

Project Report

LIBRARY MANAGEMENT SYSTEM

CSE-2004

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ABSTRACT

A college library management system is a project that manages and stores books information electronically according to student's needs. The system helps both students and library manager to keep a constant track of all the books available in the library. It allows both the admin and the student to search for the desired book. It becomes necessary for colleges to keep a continuous check on the books issued and returned and even calculate fine. This system includes the registration of the student, adding the new student which includes the roll no of the student, name, batch, branch etc. it also have employee login Which includes the details of the employee. This project helps to store the information as well as the information about the books. it keep the details of the book. That the book is available in the library or not, book name, book id, book status etc. This task if carried out manually will be tedious and includes chances of mistakes. These errors are avoided by allowing the system to keep track of information such as issue date, last date to return the book and even fine information and thus there is no need to keep manual track of this information which thereby avoids chances of mistakes. it makes the system smooth and friendly to us. Library management System is very simple, flexible and user-friendly Library Management software that takes care of all your requirements relating to managing huge library. Library stores complete records of the books, members, creates library card, mange transaction, computes late fine, search books and generate MIS reports. P2P Library is a complete library solution makes this complicated function look much easier. The software is user-friendly, with user-definable preferences like Book category and extensive and search facilities, huge library of periodical data to analyse the trend of issue and receive of books. Library management system is a typical management Information system (MIS), its Development include the establishment and maintenance of back-end database and front-end application development aspects. For the former require the establishment of data consistency and integrity of the strong data security and good libraries. As for the latter requires the application fully functional, easy to use and so on.

INTRODUCTION

Thus, this system reduces manual work to a great extent allows smooth flow of library activities by removing chances of errors in the details. This system includes the registration of the student, adding the new student which includes the roll no of the student, name, batch, branch etc.it also have employee login Which includes the details of the employee. This project helps to store the information as well as the information about the books.it keep the details of the book That the book is available in the library or not, book name, book id, book status etc. The system excludes the use of paper work by managing all the book information electronically. Admin can keep updating the system by providing the new books arrival in system and their availability thus students need not to go to library for issuing purpose. The system has books well organized and systematically arranged in different categories in the system so that user can easily search and find the book. Thus, it saves human efforts and resources.

OUR PROJECT AIMS AND OBJECTIVES

The project aims and objectives that will be achieved after completion of this project are discussed in this subchapter. The aims and objectives are as follows:

- book issue.
- Request column for librarian for providing new books.
- A separate column for digital library.
- Student login page where student can find books issued by him/her and date of return.
- A search column to search availability of books.
- A librarian login page where teacher can add any events being organized in the college and important suggestions regarding books.

LITERATURE SURVEY

Library is regarded as the brain of any institute. Many institutes understand the importance of the library to the growth of the institute and their esteem users (students). Library Management System (LMS) supports the general requirement of the library like acquisition, cataloguing, circulation. An LMS usually comprises a relational database, software to interact with that database, and two graphical user interfaces (one for patrons, one for staff). Each of them integrated with a unified interface. Selectors ordered materials with ordering slips, cataloguers manually catalogued items and indexed them with the card catalogue system (in which all bibliographic data was kept on a single index card), and users signed books out manually, indicating their name on cue cards which were then kept at the circulation desk. Early mechanization came in 1936, when the University of Texas began using a punch card system to manage library circulation. Following the success of Evergreen for the Georgia PINES library consortium, the South Carolina State Library along with some local public libraries formed the SCLENDS consortium in order to share resources and to take advantage of the open source nature of the Evergreen ILS to meet their specific needs. By October 2011, just 2 years after 5 SCLENDS began operations, 13 public library systems across 15 counties had already joined the consortium, in addition to the South Carolina State Library. Librarytechnology.org does an annual survey of over 1,500 libraries and noted in 2008, 2% of those surveyed used open source ILS, in 2009 the number increased to 8% and in 2010 (most recent year available) 12% of the libraries polled had adopted open source LMSs. Library project system that offers many flexible and convenient features, allowing librarians and library users to maximize time and efficiency. Library System gives the all detailed information about students, staffs and books. It will track on the how many books available in library and books issued to the students. It shows popular book among the students. It will provide book lost in library. It keeps the record of the suppliers and book binders.

