

Electronics Library Management System from the Website

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Abstract:- Electronics libraries are libraries in which collections are stored in electronic media formats and accessible via computers. The electronic content may be stored locally, or accessed remotely via computer networks. An electronic library is a type of information retrieval system. In this work MySQL database and php dynamic 3-tire website is design. The tested on this website don as a college virtual library it provide fast and secured system.

Keywords:-Library Website, Library Management, Electronic Library, Library Searching Website.

I. INTRODUCTION

A static site displays the same information to all users, whenever they access it. A dynamic site over time its contents would change as users added comments [1].

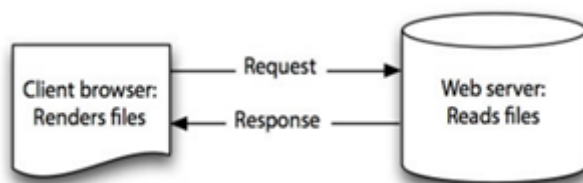


Figure 1 A typical setup for static websites

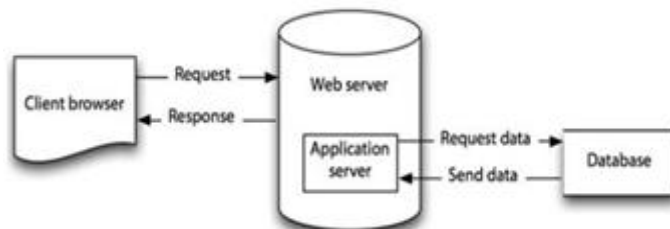


Figure 2 A typical setup for dynamic websites

Web application by definition, it is something more than just a 'web site'. It is a client/server application that uses a web browser as its client program, and performs an interactive service by connecting with servers over the Internet (or Intranet). A web site simply delivers content from static files. A web application presents dynamically tailored content based on request parameters, tracked user behaviors, and security considerations. Browsers send requests to servers, and the servers generate responses and return them to the browsers [2].

The "N" in the N-Tier concept implies any number, such as 2-tier, or 3-tier; basically, any number of distinct tiers used in the architecture. In fig. 3, a 2-tier architecture which is very popular has simple structure, easy to setup and maintain but the disadvantages of a 2-tier design includes limited scalability [3]. 3-tier architecture: the client, the server, and the Database Management System which are combined in a web application [4].

The 3-tier architecture pattern provides a means of structuring and decomposing applications into 3-tiers or layers, where each tier provides a different level or responsibility. 1-tier deals with the presentation part of the system (user and system interfaces), another handles the business logic, being the core of the system, and the last tier is representing the data storage [5]. Enterprise applications are typically implemented as 3-tier architectures that consist of clients in the front tier, servers that perform the application business logic processing

in the middle tier, and databases that store the application data in the back-end tier [6]. The 3-Tier system basically works as illustrated in **figure 4**.

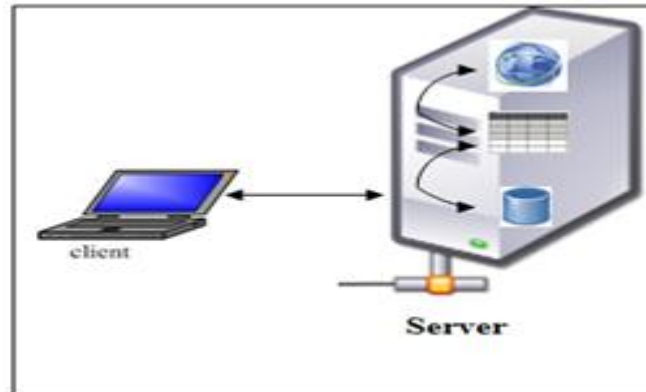


Fig. 3 Two-Tier architecture

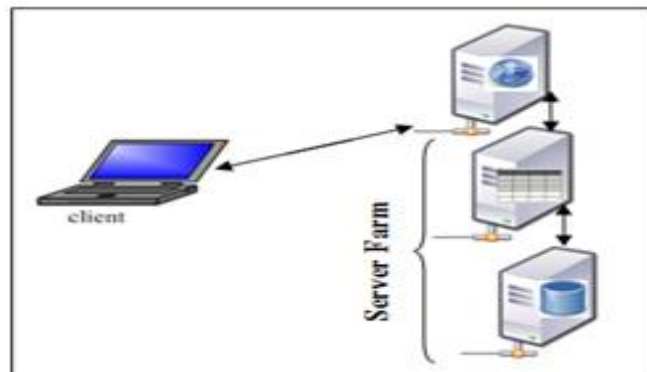


Figure 4 Three-Tier architecture

PHP stands for Hypertext Preprocessor and is a server side language. This means that the script runs on web server, not on the user's browser [7], so PHP language has been used to connecting the database in MySQL language. MySQL is a very fast, robust, relational database management system (RDBMS). A database enables the website designer or developer to efficiently store, search, sort, and retrieve data [8]. MySQL is a popular and free database system that can store information and then integrate with PHP to create a fully functional web application, the dynamic page scheme is shown in **figure 5** [9].



