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Web-Based Online Store Design at the Stebi Bina Essa Sharia Cooperative

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Abstract

The STEBI Bina Essa Sharia Cooperative offers a range of everyday necessities for its members and the general public, including products from small and medium-sized enterprises and those manufactured by its members. Nonetheless, other obstacles persist in its operations, including inefficient record-keeping procedures, potential data inaccuracies, misplaced documents, and manual promotional and sales efforts. Moreover, the personal selling mechanism complicates matters for consumers at a distance, as they must visit the cooperative in person and pay in cash. This research aims to build and develop a web-based online store for the STEBI Bina Essa Sharia Cooperative. The author utilizes the System Development Life Cycle (SDLC) technique in this study. The findings suggest that sales may be executed online. Suggestions for enhancing the online shop design for the STEBI Bina Essa Sharia Cooperative include using larger datasets, specifically through the implementation of a Cloud VPS.

Keywords : *Web-Based Sales System, Cooperative, Online Store, SDLC (System Development Life Cycle)*

INTRODUCTION

The advancement of technology in contemporary times has profoundly influenced several facets of human existence, especially in facilitating more efficient and organized endeavors. Technology serves as the primary instrument for streamlining quotidian activities (Zendrato, 2024). This technological advancement did not emerge abruptly but was the culmination of an extensive process that originated in the Industrial Revolution 1.0. The progression commenced with steam engines, evolved to electric power in phase 2.0, advanced to computer-based automation and robotics in era 3.0, and concluded in the deployment of the Internet of Things (IoT), artificial intelligence (AI), and cloud computing in Industry 4.0. At the zenith of Industry 5.0, technology seeks to enhance collaborative synergy between machines and humans, while prioritizing social dimensions and sustainability (Musyafatoni et al., 2025). In addition to industrial advancements, information technology includes software, hardware, and networks. Software comprises data and instructions that operate computer systems, whereas hardware pertains to the tangible components of a computer that are visible and tactile. Computer networks facilitate the exchange of messages, data, and information among individuals (Hasibuan et al., 2022). These three components mutually reinforce one another and establish the foundation for the advancement of contemporary information systems.

The proliferation of digital technology compels individuals and companies to embrace more efficient and cohesive systems. Online shopping is a rapidly expanding phenomenon, as the existence of online businesses enables electronic transactions via the internet, free from spatial and temporal constraints, thereby creating opportunities for many entrepreneurs, including cooperatives.

Cooperatives are economic entities owned and utilized by their members. Rational customers will select company entities that offer superior service quality, competitive pricing, and other advantageous benefits, in alignment with cooperative principles. The STEBI Bina Essa Sharia Cooperative exemplifies these ideals by providing a range of daily necessities for its members and the wider public, including products from small and medium-sized enterprises and from its members. Nonetheless, other obstacles continue to afflict its operations, including inadequate record-keeping procedures, potential data inaccuracies, misplaced documents, and manual promotional and sales efforts. The personal selling system complicates matters for distant consumers, who must visit the cooperative in person and pay in cash. This circumstance obstructs operational efficiency and growth potential.

Given these challenges, there is a necessity for innovation through a web-based sales system to improve the cooperative's service quality. Consequently, the author undertakes a study entitled "Design and Development of a Web-Based Online Store for the STEBI Bina Essa Sharia Cooperative." The adoption of this system is anticipated to enhance cooperative operations, augment promotions, broaden trade reach, streamline transactions, and enable automated report generation.

