LIBRARY DATABASE



INTRODUCTION

The library is a joint information resource and meeting place for all students and researchers at each University.

Here you will find literature and resources relevant to research and education at the university.

Qassim-University has a huge amount of resources to supply their student and professors with all the knowledge they may need.

This database will provide an advance to store transaction and resource of the library.

I. DATA REQUIREMENTS:

CATALOG SERVICES:

- **Books:** Each library can be divided into several sections such as: medical, computer science, mathematical, historical and so on.
 - Table content (ISBN, title, Author, publisher, and state of book available or No, book type and how many copies available).
- **Room:** There are several rooms in the library where member can book one. The table content (room number, status (busy / no), available time for room and room type (lab, reading room, or work room)).
- **Classification:** Are sections within library on which to classified books include: unique number and name.
- **Staff(Employee):** Are the people working in the library. Each one of them has (ID, name, email, age, gender, salary)
- ➤ <u>Items of the library:</u> Are items in the library include (Sound Recording, video Recording, and journals). The table include (unique number, type, publisher, description)
- **Other service:** This section include printing and copying services provided by computers with an active internet connection. It contains the service name and description about it.

• CIRCULATION SERVICE:

- ➤ <u>Member:</u> Members are able to loan from the library.

 The table includes (ID number, member name, member type, address, email, age).
- ➤ <u>Privilege:</u> Each member is granted privileges according to his type (student, staff). The table includes (privilege number, privilege name, loan period, highest borrow limit, highest renewal limit).
- **Loan:** A library service provided to members. Each loan has: ID, date loaned and due date.
- Fine: If the member does not abide by the library laws on the loaning that will be awarded a fine. The table includes (the number of the fine, the item that has not been recovered, the quantity, the condition whether the payment was made or not).
- **Branch:** The library has branch office. The data held on branch includes (branch name, branch number, location, phone number).

II. TRANSACTION REQUIREMENT

1. DATA MANIPULATION:

I. DATA ENTRY:

- Enter the details of new book.
- Enter the details of new member.
- Enter the details of branch.
- Enter the details of new Staff.
- Enter the details of fines.
- Enter the number of Rooms.
- Enter the number of loans.
- Enter the details of new item.
- Enter the details of privileges.
- o Enter the number of classifications.

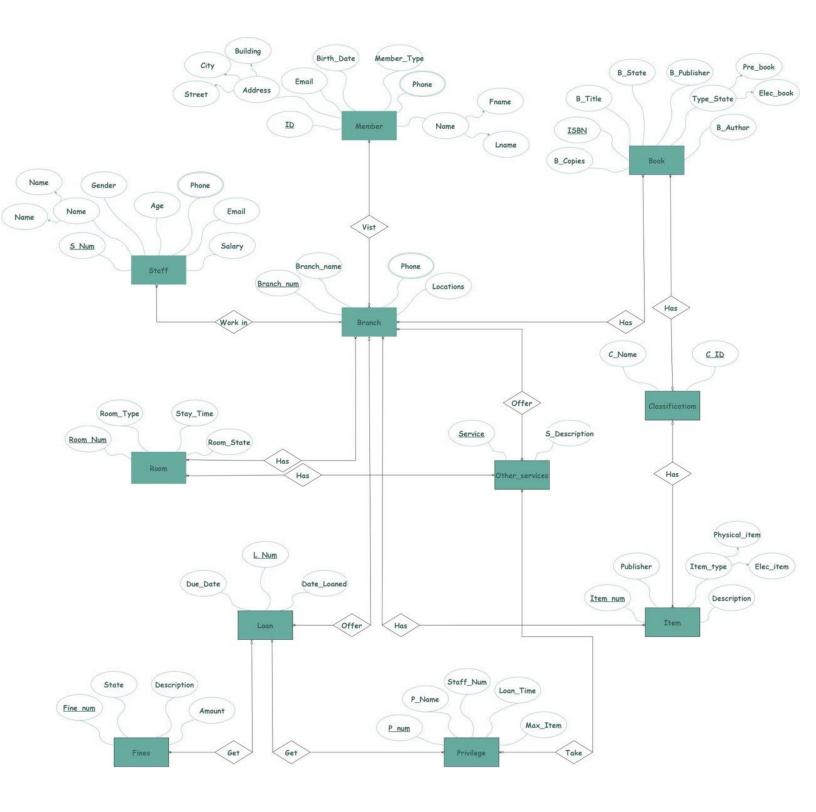
II. DATA UPDATE/DELETION:

- Update/deletion the details of new book.
- Update/deletion the details of new members.
- Update/deletion the details branch.
- Update/deletion the details of new Staff.
- Update/deletion the details of fines.
- Update/deletion the details of new Room.
- Update/deletion the details of new loan.
- o Update/deletion the details of new item.
- o Update/deletion the details of privilege.
- Update/deletion the details of classifications.

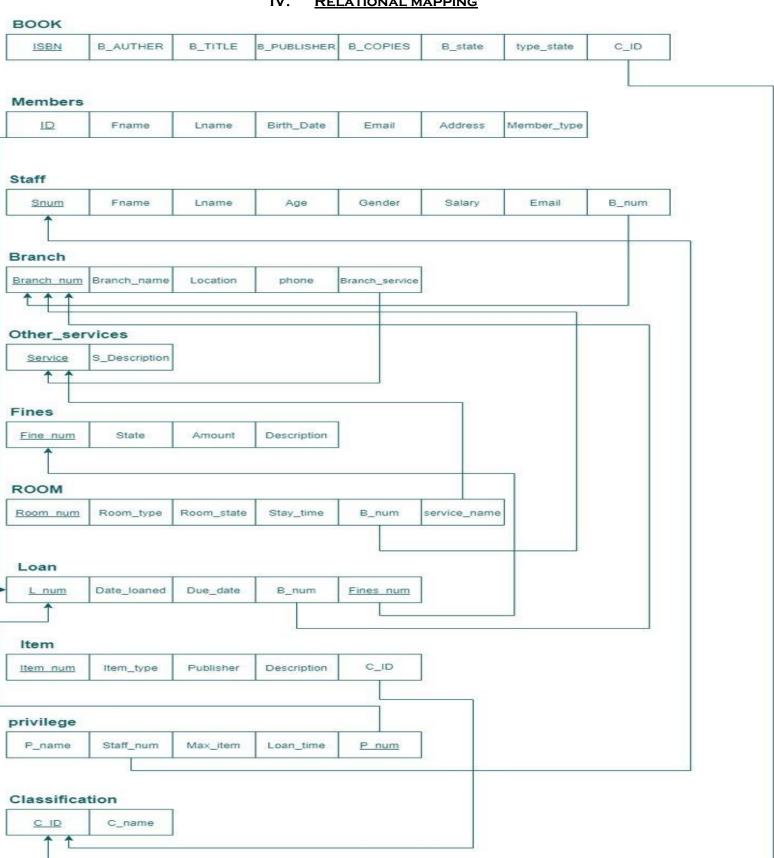
III. DATA QUERIES:

- List of all Books.
- List of all authors and Publishers.
- List of the ISBN of books.
- o Identify the total number of members that get on fines.
- List of names, ID of each member.
- List of the name, ID of each Staff.
- List of the number of branches.
- List of all services.
- List of all rooms that available in the library
- List the details of items.
- List of the number of classifications in library.

