

DBMS PROJECT LIBRARY MANAGEMENT SYSTEM 2020-21

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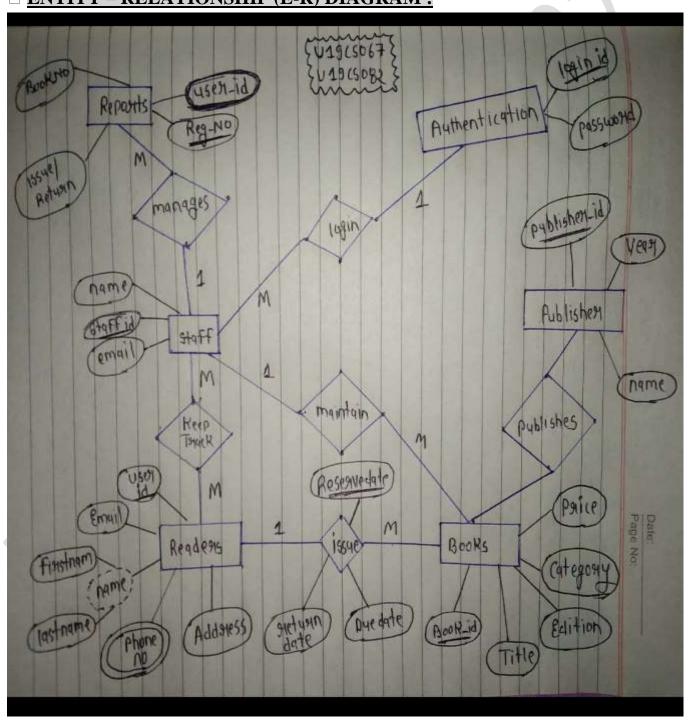


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PROBLEM STATEMENT:
☐ To design a library management system that lets user to issue different
types of books online Named as C2me. C2me can used to issue different
category of books. This system should also keep track of books record.
DISCREPTION:
A Library Management System is a software built to handle the primary housekeeping functions of a library. Library management systems also involve maintaining the database for entering new books and recording books that have been borrowed with their respective due dates.
□ CONSTRAINTS :
□ A Login id hove one was
□ A Login id have one user.□ A User use many books.
☐ A book is used by one user.
☐ A user make many issue oprations.
☐ A issue operation is made for one book.
☐ A book list have many books.
☐ A book have one publisher.
☐ A publisher have many books.

ENTITY – RELATIONSHIP (E-R) DIAGRAM:



□ ENTITIES :-

There are total six entities in this system. All of Six have their own attribute, which acts as primary key. So all are strong attributes.

User	: Library information about User.
Books	: Library information about books.
Reports : Library system made issue opration by user.	
Publishers	: Library information about Publisher of books.
Staff	: Library staff information

ALL ENTITES WITH ATTRIBUTES

user:-

- 1. fname
- 2. lname
- 3. moblieNumber
- 4. address
- 5. email (PRIMARY KEY)
- 6. password

□ book:-

- 1. bookid (PRIMARY KEY)
- 2. bookname
- 3. title
- 4. edition
- 5. bookcategory
- 6. price
- 7. publisher_email FOREIGN KEY [REFERENCES publishers(email)]

- 8. quantity
- 9. publishing_date

□ reports:-

- 1. reg_no
- 2. user_email FOREIGN KEY [REFERENCES user(email)]
- 3. issue_date
- 4. return_date
- 5. bookid FOREIGN KEY [REFERENCES book(bookid)]
- 6. **PRIMARY KEY**(reg_no)

publishers:-

- 1. fname
- 2. lname
- 3. email (PRIMARY KEY)
- 4. address
- 5. moblienumber

□ staff:-

- 1. fname
- 2. lname
- 3. email (PRIMARY KEY)
- 4. address
- 5. moblienumber
- 6. password

QUERY TO CREATE DATABASE:

```
CREATE DATABASE librarydatabase;
```

ALL DATABASES:

QUERY TO CREATE USER TABLE:

```
CREATE TABLE user(
fname varchar(30),
lname varchar(30),
moblieNumber varchar(25),
address varchar(100),
email varchar(50),
password varchar(15),
PRIMARY KEY (email));
```

