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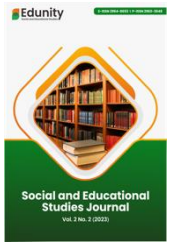

WEBSITE-BASED BOOK SALES INFORMATION SYSTEM AT MAKTABAH BIN TAAJIR BOOKSTORE

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ABSTRACT

Abstract: Maktabah Bin Taajir Bookstore is a bookstore that offers a variety of books, including fiqh, translated Islamic books, and others. Currently, the system used is still conventional, with data stored in paper format, causing issues in data management and report generation. To address these problems, the author has developed a book sales information system using the Waterfall Method. The Waterfall Method is a sequential software development approach, starting from requirement analysis, design, implementation, testing, and maintenance. This method was chosen because it helps developers in developing a structured system, following a step-by-step process from planning to implementation. The result of this research is a web-based book sales information system that is expected to facilitate and assist the Admin in managing book data, publisher data, and sales reports, while improving efficiency and effectiveness in the management process.

Keywords: Information System; Sales; Website; Waterfall

Introduction

In an era of increasingly fierce business competition, the transformation of data into information through a computerized system is crucial. This is due to the significant contribution made by computerized data processing to company performance. Compared to manual data processing, computerized data processing has advantages, such as speed and accuracy in data processing, as well as the ability to process data on a large scale (Suhartono & Jaman, 2013)

An information system is a system that exists within an organization to meet the needs of daily transaction processing, support the organization's operational, management, and strategic activities, as well as provide reports needed by certain external parties. (Mashud, 2020).

Information systems have a crucial role in business activities because they provide important information for organizational management to support business decision-making processes (Puspitasari, 2016). With an effective information system, an institution will gain a variety of competitive advantages so that it can compete with other institutions (Sahrun, 2019). Organizations use information systems as a means to

increase operational efficiency and as a strategy to gain competitive advantage (Murtadho & Wahid, 2016).

In this increasingly advanced era, technological progress is developing rapidly and has a very significant role in supporting human activities so that they can use time more efficiently (Fadillah & Suprianto, 2017). One form of using technology is to develop an information system based on book sales websites.

Books have a significant role in the learning process for individuals who are pursuing knowledge, both at the basic and advanced levels. The development of the times has made books an irreplaceable tool, and many experts have created extraordinary works to advance the world of education and technology. The existence of books is very meaningful because the knowledge contained in them will last forever, even though the author or creator is gone (Prasetyo, 2014).

Sales are activities carried out by sellers to transfer ownership of goods or services to buyers to obtain profit from the transaction (Salasa, 2017). Therefore, a sales information system is an information system that includes the process of managing a company's sales information, including information about inventory, prices, sales invoices, and customer information. The sales information system is very helpful in terms of recording sales, inventory data collection, and goods data management (Qomaruddin et al., 2018).

Maktabah Bin Taajir Bookstore is a store that was founded in 2019. This bookstore provides a wide variety of books, namely holy books, the quran, translational quran, original Middle Eastern Arabic books, fiqh, creed, interpretation, translations of Islamic books, and so on. However, since the beginning of 2020, the number of customers has been decreasing due to the COVID-19 pandemic, because before the pandemic there were usually a few customers who came to the bookstore.

The Maktabah Bin Taajir Bookstore in its sales provides free book purchases offline i.e. the buyer has to come to the store to make a purchase and online i.e. get throughplatform Tokopedia and Shopee to make the purchase process. For book promotion is done by utilizing platform social media such as WhatsApp and Instagram. Currently, the Maktabah Bin Taajir Bookstore is still relatively conventional because the existing data has the possibility of being easily lost, because the existing data is still in paper form so reporting will result in problems. Recording of sales transaction data at the Maktabah Bin Taajir Bookstore is currently still done manually, so the risk of errors in making reports often occurs.

In addition, the Maktabah Bin Taajir Bookstore also experiences problems that have the potential to cause errors in data processing, namely the difficulty of checking data on books that have been sold because the storage media is paper. All book ordering information data via telephone and WhatsApp must be noted manually, this process

will take time and allow for errors in recording transaction data. thus making work inefficient.
The solution offered to deal with this problem is to develop a book sales information system that is attractive and easy to use by users. In the development process, the method waterfall will be used. Method Waterfall is a sequential software development approach, starting from needs analysis, design, implementation, and testing to maintenance (Sulistyo, 2010).

