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Management system to minimize loss of data and time wastage in library

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ABSTRACT

Manually managing library operations wastes time and adds needless tension to the situation. In light of the above, the computerized framework for managing library activities allows the best possible use of available library manpower and resources for the benefit of users. The aim of this design is to provide solutions to the challenges that manual library systems face. The Library Management System and the Online Library System are also included in this comprehensive design. It's a website that makes it simple for students and staff to use the library while also automating library processes by keeping track of library resources and automatically allocating them.

Keywords— *Libraries, human stress, backend, frontend, html, MySQL*

1. OBJECTIVE

The objective of this project is to minimize time wastage and data loss caused by manual processing of books in libraries. And to reduce human efforts thereby reducing human stress.

2. INTRODUCTION

Library is a place where one goes to read books, novels, research papers, etc. It is a place where a person gets serenity and empowerment of knowledge by reading various documents from all over the world.

Library is a fast-growing organism. A research conducted in 2010 explained that the ancient methods of maintaining library are no longer dynamic and efficient. Speedy retrieval and dissemination of information, better service for library users and application of modern technologies in the library system have become necessity in the 21st century library operations [1]. Another research added that libraries exist to disseminate current literacy and artistic thought as well as scientific and technical innovation responsibilities which cover media such as films, videos, cassettes and tapes [2].

Integrated library system, also known as a library management system is an enterprise resource planning system that a library uses to track items owned, orders made, bills paid, and users who have borrowed from the library [3]. A library is a room, building or an institution where a collection of books and other research materials are kept [4].

The manual library system necessitates a great deal of paper work because all library information, including user data, staff data, book records, and purchase records, is manually registered. Furthermore, manual charging and discharging of books wastes time and money for both customers and the library authority.

An investigation was carried out on the computer skills among librarians of academic libraries in Ondo and Ekiti States of Nigeria. It was established that there were shortages of computers and computer skills among professionals. The study recommended that more funds should be allotted for procurement of ICT infrastructure [5].

A research on computer literacy skills of professionals in Nigerian University libraries was conducted in 2006 where it was also established that most of the professionals do not possess high level of computer skills. The Study recommended that library managers and leaders should organize and offer in-house computer training programmes for librarians and enough computers should be provided [6].

The Library Management System assists in the efficient and consistent management of library resources. Many of the modules used in a manual library system should be included in a standard library management system. A typical Library Management System should be cost-effective, not interfere with the manual library system, and provide the required and justified results.

3. PROBLEMS OF MANUAL LIBRARY SYSTEM

Having extensively examined the current manual system, the existing manual library continues to face a number of problems, indicating that it is time to transition to library automation. Among the difficulties are the following:

- Time Wastage: There are numerous processes needed in the manual library, all of which waste time, especially when it comes to charging and discharging books.
- Data Loss: The manual method entails manually documenting documents, which necessitated a large amount of paper work in order to keep track of user information and library resources. The majority of the data loss was due to manual processing.
- Loss of Library Materials: Since books and other library materials are charged and discharged manually, if the record of the borrowed library material is lost, retrieving the material would be difficult, if not impossible.
- Inadequate staffing: In academia, libraries are required to accept new users at any session, implying that library users are growing over time. Unfortunately, library staffing levels are not growing, leaving librarians with the task of doing more work with fewer resources.

4. MATERIALS AND METHODS

Certain modules of the Library Management System should be rigorously considered when creating the system, as these modules form the system's foundation. The system would be as good as non-existent without these modules. Admin login, Student login, Staff login, Search book, and Public access are among these modules. The admin (in some cases, the librarian or library personnel) can monitor the entire system using the admin login. Students and staff can access the system's resources via the Student and Staff login, which can be used interchangeably with the user's login. When looking at the creation of the Library Management System from a different angle, it may be divided into two (2) primary parts: the frontend and the backend. The frontend is the user interface through which all users can log in and access the system, whereas the backend is the database that stores all of the system's books and other materials, including user logins.

The College Library System offers real-time information about the books available in the Library as well as information about the users. The system's roles involve delivering various types of services depending on the type of users [Administrator/Member].

- The member should be given the most recent information on the book catalogue.
- If all of the other relevant rules are followed, members will be able to borrow the books they want.
- The member is given the ability to examine and amend his account information at any time within the validity period.
- Members are given a list of available books and are free to choose whatever books they want to use in the future days.
- The administrator can obtain information about members who have borrowed and returned books.
- The admin is given interfaces for adding and removing books from the book catalogue.