OUTPUT OF USER TABLE:

```
Command Prompt - mysql -u root -p
mysql> desc user;
        | Type
                        | Null | Key | Default | Extra |
Field
                         YES YES
            varchar(30)
                                    NULL
 fname
 NULL NULL
 address varchar(100) YES
                               NULL PRI NULL
 email
            varchar(50)
                         NO
 password varchar(15)
                         YES |
                                    NULL
6 rows in set (0.00 sec)
mysql> _
```



NORMALIZATION USER TABLE:

FUNCTIONAL DEPENDENCIES
 email->fname,lname,moblieNumber,address,password

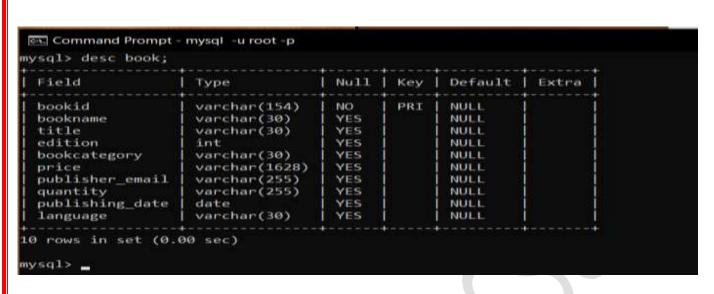
Candidate Keys:email Primary Key:email

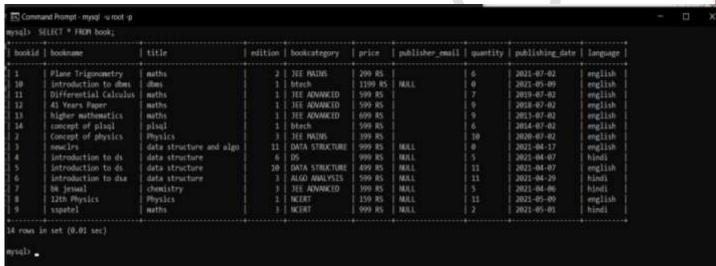
- 1nf->no multivalued attribute
- 2nf->single attribute primary key(i.e. email) all no-prime attribute are fully dependent on candidate key.so user table is in 2nf
- 3nf and bcnf->for every non-trival functional dependency X->Y
 - X is a super key

QUERY TO CREATE BOOK TABLE:

```
CREATE TABLE book(
bookid varchar(154),
bookname varchar(30),
title varchar(30),
edition int(100),
bookcategory varchar(30),
price varchar(1628),
publisher_email varchar(255),
quantity varchar(255),
publishing_date date,
language varchar(30),
PRIMARY KEY (bookid));
```

OUTPUT OF USER TABLE





NORMALIZATION USER TABLE:

FUNCTIONAL DEPENDENCIES
 bookid->bookname,title,edition ,bookcategory,price
 publisher_email,quantity,publishing_date,language

Candidate Keys:bookid Primary Key:bookid

- 1nf->no multivalued attribute
- 2nf->single attribute primary key(i.e. bookid) all no-prime attribute are fully dependent on candidate key.so user table is in 2nf
- 3nf and bcnf->for every non-trival functional dependency X->Y
 - X is a super key

QUERY TO CREATE REPORTS TABLE:

```
CREATE TABLE reports(
Reg_no int NOT NULL AUTO_INCREMENT,
User_email varchar(50),
issue_date date,
return_date date,
bookid varchar(154),
PRIMARY KEY (reg_no)
);
```

OUTPUT OF REPORTS TABLE:

```
Command Prompt - mysql -u root -p
mysql> desc reports;
 Field
                            | Null | Key | Default | Extra
             Type
 reg_no
                             NO
                                    PRI
                                          NULL
                                                    auto_increment
 user_email | varchar(50)
                              YES
                                     MUL |
                                          NULL
 issue_date | date
                              YES
                                           NULL
 return_date | date
                              YES
                                          NULL
             varchar(154) YES
 bookid
                                         NULL
5 rows in set (0.00 sec)
mysql>
```

```
Command Prompt - mysql -u root -p
mysql> SELECT * FROM reports;
 reg_no | user_email
                                        | issue_date | return_date | bookid |
                                          2021-04-19 | 2021-04-23
           exmp@gmail.com
           exmp@gmail.com
                                          2021-04-19
                                                       2021-04-23
           exmp@gmail.com
                                          2021-04-19
                                                       2021-04-23
           exmp@gmail.com
                                          2021-04-19
                                                       2021-04-23
           gurjarsourabh0802@gmail.com
                                          2021-04-02
                                                       2021-05-02
           gurjarsourabh0802@gmail.com
                                          2021-04-23
                                                       2023-06-23
      12
                                          2021-04-24
                                                       2021-05-02
      13
           gurjarsourabh0802@gmail.com
                                          2021-04-15
                                                       2021-05-02
      14
           psourabh080299@gmail.com
                                                                      10
           psourabh080299@gmail.com
                                          2021-04-07
                                                       2021-04-27
           psourabh080299@gmail.com
                                          2021-04-28
                                                       2021-05-09
          psourabh080299@gmail.com
                                          2021-04-26 | 2021-05-07
11 rows in set (0.01 sec)
nysql>
```