Research on cooperative systems has been considerable; however, most studies focus on savings and loan systems or the internal functions of cooperatives. Research concerning the establishment of internet retail platforms for consumer cooperatives is scarce. Prior research encompasses the investigation by Maryati et al. (2024) regarding a Website-Based Savings and Loan System Model for Cooperatives, the study conducted by Jum'atin et al. (2025) on the Savings and Loan Cooperative Information System at KSP Mitra Mandiri utilizing a website, and the analysis by Muslimah & Ghozaly (2024) on the Design of Information Systems for the Keluarga Besar (KKB) STT Cipasung Tasikmalaya Cooperative. Additional research includes Hia (2023), which examines a Web-Based Money Lending Information System for the New Mitra Karya Cooperative Unit XXXVII, and Sayuti et al. (2025), which focuses on a Palm Oil Sales Information System for the Biru Makmur Mandiri Bingin Rupit Village Cooperative, also utilizing a website. These studies underscore a research deficiency in the

creation of online platforms tailored for consumer cooperatives.

METHOD

This study employs the System Development Life Cycle (SDLC) methodology as the framework for system development. The Software Development Life Cycle (SDLC) is a structured process intended to ensure that a system is developed with high quality and meets user requirements and development objectives (Sagita & Surbakti, 2025). This method provides a framework that delineates the processes involved in software development. The stages of the Software Development Life Cycle (SDLC) are as follows:

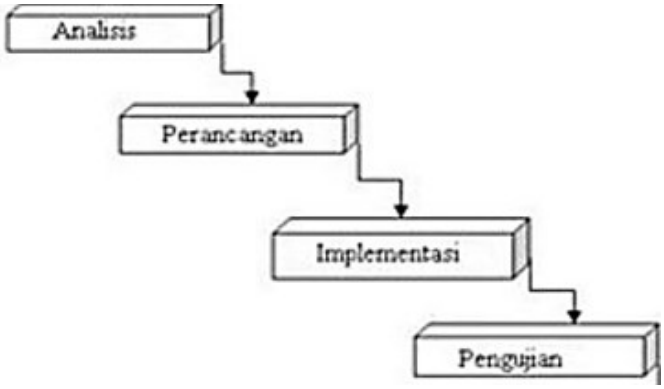

Figure 1. SDLC Method Stages

1. Analysis: The analysis phase involves the collection of information necessary to comprehend the current issues. This activity encompasses problem identification, solution formulation, and the establishment of system requirements to be developed. All assessments concentrate on facilitating the design and installation of the online store system.
2. The design phase seeks to create a system architecture that fulfills user requirements. The design incorporates sequence diagrams, class diagrams, database architecture, menu organization, and interface design.
3. Implementation: During this phase, the author implements the system plan by selecting appropriate hardware and software, then executing the program.
4. The testing step is executed to verify that the developed system fulfills user requirements. Should flaws be identified, the revision process entails reverting to the preceding phase. This testing seeks to reduce faults or flaws to ensure optimal system operation. The employed testing method is black-box testing, which focuses on evaluating system functionality without analyzing the core code.

RESULTS AND DISCUSSION

UML tools are necessary to document the SDLC approach in a step-by-step manner. This encompasses use case, activity, sequence, and class diagrams (Toto Sugiarto, 2022).

The subsequent outcomes of this study are as follows:

1. Analysis
   A. Analysis of the Running System

      Understanding the system's workflow requires examining operational processes and identifying issues and deficiencies. If the existing system has flaws, initiatives to enhance or update it are important. The procedural activities are enumerated as follows:

      1. The consumer chooses the preferred things.
      2. After the consumer selects, the administrator verifies stock availability. If the requested item is unavailable, the administrator will notify the consumer.
      3. Upon the product's availability, the administrator will notify the consumer of the full amount payable.
      4. The consumer executes a cash transaction.
      5. The administrator produces a receipt.
      6. The administrator changes the inventory and sales transactions in Excel.