Method Waterfall will be used in the development of book sales information systems because this approach can assist developers in developing systems in a structured and systematic manner, by going through successive stages, from planning to implementation. Method Waterfall is used in software development to create websites (Aldi, 2022). A website can be defined as a set of pages that are used to display various information in the form of text, still or moving images, animation, sound, or a combination of these. Each page is connected in an interrelated structure and accessed through the network (Rahwanto & Sudaryono, 2020).

Software development approach with methods waterfall can describe a systematic and sequential process, where the stages start from the specification of user requirements and continue with the planning stages that include planning, modeling, construction, system testing, and system delivery to users, as well as support after the software is produced.

This allows the developer to ensure that the system developed is in accordance with user needs and that no errors occur in the development process so that it is hoped that it will produce a book sales information system based on website quality and can function properly, and provide benefits to people who need information about the books they need.

Research Method

System Development Method

In this study, the development method will use a waterfall to develop the system. Method Waterfall, which is also known as the traditional or classic model, is the most commonly used model in the development stage. This model is often referred to as a linear sequential model or classical life flow because it follows successive stages such as the flow of a waterfall (Supiyandi et al., 2022).

In the system development process, the steps to be followed sequentially are as follows in the method waterfall (Supiyandi et al., 2022) (Fatmawati & Munajat, 2018):

Requirement Analysis

At this stage, the developer needs to gain a thorough understanding of the software requirements, including the intended use and limitations. This method of gathering information can be done in various ways, such as discussions, observations, interviews, and others. The information collected will then be processed and analyzed to obtain data or information that defines user needs for the software being developed.

System and Software Design

At this stage, the developer will plan the hardware requirements needed to build the overall structure of the software system. The purpose of designing a design is to provide an overall picture of the tasks to be performed and how the desired appearance of the system will look. Thus, this stage helps clarify hardware and system requirements and defines the overall structure of the system to be built.

Implementation and Unit Testing

At this stage, implementation and unit testing are carried out as part of software development through the programming process. The process of making software is divided into small modules which will be combined at a later stage. In addition, this stage also involves testing and examining the functions of the modules that have been made, to ensure that they meet the desired criteria or specifications.

Integration and System Testing

At this stage, the modules that have been made before will be combined. Once the process is complete, the system as a whole will be inspected and tested to detect potential failures and errors.

Operation and Maintenance

At this stage, the software that has been developed will be run and used by the user. In addition, maintenance will be carried out which includes fixing errors, improving the implementation of system units, and increasing system features according to new needs that arise (Mastan, 2021).

Method of Collecting Data

The method for collecting the required data consists of several parts, namely:

Interview

Interviews were obtained through direct communication between data collectors (interviewers) and data sources (respondents) systematically and based on research objectives by way of question and answer in the form of questions.

Observation

Observation is carried out by observing directly the object of research and the information needed.

Literature review

This literature study is obtained by reading and studying from various written sources, such as books, journals, articles, research reports, and other sources related to information on research.

System Design Method

The system design process involves a number of activities that are carried out in detail to implement the system being built (Iriadi & Rosdiana, 2017). System design using UML, which includes use *case diagram*, *activity diagram*, and sequence *diagram*, consist of:

Use Case Diagram

Importance Use *case diagram* lies in its function to describe, specify in detail, and document system behavior requirements (Muhammad et al., 2023).

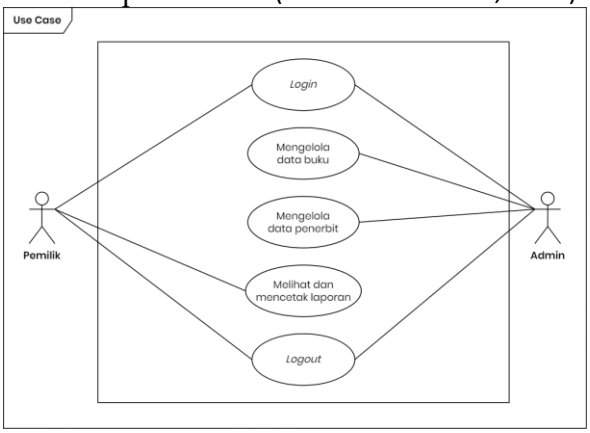

Figure 1. Use Case Diagram

Use *case diagram* above, there are two factors i.e. owners and admins who have a role in the system. The admin actor has access to commit login to the system, managing book data by performing actions of adding, changing, and deleting book data, and managing publisher data by performing actions of adding, changing, and deleting publisher data. In addition, the admin can also do*logout* from the system. Meanwhile, the owner actor has access rights to perform login to the system, view and print reports, and commit log out from the system.

