Online Library Management System

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Abstract: *The invention of Computers and Internet have opened endless opportunities for us to automate and simplify our everyday tasks. Library Management is one among those tasks that can be simplified to a certain extent by using the Internet. If the library is managed by using a website having features like QR Code scanning, online payment of fines, real-time chat between student & librarian then the whole experience becomes very user-friendly for both of them. It will save time for both student and librarian. It is less time consuming, Requesting for books remotely. Instead of standing in a queue to borrow books or return books and paying fines, if a system can be developed to do all these tasks online, it will be very beneficial and is user friendly.*

Keywords: Library, QR Code, Online fine payment, Real-time chat, Remote access.

I. INTRODUCTION

A library management system involves various tasks such as issuing books, returning books, updating student details, book details, keeping track of due books, fine due (1). A lot of things are already automated but a lot more can be achieved with the use of Internet. If there is a website for library management system, the students can login to that website and check the availability of books. If we take a step further, the student can also send a request to the librarian to borrow a book. After that the student can physically visit the library and borrow the book. Waiting time is reducedto get their details verified by the librarian before taking their book. Now, here we can reduce the time required to verify the student details by putting a QR Code behind the student's ID Card. The librarian can easily scan the QR Code using the web camera and the student details will be automatically verified (1). There is no need for the librarian to manually enter any details or manually verify any details except scanning the QR Code.

II. LITERATURE REVIEW

The online library management system website reduces the workload of the librarian by making most of the tasks automated. Even the tasks of issuing and returning books are also automated by simply scanning a QR Code. There are many works done in this particular field and many kinds of application developed to manage the library in a proper manner. Some of the works and researches done are-
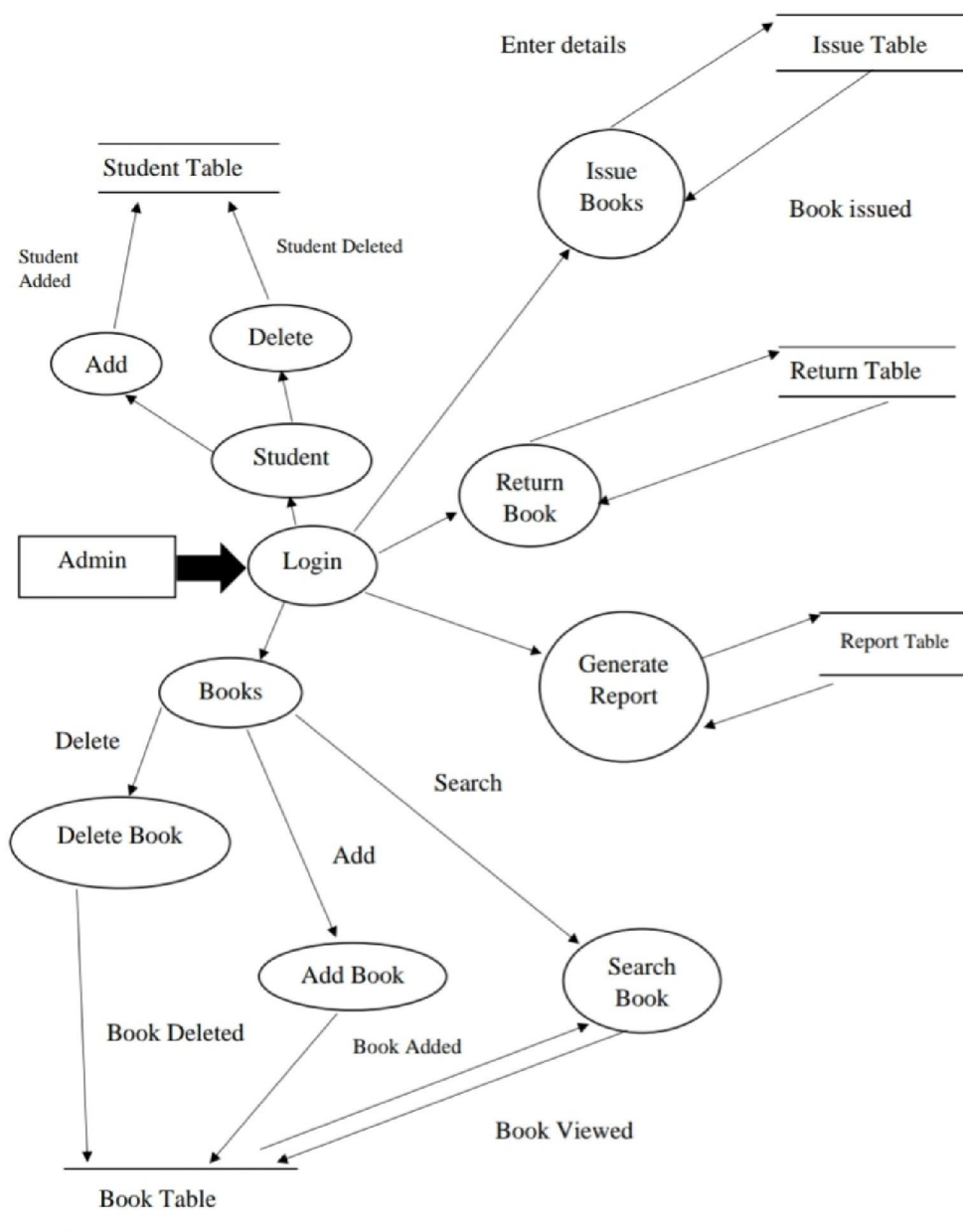
Petal. (2020) has done an analysis of library management system developed using C# Microsoft .NET. According to the research the system automates many tasks of the library generally done by the librarian manually. In manual working it becomes difficult for the librarian to keep track of all the problems simultaneously. The system helps librarian to detect all the problems at the same time.