Members and the administrator who runs and maintains the system are the system's users. It is assumed that the member has a basic understanding of computers and Internet browsing. The system administrator has a better understanding of the system's internals and is better equipped to resolve minor issues that may develop as a result of disc crashes, power outages, and other disasters in order to keep the system running. The right user interface, user's manual, College assistance, and installation and maintenance guide must educate users on how to operate the system without issues.

4.1 Hardware requirements

- Processor: The Intel core i5 7th generation processor was chosen because it is capable of multitasking in computer systems, allowing numerous tasks to be processed at the same time. However, a Pentium 4 processor is the bare minimum.
- RAM: 8GB RAM was utilized since it allows for faster design processing. This architecture, on the other hand, can be completed effectively with only 1GB of RAM also.
- Hard disk**:** This design was created on a 1TB hard disc. This design does not propose using a hard disc with a capacity of less than 50 GB.

4.2 Software requirements

- Operating System: Windows 10 was picked as the operating system since it is stable and user-friendly. Antivirus was also employed to assure the design's safety, particularly throughout the development period.
- Frontend**:** The frontend was developed using html, php and css.
- Backend: MySQL.
- Developmental tools and programming languages: In conclusion, HTML was used to write the entire code for the construction of the web pages, PHP was used for server-side scripting, and CSS was used to style the web pages. The style was done from the outside. MySQL was also used as a database technology.

5. PROPOSED SYSTEM

To overcome the difficulties faced by manual library system, we have proposed a system.