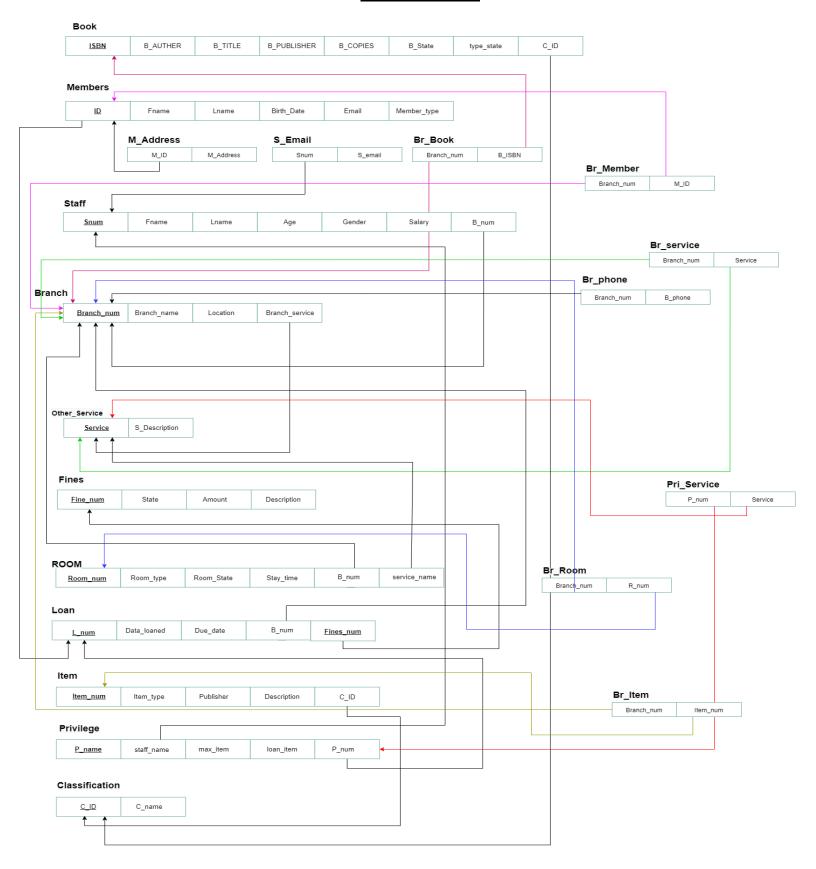
III. EER MODEL

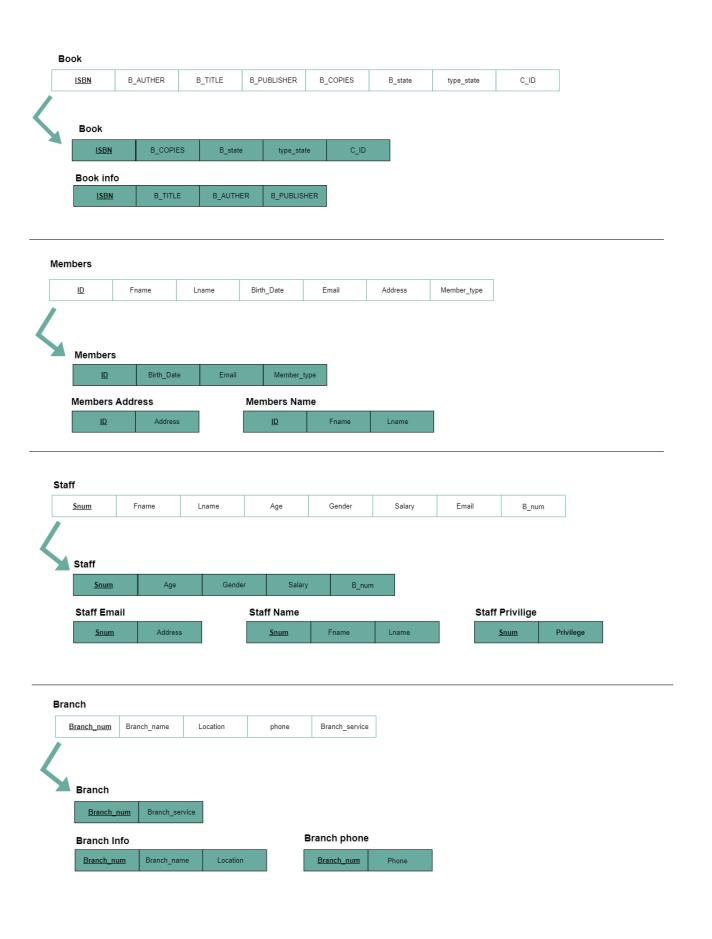


IV. RELATIONAL MAPPING



V. NORMALIZATION





*No Normilzation need in this Table

Other_Service S_Description Service Fines State Amount Description Fine_num ROOM Room_num Room_type Room_State Stay_time B_num service_name ROOM Stay_time Room_num B_num service_name Room Info Room_type Room_State Room_num Loan Data_loaned L_num Due_date B_num Fines_num Item Publisher ltem_num Description Item_type C_ID *No Normilzation need in this Table Privilege Staff_num Max_item Loan_time P_num P_name