Prasanna & Gupta (2020) has done an analysis of a library management system developed using Java. They have found that as a new student is added in the library system, the student should be issued a new code. For that, the librarian needs to maintain a lot of records which becomes very difficult to do manually. So, it can be simplified using automation.

III. OBJECTIVES AND GOALS

The main objective of the project is to create a website to automate most of the tasks done by librarian manually. It simplifies the record keeping process. The goal is to enable the students to access the library remotely. They can perform most of the things remotely which they have to do by physically visiting the library till now. The website also uses the latest technologies and features available to make the process as user-friendly and as smooth as possible.

DATA-FLOW DIAGRAM :-

IV. IMPLEMENTATION

The website is having mainly 2 modules- librarian module and student module. Once the librarian login he will get the options for author management, publisher management, member management, book issuing, book inventory, send message, penalty, borrow requests, return requests. All these options have functionalities as their name suggests. Like, the author management, publisher management, member management, book inventory is used for adding, deleting and updating authors, books, publishers and students (2). The borrow request and return request are used for approving the requests sent by students to borrow or return a book. The borrow and return requests are approved by scanning QR Codes behind the ID Card of students. Using the penalty options the librarian can check the books that are due for return, the amount of fine against the due and to send collect fine request to the students. And the send message option

can be used by the librarian to send any message to the students. There will be an option of notifications at the top of the librarian module by clicking on which the librarian can check all the unread messages sent by the students (2). Similarly, in the student's module there will be option for messages and penalty. Using the messages option, the students can read all the messages sent by librarian and using the penalty option the student can pay fine through any online payment method. While searching for the books only the student will be able to raise borrow or return request by clicking on the borrow or return button present in each row of the view books table.

V. CONCLUSION

This project is going to provide a solution for the librarian and students to access the library in an easy and smooth manner. It will help the libraries which have a computerized system as well as libraries which don't have a computerized system. Along with making the record keeping process simple, it also simplifies the issue and return process. It also provides a solution for fine collection by enabling the students to pay fine online. It also gives a system for the librarian and student to communicate with each other.

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