LIBRARY MANAGEMENT SYSTEM

Windows User

[Type the company name]

[Pick the date]

LIBRARY MANAGEMENT SYSTEM
PROJECT DONE BY
RAJDEEP MAJUMDER
&
BRINTYA MIDYA

CONTENTS

ACKNOWLEDGEMENT

We take this occasion to thank God, almighty for blessing us with his grace and taking our endeavor to a successful culmination. We extend our sincere and heartfelt thanks to our esteemed guide, and we also take this opportunity to express a deep sense of gratitude to our course teacher VARSHA PODDAR, SUBARNA ROY mam for cordial support, valuable suggestions and guidance. We extend our sincere thanks to our parents for give us suggestions and guidance.

STUDENT'S SIGNATURE

_____   _____

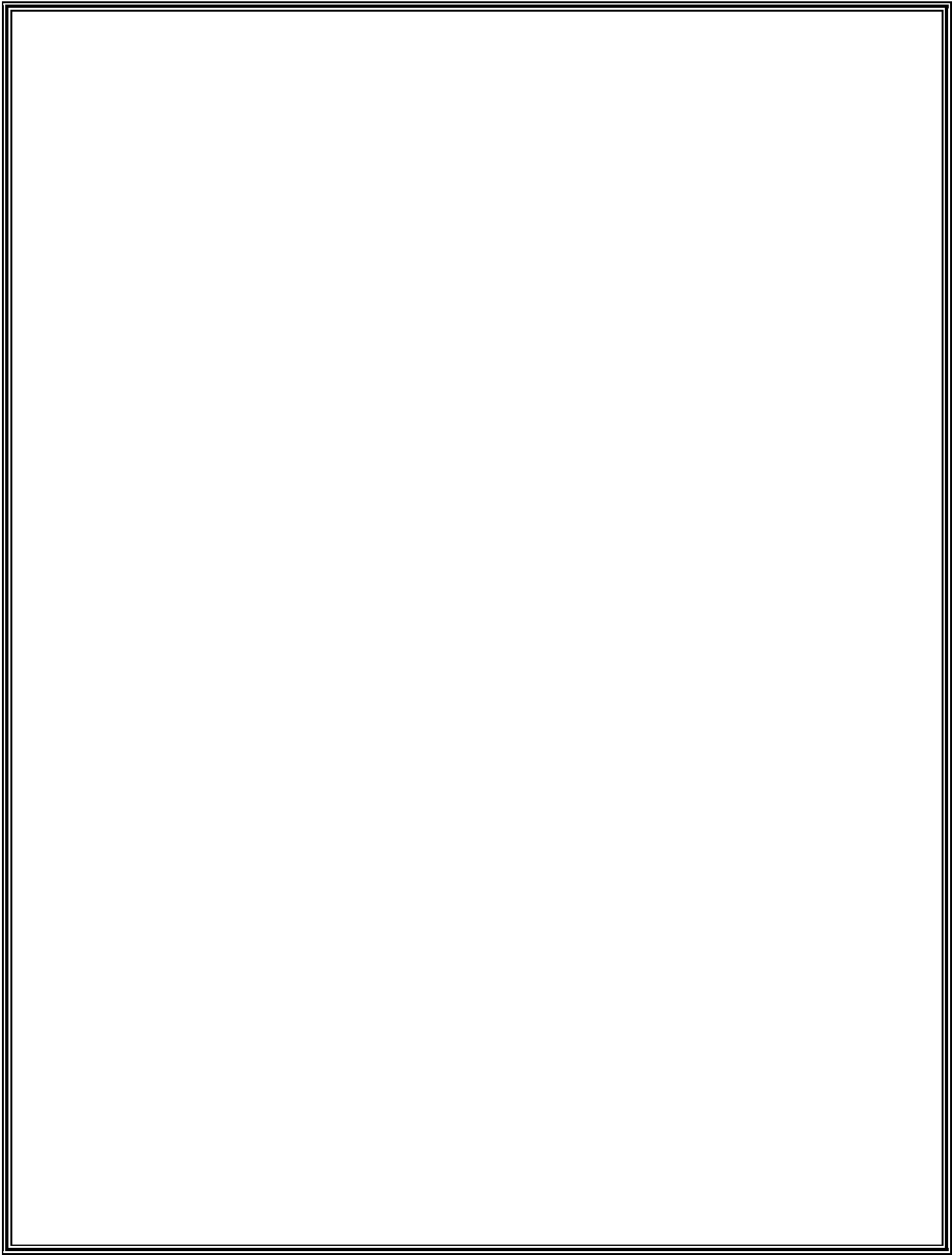RAJDEEP MAJUMDER   BRINTYA MIDYA

PROBLEM STATEMENT

A PROJECT ON "LIBRARY MANAGEMENT SYSTEM" BASED ON DATABASE MANAGEMENT SYSTEM

PROJECT IS DONE BY STUDENTS OF CSE-3D

NAME: RAJDEEP MAJUMDER
ROLL NO.:26

NAME: BRINTYA MIDYA
ROLL NO.:25

INTRODUCTION

Library management system is a project which aims in developing a computerized system to maintain all the daily work of library. This project has many features which are generally not available in normal library management systems like facility of admin login through which the admin can monitor the whole system. The librarian after logging into his account can generate various options such as new student, new book, issue book and return book details. Overall this project of ours is being developed to help staff of library to maintain the library in the best way possible and also reduce the human effort.

Modern Generation is going to dependable on computer and through computer we use Software. Hence, we are learning java that's why we create an Application for managing library system by using java. By using this, we can store a student's information, issue a book and store a student's information who takes a book from this library. Mainly this application is used by Library administration.

Libraries are essential in a process of giving citizens access to knowledge. In digital times they are needed more than ever before. In our country, library systems are written that's why we make a great use of paper. By making paper we cut trees. It is very harmful for our environment. For our environment, we take this step to reduce this.

PURPOSE OF THE PROJECT

The aim of this project is to develop a system that can handle & manage the activities involved in a library in an efficient & reliable way. Less managing personnel & easy searching availability & user profile managing are major goals in this project. Develop a system that can replace the manual library managing system.

- Develop a database which stores user details & book details.
- Give reliable search facility for the users.
- Administrator or librarian should have logins.
- Create an easy to understand user friendly environment.

SIGNIFICANCE OF THE PROJECT

Library Management System is an application which refers to library systems which are generally small or medium in size. It is used by librarian to manage the library using a computerized system where he/she can record various transactions like issue of books, return of books, addition of new books, addition of new students etc. Books and student maintenance modules are also included in this system which would keep track of the students using the library and also a detailed description about the books a library contains. With this computerized system there will be no loss of book record or member record which generally happens when a non computerized system is used. All these modules are able to help librarian to manage the library with more convenience and in a more efficient way as compared to library systems which are not computerized.

