AUTOMATED BOOK MANAGEMENT SYSTEM FOR KOTWA HIGH SCHOOL LIBRARY

CHAPTER 1: PROBLEM IDENTIFICATION

1.1. INTRODUCTION

In the wake of technological advancements, there has been a corresponding emergence of tools that make complex and time-consuming tasks much simpler and time-efficient (Shah, 2013). One of the sectors that have benefited significantly from this advancement is the library management system. Not many years ago, libraries used card catalogs, typewriters, and manually assigned due dates in book management (Singh, 2014). Automated book management system, an up-to-date method to help libraries to effectively manage books, is now streamlined because of computers and software. With the increased library floor area and the student enrolment at Kotwa High School, the school cannot continue to manage books manually in the library. The process of handling a library manually is very troublesome and clumsy. As regards to this point of view, the computerised system for handling the activities of library management provides a comprehensive way to lessen physical labour, to reduce complexity of the manual system and soon. Hence, an automated book management system will play an important role to save human efforts in most of the usual and frequently carried works in the library, for example, issuing and receiving books.

1.2. LITERATURE ON EXISTING SIMILAR SYSTEM /DESCRIPTION OF CURRENT SYSTEM

Libraries have long sought technological aids to facilitate and enhance their services. It started from the revolutionary concept of typewriter in late 1800s and ranging from printing press to microcomputers that have affected a wide spectrum of library operations (Reynolds, 1985). Library automation development can be viewed in three distinct phases ranging from 1954-70; 1970-90 and the current phase from 1990 onwards. Each of these phases witnessed the influence of technologies available during those times (Haravu, 2004).

Before the advent of computer in modern age there were different methods of keeping records in the library (Kaur & Sharda, 2010). Records were kept in the library on shelves and each shelf was labelled in an alphabetical or numerical order, in which the categories of books available were arranged on different position on the shelves and as well recorded on

the library manuscript and when any book was to be referenced the manuscript was being referred to, to know the position of such required book by the person that requested for the book (Jantz, 2012).

However, after the invention of computer different researchers have carried out various approach on an automated library management system in which this project is as well all about. The first library management system to be reviewed is the KOHA library management system. Since the original implementation in 1999, KOHA functionality has been adopted by thousands of libraries worldwide, each adding features and functions, deepening the capability of the system. With the 3.0 release in 2005, and the integration of the powerful Zebra indexing engine, KOHA became a viable, scalable solution for libraries of all kinds. LibLime KOHA is built on this foundation. With its advanced feature set, LibLime KOHA is the most functionally advanced open source Integrated Library System in the market today. The major setback of this Library Management System is that it is a web based and as a result it is not security conscious because hackers could have the database hacked and access or modify the information of such user. (www.koha.org).

After analyzing the existing working of librarian, the following limitations have been taken into consideration:

- **Security of data**: There is not any security of confidential data and information.
- **Availability of book**: There is not any chance to check availability of books.
- **Issued book**: It is very hard to check how many books are issued of the particular subject and how many are left.
- **Calculation of fine**: There is chance of error in calculation of the fine for late returned books.
- **Reissuing the book**: It is very time taking to reissue the book manually after considering the time limit.

1.3. STATEMENT OF THE PROBLEM

The school is handling all the library activities manually and records of various activities are maintained manually on paper register. Presently, transaction of books at the school library are being done manually, thereby taking more time for transaction like borrowing of books or return of books and also searching of pupil and books. Series of problems

occur as a result of not using a computerised system; thereby ensuing to inefficient library management.

Nevertheless, the difficulty in the searching of books which could be termed to be inadequacy in book management is a problem in the manual library system; thereby causing inefficiency and time consuming in the library. Also the problem of space consuming erupts after the number of records becomes large. Furthermore, the space for physical storage of file and records also increases if no computerised system is implemented. In addition, there is problem of lack of prompt information retrieval and time wastage in using the library. In short, it is very hard to keep tracks of the new book, number of issued books and also problem in calculating fine for each issued book. Thus, the current working functionality in the library is very ineffective to meet the requirements of the school.

1.4. SYSTEM OBJECTIVES

The objective of this project is to develop a system that can handle and manage the activities involved in a library in an efficient and reliable way. The proposed automated book management system must do the following actives:

- **Adding pupils details to the system**
- **Adding details of new book in database with the help of unique id**
- **Searching of available books from the database by pupils and teachers**
- **Manage transaction of book or renewing the book**
- **Calculating fine on pupils and teachers through different process**
- **Generate report of list of books available in library**
- **Generate list of books issued to pupils and teachers**
- **List of fine calculated for given period of time**
- **List of damaged books by individual pupils and teachers**

1.5. DESCRIPTION OF THE PROPOSED SYSTEM

Automated Book Management System is an application which can be used by librarian to manage the library using a computerised system where he/she can record various transactions

like issue of books, return of books, addition of new books, addition of new pupils and calculating fines. It reduces the risk of paper work such as file lost, file damaged and time consuming. It can also help user to manage the transaction or record more effectively and time-saving. The major functions of the system are as follows:

- **Authentication to librarian**: Only registered librarian can access the system. Without librarian user name and password no one can access the system data and information of the system.
- **Searching**: Librarian and pupils can easily and quickly search the book with the help of search option provided in the system.
- **Managing the book**: Librarian can easily enter the book details in the system and see the records of the entire available book in the library on clicking of one button and he can delete record of the damaged book, for this he has to enter only id number of the book. He/she also updates the book record.
- **Automatic calculate fine**: The fine on book is automatically calculated by the system and there is no chance of any error.
- **Issue process**: It minimises the time taken to issuing or renewing the book.
- **Display lists**: With the help of option provided in the system librarian can easily generate the list of issued books, list of fine calculated and list of damaged books.
- **Book ordering:** After deciding the book supplier a staff of a library can order to purchase to a vendor for particular book.
- **Book categorisation**: Separate the book according to subject and category.
- **Reservations:** From this option the library staff can know about a particular book which is available or reserve by someone in library.

1.6. CHALLENGES

One of the challenges that the systems analyst may face is the lack of co-operation from users of the system. This might be caused by the assumption that may user of manual systems have an assumption that a computerised system will make them irrelevant. During systems analysis, the users might be too busy to share information with the systems analyst concerning the current system.

1.7. SCOPE OF THE SYSTEM

This system is made for managing books in a library of a school. Only authorised person (librarian, users and registered pupils) can interact with the system or handle the system. The project will be limited to the following subsystems:

- The first subsystem is the registration of the users to the system to keep track of authorised users to the system.
- The second subsystem is the registration of new books into the library management system to know when new books are brought into the library.
- The third subsystem is a borrower and return of books which is the major area needed by the user.
- There are three end users for the Automated Book Management System. The end users are the admin, users and members.

1.8. DEFINITION OF TERMS

Library: A library is an organised collection of information sources which is made accessible to the people. The library usually contains the information physically or in a digitised format.

School library: A school library is a library within a school where students, staff, and often, parents of a public or private school have access to a variety of resources.

Automated Book Management System: Automated book management system is a project which aims in developing a computerised system to maintain all the daily work of library activity in electronic format.

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