Classification C_ID

C_name

VI. CREATING DATABASE

• CREATING TABLES:

```
create table Book (
      ISBN int(10) not null constraint book pk primary key,
      B AUTHER varchar(30) not null,
      B TITLE varchar(70) not null,
      B PUBLISHER varchar(30) not null,
      B_COPIES int(10) not null,
      B_state Varchar(20),
      type_state varchar(10),
      C_ID int(10),
      FOREIGN KEY (C_ID) REFERENCES Classification(C_ID)
  );
   create table Members (
       ID int(10) not null constraint members_pk primary key,
       Fname varchar(30) not null,
       Lname varchar(30) not null,
       Birth_Date date,
       Email varchar(30) not null,
       Address varchar(30),
       Member_type varchar(20),
       FOREIGN KEY (ID) REFERENCES Loan(L num)
   );
   create table Staff (
        Snum int(10) not null constraint staff_pk primary key,
        Fname varchar(30) not null,
        Lname varchar(30) not null,
        Age int(10),
        Gender varchar(7),
        Salary int(10) not null,
        Email varchar(30) not null,
        B num int(20),
        FOREIGN KEY (B num) references Branch(Branch num) );
   create table Branch (
         Branch_num int(10) not null constraint branch_pk primary key,
         Branch_name varchar(30) not null,
         Locations varchar(90),
         phone int(10),
         Branch_service varchar(30),
         FOREIGN KEY (Branch service) REFERENCES Other services(Service)
     );
   create table Other services (
         Service varchar(20) not null constraint other_services_pk primary key,
         S Description varchar(100) not null
     );
```

```
create table Fines (
      Fine_num int(10) not null constraint fines_pk primary key,
      State varchar(20) not null,
      Amount int(10),
      Description varchar(100)
  );
  create table Room (
       Room num int(10) not null constraint room pk primary key,
       Room type varchar(20),
      Room_state varchar(20),
      Stay_time varchar(20),
      B_num int(20),
      Service_name varchar(20),
      FOREIGN KEY (B num) REFERENCES Branch(Branch num),
      FOREIGN KEY (Service name) REFERENCES Other services(Service)
  );
  create table Loan (
      L num int(10) not null constraint loan pk primary key,
      Date_loaned date,
      Due_date date,
      B_{\text{num int}}(20),
      Fines_num int(20),
      FOREIGN KEY (B_num) REFERENCES Branch(Branch_num),
      FOREIGN KEY (Fines_num) REFERENCES Fines(Fine_num)
  );
  create table Item (
      Item_num int(10) not null constraint item_pk primary key,
      Item_type varchar(20),
      Publisher varchar(20),
      Description varchar(200),
      C_ID int(10),
      FOREIGN KEY (C_ID) REFERENCES Classification(C_ID)
  );
  create table Privilege (
    P_name varchar(20) not null,
    Staff_num int(10) not null,
    Max_item int(10),
    Loan_time int(10),
    P num int(10) not null constraint privilege pk primary key
    FOREIGN KEY (P num) REFERENCES Loan(L num),
    FOREIGN KEY (Staff num) REFERENCES Staff(Snum)
);
  create table Classification (
     C_ID int(10) not null constraint classification_pk primary key,
     C_name varchar(10)
  );
```

• INSERTION:

1. Book table:

INSERT INTO Book VALUES ('6901142585','Alan Moore', 'V for Vendetta', 'Quality Communications', 600, '', '', 111), ('90949962', 'Paul Kalanithi', 'When Breath Becomes Air', 'Random House', 500, '', '', 222), ('865349120', 'F. Scott Fitzgerald', 'The Great Gatsby', 'Charles Scribners Sons', 432, '', '', 333);

2. Members table:

INSERT INTO Members VALUES (1111,'Mosa','Ahmed majd','2000-11-22', 'MosaAh21@gmail.com', 'Buridah','student'), (1112,'Amerah','Alnasser','2001-5-18', 'A12221@gmail.com', 'Aunizah','student'), (1113,'Sarah','suliman','1993-9-10', 'Sarram2680@gmail.com', 'alrass','teacher');

