DBMS - MINI PROJECT

LIBRARY MANAGEMENT SYSTEM

TEAM MEMBERS :
MOHD AZAAN(RA1911003010900)
AAYUSH MEHTA(RA1911003010905)

INDEX PAGE

PROJECT AIM and OBJECTIVE

The project aim and objective are:

To eliminate the paper –work in library -to record every transaction in computerized system so that problems such as record file missing won't happen again.

PROJECT BACKGROUND:

Library Management system is an application refer to other library system and is suitable to use by small and medium size library.
It is use by librarian and library admin to manage the library using a computerized system.
The system was designed to help librarian record every book transaction so that the problem such as file missing will not happened again

Current Situation:

All the Transaction (books issues & books returned) are manually recorded(registers.)
Students search books by racks it so time consuming and there is no arrangement.
There is also the threat of losing records.

OPERATION ENVIRONMENT

Processor	**Intel Core Processor or Better Performance**
Operator System	**Windows Vista, Windows 7, Ubuntu**
Memory	**1GB RAM or more**
Hard Disk Space	**Minimum 3GB for Database Usage**
Database	**Oracle**

DATABASE DESIGN

INTRODUCTION:

The database is a collection of information and is systematically stored in tables in the form of rows and columns. The table in the database has unique name that identifies its contents. The database in turn is further described in detail giving all the fields used with the data types, constraints available, primary key and foreign key.

Database design is used to manage large of information. In this database we describe the entire 4 table available in the software, which are used to store all the records.

Data types and its description:

Fields in database table have a data type used in database table are explained below.

Integer: one optional sign character (+ or -) followed by at least one digit (0-9). Leading and trailing blanks are ignored. No other character is allowed.

Varchar: It is used to store alpha numeric characters. In this data type we can set the maximum number of characters up to 8000 ranges by defaults SQL server will set the size to 50 characters range.

Data/time: Data/time data type is used for representing date or time.

Database Name: bookdetails

Field Name	Data Type	Size	Relation
Accno	Varchar	50	Primary key
Author	Varchar	50	Not null
Title	Varchar	50	Not null
Publication	Varchar	50	Not null
Edition	Varchar	50	Not null
No_of_copies	int		Not null
Volumn	Varchar	50	Not null
Date_pur	Varchar	50	Not null
Price	Decimal	(18,2)	Not null
Status	Varchar(50)	50	Not null

Database Name: student

Field Name	Data Type	Size	Relation
Name	Varchar	50	Not null
Regno	Varchar	50	Primary key
Date_of_issue	Datetime		Not null
Addresss	Varchar	50	Not null

Date_of_return	Datetime		Not null
Course	Varchar	50	Not null
Accno	Varchar	50	Foreign key
Gender		50	

Database Name: issue

Field Name	Data Type	Size	Relation
Regno	Varchar	50	Foreign key
Date_of_issue_books	Datetime		Not null
Date_of_return_books	Datetime		Not null
Accno	Varchar	50	Not Null
Name	Varchar	50	Not null
Course	Varchar	50	Not null
Author	Varchar	50	Not null
Volumn	Varchar	50	Not null
Edition	Varchar	50	Not null

Database Name: return

Field Name	Data Type	Size	Relation
Regno	Varchar	50	Foreign key
Accno	Varchar	50	Not Null
Date_of_return_books	Datetime		Not null
Date_of_issue_books	Datetime		Not null
Name	Varchar	50	Not null
Course	Varchar	50	Not null
Author	Varchar	50	Not null
Volumn	Varchar	50	Not null
Edition	Varchar	50	Not null

Entity Relationship Diagram:

Entity Relationship Diagram is used in modern database software engineering to illustrate logical structure of database. It is a relational schema database modeling method used to
Model a system and approach. This approach commonly used in database design. The diagram created using this method is called ER-diagram.

The ER-diagram depicts the various relationships among entities, considering each object as entity. Entity is represented as rectangle shape and relationship represented as diamond shape. It depicts the relationship between data object. The ER-diagram is the notation that is used to conduct the data modeling activity.

Entity:

Entity is the things which we want to store information. It is an elementary basic building block of storing information about business process. An entity represents an object defined within the information system about which you want to store information. Entities are distinct things in the enterprise.