Ashok S Chaudhary GSFC University April 2015

Library is defined as a place in which books, manuscripts, recordings, films, or reference materials are kept for private or public use. Typically, a library must be able to handle some housekeeping actions such as acquisition, interlibrary loan, cataloguing, circulation, serials management, statistical reports and references. But many institutions and its libraries cannot afford the high cost of using commercial products. Therefore, an alternative solution in such situation open source software.

(PDF) *Library Management System: An Open alternative*. Available from:

https://www.researchgate.net/publication/295908650_Library_Management_System_An_Open_alternative [accessed Oct 11 2018].

Manohar 22 Jan 2018 .Net/Library Management System .Net Project:

The purpose of the Library Management System is to monitor the library's daily operations in a viable and effective way Exchanges such as login, registration, inclusion, search, deletion, issue are given. The Library Management System stores the points of interest, such as the name, address, ID number of the people who work in the library, and the clients who come to the library. Book points of interest such as book name, book number, author, publisher, shelf, etc. they are also saved. The application focuses primarily on the fundamental operations of a library, such as adding a new part, new books, and new data, looking for books, individuals, and offices to retrieve and return books.

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Digital Libraries (DLs) play a central role in the way information is produced, accessed and used in the Internet era. While the Web provides a universal access to uncontrolled information resources, DLs allow large, distributed repositories of multimedia content, annotated with possibly rich semantic structures and regulated by digital rights, to be created and managed to satisfy the needs of vast user communities.

Premanshu Shekhar Rath¹ , Abhishek Kumar² , Abhijeet Kumar³ Gaurav Kumar⁴ Assistant Professor¹ Library Management System © 2017 IJESC