      The activity diagram is illustrated as follows:

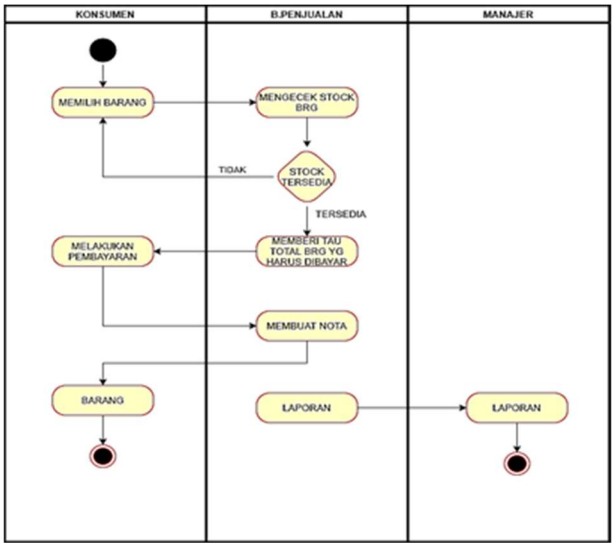

Figure 2. Activity Diagram of Current System Analysis

   B. Proposed System Analysis

The Use Case Diagram serves to illustrate and record the behavioral needs of a system. It illustrates the interaction between the system and users or other systems. It is highly beneficial for delineating the requirements of a system. The suggested system, accompanied by the use case graphic, is outlined as follows:

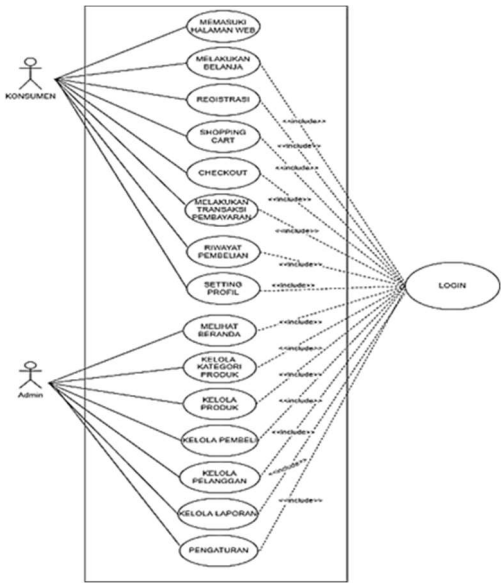

Figure 3. Use Case Diagram Of The Proposed System

C. Use Case Diagram Description

The following is a description of the use case diagram:

Tabel 1. Deskripsi Use Case Diagram

No.	Use Case	Description
1.	Login	It is the process and registration of access rights for system users.
2.	View Home	Admin can view the homepage.
3.	Manage Product Categories	Admin can view product category data.
4.	Add/input product category	To input/add product categories.
5.	Product category updates	To change product category data
6.	Delete product category	To delete data
7.	Manage Products	Admin can view and manage product data
8.	Add/input product	To input/add product data
9.	Change product	To change product data
10.	Delete product	To delete product data

11.	Product details	To view product data in detail and add product images
12.	Manage Purchases	To view the purchase list
13.	Detail	To view the invoice
14.	Payment Confirmation	To confirm consumer payment
15.	Customer Data	To view customer data
16.	Report	Admin can view reports and download reports.
17.	Arrangement	Admin can manage profiles and themes
18.	Viewing web pages	Consumers can view and visit the website.
19.	Registration	Consumers fill out the registration form.
20.	Add to cart	Consumers can add products to the cart.
21.	Shopping cart	Consumers can view the shopping list.
22.	Product details	Consumers can see the product in detail.
23.	Shopping delete	Consumers delete shopping data.
24.	Checkout Shopping	The process to continue shopping transactions.
25.	Continue Shopping	Consumers cancel purchases.
26.	Payment	The consumer confirms the payment.
27.	Logout	It is the process of ending the use of the system.

2. Design

   This design stage produces design documents, including the following:

   A. Sequence Diagram Design

      A sequence diagram is an interaction diagram that delineates the execution of an operation, the messages transmitted, and their timing. This is an illustration of employing a sequence diagram for shopping.

