



## Web-Based Library Information System at Santo Yospeh High School Medan

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### Abstract

The library is very important in supporting the knowledge and information of students in schools because the library is part of the learning resources that schools must have, therefore the library is often referred to as the heart of education. Currently, the Library of Santo Yospeh High School Medan, which currently has not been computerized, makes it difficult to carry out the process of borrowing and returning books, as well as registering as members and giving fines. For this reason, SMA Santo Yospeh Medan requires a library that has a web-based library system. The tools used to design this library information system are by using the PHP and MySQL programming languages. The results of the design of this web-based library information system are expected to be able to help library admins in carrying out the process of borrowing and returning books, processing book and member data, and creating library data reports.

**Keywords:** *MySQL, Library, PHP, Web*

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### 1. Introduction

The library is very important in supporting the knowledge and information of students in schools because the library is part of the learning resources that schools must have, therefore the library is often referred to as the heart of education. In the school environment, the library is an inseparable part of the education process. The library is a facility, both for students and for teachers as librarians in supporting the teaching and learning process in schools. Computers according to their function are as tools for processing data into better information so that it is more effective. The library of Santo Yospeh High School Medan, which currently still uses ledgers, such as member lists, book borrowing and returning processes, administration of the number of books, and fines. This results in less accurate results in borrowing and returning books, as well as frequent errors in calculating fines for students who are late in returning books. Based on the background explanation above, the author aims to design a web-based library information system at Santo Yospeh High School Medan which is expected to be able to improve the service and performance of the school library. With the change in the library information service system that still uses ledgers to a web-based library information system, it is hoped that all activities of this system will make it easier for the Santo Yospeh High School Medan library to carry out activities of borrowing and returning books to the students concerned as well as calculating fines.

### 2. Review the Library

#### 2.1. Information Systems

An information system is a collection of components that collect, process, store, and provide output from any information needed in business processes and applications used through software, databases and even related manual processes [1]. An information system is a collection of elements or components in the form of people, procedures, databases and tools that are interrelated to process, store and produce information to achieve a goal [2]. An information system is a system that is generally made based on a set of computers and manual components that can be collected, stored and processed to provide output to users [3].

An information system is a system within an organization that meets the needs of transaction management, supports operations, is managerial, and strategic activities of an organization and provides external parties with the required reports [4]. O'Brian [5] states that: "Information systems are an orderly combination of people, hardware, software, communication networks, and data resources that collect, change and disseminate information in an organization" Meanwhile, an information system is a component consisting of humans, information technology, and work procedures that process, store, analyze and disseminate information to achieve a goal [6]. From the three opinions above, it can be concluded that an information system is a system that is built to assist activities in an organization to achieve a goal and meet the need for information that has been disseminated.

Information systems are a combination of organized modules originating from components related to hardware, software, people and networks based on a set of computers and producing information to achieve goals [7].

## 2.2. Library Information System

A library management administration system is called a library information system. A library information system is a system within a public service organization that meets the needs of managing borrowing transactions, returning and extending book loans, and making daily, monthly or annual reports to support managerial operations and activities of an organization [8]. A library information system is a tool used in library management that aims to assist library administration [9]. Based on the explanation of both, a library information system is a series of system components, both machines and humans, which are arranged, designed to process data so that it is presented to support the operational functions of the library in every activity in the library. Several information systems circulating in Indonesia and have been widely used, including Ganesa Digital Library (GDL), Athenaeum light, Senayan Library Management System (SLiMS), Integrated Library System Lite (INLISLite) and other information systems that have been developed. Each information system has or features provided based on useful functions, such as in one of the library information systems, namely INLISLite, including Back Office, Read on the spot, Guest Book, Online Membership, Digital Collection Services, OPAC, Member Registration, Survey Statistics. Meanwhile, in SLiMS, including Shortcut, Dashboard, OPAC, Circulation, Membership, Master File, Stock Opname, Stock Take, System, Reporting, Serial Control, and Logout. Of course, each library information system has a variety of different functions.

## 3. System Analysis and Design

### 3.1. Analysis of the running system

The analysis of the current system is in principle studying the existing system by conducting research and observation of matters related to the library. Based on observations made by the author on the library process carried out by students, the author can conclude that borrowing, returning books and calculating fines are still manual.