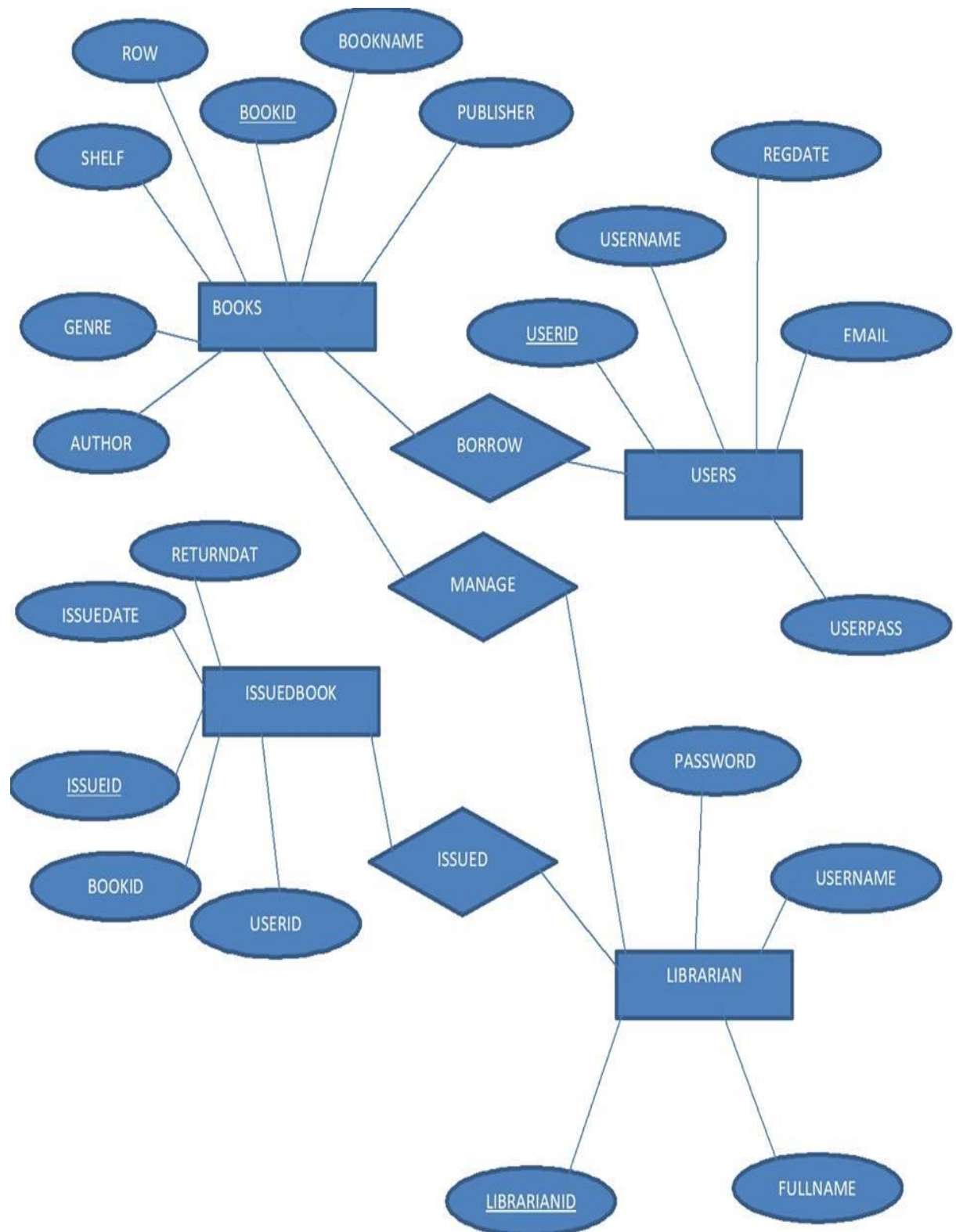
Today most of the library is using either manual system for tracking the day to day activity or they are using desktop, spread sheet like MS Excel application to manage the day to day activity. In this proposed Library Management System, it will run in client server mode so that user can check the book availability and system will store historical data. This project of "LIBRARY MANAGEMENT SYSTEM" give us the complete information about the library. We can enter the record of new books and retrieve the details of books available in the library.

Westman, Stephen R., Creating Database-Backend Library Web Pages: Using Open Source Tools, Ess Ess Pub., 2015