Figure 5 Dynamic page scheme

Instead of going to a physical library, now can wishing to retrieve the contents at desktops, laptops, or on mobile devices. The wish to have ubiquitous access to the Internet irrespective of whether are moving or even traveling from one part to the other part of the world. If students want to read a book, they want that the book should be readily available at the device they are using at the moment. This has led to a concept of electronic library (eLibrary), where the contents can be downloaded to the device by simply clicking the mouse or just pressing some buttons [10]. Through the online public access, Internet facilities and multimedia terminals, information in electronic and multimedia formats has fast become an integral part of the library's resources.

Remote access to library services including web renewal service, online reservation service and email enquiry service, gives the public greater convenience and faster than traditional library system [11].

II. ELECTRONIC LIBRARY MANAGEMENT

To designing a search system, the database has been worked for the website using PHP and MySQL languages. the library database consists of five tables, the first table for the manager's user name and password, the second table for the books' information, the third table for the borrowing system data, fourth table to saving retrieving system information and the last table for the students' login accounts as shown in **figure 6**.



Figure 6 Making database in phpMyAdmin

To creating the Manager Login Account, this page is designed by using PHP and HTML languages. The "form" page is created by using HTML language, and the second page which connected to the database, is created by using PHP language. So, when the manager logins his information correctly, PHP code of authentication page transfers the control from HTML page to the PHP page. This page includes a manager's settings and operations. The manager can control all this operations (search, add, edit, delete within the library website, after recording the user name and password as shown in **figure 7**.

A. Search Operation

As knowing, if the number of books was more than ten in a database, the search operation about specific book information will be difficult. So the search page made to help the manager and students to find data about books even if database was contained more than 8000 book. This page is designed by using two files: the first file is designed by using HTML language and the second file in PHP language. This system of search introduces three types of search: "by the book name", "by the book author", and "by the department of that book". The manager can write exact phrase or any word from the book phrase. Each of these searches has a different form and a related set of results, as shown in **figure 8**.

B. Add Operation

The manager can add a new book to the database by typing its information in the form page, to be saved in books table. After the database being tested by using the PHP language, the data that will received has been entered by a manager of the library within variables format that are passed to the database by the statement (Query="insert into books table the entered values"). If the information has been entered correctly, it will be stored in the database and a message will appear confirming that a new record had been keeping in the database, but if the information is not entered correctly a message is showing that the record is not saved, as shown in **figure 9**.

C. Edit & Delete Operation

The manager can modify existing book in the database by typing its 'Id' number and selecting 'edit' option, and then click on 'submit' button, or delete a particular book from the database by typing its 'Id' number and selecting 'delete' option, and then click on 'submit' button to drop it from books table. After the (ID) of the book that it is wanted to modify or delete it, is determined and the (edition or deletion) option has been chosen, then the (submit) command is clicked, the PHP code will be sure that the database has been linked, then the data that has been entered as variables. If the edition process has been selected, the (ID) of the book will be checked if it is existing to be edited on the data and then the information of that book was found in the database

will be displayed to be edited on the data by using the (Query="SET" new variables in the database and saves these variables in DB). But if the (deletion) option has been selected, all information of the book that it's the (ID) selected will be removed from the database by using the (DELETE) statement, as shown in **figure 10**.