NORMALIZATION USER TABLE:

FUNCTIONAL DEPENDENCIES
 Reg_no->user_email,issue_date,return_date,bookid

Candidate Keys:reg_no

Primary Key:reg no

- 1nf->no multivalued attribute
- 2nf->single attribute primary key(i.e. reg_no) all no-prime attribute are fully dependent on candidate key.so user table is in 2nf
- 3nf and bcnf->for every non-trival functional dependency X->Y
 - X is a super key

QUERY TO CREATE PUBLISHER TABLE:

```
CREATE TABLE publishers(
fname varchar(30),
lname varchar(30),
email varchar(50),
address varchar(100),
moblieNumber varchar(15),
PRIMARY KEY (email)
);
```

OUTPUT OF PUBLISHERS TABLE:

```
Command Prompt - mysql -u root -p
mysql> desc publishers;
 Field
                 Type
                               | Null | Key | Default | Extra
 fname
                                 YES
                                               NULL
                 varchar(30)
                                               NULL
 1name
                 varchar(30)
                                 YES
 email
                 varchar(50)
                                 NO
                                         PRI
                                               NULL
                                 YES
 address
                 varchar(100)
                                               NULL
 moblienumber | varchar(15)
                                 YES
                                               NULL
 rows in set (0.01 sec)
ysql> _
```

NORMALIZATION USER TABLE:

FUNCTIONAL DEPENDENCIES
 email->fname,lname,address,moblieNumber

Candidate Keys:email Primary Key:email

- 1nf->no multivalued attribute
- 2nf->single attribute primary key(i.e. email) all no-prime attribute are fully

dependent on candidate key.so user table is in 2nf

- 3nf and bcnf->for every non-trival functional dependency X->Y
 - X is a super key

QUERY TO CREATE STAFF TABLE:

```
CREATE TABLE staff(
fname varchar(30),
lname varchar(30),
email varchar(50),
address varchar(100),
moblieNumber varchar(15),
password varchar(20),
PRIMARY KEY (email));
```

OUTPUT OF SAFF TABLE

Command Prom	pt - mysql -u root -	р			
mysql> desc stat	ff; +				
Field	Туре	Null	Key	Default	Extra
fname lname email address moblienumber pasword	varchar(30) varchar(30) varchar(50) varchar(100) varchar(15) varchar(20)	YES YES NO YES YES YES	 PRI 	NULL NULL NULL NULL NULL	
6 rows in set (6	•	+	+		++