3. Staff table:

```
INSERT INTO Staff VALUES (100, 'Mohamed', 'Ahmed', 27, 'Male', 5000, 'Mohamed123@gmail.com',2), (101, 'Ali', 'Abdoallah', 26, 'Male', 5000, 'ALI1984@gmail.com',2), (102, 'Maha', 'Khalid', 26, 'Female', 5000, 'MAHAA0098@gmail.com',1), (104, 'Asma', 'Mohamed', 25, 'Female', 5000, 'ASMa4453@gmail.com',1);
```

4. Branch table:

```
INSERT INTO Branch VALUES (1," main Section Female Students", "Qassim University – Female Students", 55555, "copy"), (2,"Main Section Male Students", "Qassim University – Male Students", 444444, "computers and copy");
```

5. Other_services table:

```
INSERT INTO Other_services VALUES ('copy', 'More than 100 copies are produced'), ('computers and copy', 'print the electronic version');
```

6. Fines table:

```
INSERT INTO Fines VALUES (1,'paid', 50,'The Book was not delivered on time'), (2,' paid', 100, 'The Book was delivered in poor condition');
```

7. ROOM table:

```
INSERT INTO ROOM VALUES (201, 'Computer Lab', 'reserved', '4HOURS', 2, 'computers and copy'), (202, 'Meeting room', 'reserved', '2HOURS', 1, 'copy');
```

8. Loan table:

```
INSERT INTO Loan VALUES (1111, '2022-9-22', '2022-10-22', 2, 1), (1112, '2022-9-1', '2022-10-1', 1, 2), (1113, '2022-5-4', '2022-6-11', 2, 1);
```

9. Item table:

INSERT INTO Item VALUES

- (0, 'Physical', 'Quality Communications',' A frightening and powerful tale of the loss of freedom and identity in a chillingly believable totalitarian world, V for Vendetta stands as one of the highest achievements of the comics medium and a defining work for creators Alan Moore and David Lloyd.',111),
- (1,'Physical','Random House',' For readers of Atul Gawande, Andrew Solomon, and Anne Lamott, a profoundly moving, exquisitely observed memoir by a young neurosurgeon faced with a terminal cancer diagnosis who attempts to answer the question (What makes a life worth living?)'',222),
- (2, 'Physical', 'Charles Scribners Sons', 'the novel depicts first-person narrator Nick Carraway's interactions with mysterious millionaire Jay Gatsby and Gatsbys obsession to reunite with his former lover, Daisy Buchanan.',333);

10. Privilege table:

```
INSERT INTO privilege VALUES (001, 100, 1, 30, 1111), (002, 102, 1, 30, 1112);
```

11. Classification table:

```
INSERT INTO Classification VALUES (111, 'Comics'), (222, 'Medical'), (333, 'Fiction');
```