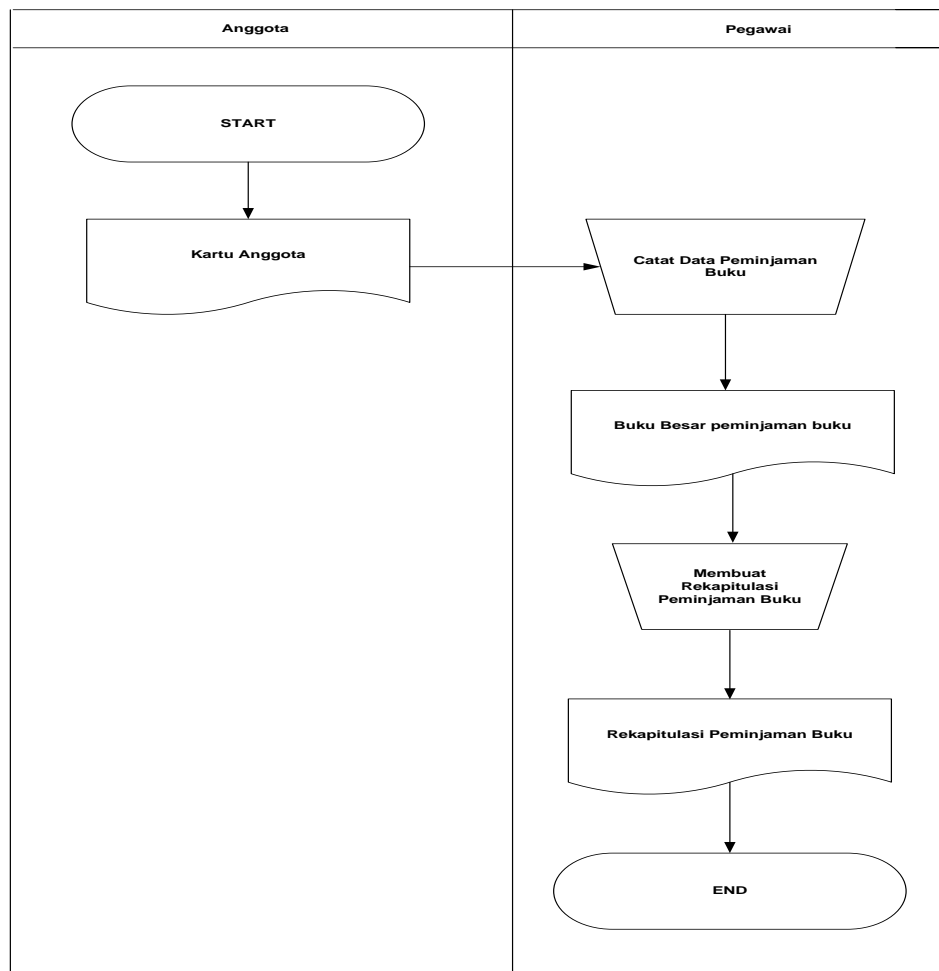


Fig. 1: The system running at Santo Yospeh High School Medan

### 3.2. Process Design Flowchart

Flowcharts can provide an overview of the system to be proposed.