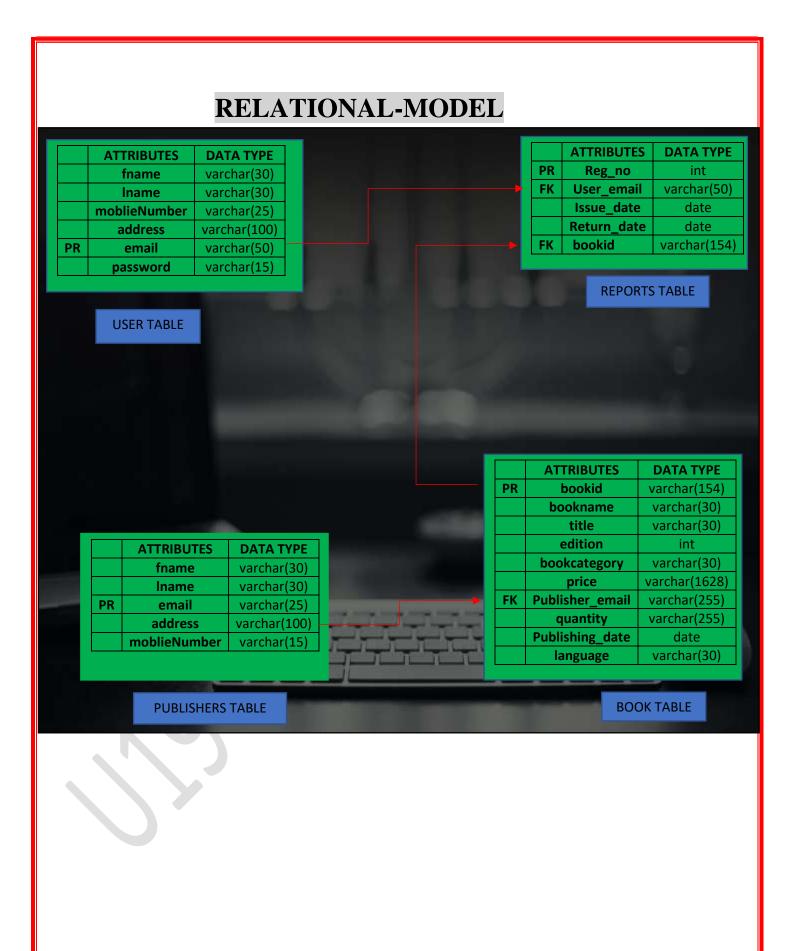
NORMALIZATION USER TABLE:

- FUNCTIONAL DEPENDENCIES

 email->fname,lname,address,moblieNumber,password

 Candidate Keys:email

 Primary Key:email
- **1nf**->no multivalued attribute
- 2nf->single attribute primary key(i.e. email) all no-prime attribute are fully dependent on candidate key.so user table is in 2nf
- 3nf and bcnf->for every non-trival functional dependency X->Y
 - X is a super key