Activity Diagram

Activity Diagram is the shape diagram expanded, which describes the flow of control from one activity to another.Diagram is used to describe the dynamics of the system in more detail (Ahmadar et al., 2021).

Activity Diagram Login

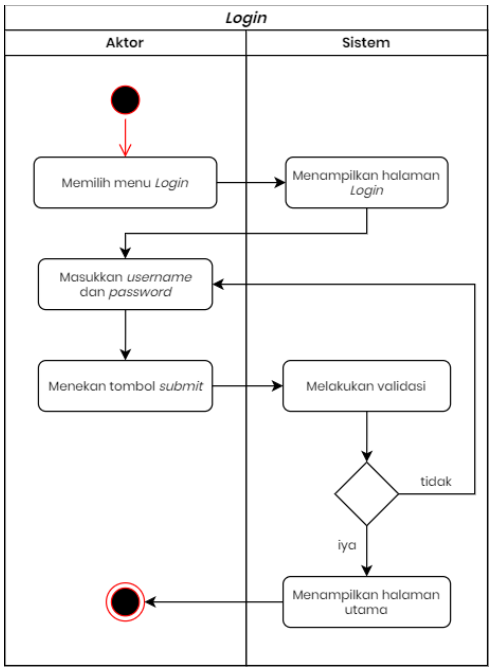

Figure 2.*Activity Diagram Login*

On Activity Diagram Login It describes the steps of the process to enter the system carried out by actors namely admin and owner. When doing login, the actor selects the menu login, and the system will display the page login. Then the actor enters the username and password used to access the system and then presses the submit button to send data username and password. Data username and password The incoming data will be validated to check whether the data is a valid username as well as whether the password entered is correct or not as listed on the database system. If the data entered is correct, then the system will display the main page and redirect the actor to the main page. If the entered data is incorrect, then the system will redirect the actor to the page login.

Activity Diagram Manage Book Data

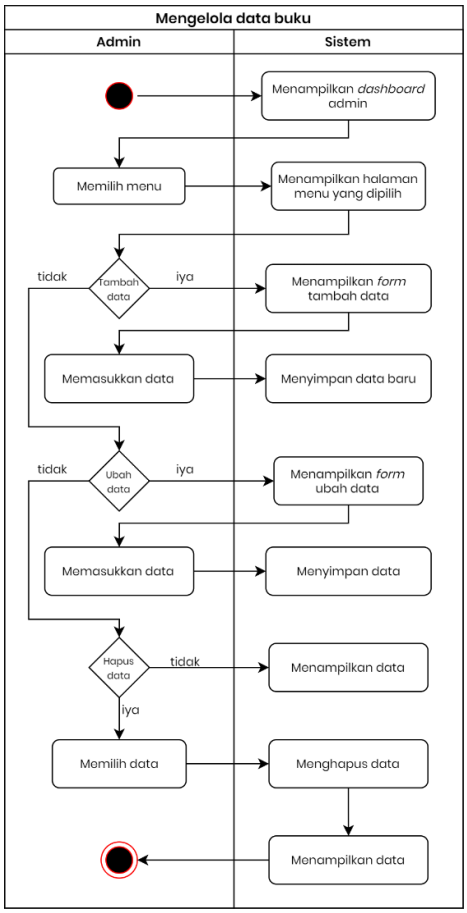

Figure 3.*Activity Diagram* Manage Book Data

On Activity Diagram Managing Book Data describes the steps of the process for managing book data carried out by the actor, namely the admin. First, starting from the display system dashboard admin and then the actor selects the book data menu and the system will display the book data menu page. Starting from adding book data, changing book data, and deleting book data on the system. To add book data, the actor selects the add button, then the system displays form add the book data and the actor who will fill it form the. After that, the actor selects the save button and the system will save the book data that has been added to database. To change book data, the actor selects the edit button, then the system displays the form to change the available book datachanged by actors. Next, the actor selects the save button and the system will save the modified book data. To delete book data, the actor selects the delete button on the book data page, then the system will save data changes on the database and display the data to the actor.