Relationship:

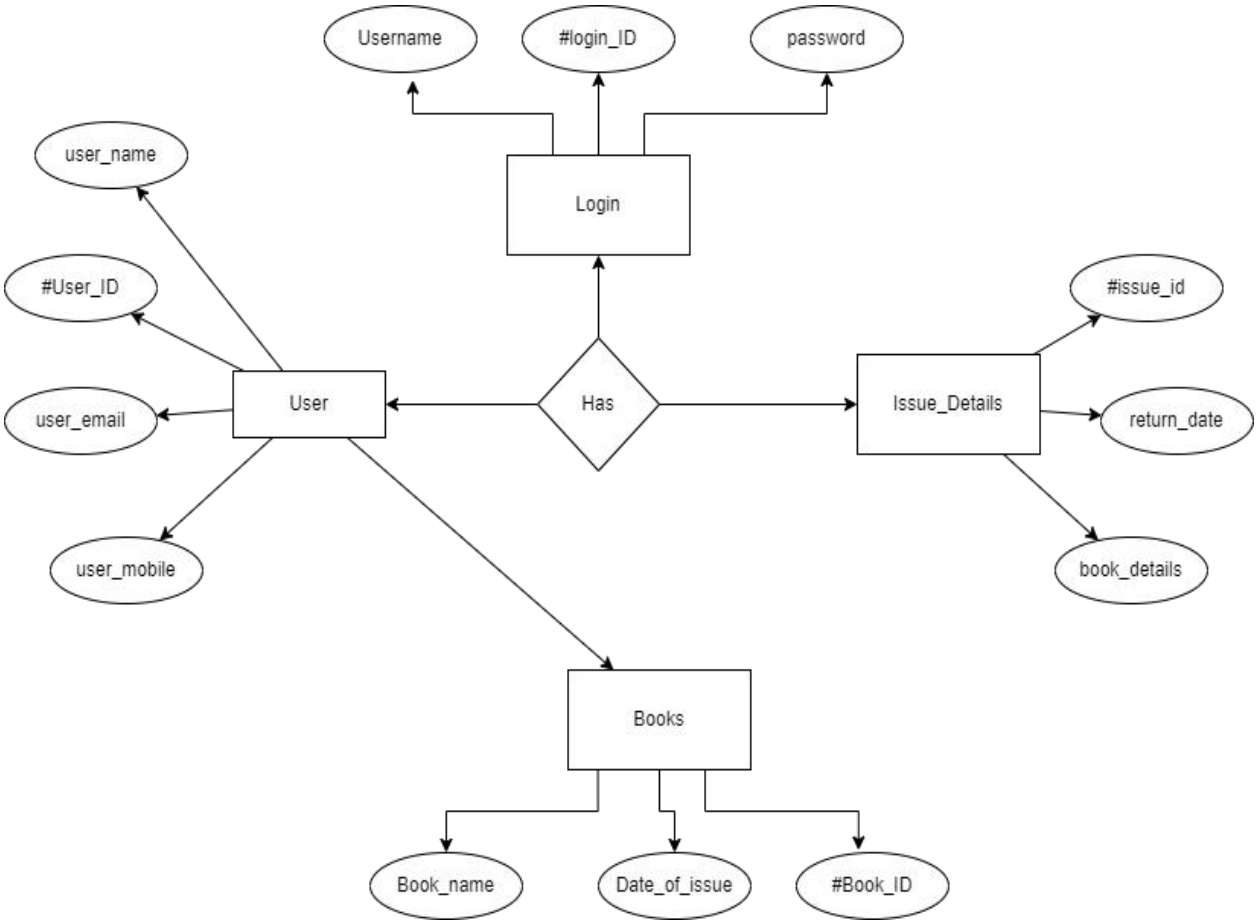
A relationship is normal connection or association between entities used to relate two or more entities with some common attributes or meaningful interaction between the object.

Attributes:

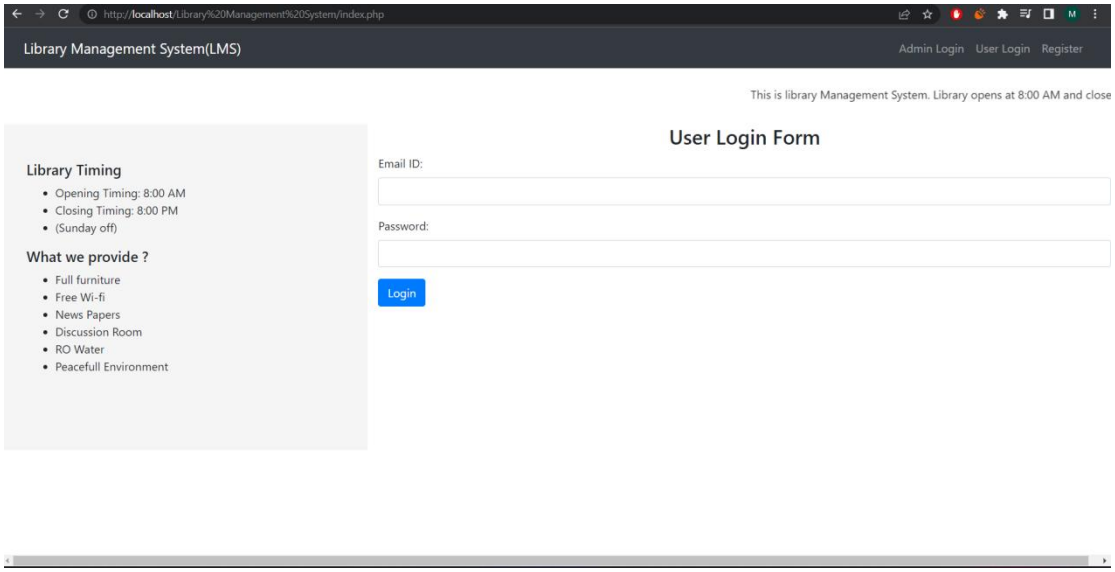
Attributes are the properties of the entities and relationship descriptor of the entity. Attributes are elementary pieces of information attached to an entity.

symbols	**Meaning**
	Entity
	Relationship
	Attributes
	Key attributes
E1 TO E2 Relation is N:1	Cardinality ratio N:1 for E1:E2 in R

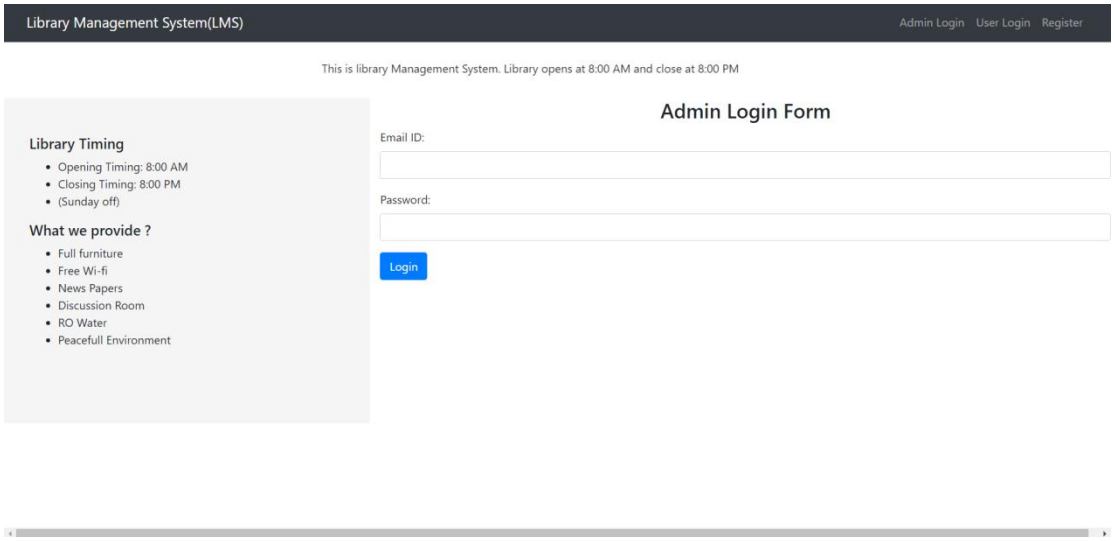
ER DIAGRAM:


Username
#login_ID
password
Login
user_name
#User_ID
user_email
user_mobile
User
Has
#issue_id
return_date
book_details
Issue_Details
Books
Book_name
Date_of_issue
#Book_ID