BACKEND QUERY:

```
const express=require('express');
const mysql=require('mysql');
const bodyParser=require('body-parser');
const cors=require('cors');
const app=express();
app.use(cors());
app.use(express.json());
app.use(bodyParser.urlencoded({extended: true}));
//database creation
const db=mysql.createConnection({
    host:'localhost',
    user: 'root',
    password:'sourabh',
    database: 'LibraryDatabase'
});
//all user list for admin
app.get('/user',(req,res)=>{
    const sqlSelect="SELECT * FROM user;"
    db.query(sqlSelect,(err,result)=>{
        res.send(result);
    });
})
//signup for user
app.post('/signup',(req,res)=>{
    const sqlInsert="INSERT INTO user (fname,lname,moblieNumber,address,email,password) VAL
UES (?,?,?,?,?,?);"
   const fname=req.body.fname;
    const lname=req.body.lname;
    const moblieNumber=req.body.moblieNumber;
    const address=req.body.address;
    const email=req.body.email;
    const password=req.body.password;
    db.query(sqlInsert,[fname,lname,moblieNumber,address,email,password],(err,result)=>{
     if(err){
         console.log(err);
     else{
         console.log('signup data inserted into user table');
```

```
})
//signup admin
app.post('/signup/admin',(req,res)=>{
    const sqlInsert="INSERT INTO staff (fname,lname,moblieNumber,address,email,password) VA
LUES (?,?,?,?,?,?);"
    const fname=req.body.fname;
    const lname=req.body.lname;
    const moblieNumber=req.body.moblieNumber;
    const address=req.body.address;
    const email=req.body.email;
    const password=req.body.password;
    db.query(sqlInsert,[fname,lname,moblieNumber,address,email,password],(err,result)=>{
     if(err){
         console.log(err);
     }
     else{
         console.log('signup data inserted into staff table');
    })
})
//delete book by admin
app.delete('/delete/book:bookid',(req,res)=>{
    const sqlDelete="DELETE FROM book WHERE bookid = ? ;";
    const bookid=req.params.bookid;
    db.query(sqlDelete,bookid,(err,result)=>{
        if(err){
            console.log(err);
        else{
            console.log('book deleted');
    });
})
//update book by admin
app.put('/update/book',(req,res)=>{
    const sqlUpdate="UPDATE book SET bookname = ?,title = ? ,edition = ? ,bookcategory = ?
 ,price = ?,publisher_email = ? , publishing_date = ? ,quantity = ? WHERE bookid = ?";
```

```
const bookid=req.body.bookid;
    const bookname=req.body.bookname;
    const title=req.body.title;
    const edition=req.body.edition;
    const bookcategory=req.body.bookcategory;
    const price=req.body.price;
    const publisheremail=req.body.publisheremail;
    const quantity=req.body.quantity;
    const publishing_date=req.body.publishing_date;
    db.query(sqlUpdate,[bookname,title,edition,bookcategory,price,publisheremail,publishing
 _date,quantity,bookid],(err,result)=>{
        if(err){
            console.log(err);
        else{
            console.log('book updated');
    });
})
//get book detials for both user and admin
app.get('/book',(req,res)=>{
    const sqlSelect="SELECT * FROM book;"
    db.query(sqlSelect,(err,result)=>{
        res.send(result);
    });
})
//reports of issued books for admin
app.get('/issuedbookforadmin',(req,res)=>{
    const sqlSelect="SELECT * FROM reports;"
    db.query(sqlSelect,(err,result)=>{
        res.send(result);
    });
})
//add new book by admin
app.post('/book',(req,res)=>{
    const sqlInsert="INSERT INTO book (bookid,bookname,title,edition,bookcategory,price,pub
lishing_date,quantity) VALUES (?,?,?,?,?,?,?);"
    const bookid=req.body.bookid;
    const bookname=req.body.bookname;
    const title=req.body.title;
```

```
const edition=req.body.edition;
    const bookcategory=req.body.bookcategory;
    const price=req.body.price;
    const quantity=req.body.quantity;
    const publishing_date=req.body.publishing_date;
    console.log('!!!!!!!!!!!1111111',bookcategory)
    db.query(sqlInsert,[bookid,bookname,title,edition,bookcategory,price,publishing_date,qu
antity],(err)=>{
        if(err){
            console.log(err);
        else{
            console.log('your book inserted successfully');
    })
})
// issue a book by user
