

E-LIBRARY

Department of Computer Science & Engineering

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Signature of student:

Gulshan(BS19BTCS003)

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CHAPTER 1

INTRODUCTION:

Libraries are the backbone of education sector and plays an integral role in the field of education .Hence ,to fulfill the demand and need to expand the education sector over the web is rapidly increasing. Digitalising libraries would be somewhere a boon for the college where all the data and functioning of libraries can be deployed over the web .

Just imagine , the huge problem of lack of resources , or accessing the books without even going to library , all the data stored digitally is done only by deploying the idea of manual library over the web. Sometimes the requirements of resource exceeds the limit of available resource ; so a different module of all the books with the functionality of fetching of pdf through the website would help everyone access the resource .

The E- library provides a user-friendly and intuitive platform that will allow us to easily search and browse through our vast collection of materials. You can search by author, title, subject, or keyword, or use our advanced search feature to find the information you need quickly and efficiently. It's goal is to run a library more efficiently and at a lower cost. Because the system is completely automated, it simplifies all of the library's operations. The software performs the tasks of book purchase, cataloging, indexing, circulation recording, and stock checking. Such software eliminates the need for manual labor and reduces the likelihood of errors.

Both the user and the librarian will get benefit from the system. The user can search for books in the library with just a few clicks. The librarian can easily respond to questions about book availability. The process of adding, removing, or editing the database is straightforward. It is simple to add new members and to cancel existing ones

This make it easier for administrators to keep track of all of the functions of the library department. It also allows librarians and users to save time and improve efficiency on time-consuming chores. The school administration would be able to track the job outline and fineness of different librarians' capabilities if they used this type of library management system. They also have the chance to see how well-maintained the record of issued books and collections is. Various reports are available to the librarian and the administration department in order to adopt new improvements.To keep track of library records, a library management system is utilized. It keeps track of the quantity of books in the library, how many are issued, how many are returned or renewed, and late fine costs, among other things.With this system, you can rapidly identify books, swiftly issue/reissue books, and handle all of the data in an efficient and organized manner.

A library management system's goal is to deliver immediate and accurate information about any type of book, saving time and effort.A library is an essential component of any educational institution. It usually has to carry out fine but difficult activities in order to keep track of the books. A well-managed library is part of the service when the institute is focused on providing great educational services.

CHAPTER 2

LITERATURE SURVEY

1.) Manual system :

Living in a digital society ; there are still lots of colleges ,schools which are still running as manual library . All the works such as book transactions are done manually in our current system. As a result, it takes longer to complete a transaction such as borrowing or returning a book, as well as to look for members and books. Another significant drawback is that producing the list of books borrowed and available in the library would take more time; today, all data are verified in one day.

Disadvantages of manual system :

As a result, we can conclude that rapid report generation is not achievable. It's difficult to track down a book. The information about the issue and return of the books is not kept up to date. Because information is not available in the database, no central database can be constructed. As a result of the feasibility research, we chose to computerize the manual library management system.



2.)CU Library ,Calcutta :

Although many e-library websites are being deployed by seeing the fast pace and demand of the resource available online . A few examples of current e-libraries available in market are discussed in this section along with their functionalities and drawbacks. CU Library is the e-library website of CU College, Calcutta .Surveying the website I found that the library has a lot of salient features and is highly resourceful and profitable for the people accessing it.

