

Chapter 1

INTRODUCTION

This database focuses on the following sectors of Library Management:

- Student Record
- Books Record
- Author Record
- Publisher Record
- Book Lending Details
- Issuing and Returning Of Books

The Admin can access the system in order to register new students, view student details, update the books catalogue, issue books to students, view all the issued books to students.

The Admin of the system acts as a communicator for the access to the system operations.

The Admin logs into to the System with the correct login credentials. The Admin can register new students, view the student details and their issued books, Admin can update new books, issue books to students and recollect the books.

Chapter 2

SYSTEM REQUIREMENTS

Section 2.1

Hardware Requirements

- Processor: Intel Core i5
- Processor Speed: 2.3 GHz
- RAM: 4GB
- Storage: 50GB

Section 2.2

Software Requirements:

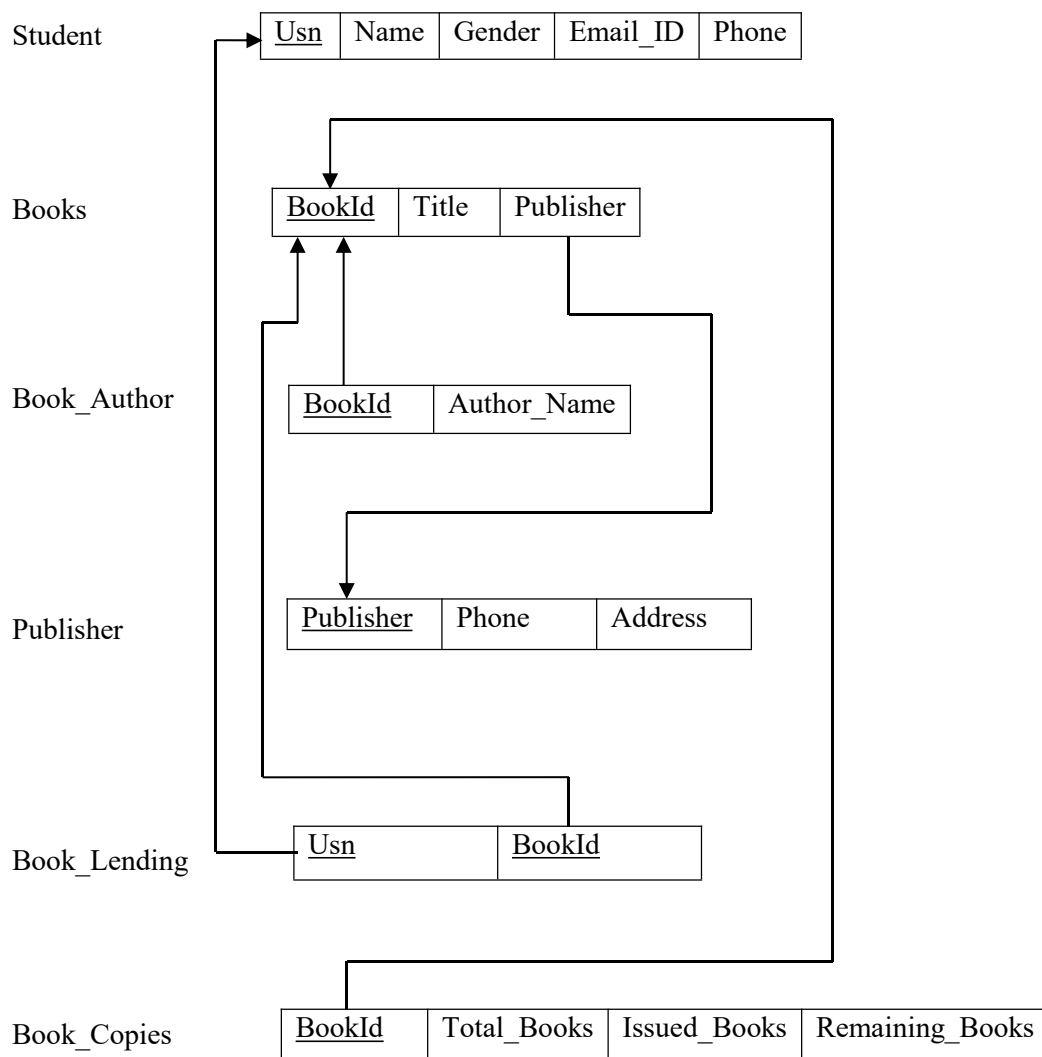
- **Operating System:** Windows
- Apache Web Server (2.4.xx)
- Mysql Server
- Or XAMPP 3.2.4 (Apache and Mysql Included)
- **Web Browser :** Google Chrome/Mozilla Firefox/Internet Explorer