E-R DIAGRAM

PUBLICATION

AVAILABILITY

ISBN

TITLE

ID

NAME

ADDRESS

YEAR

BOOK

READ

READER

CONTACT

PRICE

FINE

AUTHOR

STORED

TAKEN BY

ISBN

ISSUE_DATE

USER_ID

ADMIN

NAME

DUE

RECORD

RETURNDATE

RECORD_ID

DUE_DATE

PASSWORD

CONTACT

AVAILABILITY

ADDRESS
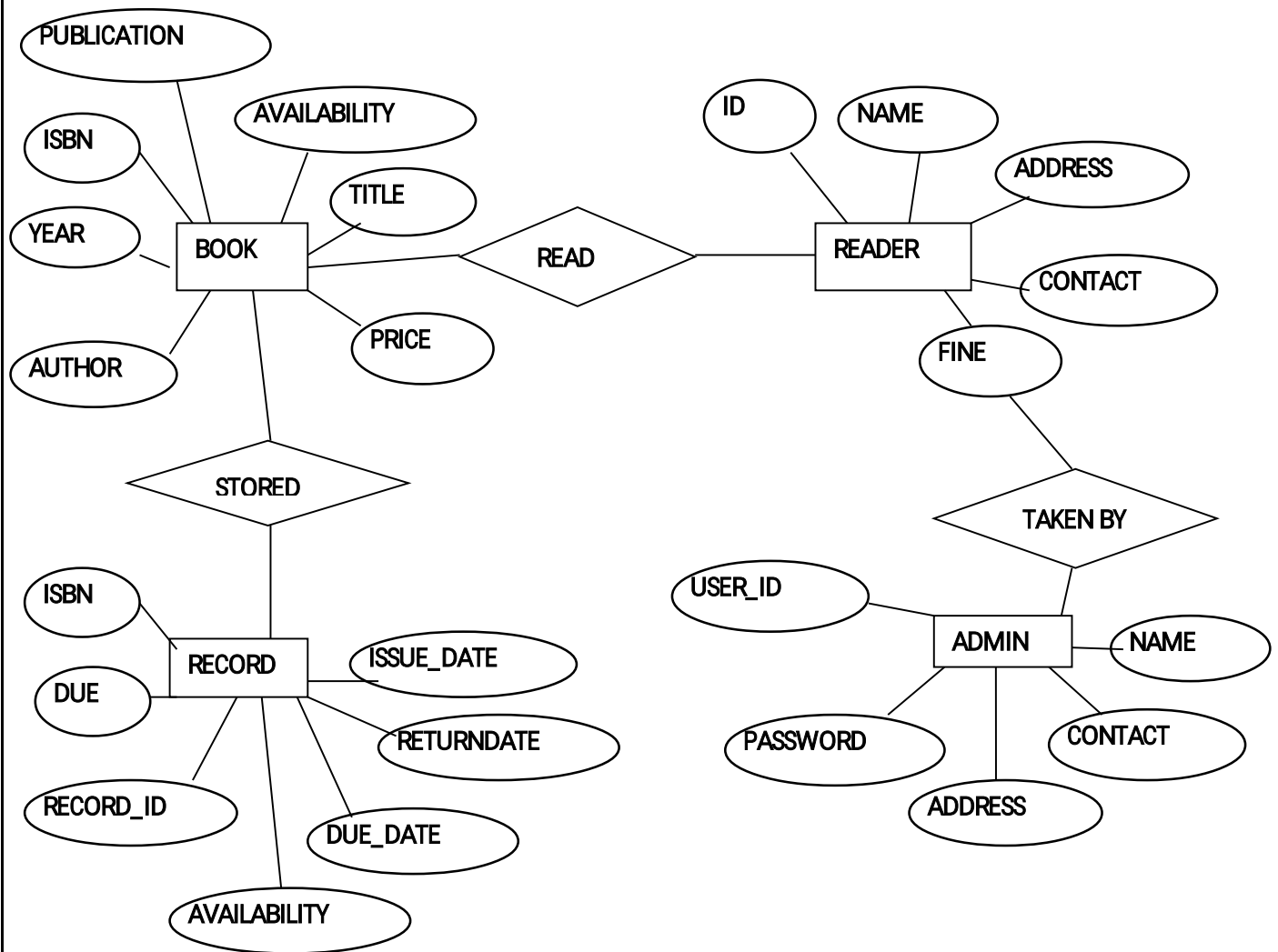
CODING SECTION –SQL QUERIES

Enter password: *****

Welcome to the MariaDB monitor. Commands end with ; or \g.

Your MariaDB connection id is 9

Server version: 10.4.7-MariaDB mariadb.org binary distribution

Copyright (c) 2000, 2018, Oracle, MariaDB Corporation Ab and others.

Type 'help;' or '\h' for help. Type '\c' to clear the current input statement.


```
MariaDB [(none)]> show databases;
+--------------------+
| Database           |
+--------------------+
| information_schema |
| mysql              |
```

```
| performance_schema |
| test               |
+--------------------+
4 rows in set (0.201 sec)


MariaDB [(none)]> use test;
Database changed
MariaDB [test]>
MariaDB [test]> show tables;
Empty set (0.048 sec)


MariaDB [test]> show databases;
+--------------------+
| Database           |
+--------------------+
| information_schema |
| mysql              |
| performance_schema |
| test               |
+--------------------+
4 rows in set (0.001 sec)
```

```
MariaDB [test]> create database Library;

Query OK, 1 row affected (0.122 sec)


MariaDB [test]> show databases;

+--------------------+

| Database           |

+--------------------+

| information_schema |

| library            |

| mysql              |

| performance_schema |

| test               |

+--------------------+

5 rows in set (0.001 sec)


MariaDB [test]> use Library;

Database changed

MariaDB [Library]> show tables;

Empty set (0.001 sec)
```

