

# LIBRARY BOOK MANAGEMENT INFORMATION SYSTEM AT MTs IBRAHIMY SECANG KALIPURO

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## Abstract

Data System is a system that works sequentially, interconnected with each other in order to digest information that will later create useful information. On the other hand, the library itself is a service space in a Learning Institution which will later aim to achieve the development of the Learning Institution, especially at MTs Ibrahimi. However, library management at MTs Ibrahimi is still manual, namely by writing in a catalog book, so that when inputting new books, recording borrowings, returns and when members are looking for references, it is still difficult. This study designs a website-based library management information system using the PHP and MySQL programming languages. The method used by the researcher is a quantitative approach by collecting information through direct observation and interviews. The process that is developed by the system uses the waterfall method which includes the stages of needs, design, implementation, verification, and maintenance and from the results of this study is a library book management data system that is expected to be able to improve more efficiency in managing the library at MTs Ibrahimi and also make it easier for officers to manage book information and reports, and help students find the references needed to support learning activities.

**Keywords :** Data System, Library, PHP, MySQL, Waterfall

## 1 INTRODUCTION

The library is one of the important facilities in educational institutions that provides access to various kinds of knowledge resources. Its main function is to support the learning process by providing reference materials needed by students and teachers, ranging from printed books, scientific journals, to digital resources[1]. In today's digital era, libraries have developed into information centers that not only focus on physical materials, but also provide online services that allow access to thousands of e-books, scientific articles, and multimedia content from around the world[2].

In schools, such as MTs Ibrahimi, libraries play a strategic role in improving the quality of education. In addition to providing teaching materials, libraries are also places for students to study independently, enrich their knowledge outside the classroom, and develop information literacy skills. With the availability of library facilities, students can utilize various reading materials that support the curriculum and get guidance in finding credible references[3].

However, the library at MTs Ibrahimi still faces several obstacles, especially in book data collection which is still manual. Work such as input, borrowing & returning, member management, and knowing the condition of books in the library is done by writing in books so that it is considered less effective in recording books in the library [4]. As a result, the books in the library are not organized. When students want to look for references, they still have difficulty finding them.

## 2 RESEARCH METHOD

### 2.1 Information Systems

An information system is a combination of interrelated elements that work together to collect, process, store, and disseminate information needed for specific business or organizational purposes[5].

## 2.2 Method of collecting data

Researchers use several quantities of tools in the form of data collection techniques in this study to develop the system being built, including:

### a. Observation (Direct Observation)

Observation is the process of collecting data by observing objects or phenomena directly at the scene. In this method, researchers conduct surveys to locations to collect data related to books in the MTs Ibrahimy library[6].

### b. Interviews

Interviews are a question and answer process between researchers (interviewers) and respondents (sources) which aims to collect qualitative information[7].

At this stage, the researcher conducted an interview with the Head of the Library and asked about any problems that arose during book input, lending and returning books, library members, and searching for the desired book.

## 2.3 Waterfall Method

### 1. Requirement

At this stage, all user and system requirements are collected. This involves a full understanding of what the system expects. The result of this phase is a detailed specification document that is used as a guide for the following phases[8].

### 2. Design

After the requirements are collected, the design phase begins. This phase focuses on designing the system architecture, user interface (UI), and database. The result of this stage is a blueprint or system design that is ready to be implemented[9].

### 3. Implementation

At the implementation stage, coding is done based on the approved design. Each system module is developed in stages, tested, and integrated[10].

### 4. Verification

This phase involves testing the system to ensure that the software is complete with the previously identified needs. Testing includes unit testing, integration testing, and acceptance testing.

### 5. Maintenance

After the system is implemented, the maintenance phase begins. This phase includes updates, bug fixes, and system enhancements according to user needs[11].

## 3 RESULTS AND ANALYSIS

In the next step, namely implementing the methodology that we have done. Which will later produce an application in which there are several menus including the login menu, membership card, book data, borrowing, and returning books. The following is a display of the application produced by the researcher:

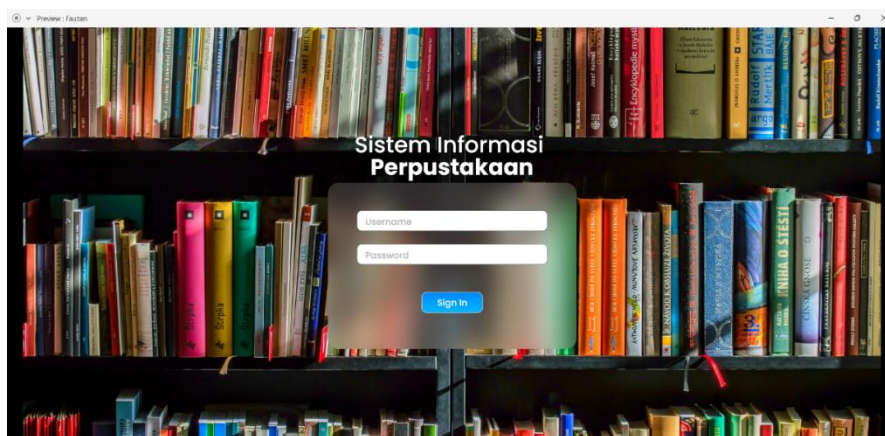


Figure 1. Login

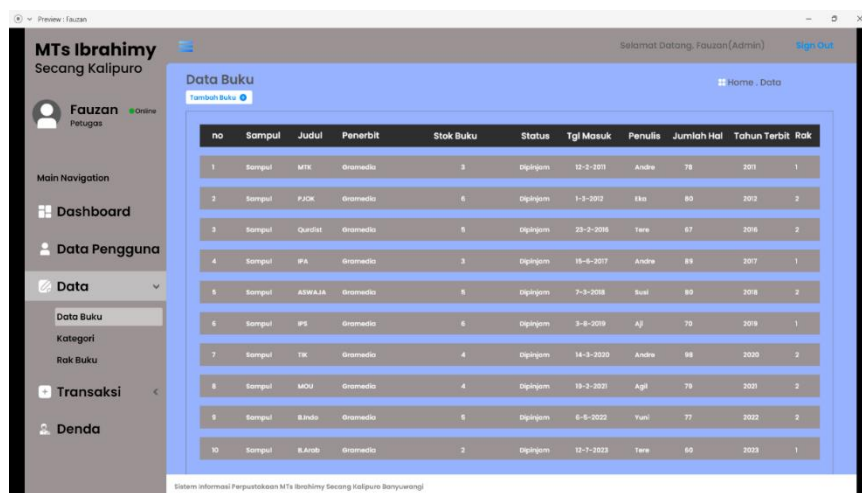
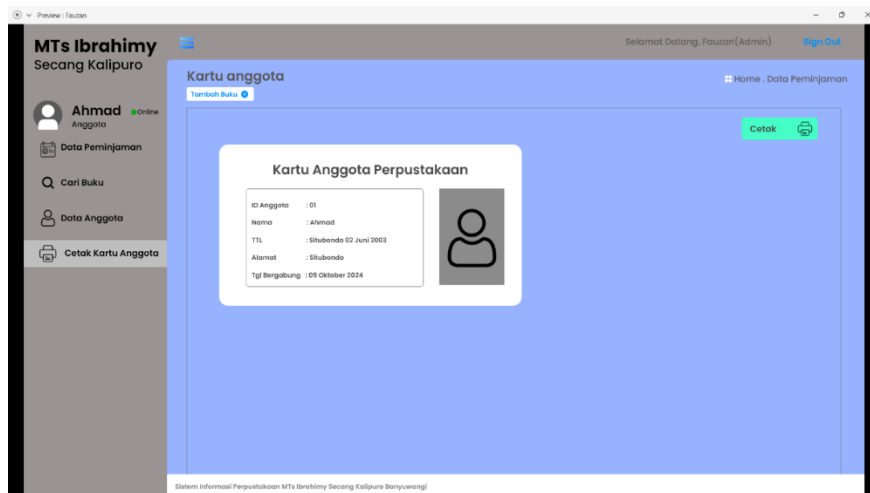


Figure 2. Book Data

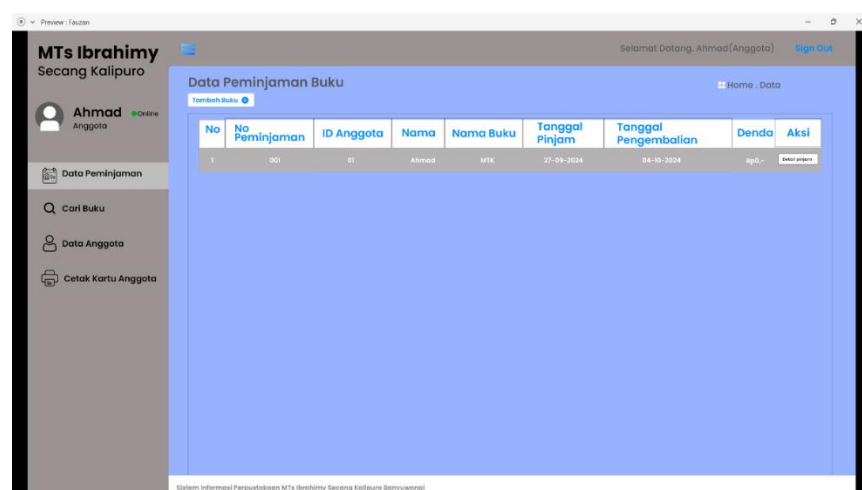


Figure 3. Book Borrowing and Return Data

## 4 CONCLUSION

The creation of this library book management information system is one form of effort to improve the operational quality of books in the MTs Ibrahimy Secang Kalipuro Banyuwangi library. From the process and results of this study, the following conclusions can be drawn:

1. This information system can make it easier for the Institution to manage books in the MTs Ibrahimy Secang Kalipuro Banyuwangi library.
2. This information system was successfully created of course with the procedures that already exist in the Institution. The conclusion explains the summary of the research that explains the achievements obtained from the results using the proposed method.

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