Activity Diagram Manage Publisher Data

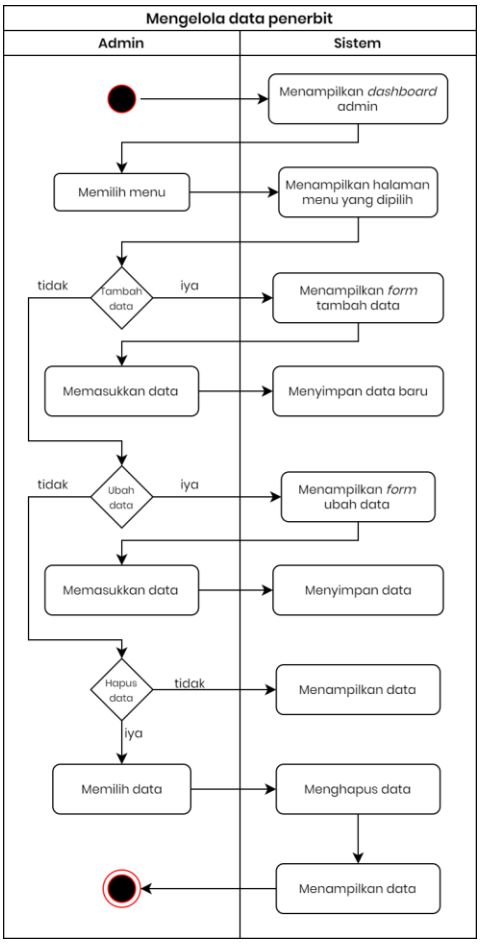

Figure 4. Activity Diagram Manage Publisher Data

On Activity Diagram Manage Publisher Data, explain the steps of the process for managing publisher data are carried out by the admin as an actor. The first step starts with the display system dashboard admin, then the admin selects the publisher data menu and the system will display the publisher data menu page. Admin has several actions, such as adding publisher data, changing publisher data, and deleting publisher data in the system. To add publisher data, the admin selects the add button, then the system displays form add publisher data that must be filled in by the admin. After that, the admin selects the save button and the system will save the publisher data that has been added to it database. To change publisher data, the admin selects the edit button, and the system displays form change publisher data available changed by admin. After the admin makes changes, the admin selects the save button and the system will save the publisher data that has been changed. To delete publisher data, the admin selects the delete button on the publisher data page, and the system will save the changes on the database and display the data to the admin.

Activity Diagram View and Print Reports

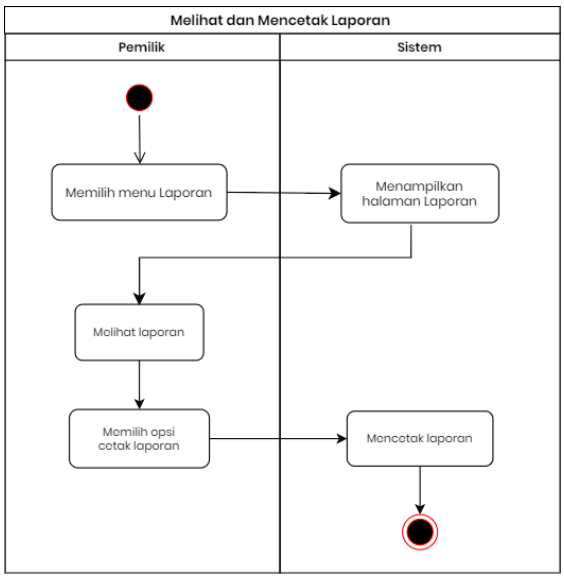

Figure 5. Activity Diagram View and Print Reports

On activity Diagram View and Print Reports,explain process steps for viewing and printing reports carried out by the owner as an actor in the system. The first step starts with the owner selecting the report menu, which will then display the report page by the system. Furthermore, the owner can view the available reports on the report page and select the print report option. The system will print reports according to the owner's choice.