Chapter 3

DESIGN

Section 3.1

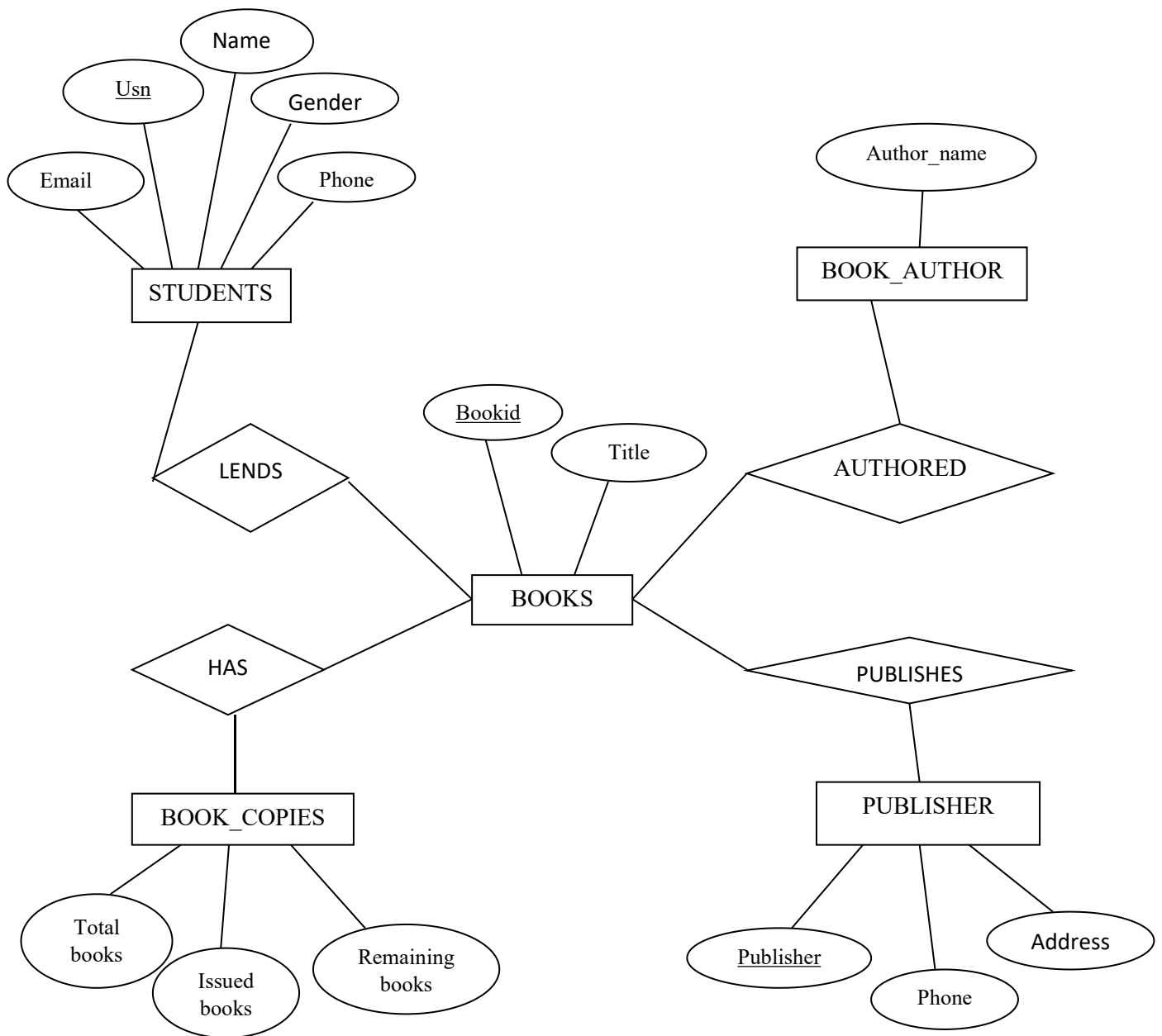
Schema



3.1 Schema Diagram

Section 3.2

ER DIAGRAM



3.2 E R Diagram

Chapter 4

IMPLEMENTATION

Section 4.0

Login Page

```
<?php
include('login.php'); // Includes Login Script
if(isset($_SESSION['login_user'])) {
header("location: profile.php"); // Redirecting To Profile Page
}
?>

<!DOCTYPE html>
<html>
<head>
<title> Admin Login</title>
<link rel="stylesheet" href="/assets/css/masterlogin.css">
</head>
<body>
<div class="login-box">
<h2>Library Management Admin Login</h2> <br>
<form action="" method="post">
<label>Username :</label>
<input id="name" name="username" placeholder="enter your username"
type="text">
<label>Password :</label>
<input id="password" name="password" placeholder="*****"
type="password"><br><br>
```

```
<input name="submit" type="submit" value=" Login ">
<span><?php echo $error; ?></span>
</form></div>
</body>
```

Section 4.1

Home Page

```
<?php
include('session.php');
if(!isset($_SESSION['login_user'])){
// Redirecting Back To Login Page on Logging-out.
header("location: index.php"); }
?>

<meta http-equiv="content-type" content="text/html; charset=UTF-8" />
<head>
<meta charset="utf-8">
<meta http-equiv="X-UA-Compatible" content="IE=edge">
<meta name="viewport" content="width=device-width, initial-scale=1">
<meta name="description" content="Library Management,Website for CMRIT
">

<meta name="keywords" content="Library Management CMRIT, Online
Courses CMRIT ">
<title> Library Management | CMRIT</title>
<link rel="shortcut icon" type="image/x-icon" href="assets/img/4.jfif">

<!-- css plugin ----->
<link rel="stylesheet" href="assets/css/bootstrap.min.css">
```

```

<link rel="stylesheet" href="assets/css/font-awesome.min.css">
<link rel="stylesheet" href="assets/css/magnific-popup.css">