Features :

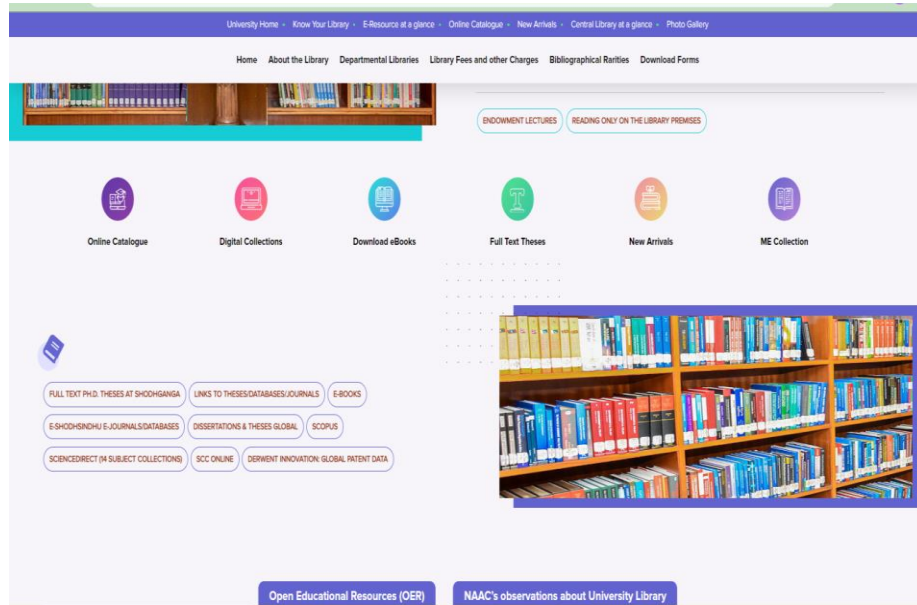
- Accessing E-Books
- Full Text Thesis
- More than 7 thousand electronic journals and over 58 thousand electronic books for all its users in all the

campuses.

- Additional feature of having a chat with professors of all dept.
- Debate and blogpost area.

Drawbacks:

There is no such methodology that can help synchronization between librarian and users through which they can have access to their personal details.



3.)Chandigarh University ,E-Library:

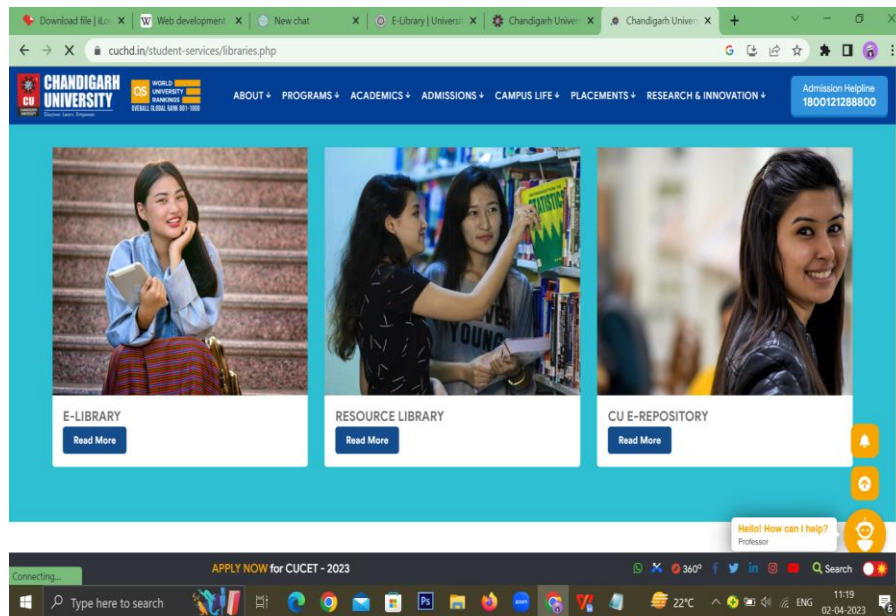
Chandigarh University has a very well maintained and well formed digital library. The platform is formed by keeping the needs of the students in mind with lots of features. The salient features of CU Library are as;

Features :

- Provides an ideal environment for Research, Innovation, Consultancy and Entrepreneurship relevant to the society.
- Online e-books and thesis
- Interactive UI
- It adopts open shelf system which offers freedom to students to visit, browse, read and explore any documents available on the shelves.