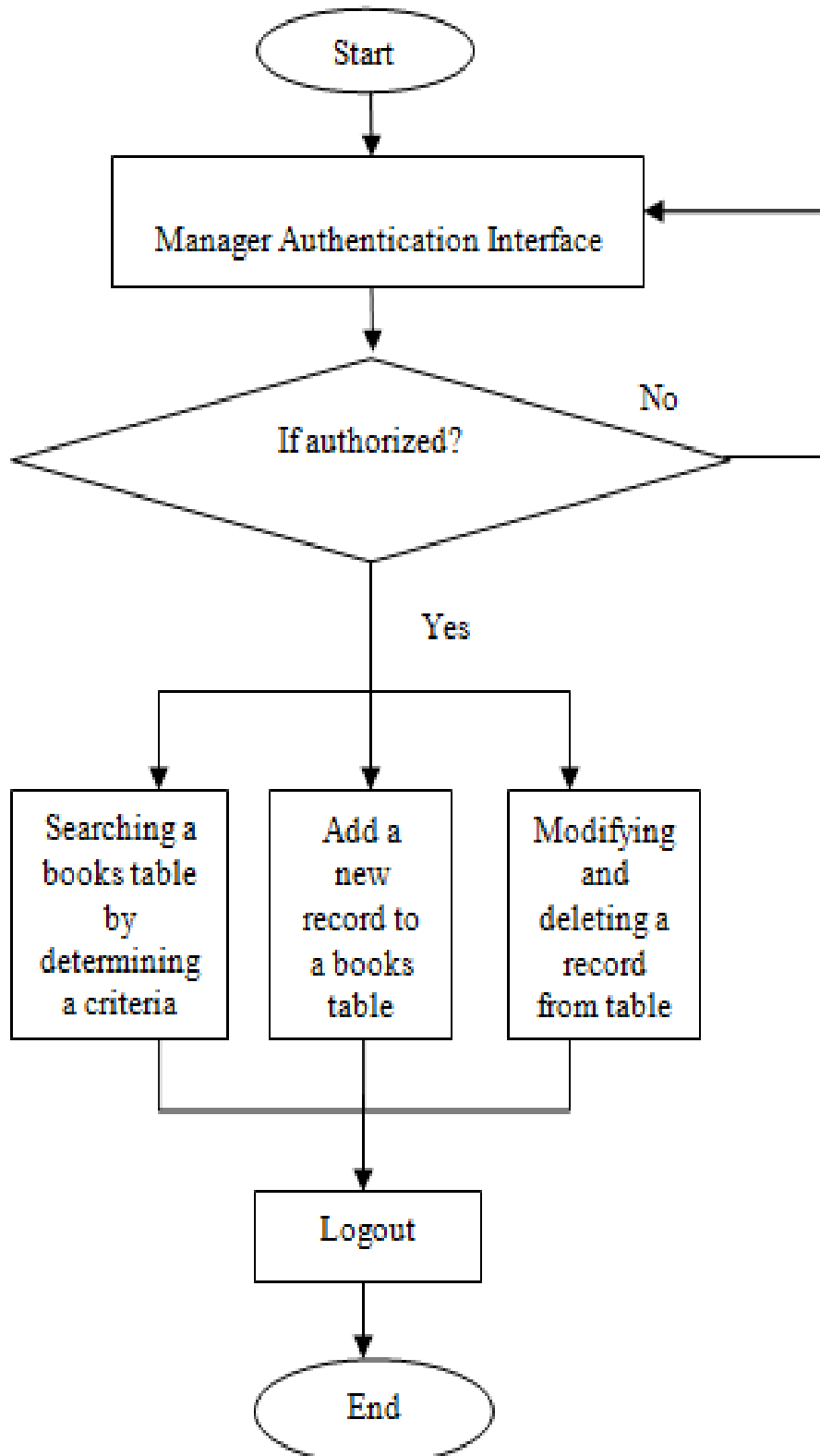


Figure 7 Manager activities diagram

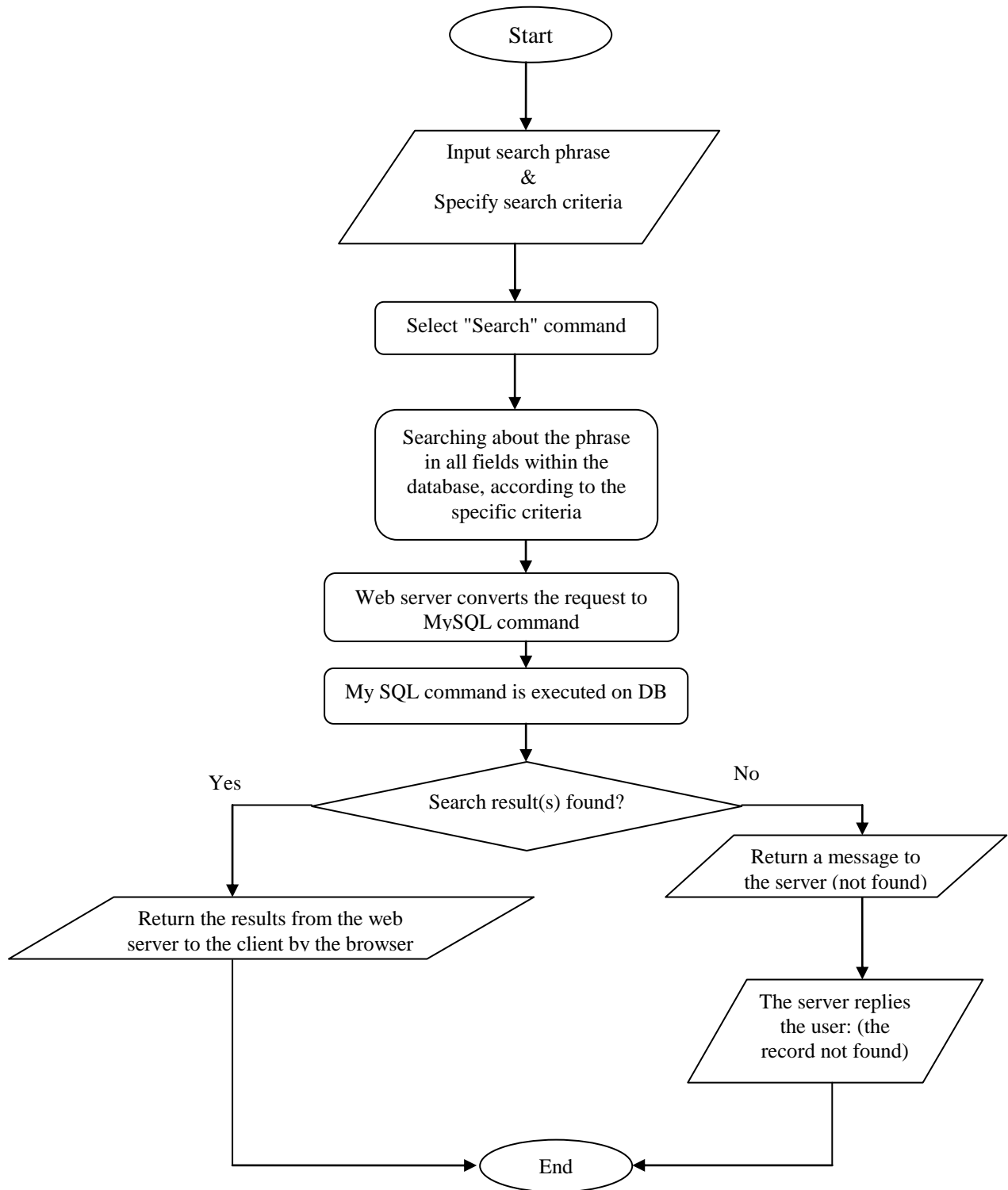


Figure 8 Search operation diagram

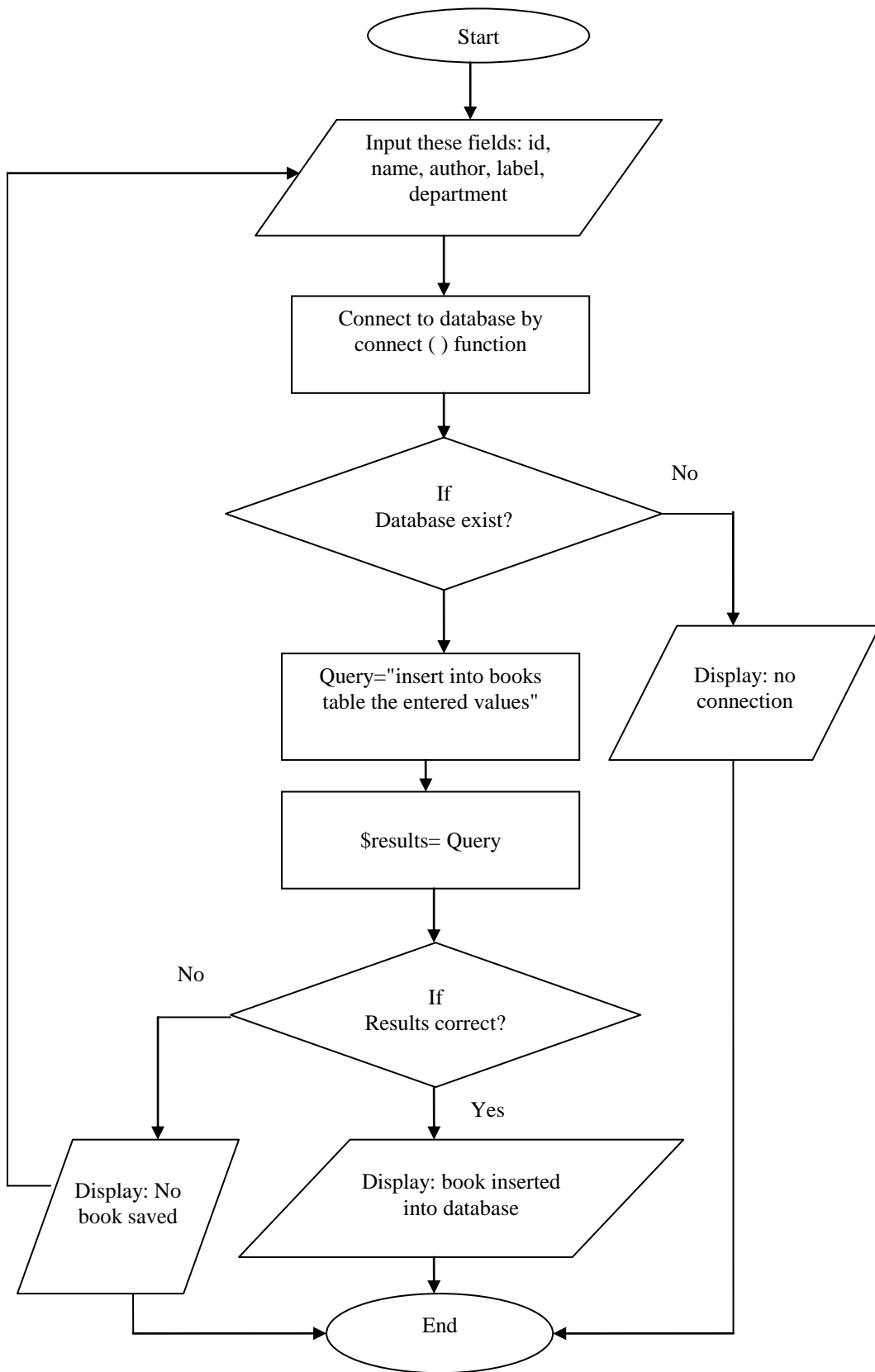


Figure 9 Add new books diagram

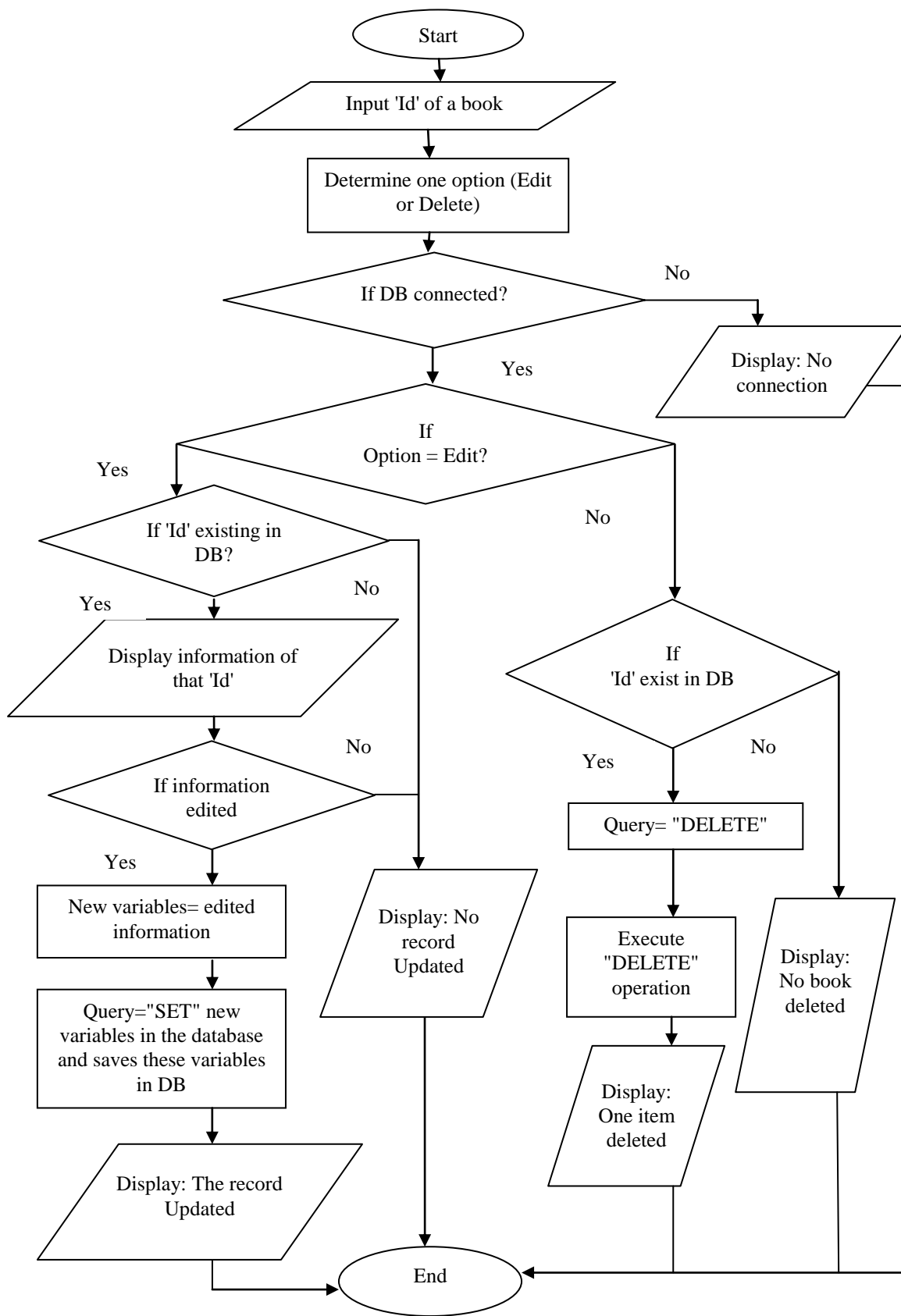


Figure 10 Edit and delete books diagram

III. CONCLUSIONS

The electronic library website provides electronic search system that is better than the traditional search by the paper records, the electronic books library published online cannot be damaged or lost as in the paper books, also the electronic reproduction is faster than the paper reproduction. The library manager can use an electronic library management system to add, modify or delete data from the database by using online control panel that is protected with a username and password through the library website.

Electronic library management system saves time and effort by the control panel of the library manager, in addition to ease of use, and the accuracy of the information being searched.

REFERENCES

- [1]. Irina Dumitrascu, "Building Your First Dynamic Website – Part 1: Setting up Your Site and Database Connection", Adobe Systems Incorporated, 2010 .
- [2]. Leon Shklar, Richard Rosen, Dow Jones and company, "Web Application Architecture: Principles, Protocols and Practices", Copyright by John Wiley & Sons Ltd, 2003.
- [3]. "Integrating Oracle E-Business Suite 11i in, the Cisco Data Center", Cisco System, Inc, 2007, available at: www.cisco.com.
- [4]. Mumtaz Al-Mukhtar and Sarmad Hadi, "Developing a Three-Tier Web Data Management Application for Higher Education Admission Environment", International Arab Journal of e-Technology, Vol. 2, No. 4, June 2012.
- [5]. Fernandez B., et al, "The Secure Three-Tier Architecture Pattern", International Conference on Complex, Intelligent and Software Intensive System, Barcelona, Spain, pp. 555-560, 2008.
- [6]. Zhao W., Moser E., and Meliar-Smith P., "Unification of Transactions and Replication in Three-Tier Architectures Based on CORBA", IEEE Transactions on Dependable And Secure Computing, Vol. 2, No. 1, pp. 20-33, 2005.
- [7]. Alireza Nematollahi, "Programming in PHP and MySQL", ARNIT Education Centre, 2, 2005.
- [8]. Luke Welling, Laura Thomson, "PHP and MySQL Web Development", Fourth Edition, Copyright by Pearson Education, Inc., 2009.
- [9]. Steve Suehring and Janet Valade, "PHP, MySQL, Javascript & HTML5", Published by John Wiley & Sons, Inc., Hoboken, New Jersey, 2013.
- [10]. Ash Mohammad Abbas, " An Analytical Model for Service Profile Based Service Quality of an Institutional eLibrary", arXiv:1102.4078v2 [cs.DL] 2 Mar 2011.
- [11]. Oshilalu, Habdulhakeem Adeyinka, "Emergence of Electronic Library resources", Accepted at 12 January, 2011.

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