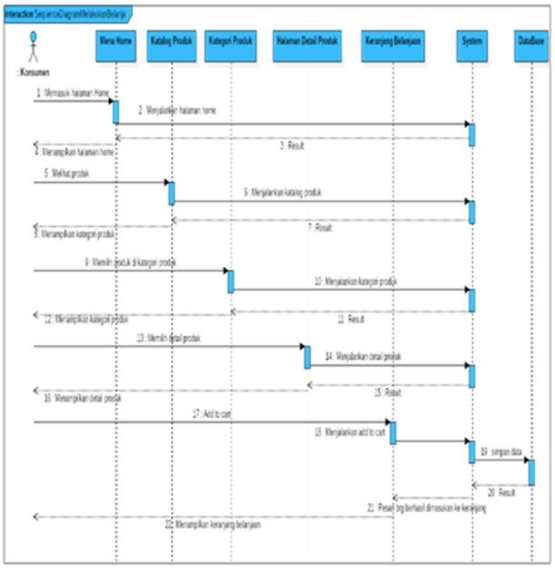

Figure 4. Sequence diagram of shopping

B. Class Diagram Design

The class diagram delineates the structure and description of classes, packages, and objects, as well as their interrelationships. The following is the class diagram for the design and development of the online store at the STEBI Bina Essa Sharia Cooperative. This is an illustration of the class diagram for the design and development of the online store at the STEBI Bina Essa Sharia Cooperative:

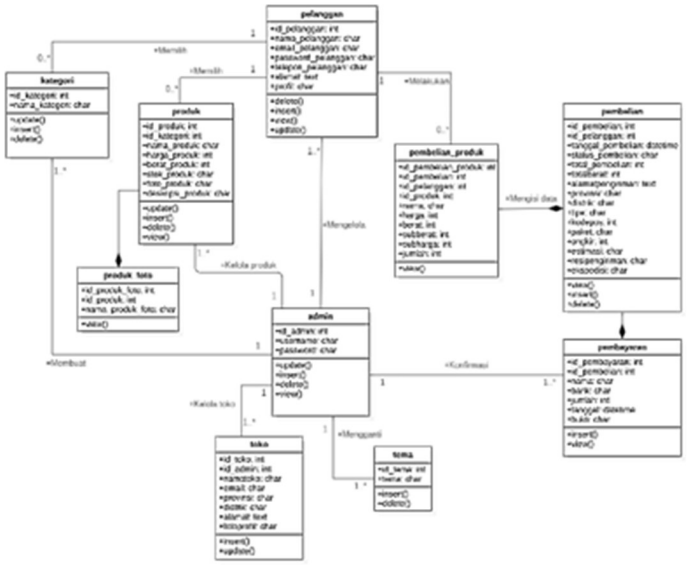

Figure 5. Class Diagram

C. Database Design

Several tables have been produced for the execution of the online shop design for the STEBI Bina Essa Sharia Cooperative. The objective of this schema is to identify the fields, field types, field widths, and primary keys for each table in the 'db_toko' database. An illustration of the data structure is as follows:

Table Name: admin

Function: Stores admin data

Primary Key: id

Table 2. Admin

Field Name	Type	Size	Information
id_admin	integer	11	Primary key
Username	varchar	255	
password	varchar	100	

D. Interface Design

Interface design is the stage of creating the appearance or design of the system to be built. An example of the interface design for the web-based online store of the STEBI Bina Essa Sharia Cooperative is shown below:

a. Consumer Home Interface Design

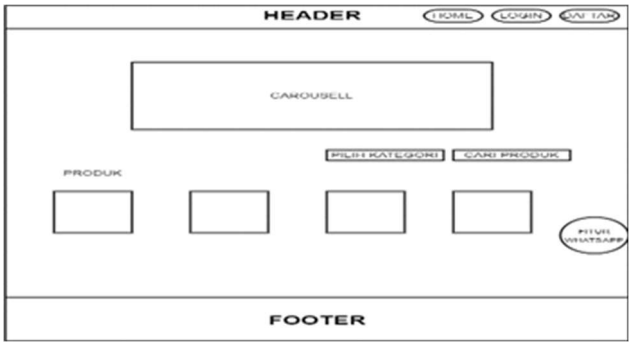

Figure 6. Consumer Home Interface Design

b. Store Admin Interface Design

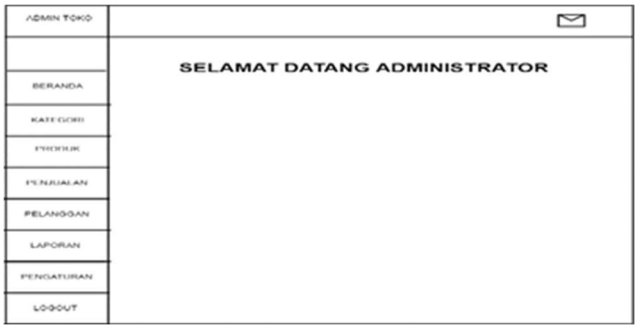

Figure 7. Shop Admin Interface Design

Implementation

A. System Requirements

Hardware. The hardware used to support the online store design at the STEBI Bina Essa Sharia Cooperative includes:

1. Core i3 processor
2. 4096 MB RAM
3. 14-inch monitor
4. Printer
5. Keyboard
6. Mouse
7. 500 GB hard drive

Software. The software used includes:

1. Windows 10
2. XAMPP
3. Database: MySQL
4. Programming language: PHP
5. Web browser: Google Chrome
6. Web server: Apache

Brainware/access rights. This system can be operated by:

1. Users, namely those who use the finished system, namely, store administrators and consumers.
2. Programmers, namely those who create and maintain the system.

B. Database Interface

This is a presentation of the previously developed database implementation:

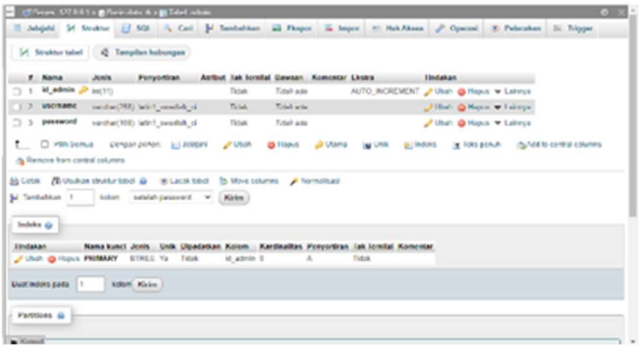

Figure 8. Admin Table

C. Consumer Home Interface

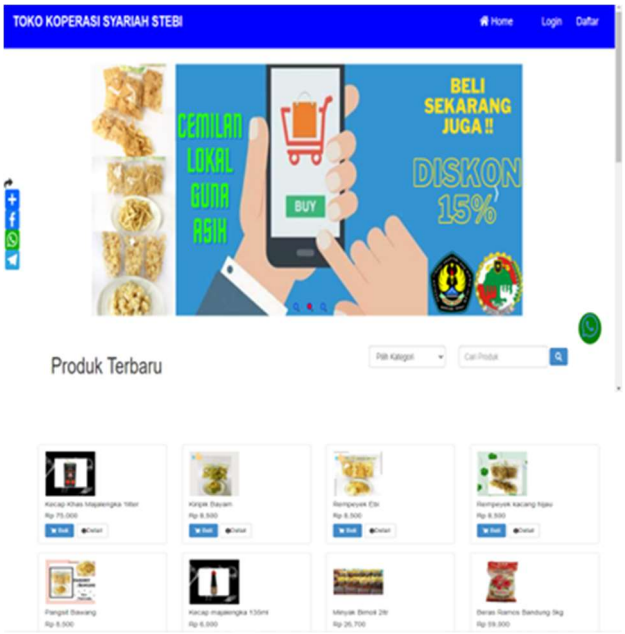

Figure 9. Consumer Home Interface

D. Store Admin Interface

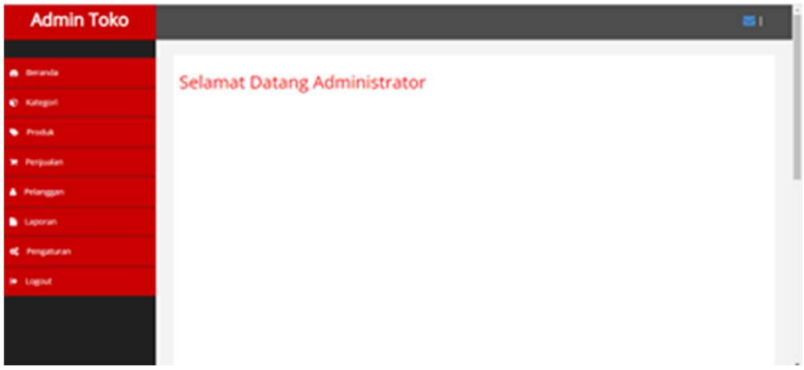

Figure 10. Store Admin Interf

Blackbox Testing

Black box testing is a software evaluation technique that emphasizes functionality, particularly the application's input and output, and assesses whether they align with the anticipated outcomes (Jum'atin et al., 2025). The testing phase is a crucial stage in the software development cycle. The following table illustrates the black-box testing.

Table 2. Blackbox Testing

No	Tested Modules	Action	Results	Status
1.	Login Form	Enter username and password.	The user successfully logged into the system.	SUCCEED

2.	Registration Form	Input name, email, password, address, telephone.	Users can log in.	SUCCEED
3.	Home Menu	Click the home menu	Displaying the main page menu	SUCCEED
4.	Logout Menu	Select the logout menu	Sign out of account	SUCCEED
5.	Purchase History	Click the purchase history menu	Displays the purchase history page	SUCCEED
6.	Checkout	Click checkout	Displaying the shopping checkout form	SUCCEED
7.	Payment	Click the payment button	Displaying the payment confirmation form	SUCCEED
8.	Shopping Cart	Click shopping cart	Displaying shopping cart	SUCCEED
9.	Select Category	Click select category	Displaying product category pages	SUCCEED
10.	Setting Profile	Displaying product category pages	Displaying the consumer profile page	SUCCEED
11.	Unpaid Button	Click not paid yet	Displays unpaid shopping data	SUCCEED
12.	Button processed	Click processed	Displays shopping data that is being processed by the admin	SUCCEED
13.	Button sent	Click send	Displays shopping data that has been sent by the admin	SUCCEED
14.	View Home	Click the home menu	Displaying the "Welcome Administrator" home page	SUCCEED
15.	Manage Categories	Click the category menu	Displaying category pages	SUCCEED
16.	Manage Products	Click add category	The database grows according to the categories added.	SUCCEED
		Click edit	The database updates the categories according to what is edited.	SUCCEED
		Click delete	Database deleted according to what was deleted	SUCCEED
	Manage Products	Click the product menu	Displaying product pages	SUCCEED
17.		Click add product	The database grows according to the products added.	SUCCEED
18.		Click edit	Database updates products according to what is edited	SUCCEED
		Click delete	Database deleted according to what was deleted	SUCCEED
	Manage Sales	Click the sales menu	Displaying the sales report page	SUCCEED
	Arrangement	Click settings	Displaying the store profile page	SUCCEED

CONCLUSION

This report allows for numerous conclusions regarding the effects of the website's establishment on the STEBI Bina Essa Sharia Cooperative. The creation of this online platform enables clients to browse and purchase products from any location, significantly expanding the cooperative's market reach. The shift to an online system streamlines ordering and shipping operations, improves payment methods by including transfers, facilitates transactions, and provides more information for consumers. They can now finalize their purchases without physically visiting the business, saving time and effort. Moreover, adopting this system markedly optimizes reporting processes for cooperative management, facilitating swifter, more efficient data handling. This unique strategy markedly improves the cooperative's operational efficiency and broadens the marketing reach of its products.

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