MariaDB [Library]> create table book(ISBN int(30),title varchar(50),author varchar(30),publication varchar(30),year year,price int(5),availability bool);

Query OK, 0 rows affected (1.001 sec)

MariaDB [Library]> show tables;

```
+-------------------+
| Tables_in_library |
+-------------------+
| book              |
+-------------------+
```

1 row in set (0.001 sec)

MariaDB [Library]> show details book;

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MariaDB server version for the right syntax to use near 'details book' at line 1

MariaDB [Library]> describe book;

```
+--------------+--------------+------+-----+---------+-------+
| Field        | Type         | Null | Key | Default | Extra |
+--------------+--------------+------+-----+---------+-------+
| ISBN         | int(30)      | YES  |     | NULL    |       |
```

```
| title       | varchar(50) | YES |   | NULL |   |
| author      | varchar(30) | YES |   | NULL |   |
| publication | varchar(30) | YES |   | NULL |   |
| year        | year(4)     | YES |   | NULL |   |
| price       | int(5)      | YES |   | NULL |   |
| availability| tinyint(1)  | YES |   | NULL |   |
+-------------+-------------+-----+---+------+---+
```

7 rows in set (0.214 sec)

MariaDB [Library]> create table reader(ID int(10),name varchar(30),address varchar(100),contact varchar(15));

Query OK, 0 rows affected (0.238 sec)

MariaDB [Library]> show tables
    -> ;

```
+------------------+
| Tables_in_library |
+------------------+
| book             |
| reader           |
+------------------+
```

2 rows in set (0.001 sec)

MariaDB [Library]> describe book;

Field	Type	Null	Key	Default	Extra
ISBN	int(30)	YES		NULL	
title	varchar(50)	YES		NULL	
author	varchar(30)	YES		NULL	
publication	varchar(30)	YES		NULL	
year	year(4)	YES		NULL	
price	int(5)	YES		NULL	
availability	tinyint(1)	YES		NULL	

7 rows in set (0.083 sec)

MariaDB [Library]> describe reader;

Field	Type	Null	Key	Default	Extra
ID	int(10)	YES		NULL	

```
| name     | varchar(30)  | YES |   | NULL   |     |
| address  | varchar(100) | YES |   | NULL   |     |
| contact  | varchar(15)  | YES |   | NULL   |     |
+---------+--------------+------+-----+---------+-------+
4 rows in set (0.042 sec)


MariaDB [Library]>

MariaDB [Library]>

MariaDB [Library]>

MariaDB [Library]>

MariaDB [library]> show tables;

+-------------------+
| Tables_in_library |
+-------------------+
| book              |
| reader            |
+-------------------+
2 rows in set (0.070 sec)


MariaDB [library]> create table;
ERROR 1064 (42000): You have an error in your SQL syntax;
```

check the manual that corresponds to your MariaDB server version for the right syntax to use near '' at line 1

MariaDB [library]> describe book;

Field	Type	Null	Key	Default	Extra
ISBN	int(30)	YES		NULL	
title	varchar(50)	YES		NULL	
author	varchar(30)	YES		NULL	
publication	varchar(30)	YES		NULL	
year	year(4)	YES		NULL	
price	int(5)	YES		NULL	
availability	tinyint(1)	YES		NULL	

7 rows in set (0.116 sec)

MariaDB [library]> describe reader;

Field	Type	Null	Key	Default	Extra
ID	int(10)	YES		NULL	

```
| name    | varchar(30)  | YES |    | NULL   |    |
| address | varchar(100) | YES |    | NULL   |    |
| contact | varchar(15)  | YES |    | NULL   |    |
+---------+--------------+-----+----+--------+------+
4 rows in set (0.031 sec)


MariaDB [library]> create table record(record_ID int(15) primary
key,ISBN int(30),issue_date date,due_date date,due
bool,return_date date);
Query OK, 0 rows affected (0.418 sec)


MariaDB [library]> describe record;
+-------------+------------+-----+-----+---------+------+
| Field       | Type       | Null | Key | Default | Extra |
+-------------+------------+-----+-----+---------+------+
| record_ID   | int(15)    | NO  | PRI | NULL    |    |
| ISBN        | int(30)    | YES |    | NULL    |    |
| issue_date  | date       | YES |    | NULL    |    |
| due_date    | date       | YES |    | NULL    |    |
| due         | tinyint(1) | YES |    | NULL    |    |
| return_date | date       | YES |    | NULL    |    |
```

```
+-------------+-------------+-------+-----+---------+-------+
```