5.1 Block diagram of the home page

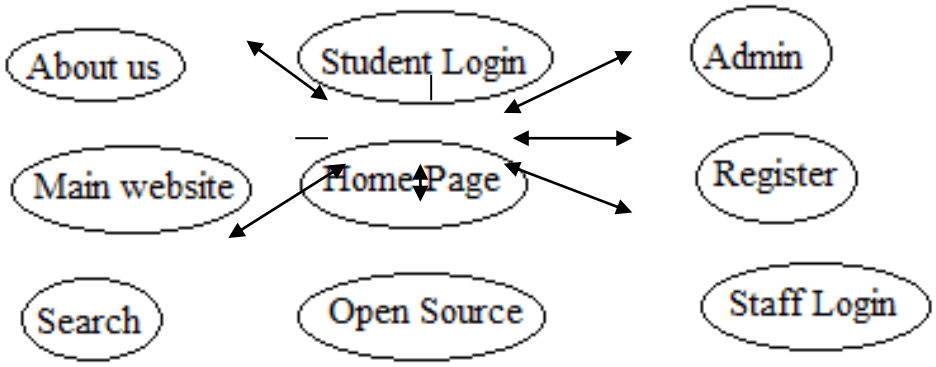

Fig. 1: Block diagram of home page

5.2 Flowchart of the proposed system

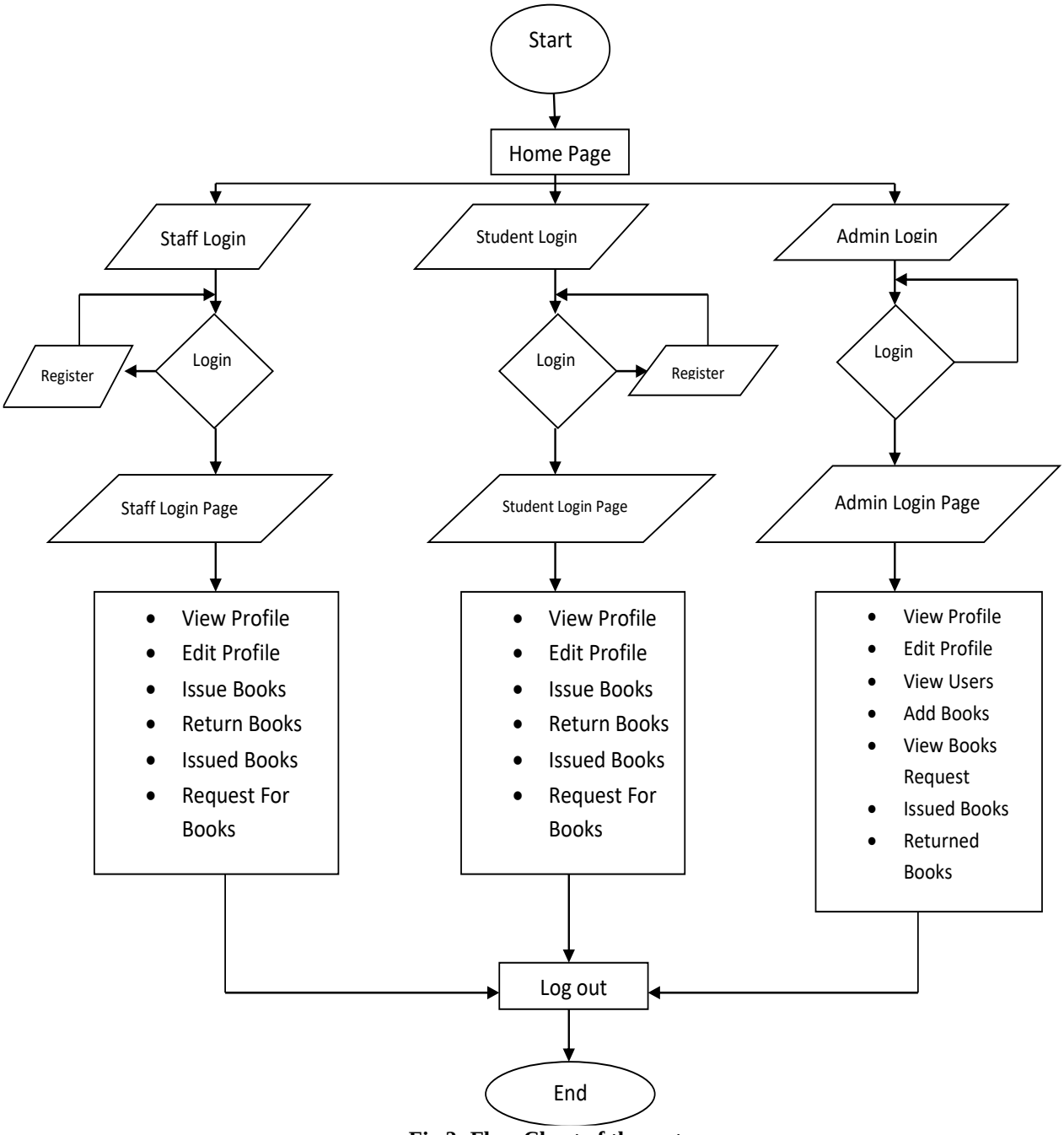

Fig 2: Flow Chart of the system

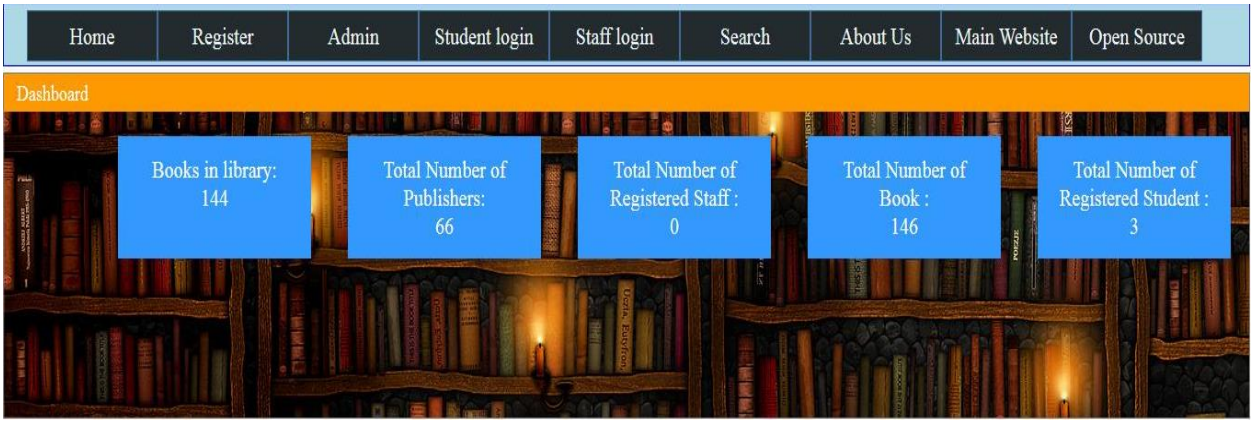

Fig 3: Home Page

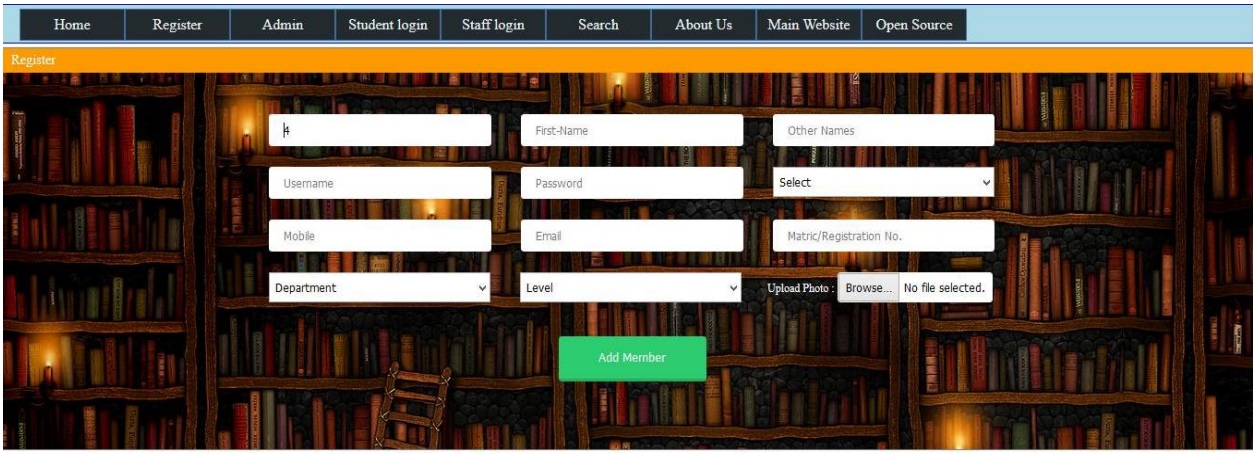

Fig 4: Registration Page

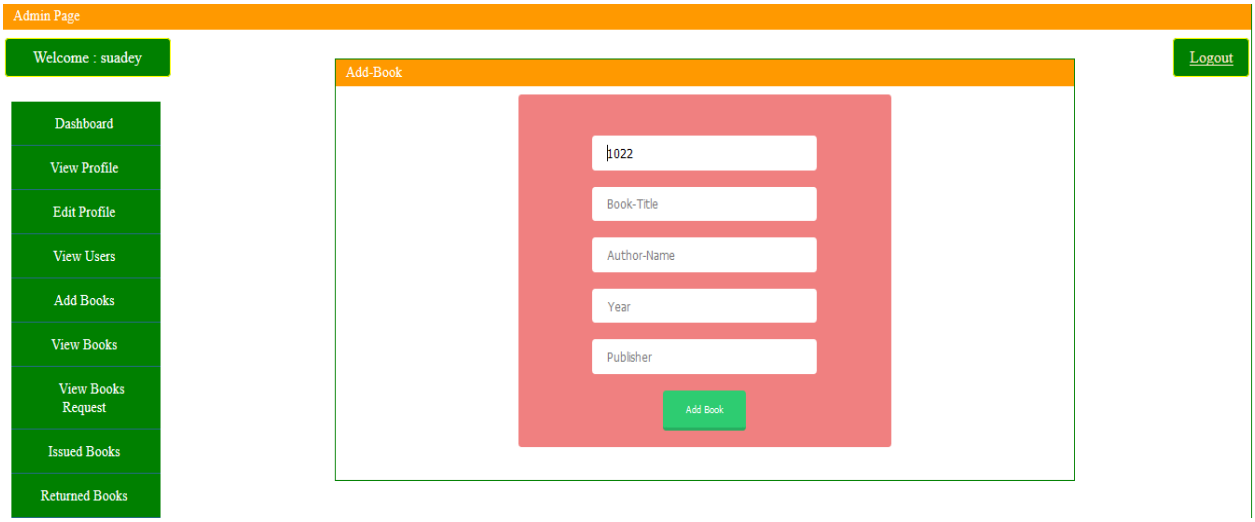

Fig 5: Add book page

6. RESULTS AND DISCUSSION

The outcomes of this study were split into two categories: frontend results and backend results. The newly designed system was put through its paces on several platforms, and changes were made to guarantee that it delivered the expected results. Each module was put through its paces and they were all delivering the expected results. The home page, registration page, student login page, staff login page, add books page, and borrow books page are among the frontend results, while the backend results include the users table, borrow details table, and book table.

7. CONCLUSION

We were confident that the existing system's faults had been resolved when we concluded the project. To decrease human errors and boost efficiency, the "MANAGEMENT SYSTEM TO MINIMIZE LOSS OF DATA AND TIME WASTAGE IN LIBRARY" procedure was digitized. This project's major goal is to reduce human effort. Because all of the records are kept in the ACCESS database, data can be retrieved quickly, record maintenance is simplified. The editing process has also been simplified. All that is required of the user is to put in the required information and update the desired field.

The project's major goal is to obtain accurate information about a specific student as well as books available in the library.

To a considerable extent, the issues that existed have been resolved. And it is believed that this project would go a long way toward meeting the needs of the users. The computerization of library management would not only increase efficiency, but it will also reduce human stress, thereby boosting human resources indirectly.

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