Activity Diagram Logout

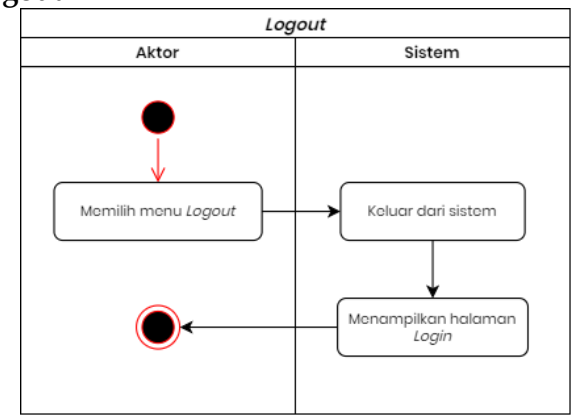

Figure 6.Activity Diagram Logout

On activity Diagram Logout It describes the steps of the processlogin to exit the system and is carried out by actors namely admin and owner. To dologout, what the actor does is select the menuLogout and the system will issue the actor. Next, the system will display the pageLogin on actor.

Sequence Diagram

Sequence diagrams play an important role in illustrating the communication between actors and systems in the application context by representing the messages sent all the time (Asyari, 2021).

Sequence Diagram Login

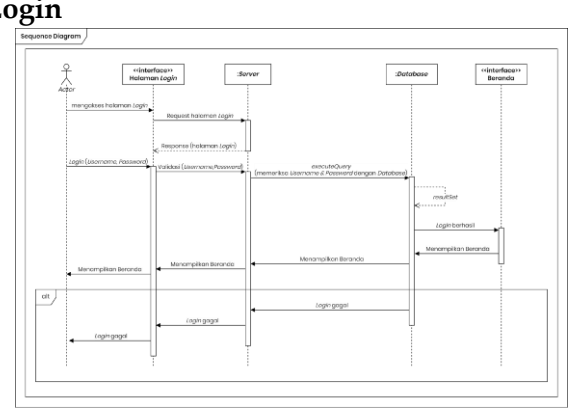

Figure 7. Sequence Diagram Login

On Sequence Diagram, Login describes the process of login carried out by actors namely admin and owner into the system. First, the actor will access the page login on general Page Login with a request page login on Server Then Server will give a response and display the page login then the actor enters the username as well as the password used to access the system. Data login is then processed by the server to check the correctness username as well as password and match it with the existing data on the database through the process execute Query, if the process is complete then the results will be sent to the Server. When the data login is entered correctly then the system will give a message in the form of status login successful to the actor and the end goal is successful login and redirect to the front page. When the data login is entered incorrectly, the system will give a status message login failed to the actor and redirect to page login.

Sequence Diagram Manage Book Data

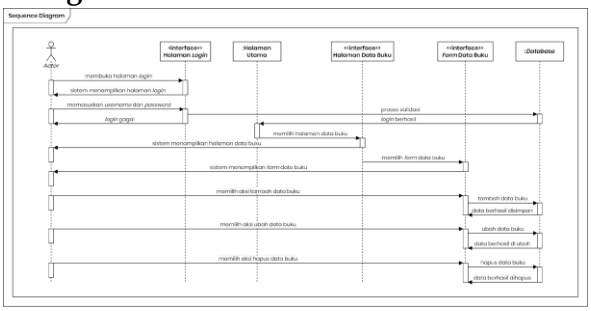

Figure 8.Sequence Diagram Manage Book Data

On Sequence Diagram Managing Book Data explains the process of managing book data carried out by actors, namely admins in the system. First, the actor will open the page login general Page Login then displays the page login, after which the actor enters username as well as the password used to access the system. Datalogin which comes in is then processed and checked for authorization username as well as password and

matches it with the existing data on the Database. If data login is correct, then the system will redirect the actor to the main page. If data login does not match or is wrong, then the system will redirect the actor back to the page login. Next, the actor can select the Book Data page and form Book Data. On form Book Data that has been displayed, actors can choose actions to add, change, and delete Book Data which will be responded by the system according to the action chosen by the actor.

