

SYNOPSIS

PROGRAMMING IN JAVA-LAB (CAP680)

DIGITAL LIBRARY



LOVELY FACULTY OF COMPUTER APPLICATION

LOVELY PROFESSIONAL UNIVERSITY

PUNJAB (April 2023)

SUBMITTED BY:

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INTRODUCTION

OVERVIEW OF THE PROJECT:

- This digital library is a platform that allows users to access and search through a vast collection of digital resources such as books and admin, librarian can edit the books by name and quantity as well the database for users. In this project, we have developed a digital library system using Java programming language and NetBeans Integrated Development Environment (IDE).
- The main objective of this project is to create a user-friendly digital library system that enables users to search, borrow, and return digital resources. The system will also provide administrators with the ability to manage the library's resources, users, and borrowing policies.
- The system will consist of a graphical user interface (GUI) that enables users to search the library's resources by title, author, subject, and keyword. Users will also be able to view the availability status of resources and request to borrow them.
- Administrators will have access to additional functionalities such as adding new resources to the library, updating existing resources, managing user accounts, and setting borrowing policies.
- Overall, the digital library system project using Java and NetBeans IDE has provided us an excellent opportunity to improve our programming skills, database management, and GUI development.

ADVANTAGES :

- **Enhanced Security:** Desktop-based systems can be installed on local servers or individual computers, providing greater control over data security. Libraries can implement their own security measures, including firewalls, encryption, and access controls, to safeguard sensitive information such as patron details and circulation records.
- **Speed and Performance:** Desktop-based systems often offer faster response times and improved performance compared to web-based systems. This is because the system's resources are dedicated solely to library operations, without the need to share processing power with other web applications or online traffic.
- **Customization and Integration:** Desktop-based library management systems can be tailored to suit the specific needs of a library. Libraries can customize the system's features, interfaces, and workflows to match their unique requirements. Additionally, desktop systems can be easily integrated with other software or local databases, facilitating seamless data exchange and integration with other library processes.

FUTURE SCOPE :

1. **Automation and Artificial Intelligence (AI):** Library management systems can leverage AI and automation to streamline processes such as cataloging, inventory management, and resource allocation. AI algorithms can enhance search capabilities, recommend personalized reading lists, and even assist in data analysis for decision-making.
2. **Integration with emerging technologies:** Library management systems can integrate with emerging technologies such as augmented reality (AR) and virtual reality (VR) to create immersive learning experiences. Users could explore virtual libraries, interact with 3D book displays, and engage in interactive learning activities.

3. Digital resource management: As digital resources become more prevalent, library management systems will need to adapt to efficiently manage electronic books, journals, databases, and multimedia content. Integration with e-readers and other digital devices will facilitate seamless access and borrowing of digital materials.
4. Data analytics and user insights: Library management systems can employ data analytics to gain insights into user behavior, preferences, and usage patterns. This information can help librarians optimize collection development, tailor recommendations, and improve services based on user needs.
5. Mobile applications and cloud-based solutions: Mobile apps will continue to play a crucial role in library management, enabling users to search catalogs, reserve books, receive notifications, and access digital resources on their mobile devices. Cloud-based solutions will provide scalable and accessible platforms for libraries of all sizes, allowing for easier collaboration and sharing of resources.
6. Collaborative spaces and community engagement: Library management systems can facilitate the creation of collaborative spaces within physical libraries, encouraging knowledge sharing, group projects, and community engagement. Features like event management, room booking, and community forums can enhance the overall library experience.

SYSTEM REQUIREMENT:

Computer system is made up of units that are put together to work as one in order to achieve a common goal. The requirements for the implementation of the new system are:

- The Hardware

➤ The Software

SOFTWARE REQUIREMENT

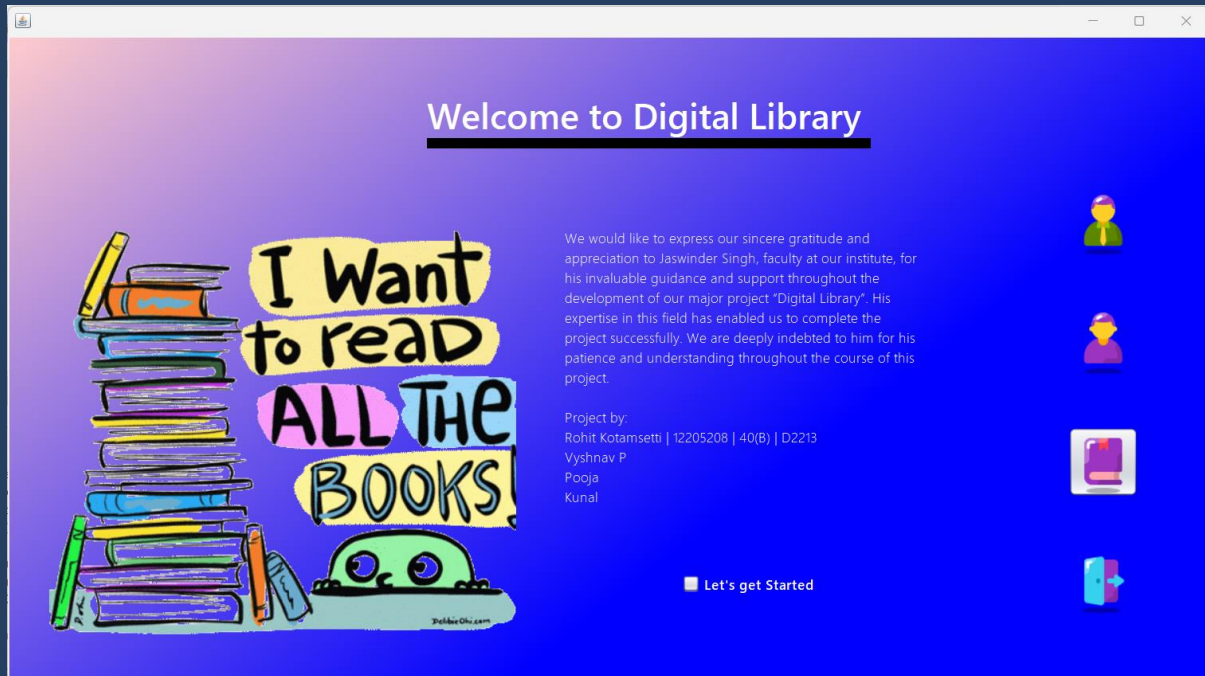
For the effective implementation of the new system, the following software has to be installed on the computer

- NetBeans
- XAMPP
- Apache Server
- JDBC Connector
- Browser

Hardware Requirements

- 4GB RAM and above
- Key Board
- Intel Core i3
- Mouse

Interface:



DIGITAL LIBRARY

(ADMIN)

ADMIN

X

Home Page

Pie Graph

Manage

Books

Students

Issue Book

Return Book

View Records

Defaulters

Logout

BOOKS

STUDENTS

ISSUED

DEFAULTER

Student Details

Book Details

Book id	Name	Course	Branch
1001	vyshnav	BCA	SCA
1002	Gautham	BCA	SCA
1003	Pranoy	MSC	IT

Book id	Name	Author	Quantity
101	Wings of Fire	A.P.J Abdul Kal..	9
102	Brave New Wo...	Aldous Huxley	0
103	To Kill a Mocki...	Harper Lee	6

6

DIGITAL LIBRARY

(USER)

USER

X

Home Page

Graph

Pre Register

View Records

Logout

Book Details

Book id	Name	Author	Quantity
101	Wings of Fire	A.P.J Abdul Kalam	4
102	Brave New World	Aldous Huxley	0
103	To Kill a Mockingbird	Harper Lee	-1
104	Wings of Fire	A.P.J Abdul Kalam	7
105	d	d	0

BOOKS

5

DIGITAL LIBRARY

(LIBRARIAN)

POOJA

X

Home Page

Pie Graph

Students

Issue Book

Return Book

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BOOKS

5

STUDENTS

6

ISSUED

3

DEFAULTER

1

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103	To Kill a Mockl...	Harper Lee	6

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localhost / 127.0.0.1 / roy | phpMyAdmin

localhost/phpmyadmin/index.php?route=/database/structure&db=roy

Server 127.0.0.1 » Database: roy

Structure SQL Search Query Export Import Operations Privileges Routines Events Triggers Designer

Filters

Containing the word:

Table	Action	Rows	Type	Collation	Size	Overhead
<input type="checkbox"/> book_details		5	InnoDB	utf8mb4_general_ci	16.0 Kib	-
<input type="checkbox"/> issue_book		5	InnoDB	utf8mb4_general_ci	16.0 Kib	-
<input type="checkbox"/> student_details		8	InnoDB	utf8mb4_general_ci	16.0 Kib	-
<input type="checkbox"/> users		17	InnoDB	utf8mb4_general_ci	16.0 Kib	-
<input type="checkbox"/> user_key		13	InnoDB	utf8mb4_general_ci	48.0 Kib	-
5 tables	Sum	48	InnoDB	utf8mb4_general_ci	112.0 Kib	0 B

☐ Check all With selected:

Print Data dictionary

Create new table

Table name: Number of columns:

Console