<link rel="stylesheet" href="assets/css/flexslider.css">
<link rel="stylesheet" href="assets/css/aos.css">

<!-- main css ----->
<link rel="stylesheet" href="assets/css/style.css">
<link rel="stylesheet" href="assets/css/style-responsives.css">

<!-- google fonts ----->
<link
href="https://fonts.googleapis.com/css?family=Hind:600|Lato:300,400|Ubuntu"
rel="stylesheet">
<link href="https://fonts.googleapis.com/css?family=Roboto" rel="stylesheet">
</head>
<body>
<!-- // PRELOADER BEGIN ----->
<div id="preloader">
<div id="status">
<div class="loader-revolve center">
<span></span>
</div></div></div>
<!-- // PRELOADER END ----->

<!-- // NAVIGATION BEGIN----->
<div id="navigation">
<div class="container">
<div class="row">
<div class="col-sm-3">

```

```

<div class="logo">
<a href="index.html" >Library Management CMRIT </a>
</div>
<!--// LOGOUT----->
<div id="profile">
<b style="color:white" id="welcome">Welcome : <i><?php echo
$login_session; ?></i></b><br>
</div>
<!------->
</div>
<div class="col-sm-9">
<div class="navigation-menu">
<div class="navbar">
<div class="navbar-header">
<button type="button" class="navbar-toggle" data-toggle="collapse" data-
target=".navbar-collapse">
<span class="sr-only">Toggle navigation</span>
<span class="icon-bar"></span>
<span class="icon-bar"></span>
<span class="icon-bar"></span>
</button></div>
<div class="navbar-collapse collapse">
<ul class="nav navbar-nav navbar-right">
<li><a class="active smoth-scroll" href="#particles-js">Home</a></li>
<li><a class="smoth-scroll" href="#about">Book Info.</a></li>
<li><a class="smoth-scroll" href="#portfolio">Register</a></li>
<li><a class="smoth-scroll" href="#contact">Contact</a></li>
<li><a id="logout" href="logout.php" style="color:silver">Log Out</a></li>
</ul></div></div>