app.put('/issue/book',(req,res)=>{
     console.log('enter');
     const bookid=req.body.bookid;
     const sqlSelect="SELECT quantity FROM book WHERE bookid=?;"
     db.query(sqlSelect,[bookid],(err,result)=>{
        if(result[0].quantity>0){
            const issue_date=req.body.issue_date;
            const return_date=req.body.return_date;
            const email=req.body.email;
            const sqlInsert="INSERT INTO reports (user_email,issue_date,return_date,bookid)
 VALUES (?,?,?,?);"
            db.query(sqlInsert,[email,issue_date,return_date,bookid],(err)=>{
                if(err){
                    console.log(err);
                else{
                    console.log('data inserted into report');
            });
            const sqlUpdate="UPDATE book SET quantity = ? WHERE bookid = ?";
            const quantity=result[0].quantity-req.body.quantity;
            db.query(sqlUpdate,[quantity,bookid],(err)=>{
                if(err){
                    console.log(err);
                else{
                    console.log('your book is issued completly');
```

```
});
    });
})
app.get('/book/issued:email',(req,res)=>{
    const email=req.params.email;
    const sqlSelect=" SELECT DISTINCT b.*,r.* FROM book b,reports r WHERE r.bookid=b.bookid
AND ( r.bookid IN (SELECT bookid FROM reports WHERE user_email= ?) AND r.reg_no IN (SELEC
T reg no FROM reports WHERE user email= ?));"
    db.query(sqlSelect,[email,email],(err,result)=>{
        res.send(result);
    });
})
//return book by user
app.put('/book/return',(req,res)=>{
    const email=req.body.email;
    const reg_no=req.body.reg_no;
    const sqlDelete="DELETE FROM reports WHERE (reg_no= ? AND user_email =?);"
    db.query(sqlDelete,[reg_no,email],(err,result)=>{
        if(err){
            console.log(err);
        else{
            console.log('your book is submited successfully');
    });
})
//update book renue date by user
app.put('/book/renue',(req,res)=>{
    const email=req.body.email;
    const reg_no=req.body.reg_no;
    const renuedate=req.body.newrenudate.fname;
    const sqlUpdate="UPDATE reports SET return_date=? WHERE (reg_no= ? AND user_email = ?)
    db.query(sqlUpdate,[renuedate,reg_no,email],(err,result)=>{
        if(err){
           console.log(err);
```

```
else{
            console.log('your book return date is successfully updated',renuedate,"...",reg
_no,"..",email);
   });
})
//category of books for user
app.post('/user/category',(req,res)=>{
      const sqlSelect='SELECT DISTINCT bookcategory from book;'
      db.query(sqlSelect,(err,result)=>{
        if(err){
            console.log(err);
        else{
            res.send(result)
            console.log("category are sent to user");
      })
})
//get book by category
app.post('/getbookbycategory',(req,res)=>{
    const bookcategory=req.body.bookcategory;
    const sqlSelect='SELECT * FROM book WHERE bookcategory= ?;'
    db.query(sqlSelect,bookcategory,(err,result)=>{
        if(err){
            console.log(err)
        else{
            res.send(result)
   })
})
//get book by id
app.post('/getbookbyid',(req,res)=>{
    const bookid=req.body.bookid;
    const sqlSelect='SELECT * FROM book WHERE bookid= ?;'
    db.query(sqlSelect,bookid,(err,result)=>{
        if(err){
           console.log(err)
```

```
else{
           res.send(result)
    })
})
app.get('/latestbook',(req,res)=>{
    const sqlSelect='SELECT * FROM book LIMIT 18;'
    db.query(sqlSelect,(err,result)=>{
        if(err){
           console.log(err)
        else{
           console.log(result)
           res.send(result)
   })
})
app.post('/user/search',(req,res)=>{
    const sqlSelect='SELECT * FROM book WHERE bookcategory = ? AND title = ?;'
    const bookcategory=req.body.bookcategory;
    const auther=req.body.auther;
    const title=req.body.title;
    const language=req.body.language;
    db.query(sqlSelect,[bookcategory,title],(err,result)=>{
       if(err){
          console.log(err)
      else{
          res.send(result)
          console.log('done.....',result,"..",bookcategory,"...
 ,title)
  })
})
app.listen(3001,()=>{
   console.log('running in 3001.....');});
```