6 rows in set (0.090 sec)

MariaDB [library]> create table admin(name varchar(30),user_id varchar(20) primary key,password varchar(20),contact varchar(15),adress varchar(100));

Query OK, 0 rows affected (0.209 sec)

MariaDB [library]> describe admin;

```
+-----------+---------------+-------+-----+---------+-------+
| Field     | Type          | Null | Key | Default | Extra |
+-----------+---------------+-------+-----+---------+-------+
| name      | varchar(30)   | YES  |     | NULL    |       |
| user_id   | varchar(20)   | NO   | PRI | NULL    |       |
| password  | varchar(20)   | YES  |     | NULL    |       |
| contact   | varchar(15)   | YES  |     | NULL    |       |
| adress    | varchar(100)  | YES  |     | NULL    |       |
+-----------+---------------+-------+-----+---------+-------+
```

5 rows in set (0.095 sec)

MariaDB [library]> alter table reader

-> add primary key(ID)

    -> modify name varchar(30) NOT NULL

    -> modify address varchar(100) NOT NULL

    -> modify address varchar(15) NOT NULL;

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MariaDB server version for the right syntax to use near 'modify name varchar(30) NOT NULL

modify address varchar(100) NOT NULL

modify add' at line 3

MariaDB [library]> describe reader;

+---------+--------------+------+-----+---------+-------+
| Field | Type | Null | Key | Default | Extra |
+---------+--------------+------+-----+---------+-------+
ID	int(10)	YES		NULL	
name	varchar(30)	YES		NULL	
address	varchar(100)	YES		NULL	
contact	varchar(15)	YES		NULL	
+---------+--------------+------+-----+---------+-------+
4 rows in set (0.034 sec)

MariaDB [library]> alter table reader;

```
Query OK, 0 rows affected (0.071 sec)

Records: 0  Duplicates: 0  Warnings: 0


MariaDB [library]> alter table reader
    -> ADD PRIMARY KEY(ID);

Query OK, 0 rows affected (0.830 sec)

Records: 0  Duplicates: 0  Warnings: 0


MariaDB [library]> alter table reader
    -> modify name varchar(30) NOT NULL;

Query OK, 0 rows affected (0.699 sec)

Records: 0  Duplicates: 0  Warnings: 0


MariaDB [library]> alter table reader
    -> modify address varchar(100) NOT NULL;

Query OK, 0 rows affected (0.782 sec)

Records: 0  Duplicates: 0  Warnings: 0


MariaDB [library]> alter table reader
    -> modify contact varchar(15) NOT NULL;

Query OK, 0 rows affected (0.555 sec)
```

Records: 0 Duplicates: 0 Warnings: 0

MariaDB [library]> describe reader;

```
+---------+--------------+------+-----+---------+-------+
| Field   | Type         | Null | Key | Default | Extra |
+---------+--------------+------+-----+---------+-------+
| ID      | int(10)      | NO   | PRI | NULL    |       |
| name    | varchar(30)  | NO   |     | NULL    |       |
| address | varchar(100) | NO   |     | NULL    |       |
| contact | varchar(15)  | NO   |     | NULL    |       |
+---------+--------------+------+-----+---------+-------+
```
4 rows in set (0.030 sec)

MariaDB [library]> alter table reader
    -> ADD fine float(5) DEFAULT 0;
Query OK, 0 rows affected (0.242 sec)
Records: 0 Duplicates: 0 Warnings: 0

MariaDB [library]> describe reader;

```
+---------+--------------+------+-----+---------+-------+
| Field   | Type         | Null | Key | Default | Extra |
```

```
+---------+-------------+------+-----+---------+-------+
| ID      | int(10)     | NO   | PRI | NULL    |       |
| name    | varchar(30) | NO   |     | NULL    |       |
| address | varchar(100)| NO   |     | NULL    |       |
| contact | varchar(15) | NO   |     | NULL    |       |
| fine    | float       | YES  |     | 0       |       |
+---------+-------------+------+-----+---------+-------+
```
5 rows in set (0.084 sec)

MariaDB [library]> describe book;

ERROR 2006 (HY000): MySQL server has gone away

No connection. Trying to reconnect...