```



```

</div></div></div></div>

<!-- // NAVIGATION END ----->

<!-- // HOME BEGIN ----->

<div id="particles-js" class="home-bg" style="background-image:
url('assets/img/2.jpg')" data-stellar-background-ratio="0.6">

<div class="overlay">

<div class="container">

<div class="row">

<div class="home-text">

<div class="profile-pic" data-aos="fade-zoom-in" data-aos-easing="ease-in-
back" data-aos-delay="400"
  data-aos-offset="0">



</div>

<div data-aos="fade-zoom-in" data-aos-easing="ease-in-back" data-aos-
delay="400" data-aos-offset="0">

<h1>Library Management CMRIT</h1>

<h3 id="text-rotator">

<div>Dive Deep into Concepts</div>

<div>Where Learning Never STOPS</div>

<div>CMRIT Bengaluru</div>

</h3></div></div>

<a class="smoth-scroll" href="#about"><i class="fa fa-angle-down
arrow"></i></a>

</div></div></div></div>

<!-- particles-js style ----->

<style type="text/css" media="screen">

#particles-js

```

```
{
background-image: url('assets/img/2.jpg');
height: 100vh;
}
</style>
<!-- // HOME END ----->
<!-- // ABOUT BEGIN ----->
<section id="about">
<div class="container">
<div class="row">
<div class="description col-md-6 col-sm-4 col-xs-12">
<h2> Welcome to our <strong style="color: #4cd137"> Library </strong></h2>
<h4> DBMS Project | CMRIT Bengaluru, India</h4>
<p> Our Project <em> ' LIBRARY MANAGEMENT ' </em> sole purpose is
to build a system is to manage library daily operation efficiently.
<br></p> </div>
<div class="facts col-md-5 col-sm-5 col-xs-12">
<div class="row">
<div class="col-md-6 col-sm-6 col-xs-6">
<div class="count-item">
<div class="numscroller" data-sln0='1' data-min='0' data-max='40000' data-
delay='6' data-increment="50">50</div>
<div class="count-name-intro">e-Books <i class="fa fa-book"></i></div>
</div></div>
<div class="col-md-6 col-sm-6 col-xs-6">
<div class="count-item">
<div class="numscroller" data-sln0='1' data-min='0' data-max='1700' data-
delay='6' data-increment="2">95</div>
<div class="count-name-intro">Journals <i class="fa fa-file-text"></i></div>
```

```
</div></div></div></div></div>
```

```
</div></section>
```

```
<!-- // ABOUT END ----->
```

```
<section id="portfolio">
```

```
<div class="container text-center">
```

```
<div class="row">
```

```
<div class="col-md-20 text-center">
```

```
<h2> Student Registration | Registered Student Details </h2>
```

```
</div>
```

```
<div class="col-md-18 col-sm-6">
```

```
<div class="blog-item">
```

```
<div class="blog-desc">
```

```
<h4>
```

```
<a > Student Registration</a>
```

```
</h4>
```

```
<a href="form.html" target="_blank" class="btn btn-dark " id="register">
Student Register</a>
```

```
</div></div></div>
```

```
<div class="col-md-4 col-sm-6">
```

```
<div class="blog-item">
```

```
<div class="blog-desc">
```

```
<h4><a > Student Details</a></h4>
```

```
<a href="studentdetails.php" target="_blank" class="btn btn-dark "
id="register">Student Details</a></div>
```

```
</div></div></div></div></section>
```

```
<section id="blog">
```

```
<div class="container text-center">
```

```
<div class="row">
```

```
<div class="col-md-12 text-center">
<h2>Books Available | Issue | Update </h2>
</div>
<div class="col-md-4 col-sm-6">
<div class="blog-item">
<a class="blog-img">

</a>
<div class="blog-desc">
<h4><a > Books Available</a></h4>
<p>This section contains the list of available books- currently in our CMRIT
library depository.</p>
<a href="booksavailable.php" target="_blank" class="btn btn-dark"
id="readmore">View</a>
</div></div></div>
<div class="col-md-4 col-sm-6">
<div class="blog-item">
<a class="blog-img">

</a>
<div class="blog-desc">
<h4>
<a > Book Issue/Return</a>
</h4><p>This section of Books Info. contains the list of issued/return
books.</p>
<a href="booksissue.html" target="_blank" class="btn btn-dark"
id="readmore">Issue</a>
<a href="reissue.html" target="_blank" class="btn btn-dark "
id="register">Return</a>
</div>
```

```

</div>

</div>

<div class="col-md-4 col-sm-6">
<div class="blog-item">
<a class="blog-img">

</a>
<div class="blog-desc">
<h4>
<a > Update </a>
</h4>
<p> Updating on the books information- i.e addition of books.</p>
<a href="update.html" target="_blank" class="btn btn-dark "
id="register">Enter</a></div></div>
</div></div></div></section>

<!-- // FOOTER BEGIN ----->

<footer id="contact">
<div class="container">
<div class="col-md-12 text-center">
<h3> CONNECT WITH US.</h3>
<ul class="social-icons-footer">
<li><a href="https://twitter.com/cmritspeaks?lang=en" target="_blank"><i
class="fa fa-twitter"></i></a></li>
<li><a href="https://www.linkedin.com/school/cmr-institute-of-
technology/?originalSubdomain=in" target="_blank"><i class="fa fa-
linkedin"></i></a></li>
<li><a href="mailto:info@cmrit.ac.in" target="_blank"><i class="fa fa-
envelope"></i></a></li>
</ul></div></div></div></div>

<!-- // FOOTER END ----->