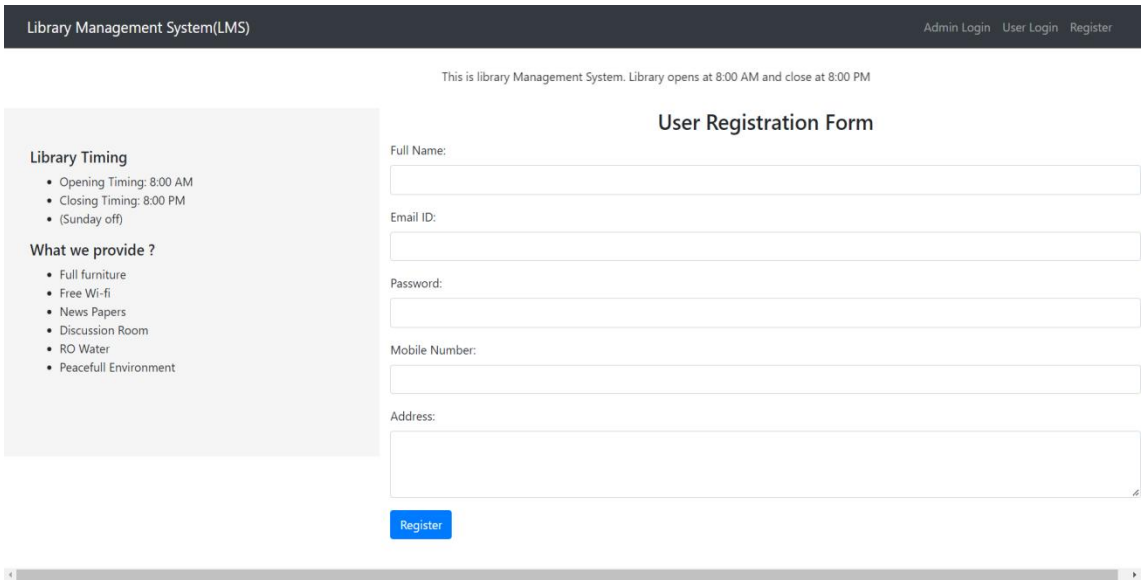
USER LOGIN FORM:



ADMIN LOGIN INFO:



REGISTER FORM:



SQL STATEMENTS:

```
-- phpMyAdmin SQL Dump
-- version 4.9.2
-- https://www.phpmyadmin.net/
--
-- Host: 127.0.0.1
-- Generation Time: Apr 22, 2020 at 08:10 PM
-- Server version: 10.4.11-MariaDB
-- PHP Version: 7.2.26

SET SQL_MODE = "NO_AUTO_VALUE_ON_ZERO";
SET AUTOCOMMIT = 0;
START TRANSACTION;
SET time_zone = "+00:00";


/*!40101 SET @OLD_CHARACTER_SET_CLIENT=@@CHARACTER_SET_CLIENT */;
/*!40101 SET @OLD_CHARACTER_SET_RESULTS=@@CHARACTER_SET_RESULTS */;
/*!40101 SET @OLD_COLLATION_CONNECTION=@@COLLATION_CONNECTION */;
/*!40101 SET NAMES utf8mb4 */;

--
-- Database: `library_manag`
--

-- --------------------------------------------------------

--
-- Table structure for table `admins`
--

CREATE TABLE `admins` (
  `id` int(11) NOT NULL,
  `name` varchar(100) NOT NULL,
  `email` varchar(100) NOT NULL,
  `password` varchar(250) NOT NULL,
  `mobile` int(10) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;
```

```
--
-- Dumping data for table `admins`
--

INSERT INTO `admins` (`id`, `name`, `email`, `password`, `mobile`) VALUES
(1, 'admin', 'admin@gmail.com', 'admin@1234', 1148458757);

-- --------------------------------------------------------

--
-- Table structure for table `authors`
--

CREATE TABLE `authors` (
  `author_id` int(11) NOT NULL,
  `author_name` varchar(250) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;

--
-- Dumping data for table `authors`
--

INSERT INTO `authors` (`author_id`, `author_name`) VALUES
(102, 'M D Guptaa'),
(103, 'Chetan Bhagat'),
(104, 'Munshi Prem Chand');

-- --------------------------------------------------------

--
-- Table structure for table `books`
--

CREATE TABLE `books` (
  `book_id` int(11) NOT NULL,
  `book_name` varchar(250) NOT NULL,
  `author_id` int(11) NOT NULL,
  `cat_id` int(11) NOT NULL,
  `book_no` int(11) NOT NULL,
  `book_price` int(11) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;
```

```
--
-- Dumping data for table `books`
--

INSERT INTO `books` (`book_id`, `book_name`, `author_id`, `cat_id`, `book_no`,
`book_price`) VALUES
(1, 'Software engineering', 101, 1, 4518, 270),
(2, 'Data structure', 102, 2, 6541, 300);

-- --------------------------------------------------------

--
-- Table structure for table `category`
--

CREATE TABLE `category` (
  `cat_id` int(11) NOT NULL,
  `cat_name` varchar(100) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;

--
-- Dumping data for table `category`
--

INSERT INTO `category` (`cat_id`, `cat_name`) VALUES
(1, 'Computer Science Engineering '),
(2, 'Novel'),
(4, 'Motivational'),
(5, 'Story');

-- --------------------------------------------------------

--
-- Table structure for table `issued_books`
--

CREATE TABLE `issued_books` (
  `s_no` int(11) NOT NULL,
  `book_no` int(11) NOT NULL,
  `book_name` varchar(200) NOT NULL,
```

```
  `book_author` varchar(200) NOT NULL,
  `student_id` int(11) NOT NULL,
  `status` int(11) NOT NULL,
  `issue_date` longtext NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;

--
-- Dumping data for table `issued_books`
--

INSERT INTO `issued_books` (`s_no`, `book_no`, `book_name`, `book_author`,
`student_id`, `status`, `issue_date`) VALUES
(1, 6541, 'Data structure', 'D S Gupta', 4, 1, '0000-00-00 00:00:00'),
(18, 7845, 'half Girlfriend', 'Chetan Bhagat', 2, 1, '2020-04-22');

-- --------------------------------------------------------

--
-- Table structure for table `users`
--

CREATE TABLE `users` (
  `id` int(11) NOT NULL,
  `name` varchar(50) NOT NULL,
  `email` varchar(100) NOT NULL,
  `password` varchar(100) NOT NULL,
  `mobile` int(10) NOT NULL,
  `address` varchar(250) NOT NULL
) ENGINE=InnoDB DEFAULT CHARSET=utf8mb4;

--
-- Dumping data for table `users`
--

INSERT INTO `users` (`id`, `name`, `email`, `password`, `mobile`, `address`) VALUES
(4, 'user', 'user@gmail.com', 'user@1234', 2147483644, 'XYZ Coloney, PQR Nagar ,
Jaipur'),
(7, 'hemant', 'hemant@gmail.com', 'hemant@123', 2147483644, 'XYZ Coloney, PQR
Nagar , Jaipur');

--
```

```
-- Indexes for dumped tables
--

--
-- Indexes for table `admins`
--
ALTER TABLE `admins`
  ADD PRIMARY KEY (`id`);

--
-- Indexes for table `authors`
--
ALTER TABLE `authors`
  ADD PRIMARY KEY (`author_id`);

--
-- Indexes for table `books`
--
ALTER TABLE `books`
  ADD PRIMARY KEY (`book_id`);

--
-- Indexes for table `category`
--
ALTER TABLE `category`
  ADD PRIMARY KEY (`cat_id`);

--
-- Indexes for table `issued_books`
--
ALTER TABLE `issued_books`
  ADD PRIMARY KEY (`s_no`);

--
-- Indexes for table `users`
--
ALTER TABLE `users`
  ADD PRIMARY KEY (`id`);

--
-- AUTO_INCREMENT for dumped tables
```

```
--

--
-- AUTO_INCREMENT for table `admins`
--
ALTER TABLE `admins`
  MODIFY `id` int(11) NOT NULL AUTO_INCREMENT, AUTO_INCREMENT=2;

--
-- AUTO_INCREMENT for table `authors`
--
ALTER TABLE `authors`
  MODIFY `author_id` int(11) NOT NULL AUTO_INCREMENT, AUTO_INCREMENT=107;

--
-- AUTO_INCREMENT for table `books`
--
ALTER TABLE `books`
  MODIFY `book_id` int(11) NOT NULL AUTO_INCREMENT, AUTO_INCREMENT=9;

--
-- AUTO_INCREMENT for table `category`
--
ALTER TABLE `category`
  MODIFY `cat_id` int(11) NOT NULL AUTO_INCREMENT, AUTO_INCREMENT=10;

--
-- AUTO_INCREMENT for table `issued_books`
--
ALTER TABLE `issued_books`
  MODIFY `s_no` int(11) NOT NULL AUTO_INCREMENT, AUTO_INCREMENT=19;

--
-- AUTO_INCREMENT for table `users`
--
ALTER TABLE `users`
  MODIFY `id` int(11) NOT NULL AUTO_INCREMENT, AUTO_INCREMENT=8;
COMMIT;
/*!40101 SET CHARACTER_SET_CLIENT=@OLD_CHARACTER_SET_CLIENT */;
/*!40101 SET CHARACTER_SET_RESULTS=@OLD_CHARACTER_SET_RESULTS */;
/*!40101 SET COLLATION_CONNECTION=@OLD_COLLATION_CONNECTION */;
```

CONCLUSION:

During the course of this project, we learnt a lot of the work and best practices that go into creating a database, the rules to construct a good ER diagram, how to come up with relational schema mapping from the ER diagram, deriving the functional dependencies and how to normalize the relational schema. We learnt on how to design a system from Database perspective and how to efficiently store and manipulate data.