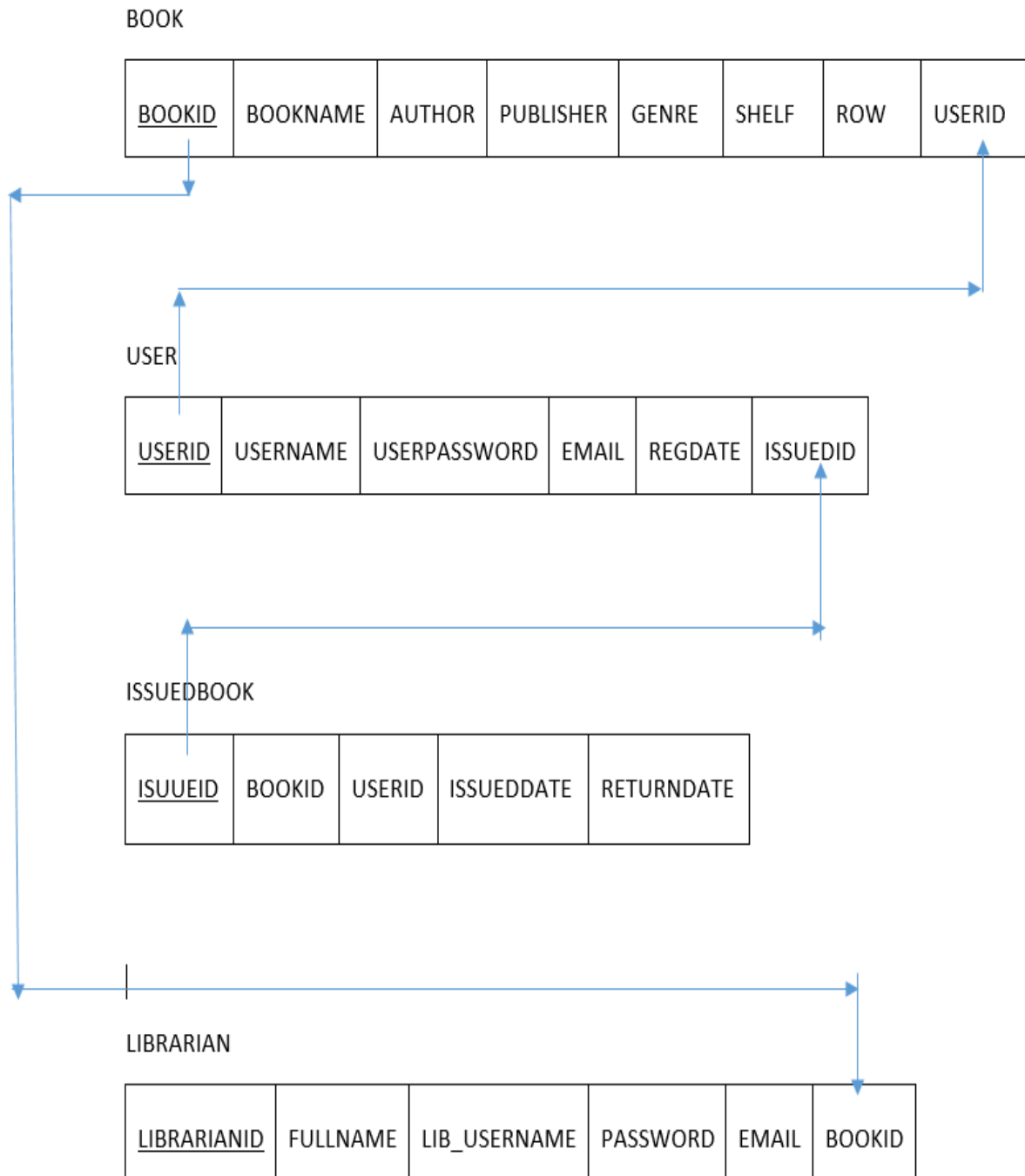
For at least the last two decades, libraries have overwhelmingly obtained their core automation systems from specialized vendors who offer the software through licenses that allow the company to retain exclusive access to the underlying source code. In recent years, open source software has become an increasingly popular alternative.

TOOLS AND METHODOLOGIES

- ER DIAGRAM:



- **RELATIONAL SCHEMA:**

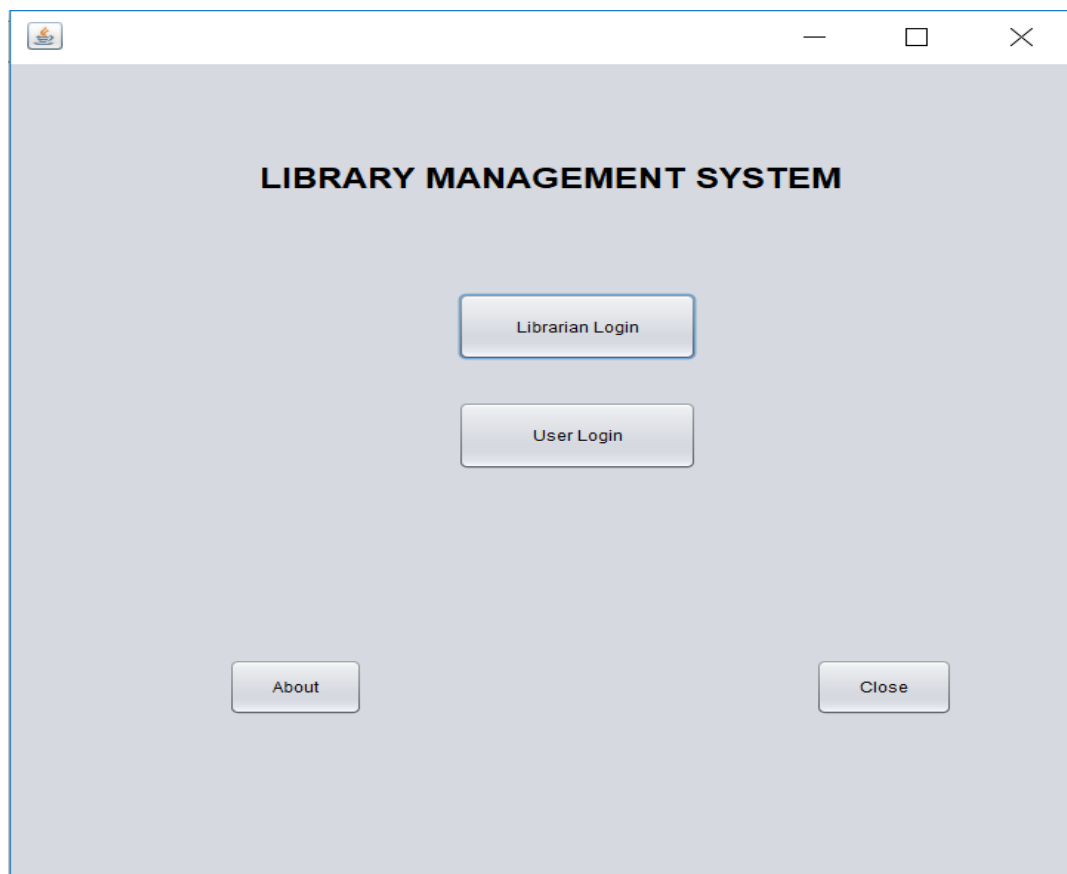



- **JAVA (FRONT END)**

NetBeans 8.2 java is an integrated development environment (IDE) for Java. NetBeans allows applications to be developed from a set of modular software components called modules. NetBeans runs on Microsoft Windows, macOS, Linux and Solaris. In addition to Java development, it has extensions for other languages like PHP, C, C++, HTML and JavaScript. Applications based on NetBeans, including the NetBeans IDE, can be extended by third party developers.

Here we have used java platform to execute the code. Different JFrame are assigned to do different task for creating user interface like user login, librarian login, issue book, return book etc. we have attached screenshots of our project interfaces.

SCREENSHOTS:



— □ ×


LIBRARIAN LOGIN

Username

Password

Login

Back

— □ ×

Name

Library ID

Email

Contact No.

View Issued Books

Issue Book

Return Book

View Book

View Students

Add Student

LogOut

—

□

×

Issued Books

☒ Name

☐ BookID

☐ UserID

☐ ALL

Search

Book ID	User ID	Book Name	Issued Date	Return Date
	3 8	two state	2018-10-06	2018-10-21
	5 5	dbms	2018-10-06	2018-10-21
	8 11	eee	2018-10-06	2018-10-21
	1 4	harry potter	2018-10-09	2018-10-24

Close

—

□

×

Books

☒ Name

☐ Author

☐ ALL

Search

Book ID	Name	Genre	AuthorRadio	Publisher	Shelf	Row
1	harry potter	fiction	jk rowling	hadf	1	c
2	half girlfriend	drama	chetan bhagat	hadf	1	c
3	two state	drama	chetan bhagat	hadf	1	c
4	hurry up	drama	ram bhagat	asdff	1	e
5	dbms	computer	satyrsl	asdff	2	c
6	os	computer	santhi	asdff	2	c
7	calculus	math	anuradha	anuradah	4	f
8	eee	electronic	ariyan	adah	4	f
9	avengers	fiction	Otto Binder	bantam	6	w
10	captain america	fiction	ted white	bantam	6	e
11	spiderman	fiction	marv	pocket	7	je
12	hulk	fiction	Richard	pocket	8	zje
13	Origin	Fiction	Dan Brown	Ratna	8	g
17	rome in built	fiction	rabi	bibeka	1	v