```

```
<!-- js plugin ----->
<script src="assets/js/jquery.js"></script>
<script src="assets/js/bootstrap.min.js"></script>
<script src="assets/js/jquery.stellar.min.js"></script>
<script src="assets/js/text-rotate.js"></script>
<script src="assets/js/numscroller.js"></script>
<script src="assets/js/jquery.appear.js"></script>
<script src="assets/js/progress-bar.min.js"></script>
<script src="assets/js/jquery.mixitup.js"></script>
<script src="assets/js/jquery.magnific-popup.min.js"></script>
<script src="assets/js/magnific-popup-options.js"></script>
<script src="assets/js/jquery.flexslider-min.js"></script>
<script src="assets/js/aos.js"></script>
<script src="assets/js/jquery.form.js"></script>
<script src="assets/js/jquery.validate.min.js"></script>
<script src="particles.js"></script>
<script src="app.js"></script>

<!-- main js ----->
<script src="assets/js/main.js"></script>
</body>
```

Section 4.1.1

Student Register Page

```
<?php
$usn = $_POST['usn'];
$username = $_POST['username'];
$gender = $_POST['gender'];
$phone = $_POST['phone'];
```

```

$email = $_POST['email'];
$password = $_POST['password'];

if (!empty($usn) || !empty($username) || !empty($gender) || !empty($phone)
|| !empty($email) || !empty($password)) {
    $host = "localhost";
    $dbUsername = "root";
    $dbPassword = "";
    $dbname = "library_cmrit";
    //create connection
    $conn = new mysqli($host, $dbUsername, $dbPassword, $dbname);
    if (mysqli_connect_error()) {
        die('Connect Error('. mysqli_connect_errno().')'. mysqli_connect_error());
    }
    else {
        $SELECT = "SELECT email From student Where email = ? Limit 1";
        $INSERT = "INSERT Into student values(?,?,?,?,?,?)";
        //Prepare statement
        $stmt = $conn->prepare($SELECT);
        $stmt->bind_param("s", $email);
        $stmt->execute();
        $stmt->bind_result($email);
        $stmt->store_result();
        $rnum = $stmt->num_rows;
        if ($rnum==0) {
            $stmt->close();
            $stmt = $conn->prepare($INSERT);
            $stmt->bind_param("ssiss", $usn, $username, $gender, $phone, $email,
            $password);
            $stmt->execute();
            echo "New record inserted sucessfully";
        }
        else
        {echo "Someone already register using this email";}
        $stmt->close();
        $conn->close();
    }
}
else { echo "All field are required"; die(); }
?>