VII. ONLINE LIBRARY

HTML, CSS & PHP for login page:

```
<!DOCTYPE html>
<html lang="ar" dir="rtl">
<head>
<title>login</title>
<meta charset="UTF-8">
<link rel="stylesheet" href="login.css">
<!-- icons-->
<link rel="stylesheet"</pre>
href="https://cdnjs.cloudflare.com/ajax/libs/font-
awesome/5.15.3/css/all.min.css">
<meta name="viewport" content="width=device-width,</pre>
initial-scale=1.0">
</head>
<body>
<div class="container">
<input type="checkbox" id="flip">
<div class="cover">
<img src="library.jpg">
</div>
<div class="forms">
<div class="form-content">
<div class="login-form">
<div class="title">كتسجيل الدخول</div>
<form action="logincon.php" method="POST">
<div class="input-boxes">
<div class="input-box">
<i class="fas fa-user"></i></i>
<input type="text" name="user" placeholder=" اسم</pre>
required> "المستخدم
</div>
<div class="input-box">
<i class="fas fa-lock"></i></i>
<input type="password" name="password"</pre>
placeholder="كلمة المرور" required>
</div>
<div class="button input-box">
<input type="submit" value="تسجيل">
clabel لا نملك حساب؟ </div class="text sign-up-text">
for="flip"> سجل الان </label></div>
</div>
</form>
</div>
<div class="signup-form">
<div class="title"> مستخدم جدید </div>
<form action="connect.php" method="post">
<div class="input-boxes">
<div class="input-box">
<i class="fas fa-user"></i></i>
<input type="text" name="user" id="user"</pre>
placeholder="الاسم" required>
</div>
<div class="input-box">
<i class="fas fa-lock"></i>
<input type="password" name="password"</pre>
id="password" placeholder="كلمة المرور required>
</div>
<div class="button input-box">
<input type="submit" value="تسجيل">
</div>
```

```
background: #829c9aa2; /*img overlay*/
 opacity: 0.5;
 z-index: 12;}
.container .cover::after{
 opacity: 0.3;
  transform: rotateY(180deg);
.container .cover img{
 position: absolute;
 height: 100%;
 width: 100%;
 object-fit: cover;
 z-index: 10;
.container .forms{
 height: 100%;
 width: 100%;
 background: #fff;
.container .form-content{
  display: flex;
  align-items: center;
  justify-content: space-between; /*imp to make it like 2
containers*/
.form-content .login-form,
.form-content .signup-form{
 width: 350px;
.forms .form-content .title{
 position: relative;
  font-size: 30px;
 color: black;
.forms .form-content .input-boxes{
 margin-top: 30px;
                         /*spaces under the title*/
.forms .form-content .input-box{
  display: flex;
  align-items: center;
 height: 50px;
 width: 100%;
  margin: 10px 0; /*spaces between inputs*/
  position: relative;
.form-content .input-box input{
 height: 100%;
 width: 100%;
 outline: none;
 border: none;
 padding: 0 30px;
 font-size: 16px;
 border-bottom: 2px solid rgba(0,0,0,0.2);
 transition: 0.3s;
.form-content .input-box i{
                                 /*icons*/
  position: absolute;
  color: #009688;
  font-size: 17px;
.forms .form-content .button{
  color: #fff;
  margin-top: 40px;
```

```
label> لديك حساب بالفعل؟ <div class="text sign-up-text">
    for="flip"> سجل الدخول </label></div>
    </div>
    </form>
    </div>
    </div>
    </div>
    </div>
    </body>
    </html>
Css:
    /*loin page*/
      margin: 0;
      padding: 0;
      box-sizing: border-box;
      min-height: 100vh;
      display: flex;
      align-items: center;
      justify-content: center;
      background: #efefef;
      padding: 30px;
    .container{
      position: relative;
      max-width: 850px;
      width: 100%;
      background: #fff;
      padding: 40px 30px;
      box-shadow: 0 5px 10px rgba(0,0,0,0.2);
      perspective: 2700px;
                               /*motion*/
    .container .cover{
      position: absolute;
      top: 0;
      left: 50%;
                       /*cover side*/
      height: 100%;
      width: 50%;
      z-index: 98;
      transition: 1s;
      transform-origin: left; /*rotation*/
      transform-style: preserve-3d;
    .container #flip:checked ~ .cover{ /*matching*/
      transform: rotateY(-180deg);
    .container .cover .front,
     .container .cover .back{
      position: absolute;
      top: 0;
      left: 0;
      height: 100%;
      width: 100%;
    .cover .back{
      transform: rotateY(180deg);}
    .container .cover::before,
    .container .cover::after{
  content: '';
      position: absolute;
      height: 100%;
      width: 100%;
```

```
.forms .form-content .button input{
      color: #fff;
      background: #009688;
      border-radius: 6px; /*button design befor*/
      padding: 0;
      cursor: pointer;
    .forms .form-content .button input:hover{
            /*button design after*/
      background: #00786d;
    }
    .forms .form-content label{
      color: #7d2ae8; /*purple*/
                             /*show its clickable*/
      cursor: pointer;
    .forms .form-content label:hover{
      text-decoration: underline;
    .forms .form-content .login-text,
    .forms .form-content .sign-up-text{
      text-align: center;
      margin-top: 25px;
    }
    .container #flip{
      display: none;
    @media (max-width: 730px) {
      .container .cover{
        display: none;
      .form-content .login-form,
      .form-content .signup-form{
        width: 100%;
      .form-content .signup-form{
        display: none;
      .container #flip:checked ~ .forms .signup-form{
        display: block;
      .container #flip:checked ~ .forms .login-form{
        display: none;
    }
PHP:
    <?php
    session_start();
    $con = mysqli_connect('localhost','root','','library');
    if(isset($_POST['user'])&&isset($_POST['password'])){
      $userr =$_POST['user'];
      $password =$_POST['password'];
      $query = " SELECT * FROM login WHERE user='$userr' &&
    password='$password'";
     if(mysqli_num_rows(mysqli_query($con,$query))>1)
             $_SESSION['user']=$row['user'];
       header("Location:vBook.php?=success");
```