Connection id: 12

Current database: library


```
+--------------+-------------+------+-----+---------+-------+
| Field        | Type        | Null | Key | Default | Extra |
+--------------+-------------+------+-----+---------+-------+
| ISBN         | int(30)     | YES  |     | NULL    |       |
| title        | varchar(50) | YES  |     | NULL    |       |
| author       | varchar(30) | YES  |     | NULL    |       |
```

```
| publication  | varchar(30) | YES |    | NULL   |     |
| year         | year(4)     | YES |    | NULL   |     |
| price        | int(5)      | YES |    | NULL   |     |
| availability | tinyint(1)  | YES |    | NULL   |     |
+--------------+-------------+------+-----+---------+-------+
7 rows in set (0.081 sec)


MariaDB [library]> alter table book
    -> add primary key(ISBN);
Query OK, 0 rows affected (0.592 sec)
Records: 0  Duplicates: 0  Warnings: 0


MariaDB [library]> alter table
    -> modify title varchar(50) NOT NULL
    -> modify author varchar(30) NOT NULL;
ERROR 1064 (42000): You have an error in your SQL syntax;
check the manual that corresponds to your MariaDB server version
for the right syntax to use near 'varchar(50) NOT NULL

modify author varchar(30) NOT NULL' at line 2

MariaDB [library]> alter table
    -> modify title varchar(50) NOT NULL;
```

ERROR 1064 (42000): You have an error in your SQL syntax; check the manual that corresponds to your MariaDB server version for the right syntax to use near 'varchar(50) NOT NULL' at line 2

MariaDB [library]> alter table book

    -> modify title varchar(50) NOT NULL;

Query OK, 0 rows affected (0.868 sec)

Records: 0 Duplicates: 0 Warnings: 0

MariaDB [library]> alter table book

    -> modify author varchar(30) NOT NULL;

Query OK, 0 rows affected (0.632 sec)

Records: 0 Duplicates: 0 Warnings: 0

MariaDB [library]> alter table book

    -> modify publication varchar(50) DEFAULT 'Unknown';

Query OK, 0 rows affected (0.195 sec)

Records: 0 Duplicates: 0 Warnings: 0

MariaDB [library]> alter table book

    -> modify year year(4) NOT NULL;

Query OK, 0 rows affected (0.591 sec)

Records: 0 Duplicates: 0 Warnings: 0

MariaDB [library]> alter table book

  -> modify price float(5) NOT NULL;

Query OK, 0 rows affected (1.005 sec)

Records: 0 Duplicates: 0 Warnings: 0

MariaDB [library]> alter table book

  -> modify availability bool DEFAULT 1;

Query OK, 0 rows affected (0.090 sec)

Records: 0 Duplicates: 0 Warnings: 0

MariaDB [library]> describe book;

```
+--------------+-------------+------+-----+---------+-------+
| Field        | Type        | Null | Key | Default | Extra |
+--------------+-------------+------+-----+---------+-------+
| ISBN         | int(30)     | NO   | PRI | NULL    |       |
| title        | varchar(50) | NO   |     | NULL    |       |
| author       | varchar(30) | NO   |     | NULL    |       |
| publication  | varchar(50) | YES  |     | Unknown |       |
| year         | year(4)     | NO   |     | NULL    |       |
```

```
| price        | float      | NO  |     | NULL    |       |
| availability | tinyint(1) | YES |     | 1       |       |
+--------------+------------+-----+-----+---------+-------+
7 rows in set (0.031 sec)


MariaDB [library]> describe admin;
+----------+--------------+------+-----+---------+-------+
| Field    | Type         | Null | Key | Default | Extra |
+----------+--------------+------+-----+---------+-------+
| name     | varchar(30)  | YES  |     | NULL    |       |
| user_id  | varchar(20)  | NO   | PRI | NULL    |       |
| password | varchar(20)  | YES  |     | NULL    |       |
| contact  | varchar(15)  | YES  |     | NULL    |       |
| adress   | varchar(100) | YES  |     | NULL    |       |
+----------+--------------+------+-----+---------+-------+
5 rows in set (0.036 sec)


MariaDB [library]> alter table admin
    -> modify name varchar(30) NOT NULL;
Query OK, 0 rows affected (0.566 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

```
MariaDB [library]> alter table admin
    -> modify password varchar(20) NOT NULL;
Query OK, 0 rows affected (0.912 sec)
Records: 0  Duplicates: 0  Warnings: 0


MariaDB [library]> alter table admin
    -> modify contact varchar(15) NOT NULL;
Query OK, 0 rows affected (0.877 sec)
Records: 0  Duplicates: 0  Warnings: 0


MariaDB [library]> alter table admin
    -> drop adress varchar(100);
ERROR 1064 (42000): You have an error in your SQL syntax;
check the manual that corresponds to your MariaDB server version
for the right syntax to use near 'varchar(100)' at line 2
MariaDB [library]> alter table admin
    -> drop adress;
Query OK, 0 rows affected (0.118 sec)
Records: 0  Duplicates: 0  Warnings: 0
```

MariaDB [library]> alter table admin

   -> ADD address varchar(100) not null;

Query OK, 0 rows affected (0.134 sec)

Records: 0 Duplicates: 0 Warnings: 0

MariaDB [library]> describe admin;

```
+----------+--------------+------+-----+---------+-------+
| Field    | Type         | Null | Key | Default | Extra |
+----------+--------------+------+-----+---------+-------+
| name     | varchar(30)  | NO   |     | NULL    |       |
| user_id  | varchar(20)  | NO   | PRI | NULL    |       |
| password | varchar(20)  | NO   |     | NULL    |       |
| contact  | varchar(15)  | NO   |     | NULL    |       |
| address  | varchar(100) | NO   |     | NULL    |       |
+----------+--------------+------+-----+---------+-------+
```
5 rows in set (0.031 sec)

MariaDB [library]> describe record;

```
+-------------+-------------+------+-----+---------+-------+
| Field       | Type        | Null | Key | Default | Extra |
+-------------+-------------+------+-----+---------+-------+
```

```
| record_ID   | int(15)    | NO  | PRI | NULL |    |
| ISBN        | int(30)    | YES |     | NULL |    |
| issue_date  | date       | YES |     | NULL |    |
| due_date    | date       | YES |     | NULL |    |
| due         | tinyint(1) | YES |     | NULL |    |
| return_date | date       | YES |     | NULL |    |
+-------------+------------+-----+-----+---------+-------+
6 rows in set (0.033 sec)


MariaDB [library]> alter table record
    -> add foreign key(ISBN) references book(ISBN);
Query OK, 0 rows affected (0.838 sec)
Records: 0  Duplicates: 0  Warnings: 0


MariaDB [library]> alter table record
    -> modify issue_date date NOT NULL;
Query OK, 0 rows affected (0.611 sec)
Records: 0  Duplicates: 0  Warnings: 0


MariaDB [library]> alter table record
    -> modify due tinyint(1) default 0;
```

Query OK, 0 rows affected (0.128 sec)

Records: 0 Duplicates: 0 Warnings: 0

MariaDB [library]> alter table record

   -> add borrower_id int(10) foreign key references reader(ID);

MariaDB [library]> alter table record

   -> add borrower_id int(10);

Query OK, 0 rows affected (0.132 sec)

Records: 0 Duplicates: 0 Warnings: 0

MariaDB [library]> alter table record

   -> add foreign key(borrower_id) references reader(ID);

Query OK, 0 rows affected (1.225 sec)

Records: 0 Duplicates: 0 Warnings: 0

FUTURE SCOPE OF THE PROJECT

We have much scope for developing our Application. We can make this application as Server based application. In our application we don't have student's interaction to this application. We can make this happen in future. We can make this application as an android application which is very helpful to the user and the library authority.

CONCLUSION

In this application we can entry a new book which has a specific id, price, pages, book name, and publisher. We also add a student's information such as name, id, father's name, and batch, semester which is help admin when a student issue a book & return a book. If admin wants to see the details information of returning or issuing a book with date, he needs to click just a button on our application.

REMARKS

_____

TEACHER'S SIGNATURE