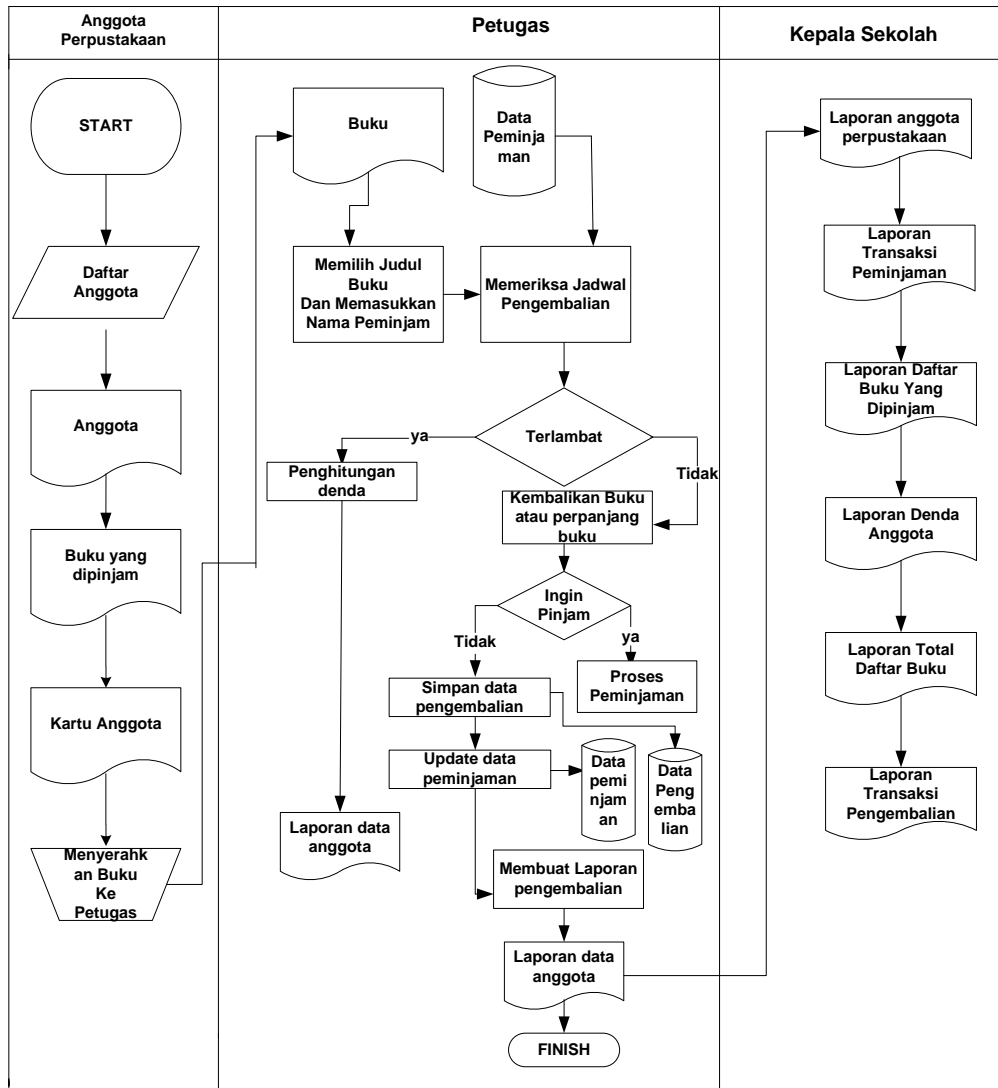


Fig. 2: Flowchart of the Proposed System at Santo Yospeh High School Medan

### 3.3. Context Diagram

Context Diagram can provide an overview of the system to be proposed.

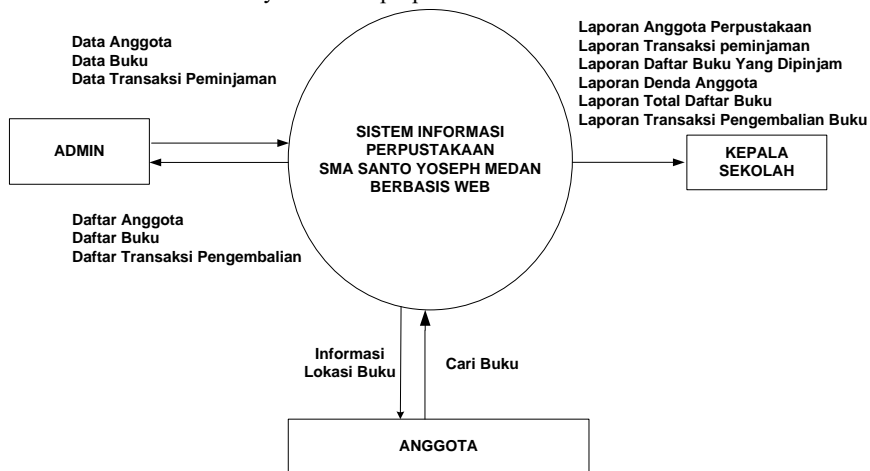


Fig. 3: Context Diagram of the proposed System



## 4.2. Initial System View

This view is the first view that automatically opens if the admin login process is successful. The initial view of the admin page can be seen as in Figure 6.



Fig. 6: Initial view of the system page

## 4.3. Views for Making Transactions

Transactions are the process of borrowing and returning books in order to create convenience in carrying out all transactions in the library. In this library information system, it includes 3 things, namely borrowing transactions, returning transactions, and fines.