else{

}

?>

}

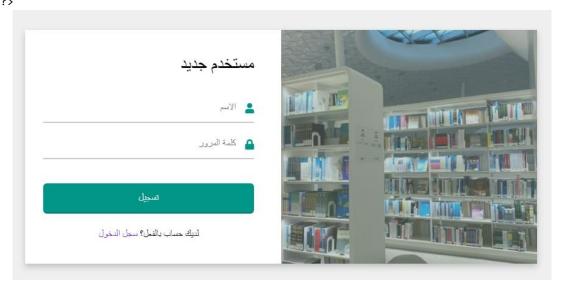
; "اسم المستخدم او كلمه المرور خطأ "echo

• Login page:



• Registration page:

```
<?php
session_start();
$con = mysqli_connect('localhost','root','','library');
$userr =$_POST['user'];
$password =$_POST['password'];
$query =" SELECT*FROM logIn WHERE user='$userr'";
$result=mysqli_query($con,$query);
$resultCheck = mysqli_num_rows($result);
if($resultCheck==1){
  echo "username Already Taken";
}else{
  $reg ="insert into login (user,password) values ('$userr','$password')";
 mysqli_query($con,$reg);
  echo "<script type='text/javascript'> alert('تم التسجيل ') </script>";
 header("Location:vBook.php?=success");
echo '<meta http-equiv="refresh" content="0; url=login.html" />'
?>
```



VBook:

```
<head>
<meta charset="UTF-8">
 <title>View</title>
 <style>
body{
      font-family:italic;
}
h2{
text-align:center;
margin-top:50px;
font-size:60px;
table{
  border-collapse:collapse;
 margin: 90px 400;
  font-size: 0.9em;
 min-width: 500px;
  border-radius:5px 5px 0 0;
  overflow:hidden;
 box-shadow:0 0 20px rgba(0,0,0,0.15);
table thead tr{
background-color: #009879;
color:#ffffff;
text-align:left;
font-weight:bold;
}
table td{
padding:12px 15px;
table tr{
border-bottom: 1px solid #dddddd;
table tr:last-of-type{
  border-bottom: 2px solid #009879;
tr:hover {background-color: #dddddd;}
</style>
</head>
<body>
<div class="background">
<h2> THE TABLES</h2>
<hr style="width:50%">
<?php
$conn = new
mysqli("localhost","root","","library");
```

```
#The first query
$stmt=$conn->prepare("SELECT * FROM vBookStatus ");
$stmt->execute();
$result=$stmt->get result();
echo "";
echo "<thead>"." ISBN "."  "." B State
"." >"."
" B Auther "." "." Locations "."
</thead>";
while ($row =$result->fetch_assoc()){
   echo " ".$row['isbn']."
".$row['B_State']."
   ".$row['B_Auther']."
".$row['Locations']." ";
echo "";
# the second query
$stmt=$conn->prepare("SELECT Snum,Fname,Lname,Salary
FROM Staff ");
$stmt->execute();
$result=$stmt->get_result();
echo "";
echo "<thead>"."Snum"." "."
Fname"." ".
" Lname "." >"." Salary "."
</thead>";
while ($row =$result->fetch_assoc()){
   echo " ".$row['Snum']."
".$row['Fname']."
   ".$row['Lname']."
".$row['Salary']." ";
echo "";
# the third query
$stmt=$conn->prepare("SELECT
B Title, B Auther, B Publisher, B Copies FROM Book ");
$stmt->execute();
$result=$stmt->get_result();
echo "";
echo "<thead>"."B_Title"." "."
B_Auther"." "."
</thead>";
while ($row =$result->fetch_assoc()){
   echo " ".$row['B_Title']."
".$row['B_Auther']."
   ".$row['B_Publisher']."
".$row['B_Copies']." ";
}
echo ""
?></div>
</body> </html>
```