Sequence Diagram Manage Publisher Data

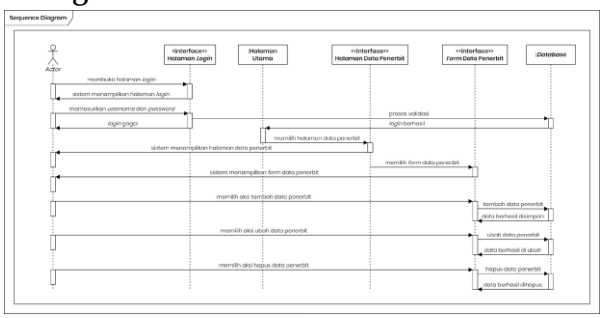

Figure 9.Sequence Diagram Manage Publisher Data

On Sequence Diagram Managing Publisher Data explains the process of managing publisher data which is carried out by actors, namely admins in the system. First, the actor will open the page login ongeneral Page Login then displays the page login, after which the actor enters username as well as password used to access the system. Data login which comes in is then processed and checked for authorization username as well as password and matches it with the existing data on Database. If data login is correct, then the system will redirect the actor to the main page. If data login does not match or is wrong, then the system will redirect the actor back to the page login. Next, the actor can select the Publisher Data page and form Publisher Data. On form Publisher Data that has been displayed, actors can choose actions to add, change, and delete Publisher Data which will be responded to by the system according to the action chosen by the actor.

A. Sequence Diagram View and Print Reports

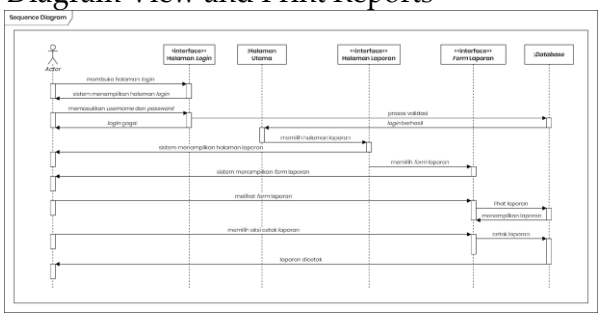

Figure 10.Sequence Diagram View and Print Reports

On Sequence Diagram Viewing and Printing Reports, explained the process of viewing and printing reports carried out by the owner as an actor in the system. First, the actor opens the page login ongeneral Page Login then displays the page login. After that, the actor will enter username and password to access the system. Data login will be processed and checked for correctness with the data in Database. If datalogin valid, then the system will direct the actor to the main page. However, if datalogin does not match or is wrong, then the actor will be redirected back to the page login. Next, the actor can select the Reports page and view form Reports are displayed. On form Reports, actors can view existing reports and also choose to print reports. The system will respond to the actor's report printing action by carrying out the report printing process.

Sequence Diagram Logout

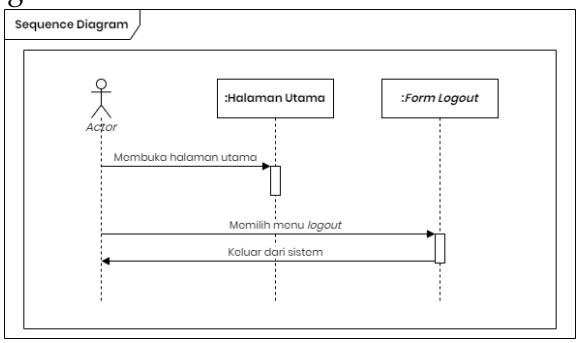

Figure 11. Sequence Diagram Logout

On Sequence Diagram Logout it describes the process logout carried out by actors, namely the admin and owner of the system. Previously, the actor has done login to the system. First, the actor will open the main page ongeneral Home page then the actor chooses the menu logout on the system shown. Then the system will process logout. If logout has been successfully carried out, the system will redirect the actor to the pagelogin on the system.

Result And Discussion

The following is the result of the implementation of sales information system technology at the Maktabah Bin Taajir Bookstore:

Page Login

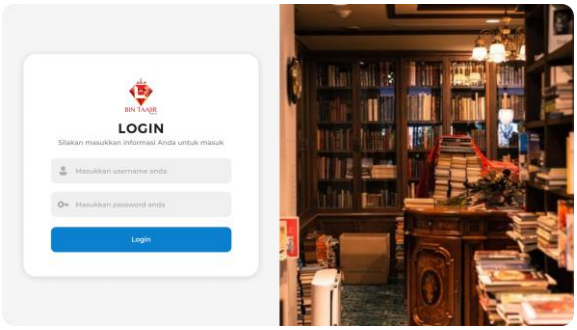

Figure 12. Page Login

On the page login it, the system will display a form which must be filled in by the admin and the owner when they want to enter the system. This page has a form to fill username and password, and after that the admin and the owner can press the "Login" to validate and access the system.