### A. Display for adding loan transactions

Used to input book borrowing transactions by library staff. For example, here a library member will borrow, then the admin will input the book code listed on the book, then input the borrower's nis and description. In this library system, the borrowing date and return date are automatic and the return limit is 3 days from the borrowing date. The display for adding borrowing transactions can be seen in Figure 7.

KODE BUKU	TANGGAL PINJAM	ID TRANSAKSI
A/PRG/2010/0001	03-05-2019	20190503010
NIS PEMINJAM	TANGGAL KEMBALI	KETERANGAN
121402105	06-05-2019	

**TAMBAH TRANSAKSI**

Fig. 7: Display of the Add Transaction Input Menu

After the admin has successfully added a book borrowing transaction, the book status will automatically change to borrowed in this system.

> Data Kode Buku

Pencarian...   \*) Kode Buku ATAU Status

Jumlah Pencarian : 5 eks. | Jumlah Keseluruhan Buku : 5 eks.

Kode Buku	Judul Buku	Status	Lokasi
A/UMM/AAN/AAN/16/0001	BAHASA INDONESIA X	pinjam	L1A1
A/UMM/AAN/AAN/16/0002	BAHASA INDONESIA X	lemari	L1A1
A/UMM/AAN/AAN/16/0003	BAHASA INDONESIA X	lemari	L1A1
A/UMM/AAN/AAN/16/0004	BAHASA INDONESIA X	lemari	L1A1
A/UMM/AAN/AAN/16/0005	BAHASA INDONESIA X	lemari	L1A1

Print Kode Buku

Fig. 8: Display of Borrowed Book Status

**B. Display for Making Book Return Transactions**

Used to make book return transactions by library staff. For example, here a library member wants to return a book that has been borrowed. So in the system the admin just clicks on the return transaction. Then enter the nis (student registration number), then click the return menu if the book is returned in an undamaged condition, and if the book is returned in a damaged or lost condition, the admin just clicks according to the condition of the book and if you want to extend the book, the admin just clicks the extend book menu, then the return date will automatically increase for the next 3 days. The display of the book return transaction can be seen in Figure 9

> Transaksi

Pencarian...   \*) masukkan kode buku ATAU nis

Jumlah Pencarian : 6 transaksi | Jumlah Keseluruhan Transaksi : 8 transaksi

ID Trans	Kode Buku	NIS Peminjam	Tgl. Pinjam	Tgl. Kembali	Status	Ket.	Terlambat	Harga	Kembali	Perpanjang	Hilang	Rusak
20190503010	A/UMM/AAN/AAN/16/0001	216430001	03-05-2019	06-05-2019	pinjam	PINJAM	0 hari	98000	kembali	perpanjang	Hilang	Rusak
20190503011	A/UMM/BUD/BUD/16/0001	216430002	03-05-2019	06-05-2019	pinjam	PINJAM	0 hari	85000	kembali	perpanjang	Hilang	Rusak
20190503008	A/UMM/ IJ/GGA/09/0001	216430003	03-05-2019	06-05-2019	pinjam	PINJAM	0 hari	83500	kembali	perpanjang	Hilang	Rusak
20190503005	A/IPS/DKK/ARA/17/0001	216430004	03-05-2019	06-05-2019	pinjam	PINJAM	0 hari	75000	kembali	perpanjang	Hilang	Rusak
20190503009	A/UMM/MAN/GGA/05/0001	216430004	03-05-2019	06-05-2019	pinjam	PINJAM	0 hari	56000	kembali	perpanjang	Hilang	Rusak
20190503006	A/IPS/ADI/ARA/17/0001	216430006	03-05-2019	06-05-2019	pinjam	PINJAM	0 hari	85000	kembali	perpanjang	Hilang	Rusak

Fig. 9: Book Return Transaction Display

The book loan period is 3 days. If a student wants to extend the book loan period, the admin will first click the return transaction button and enter the book code or nis of the student who borrowed the book and click the extend book loan period button, then the book return period will be extended for three days automatically.

**4.4. Display of the Search Book Menu Used by Students**

Used to provide convenience to students in finding books they want to borrow to find out the location of the book without having to look for the book in the library. The display for searching for books can be seen in Figure 10.

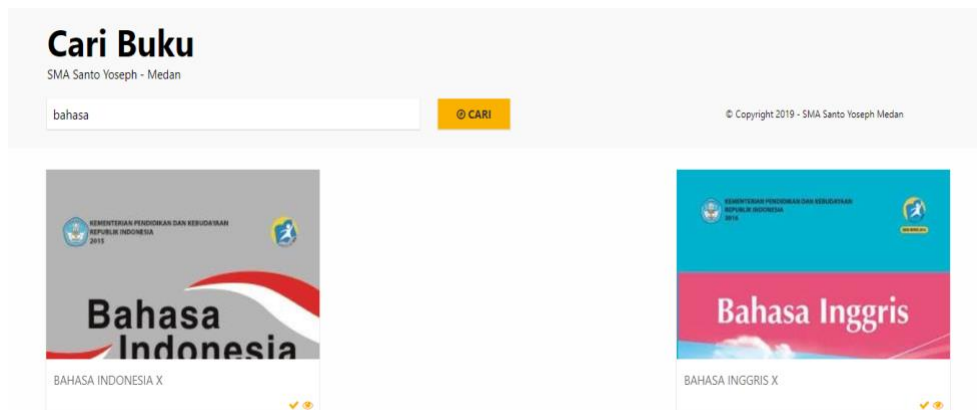


Fig. 10: View Searching for Books

#### 4.5. Report on Library Information System of Santo Yoseph High School Medan

The library information system report Santo Yoseph High School Medan consists of member reports, borrower list reports, list of borrowed books, fine reports, total book list reports, and return reports.

##### A. Loan Transaction Report of Santo Yoseph High School Medan

This Santo Yoseph High School Medan Loan Transaction Report is a report to find out which members borrowed books from students, which consists of transaction ID, book code, member ID, borrowing date, return date, status, and student name.

###### LAPORAN TRANSAKSI PEMINJAMAN SMA SANTO YOSEPH MEDAN

ID Transaksi	Kode Buku	ID Anggota	Tgl Pinjam	Tgl Kembali	Status	Nama
20190429001	A/UMM/BUD/BUD/16/0002	216430003	29-04-2019	02-05-2019	pinjam	SARAH SILAEN
20190503002	A/UMM/BUD/BUD/16/0001	216430002	27-04-2019	03-05-2019	pinjam	ANDRE PURBA
20190503005	A/IPS/DKK/ARA/17/0001	216430004	27-04-2019	30-04-2019	pinjam	ABDON SIAHAAN
20190503006	A/IPS/ADI/ARA/17/0001	216430006	27-04-2019	30-04-2019	pinjam	SAMUEL SILALAH

Medan, 29-04-2019  
Kepala Sekolah

Activate Windows  
Go to Settings to activate Windows

Sr. Frederika Sijabat, SCMM, S.Pd

Fig. 11: Display of Loan Transaction Report at Santo Yoseph High School Medan

##### B. Book Return Transaction Report at Santo Yoseph High School Medan

This book return transaction report at Santo Yoseph High School Medan is a report to find out the names of students who returned books.

###### LAPORAN TRANSAKSI PENGEMBALIAN BUKU PADA SMA SANTO YOSEPH MEDAN

ID Transaksi	Kode Buku	ID Anggota	Tgl Pinjam	Tgl Kembali	Status	Nama
20190503001	A/UMM/AAN/AAN/16/0001	216430001	27-04-2019	30-04-2019	kembali	ANDRO SIAHAAN
20190503004	A/UMM/MAN/GGA/05/0001	216430004	27-04-2019	29-04-2019	kembali	ABDON SIAHAAN

Medan, 29-04-2019  
Kepala Sekolah

Sr. Frederika Sijabat, SCMM, S.Pd

Fig. 12: Display of Book Return Transaction Report

## 5. Conclusion

From the results of the discussion that has been described in the previous chapters, the following conclusions can be drawn;

1. With the existence of this web-based library information system, it is able to provide convenience for students to obtain information on books to be borrowed through the library search book website without having to look for the book in the library.
2. This new library information system makes it easier for library staff to process member data, book data, book borrowing and return transactions, and fine calculations, so that it can become information needed by parties related to the library information system.

3. With the existence of a library information system, it can provide a wider reach in providing data on books in the Santo Yoseph High School Medan library.
4. This library information system makes it easier for library staff to make reports on their library activities.

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