THE TABLES

localhost/ITproject/vBook.php ① **5** ← ・



Snum	Fname	Lname	Salary
100	Mohamed	Ahmed	5000
101	Ali	Abdoallah	5000
102	Maha	Khalid	5000
104	Asma	Mohamed	5000

B_Title	B_Auther	B_Publisher	B_Copie
When Breath Becomes Air	Paul Kalanithi	Random House	500
The Great Gatsby	F. Scott Fitzgerald	Charles Scribners Sons	432
V for Vendetta	Alan Moore	Quality Communications	600

```
create or replace view vBookStatus
as
select
   isbn, B_State, B_Auther, Locations
from
   Book, Branch
where B_State= 'Available';
```

IX. ROLE

CREATE ROLE BookRole;
GRANT select ON vBookStatus TO BookRole;

🧽 قام MySQL بارجاع تتيجة قارعة. (استعرق الاستعلام 0.0067 ثانية.)
CREATE ROLE BookRole;
Edit inline] [تحديل] [آهني کرد PHP]
🧼 قام MySQL بإرجاع عليجة قارعة. (استمرق الاستملام 0.0039 تالية.)
GRANT <u>select</u> on vBookStatus to BookRole;
Edit inline] [نحيل] [الشئ كو. PHP]

X. TABLES

• Book table:

7	ISBN	B_AUTHER	B_TITLE	B_PUBLISHER	B_COPIES	B_state	type_state	C_ID
L	90949962	Paul Kalanithi	When Breath Becomes Air	Random House	500	Not-Available		222
	865349120	F. Scott Fitzgerald	The Great Gatsby	Charles Scribners Sons	432	Available		333
	2147483647	Alan Moore	V for Vendetta	Quality Communications	600	Available		111

• Members Table:

Member_type	Address	Email	Birth_Date	Lname	Fname	ID
student	Buridah	MosaAh21@gmail.com	2000-11-22	Ahmed majd	Mosa	1111
student	Aunizah	A12221@gmail.com	2001-05-18	Alnasser	Amerah	1112
teacher	alrass	Sarram2680@gmail.com	1993-09-10	suliman	Sarah	1113

• Staff Table:

B_num	Email	Salary	Gender	Age	Lname	Fname	Snum
2	Mohamed123@gmail.com	5000	Male	27	Ahmed	Mohamed	100
2	ALI1984@gmail.com	5000	Male	26	Abdoallah	Ali	101
1	MAHAA0098@gmail.com	5000	Female	26	Khalid	Maha	102
1	ASMa4453@gmail.com	5000	Female	25	Mohamed	Asma	104

• Brach Table:

Branch_service	phone	Locations	Branch_name	Branch_num 🔺	1 3
сору	55555	Qassim University - Female Students	main Section Female Students		1 .
computers and copy	444444	Qassim University – Male Students	Main Section Male Students		2 .

• Other_services Table:

	S_Description	Service '
р	rint the electronic version	computers and copy
More than	100 copies are produced	сору

• Fines Table:

Description	Amount	State	Fine_num
The Book was not delivered on time	50	paid	1 .
The Book was delivered in poor condition	100	paid	2 .

Room Table:

	Service_name	B_num	Stay_time	Room_state	Room_type	Room_num >
C	omputers and copy	2	4HOURS	reserved	Computer Lab	201
	сору	1	2HOURS	reserved	Meeting room	202

Loan Table:

Fines_num	B_num	Due_date	Date_loaned	L_num '
1	2	2022-10-22	2022-09-22	1111
2	1	2022-10-01	2022-09-01	1112
1	2	2022-06-11	2022-05-04	1113

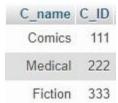
• Item Table:

C_ID	Description	Publisher	Item_type	Item_num
111	A frightening and powerful tale of the loss of fr	Quality Communicatio	Physical	0
222	For readers of Atul Gawande, Andrew Solomon, and	Random House	Physical	1
333	the novel depicts first-person narrator Nick Carr	Charles Scribners So	Physical	2

• Privilege Table:

P_num	Loan_time	Max_item	Staff_num	P_name
1111	30	1	100	1
1112	30	1	102	2

Classification Table:



Login page database:

