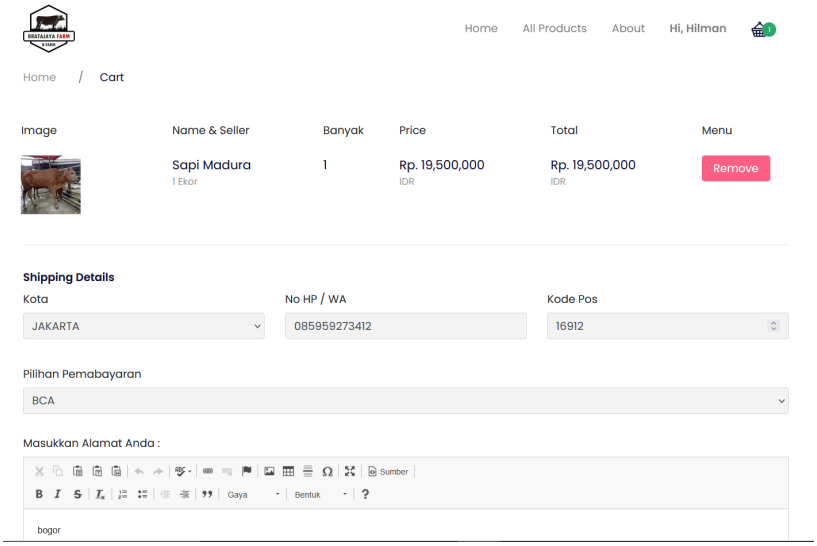

Figure 5 Cart View

5 Conclusion

Based on the research results described above, researchers reached several conclusions including the following E-Commerce technology can help Bratajaya Farm in buying and selling sacrificial animals easily. This e-commerce technology makes it easier for customers to buy sacrificial animals without having to go to the shop. With the Content Based Filtering method, it can make it easier for customers to search for the animal category to choose. This E-Commerce technology makes it easier for admins to manage transaction data.

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