Disadvantages:

- Not a user-friendly system
- Less Secure
- Slow functioning of website



4.)E-Library (LPU) :

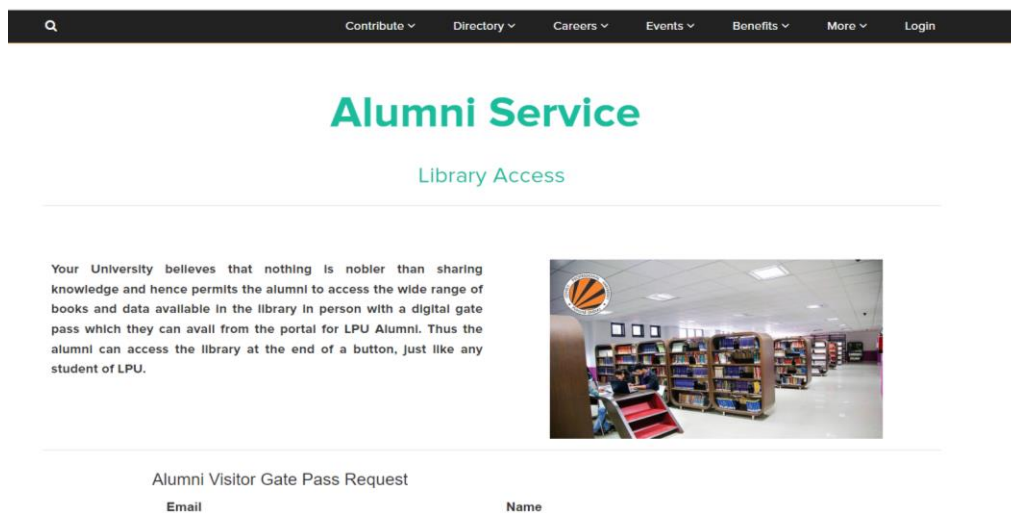
Lovely Professional University has their own personal websites through which they manage the number of books that are issued by the students daywise ;they had tried to deploy automation in their websites through which they can easily know the interest of the students as per the types of genres issued.

Features:

- Automated website
- Same portal for online inductions and blogs
- Additional functionality of alumni management

Disadvantages:

- Non interactive UI
- No functionality of downloading books



CHAPTER 3

PROPOSED MODEL

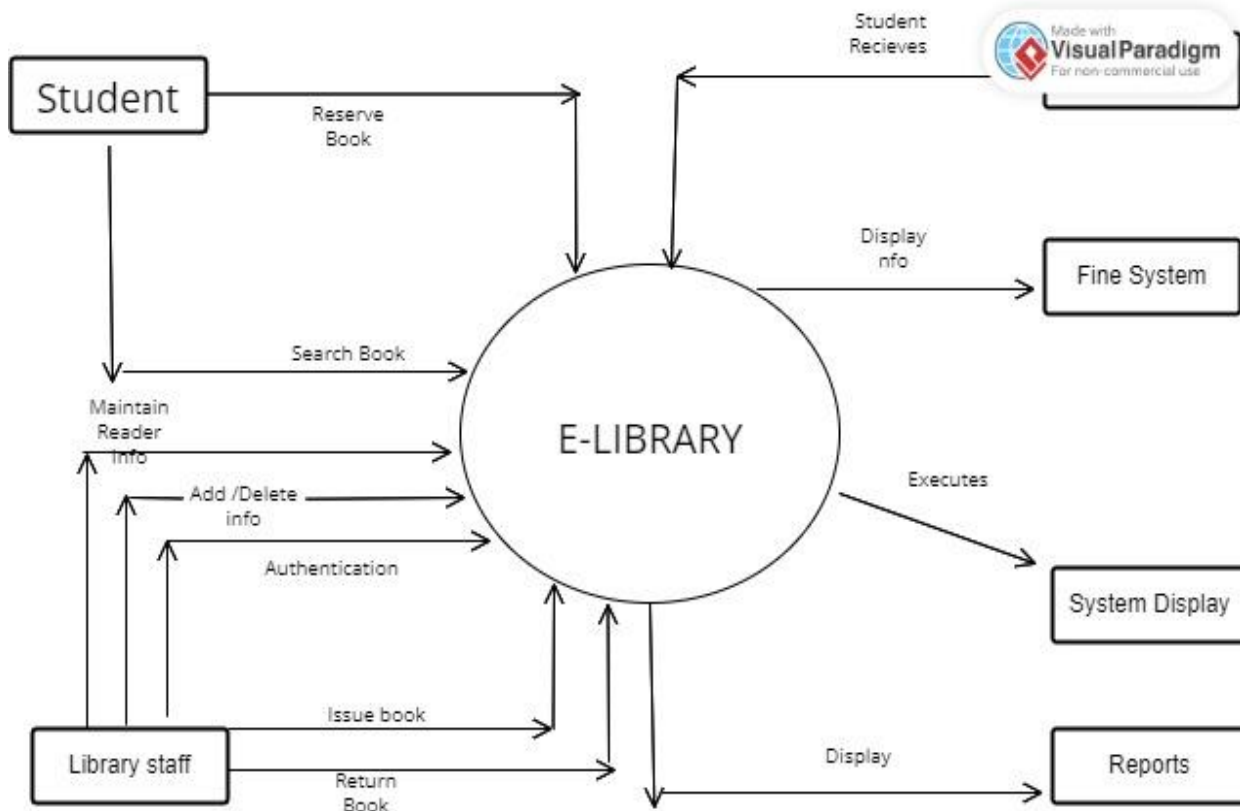
In a gratitude to the organization where I had completed my graduation and in a thought of resolving a real time problem ; I figured out the idea of developing a website for **library named as E-Library (ETERNAL LIBRARY)** .

In order to deploy the works done manually in the library ; I will be trying to deploy it online which would add more value and support to the work of librarian and provide a helping hand to the students accessing the online website.

The key salient features of the library would be :

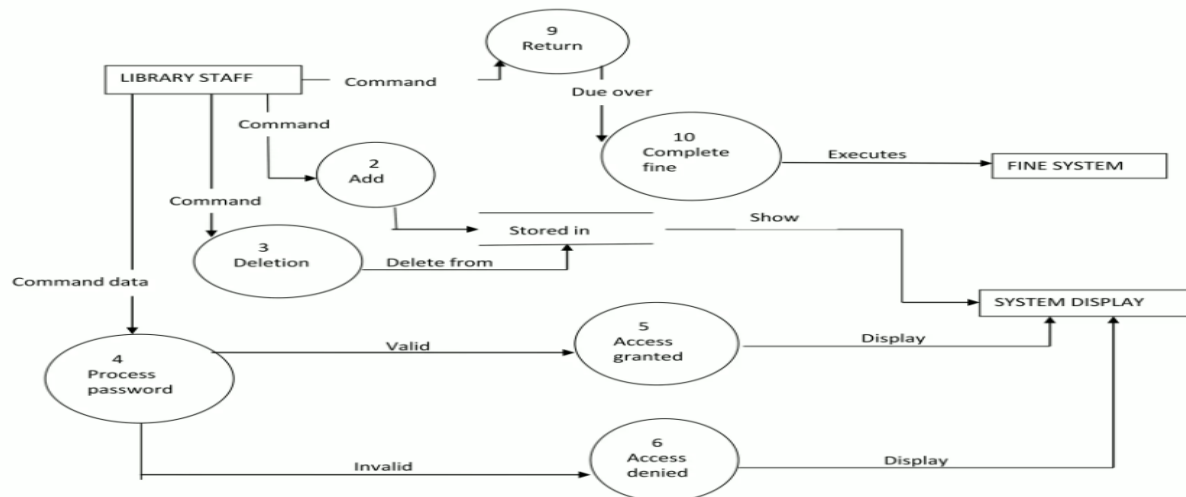
- User-friendly interface
- Look and Feel Environment
- Quick transaction All the manual difficulties in managing the Library have been rectified by implementing computerization
- Help to improve the library services.
- Help the Librarians with management information.
- Help the librarian in reporting on the various operations of the library.
- Increase the rate at which Tasks are completed accurately.
- Help the students with notification on due dates to return the book in the form of SMS or EMAIL.
- Online book issue ☐
- A teacher login page where teacher can add any events being organized in the college and important suggestions regarding books. ☐

No doubt ,I am trying to work on this project since my minor project but creating this project from scratch in a new technology would always be a roller coaster ride and it would be an experience giving journey .



Data Flow Diagram

DATA FLOW DIAGRAM (DFD)



Technologies Used :

The three months were covered by studying and making implementations regarding the technologies listed below. The basics of the following technologies would be used for the successful completion of the project.

-REACT JS

-NODE JS

-BOOTSTRAP

-EXPRESS JS

-MONGO DB

- **React** is a JavaScript library for building user interfaces. It was created by Facebook and is now maintained by Facebook and a community of developers. React is known for its performance, scalability, and the ability to easily create reusable components. React works by using a declarative approach to building UIs. This means that you describe the state of your UI and React takes care of updating the DOM (Document Object Model) to reflect those changes. React uses a virtual DOM to efficiently update only the parts of the DOM that have changed, which makes it faster and more efficient than traditional approaches to building UIs. React is often used with other libraries and frameworks, such as Redux for managing state and Next.js for server-side rendering. React can also be used with a variety of other tools and libraries to create complex web applications.

Some of the key features of React include:

- **Components:** React allows you to create reusable components that can be used throughout your application. This makes it easy to maintain consistency across your UI and to separate concerns.
- **Virtual DOM:** React uses a virtual DOM to efficiently update only the parts of the DOM that have changed. This makes it faster and more efficient than traditional approaches to building UIs.
- **JSX:** React uses JSX, a syntax extension to JavaScript, to allow you to write HTML-like code in your JavaScript files. This makes it easier to reason about your code and to create reusable components.
- **Unidirectional data flow:** React uses a unidirectional data flow, which means that data flows in a single direction through your application. This makes it easier to reason about your code and to avoid bugs.

Overall, React is a powerful tool for building complex web applications. It is used by many large companies, including Facebook, Instagram, and Netflix, and has a large and active community of developers who contribute to its development and maintenance.

2. **CDN (Content Delivery Network)** links are URLs that point to files hosted on a CDN, which is a network of servers distributed around the world that cache and serve content to users from a location that is geographically closer to them. CDN links are commonly used to serve static assets, such as images, scripts, and stylesheets, to web pages.

Here are some examples of CDN links for popular libraries and frameworks:

jQuery: <https://code.jquery.com/jquery-3.6.0.min.js>

Bootstrap: <https://cdn.jsdelivr.net/npm/bootstrap@5.1.3/dist/css/bootstrap.min.css>

3.)Bootstrap Bootstrap is a popular front-end development framework that helps you quickly and easily create responsive and mobile-first websites. It includes a set of pre-built CSS styles and JavaScript components that you can use to create web pages and user interfaces.

Bootstrap was created by Twitter and is now maintained by a community of developers. It is open source and free to use.

Some of the key features of Bootstrap include:

- **Responsive design:** Bootstrap includes CSS classes and JavaScript components that make it easy to create websites that adapt to different screen sizes and devices, from desktops to smartphones.

- **Pre-built components:** Bootstrap includes a wide range of pre-built UI components, such as buttons, forms, modals, navigation menus, and more. These components are designed to be easy to use and customize.
- **Grid system:** Bootstrap includes a powerful grid system that makes it easy to create complex layouts. You can use the grid system to divide a page into rows and columns, and then place content within those columns.