Close

Users

☐ Name

☐ Email

☐ ALL

Search

User ID	UserPass	RegDate	UserName	Email
1	1234	2018-09-18	bibek	bibek@goli.com
4	12345	2018-10-06	sinhalok	aloksinha@gmail.com
5	123456	2018-10-06	ramlinga	ram@gmail.com
6	123456	2018-10-06	ariyan123	ariyan@gmail.com
7	123456	2018-10-06	saikat123	saikat@gmail.com
8	123456	2018-10-06	rahul	rahul@gmail.com
9	12345	2018-10-06	megha	megha@gmail.com
10	12345	2018-10-06	niharika	niharika@gmail.com
11	1234	2018-10-06	mahika	abs@gmail.com
12	Rabi	2018-10-07	Rabi	rabi@gmail.com
13	123456	2018-10-09	lakshita	lakshita@gmail.com
14	123	2018-10-09	hsadthfasvghbgh	as@gmail.com
15	1234	2018-10-10	shivanifatty	shivanieroine@gmail.com
16	12345	2018-10-11	NIRANJAN	NIRANJAN@GMAIL.COM

Close

—

□

×

User Name

Password

Position

Email


Academic

Program

Year

ADD USER

Back

— □ ×

Book ID

User ID

Return Date

11

-


10

-

2018

Return

Back

— □ ×

Book ID

User ID

Issue Date

11

-

10

-

2018

Return Date

26

-

10

-

2018

Issue

Back

- **MYSQL (BACK END)**

MySQL is an open-source relational database management system (RDBMS). Its name is a combination of "My", the name of co-founder Michael Widenius's daughter, and "SQL", the abbreviation for Structured Query Language. The MySQL development project has made its source code available under the terms of the GNU General Public License, as well as under a variety of proprietary agreements. MySQL was owned and sponsored by a single for-profit firm, the Swedish company MySQL AB, now owned by Oracle Corporation. For proprietary use, several paid editions are available, and offer additional functionality. mysql and java connector is used to connect database and java netbeans using local host user and port number(3306). Like java frames for front end similarly we have made mysql for backend and here we have attached the screenshots of our database system.

For connection property: mysql jdbc connector is used for connection of front end (java) and back end(mysql)

```
mysql> SELECT * FROM USERS;
```

UserID	UserPass	RegDate	UserName	Email
1	1234	2018-09-18	bibek	bibek@goli.com
4	12345	2018-10-06	sinhalok	aloksinha@gmail.com
5	123456	2018-10-06	ramlinga	ram@gmail.com
6	123456	2018-10-06	ariyan123	ariyan@gmail.com
7	123456	2018-10-06	saikat123	saikat@gmail.com
8	123456	2018-10-06	rahul	rahul@gmail.com
9	12345	2018-10-06	megha	megha@gmail.com
10	12345	2018-10-06	niharika	niharika@gmail.com
11	1234	2018-10-06	mahika	abs@gmail.com
12	Rabi	2018-10-07	Rabi	rabi@gmail.com
13	123456	2018-10-09	lakshita	lakshita@gmail.com
14	123	2018-10-09	hsadbhfasvghbhg	as@gmial.com
15	1234	2018-10-10	shivanifatty	shivaniheroine@gmail.com
16	12345	2018-10-11	NIRANJAN	NIRANJAN@GMAIL.COM

14 rows in set (0.00 sec)

```
mysql> SELECT * FROM ISSUEDBOOK;
```

BookID	UserID	IssueDate	ReturnDate
3	8	2018-10-06	2018-10-21
5	5	2018-10-06	2018-10-21
8	11	2018-10-06	2018-10-21
1	4	2018-10-09	2018-10-24

```
4 rows in set (0.00 sec)
```

```
mysql> SELECT * FROM BOOKS;
```

BookID	BookName	Genre	Author	Publisher	Shelf	Row
1	harry potter	fiction	jk rowling	hadf	1	c
2	half girlfriend	drama	chetan bhagat	hadf	1	c
3	two state	drama	chetan bhagat	hadf	1	c
4	hurry up	drama	ram bhagat	asdff	1	e
5	dbms	computer	satyraj	asdfg	2	c
6	os	computer	santhi	asdfg	2	c
7	calculus	math	anuradha	anuradah	4	f
8	eee	electronic	ariyan	adah	4	f
9	avengers	fiction	Otto Binder	bantam	6	w
10	captain america	fiction	ted white	bantam	6	e
11	spiderman	fiction	marv	pocket	7	je
12	hulk	fiction	Richard	pocket	8	zje
13	Origin	Fiction	Dan Brown	Ratna	8	g
17	rome in built	fiction	rabi	bibeka	1	v

```
14 rows in set (0.00 sec)
```

```
mysql> SELECT * FROM LIBRARIAN;
```

LibrarianID	FullName	UserName	Password	Email
1	Amit Sinha	sinhamiit	amit123	amit@gmail.com

```
1 row in set (0.00 sec)
```


EXPERIMENT AND RESULT:

We are making project on library management system. It makes the library management system easier and user comfortable. In the previous system, we are keeping all records manually which is more complex for the librarian to redrive any data and manage data.

Now our system is made all easy by keeping all the record in the computer. With the help of our project library management system become so easy and user as well as librarian friendly. This project helps to store the information as well as the information about the books.it keep the details of the book. That the book is available in the library or not, book name, book id, book status etc. This task if carried out manually will be tedious and includes chances of mistakes. These errors are avoided by allowing the system to keep track of information such as issue date, last date to return the book and even fine information and thus there is no need to keep manual track of this information which thereby avoids chances of mistakes.it makes the system smooth and friendly to us.

CONCLUSION

This program provides a computerized version of library management system which will benefit the students as well as the staff of the library. It makes entire process where student can search books, staff can generate reports and do book transactions. It also has a facility for student login where student can login and can see status of books issued as well request for book or give some suggestions. It has a facility of librarian's login where librarian can add books. we are making it more interactive more user friendly and project which fulfils each user need in the best way possible. Our project is only a humble venture to satisfy the needs in a library. Several user-friendly coding has also adopted. This package shall prove to be a powerful package in satisfying all the manger to make reasonable estimates made within a limited time frame at the beginning of the software project and should be updated regularly as the project progresses. Last but not least it is no the work that played the ways to success.

REFERENCES

"ALA | Exhibit Spaces and Bulletin Boards". www.ala.org. Retrieved 2016-09-20.

Disaster planning". Australian Library and Information Association

"The Journal of Library Administration". Retrieved 7 November 2013.

Manohar 22 Jan 2018 .Net/Library Management System .Net Project:

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Westman, Stephen R., Creating Database-Backend Library Web Pages: Using Open Source Tools, Ess Ess Pub., 2009

Amin, Saiful, Open Source Software for Libraries, A Trend Report, DRTC, Bangalore 2003

Hasan, Nabi, Issues and Challenges in Open Source Software Environment with Special Reference to India, CSK H. P. Agricultural University, Palampur (HP), India

Sangsuree Vasupongayya, Kittisak Keawneam, Kittipong Sengloilaun, Patt Emmawat: Open Source Library Management System Software: A Review, Hat Yai, Songkhla, Thailand

M. Breeding, Open Source Library Automation: Overview and Perspective. Library Technology Reports. 44(8):5-10, 2008.

<https://www.slideshare.net/jimmykhan/library-mangement-system-project-srs-documentationdoc>