Book Data Page

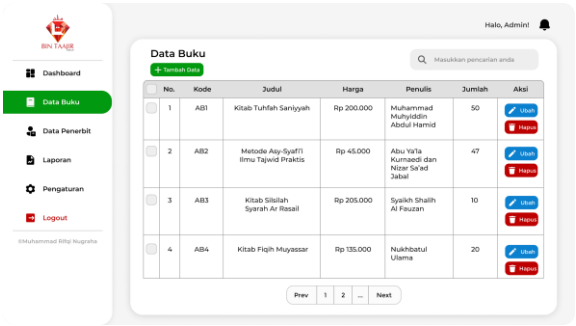

Figure 13. Page Book Data

On the book data page, the system will display all information regarding the available book data. On this page, the admin has the ability to perform several actions such as adding new book data, changing existing book data information, and deleting book data in the system.

Publisher Data Page

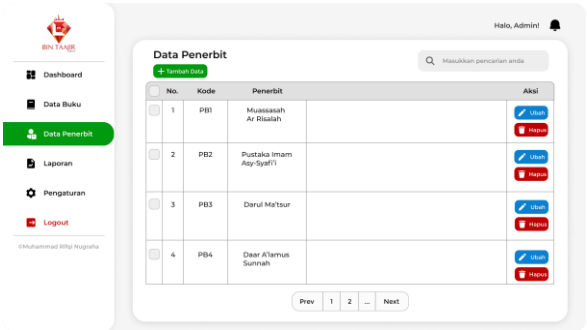

Figure 14. Publisher Data Page

On the publisher data page, the system will display all information regarding the available publisher data. On this page, the admin has the ability to perform several actions, such as adding new publishers, changing existing publisher information, and deleting publisher data from the system.

Report Page

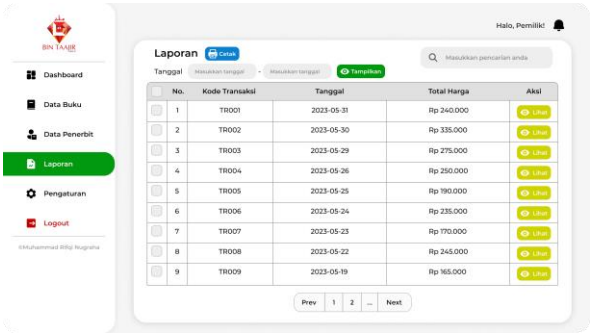

Figure 15. Page Report

On the report page, the system will display all data regarding book sales. Owners can select specific dates on the filter menu to see the appropriate sales report. In addition, the owner also has the option to print a book sales report and get detailed information by clicking the "view" button.

Page Logout

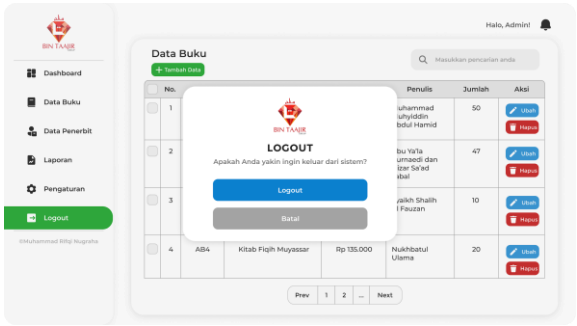

Figure 16. PageLogout

On the page logout, the system will display a form logout to the owner who wants to exit the system. This page has a form which displays instructions to exit the system, and the owner can choose to press the “Logout” to exit the system or “Cancel” button to remain in the system. Iflogout has been successfully carried out, the system will direct the actor to the pagelogin on the system.

Conclusion

Through the implementation of a website-based book sales information system at the Maktabah Bin Taajir Bookstore, the following conclusions can be drawn: This system helps simplify the task of the Maktabah Bin Taajir Bookstore Admin in recording book data and sales reports. Book sales information system based website at the Maktabah

Bin Taajir Bookstore provides several benefits, such as: (a) Reducing the resulting errors human error (b) Increase efficiency and effectiveness in the management process this book sales information system plays an important role in helping manage book data, publisher data, and sales reports

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