PL/SQL:

O FUNCTION

This function is used to tell the missing due date to the user according to the due date of issued books;

```
CREATE FUNCTION check_missing_date(return_date DATE)
RETURNS VARCHAR(4)
BEGIN
DECLARE missing VARCHAR(4);
IF year(curdate()) > year(return_date) THEN
SET missing = 'Yes';
ELSE
SET missing = 'No';
END IF;
RETURN (missing);
END
```

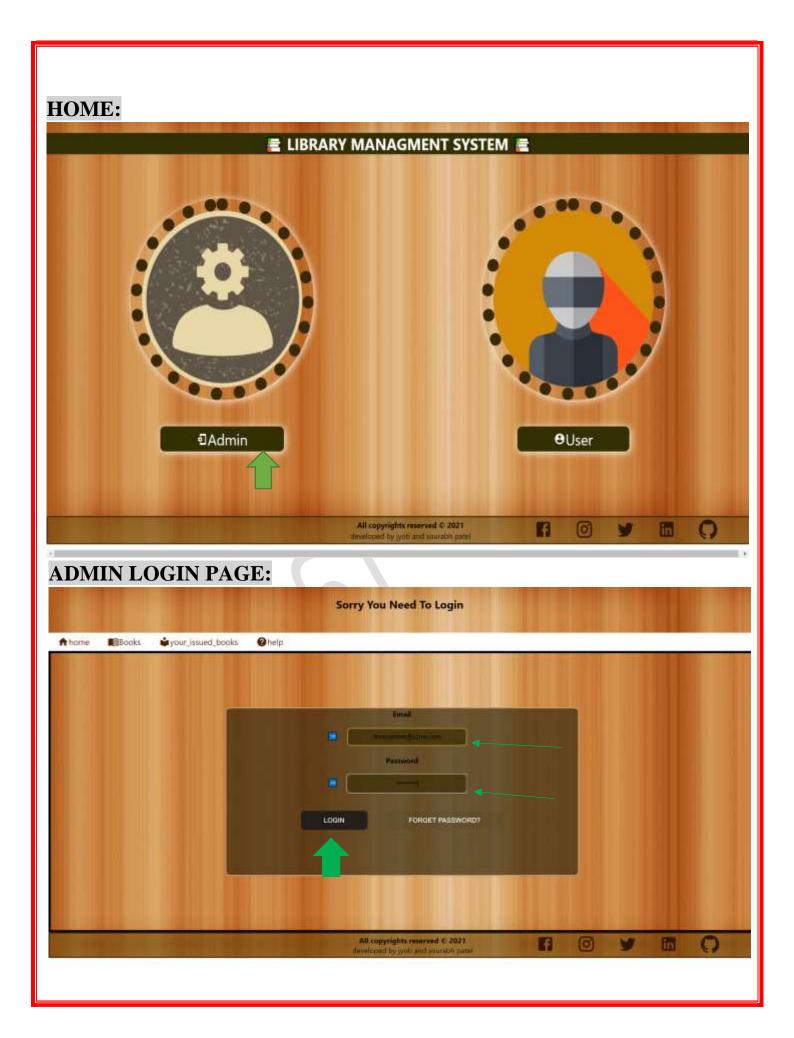
PROCEDURES

This procedure is used for updating entries in vaccinates table whenever a patient is given a dose of vaccine.

```
CREATE PROCEDURE update_reports(IN return_date DATE,IN new_return_date DATE,IN bookID
varchar)
BEGIN
update reports SET return_date = new_return_date where
bookid=bookID;
END
```

VIEWS

```
CREATE VIEW book_data AS SELECT bookid, bookname, bookcategory, edition, title, price, publisher_email,quantity,language FROM book;
```





ADMIN HOME PAGE:



ADMIN BOOKS PAGE:

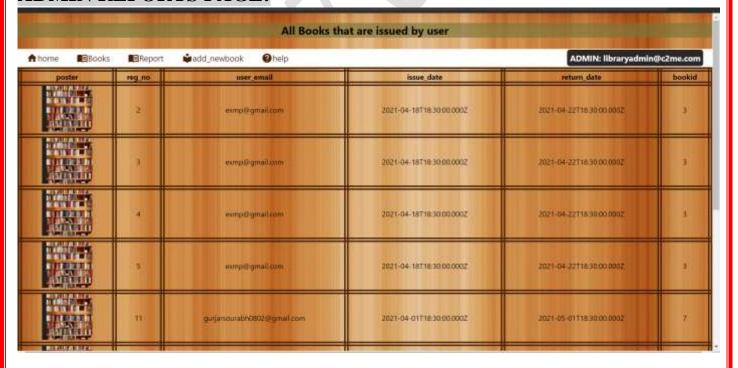


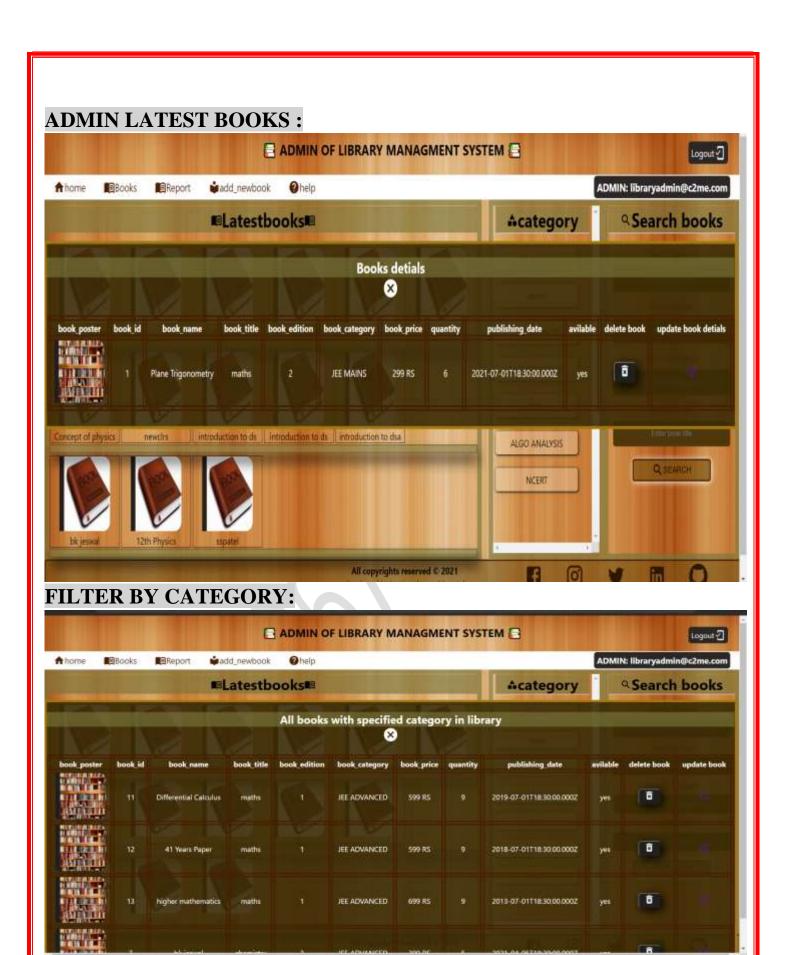
ADMIN UPDATE BOOK PAGE:



ADD NEW BOOK ADD NEW BOOK ADMIN: libraryadmin@c2me.com ADMIN: libraryadmin@c2me.com Book id Quantity Book name Category Category

ADMIN REPORTS PAGE:



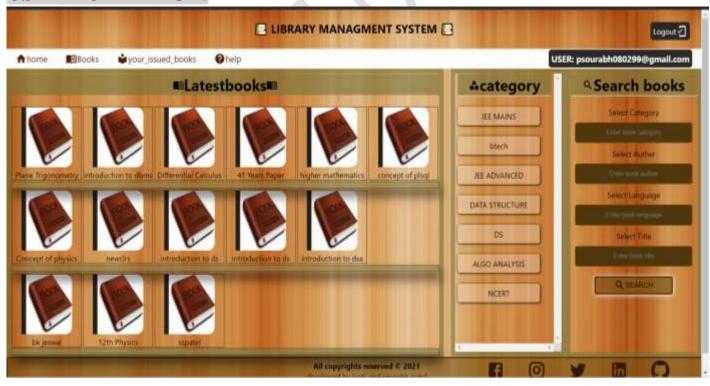




USER LOGIN PAGE:



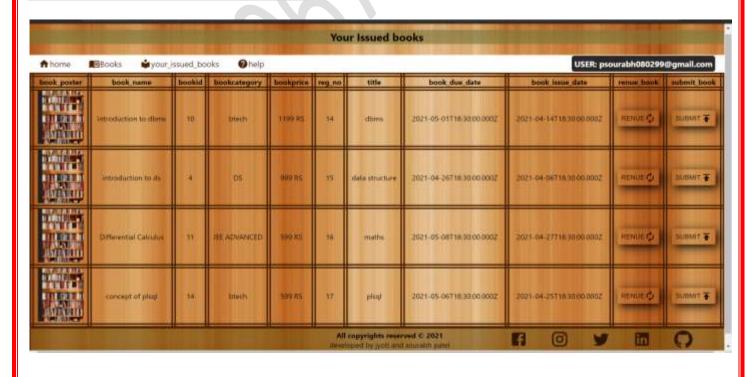
USER HOME PAGE:



ALL BOOKS PAGE:

All books in library												
♠home ■Books ♦your_issued_books ♦help								USER: psourabh080299@gmail.co				
ook poster	book id	book name	book title	edition	bookcategory	Price	quantity	publishing date	avilable	add to issue book		
	15	Plane Trigonometry	mattu	2	JEE MAINS	299 RS	6	2021-07-01118-30:00.0002	yes	#		
	10	introduction to dbms	dbms	1	blech	1199 RS	٥	2021-05-0811830-003002	10	0		
	11	Cifferential Calculus	maths	1	JEE ADVANCED	599 RS	9	2019-07-01118-30-00.0002	yes	8		
	12	41 Years Paper	maths	i	JEE ADVANCED	599 RS	9	2018-07-0111830:00:0002	yes	0		

USER ISSUED BOOK PAGE:



EXTEND SUBMIT DATE: Your Issued books USER: psourabh080299@gmail.com ♠ home **■**Books your_issued_books book name bookid bookcategory bookprice reg no book due date 2021-04 14118-30 00:0002 2021-05-01718:30:00:0002 introduction to dimn 8 **Enter New Due Date** FURBUT introduction to its \$1000,000Z BARBAIT T Differential Calculus \$8000000E 509 RS 2021-05-06718:30:00:0002 2021-04-25718:30:00:0002 евмие ф SUBMIT 🛊 concept of plant brech plsqt All copyrights reserved © 2021 0