```

Section 4.1.2

Student Details Page

```
<!DOCTYPE html>
<html>
<head>
<title>Student Details</title>
<style>
table {
border-collapse: collapse;
width: 100%;
color: #588c7e;
font-family: monospace;
font-size: 25px;
text-align: left;
}
th {
background-color: #588c7e;
color: white;
}
tr:nth-child(even) {background-color: #f2f2f2}
</style></head>
<body>
<table>
<tr>
<th>Usn</th>
<th>Username</th>
<th>Gender</th>
<th>Phone</th>
<th>Email</th>
</tr>
<?php
$conn = mysqli_connect("localhost", "root", "", "library_cmrit");
// Check connection
if ($conn->connect_error) {
die("Connection failed: " . $conn->connect_error); }

$sql = "SELECT * FROM student";
$result = $conn->query($sql);
if ($result->num_rows > 0) {
// output data of each row
```



```
while($row = $result->fetch_assoc()) {
echo "<tr><td>" . $row["usn"]. "</td><td>" . $row["name"] . "</td><td>" .
$row["gender"] . "</td><td>" . $row["phone"] . "</td><td>"
. $row["email"]. "</td></tr>";
}
echo "</table>";
} else { echo "0 results"; }
$conn->close();
?>
</table>
</body></html>
```

Section 4.1.3

Book Update Page

```
<?php
$bookid = $_POST['bookid'];
$title = $_POST['title'];
$publisher = $_POST['publisher'];
$address = $_POST['address'];
$phone = $_POST['phone'];
$totalbooks = $_POST['totalbooks'];
$issuedbooks = 0;
$remainingbooks=$totalbooks;

if (!empty($bookid) || !empty($title) || !empty($publisher) || !empty($address)
|| !empty($phone) || !empty($totalbooks) ) {
$host = "localhost";
$dbUsername = "root";
$dbPassword = "";
$dbname = "library_cmrit";
//create connection
```

```

$conn = new mysqli($host, $dbUsername, $dbPassword, $dbname);
if (mysqli_connect_error()) {
    die('Connect Error('. mysqli_connect_errno().')'. mysqli_connect_error());
} else {
    $SELECT = "SELECT bookid From books Where bookid = ? Limit 1";
    $INSERT = "INSERT Into books (bookid, title, publisher, totalbooks,
    remainingbooks) values(?, ?, ?, ?, ?)";
    $pubinsert = " insert into publisher values(?,?,?)";
    //Prepare statement
    $stmt = $conn->prepare($SELECT);
    $stmt->bind_param("s", $bookid);
    $stmt->execute();
    $stmt->bind_result($bookid);
    $stmt->store_result();
    $rnum = $stmt->num_rows;
    if ($rnum==0) {
        $stmt->close();
        $stmt = $conn->prepare($INSERT);
        $stmt->bind_param("ssii", $bookid, $title, $publisher, $totalbooks,
        $remainingbooks );
        $stmt->execute();
        echo "New record inserted sucessfully";
    } else {
        echo " Already registered once with this bookid";
    }
    $stmt->close();
    $conn->close();
}

else { echo "All field are required"; die(); } ?>

```

Section 4.1.4

Book Issue Page

```
<?php
$usn = $_POST['usn'];
$bookid = $_POST['bookid'];
if (!empty($usn) || !empty($bookid)) {
    $host = "localhost";
    $dbUsername = "root";
    $dbPassword = "";
    $dbname = "library_cmrit";
    //create connection
    $conn = new mysqli($host, $dbUsername, $dbPassword, $dbname);
    if (mysqli_connect_error()) {
        die('Connect Error('. mysqli_connect_errno().'). mysqli_connect_error());
    } else {
        $SELECT = "SELECT remainingbooks From book_copies Where bookid = ?
        Limit 1";
        $INSERT = "INSERT Into booklending (usn, bookid ) values(?, ?)";
        //Prepare statement
        $stmt = $conn->prepare($SELECT);
        $stmt->bind_param("s", $bookid);
        $stmt->execute();
        $stmt->bind_result($bc);
        $stmt->store_result();
        $stmt->fetch();
        if($bc==0){    //bc -> Book Copies
            echo $bc;
```

```

echo "BOOKS not found AVAILABLE";
$stmt->close();
die();
}
else {
$stmt = $conn->prepare($INSERT);
$stmt->bind_param("ss", $usn, $bookid );
$stmt->execute();
$stmt->close();
$trigger = "update book_copies set issuedbooks=issuedbooks+1 where bookid
= ?";
$stmt = $conn->prepare($trigger);
$stmt->bind_param("s", $bookid);
$stmt->execute();
echo "New record inserted sucessfulsly";
$conn->close();
}}
}
else { echo "All field are required"; die(); } ?>

```

Section 4.1.5

Book Return Page

```

<?php
$usn = $_POST['usn'];
$bookid = $_POST['bookid'];
if (!empty($usn) || !empty($bookid)) {
$host = "localhost";
$dbUsername = "root";

```

```

$dbPassword = "";
$dbname = "library_cmrit";
//create connection
$conn = new mysqli($host, $dbUsername, $dbPassword, $dbname);
if (mysqli_connect_error()) {
    die('Connect Error('. mysqli_connect_errno().')'. mysqli_connect_error());
} else {
    $INSERT = "Delete from booklending where usn=? and bookid= ? ";
    $stmt = $conn->prepare($INSERT);
    $stmt->bind_param("ss", $usn, $bookid );
    $stmt->execute();
    $stmt->close();
    $trigger = "update book_copies set issuedbooks=issuedbooks-1 where bookid
    = ?";
    $stmt = $conn->prepare($trigger);
    $stmt->bind_param("s", $bookid);
    $stmt->execute();
    echo "New record inserted sucessfulsly";
    $conn->close();
}
}
else {echo "All field are required"; die(); } ?>

```

Section 4.1.6

Books Available Page

```

<!DOCTYPE html>
<html>
<head>
<title>Books Available</title>

```

```

<style>
table {
border-collapse: collapse;
width: 100%;
color: #588c7e;
font-family: monospace;
font-size: 25px;
text-align: left;
}
th { background-color: #588c7e; color: white; }
tr:nth-child(even) {background-color: #f2f2f2}
</style>
</head>
<body>
<table>
<tr>
<th>Book Id</th>
<th>Book Title</th>
<th> Book Author </th>
<th> Total Books </th>
<th> Issued Books </th>
<th> Remainig Books </th>
<th> Book Publisher</th>
<th> Phone_no </th>
</tr>
<?php
$conn = mysqli_connect("localhost", "root", "", "library_cmrit");
// Check connection

```

```

if ($conn->connect_error) {
    die("Connection failed: " . $conn->connect_error);
}

$sql = "call find2()"; //stored procedure
$result = $conn->query($sql);
if ($result->num_rows > 0) {
    // output data of each row
    while($row = $result->fetch_assoc()) {
        echo "<tr><td>" . $row["bookid"]. "</td><td>" . $row["title"] . "</td><td>" .
        $row["author_name"]. "</td> <td>" . $row["totalbooks"]. "</td><td>" .
        $row["issuedbooks"]. "</td><td>" . $row["remainingbooks"]. "</td><td>"
        . $row["publisher"]. "</td><td>" . $row["phone"]. "</td></tr>";
    }
    echo "</table>";
} else { echo "0 results"; }
$conn->close();
?>
</table>
</body> </html>

```

Section 4.2

Trigger and Stored Procedure

Section 4.2.1

Stored Procedure

DELIMITER \$\$

```
CREATE PROCEDURE `find2` () BEGIN
SELECT
b.bookid,b.title,b.publisher,ba.author_name,c.totalbooks,c.issuedbooks,c.remain
ingbooks,p.phone from books b,book_copies c,book_author ba,publisher p
where b.bookid=ba.bookid and b.bookid=c.bookid and b.publisher=p.publisher;
END$$
```

DELIMITER ;

Section 4.2.2

Triggers

Triggers `book_copies`

DELIMITER \$\$

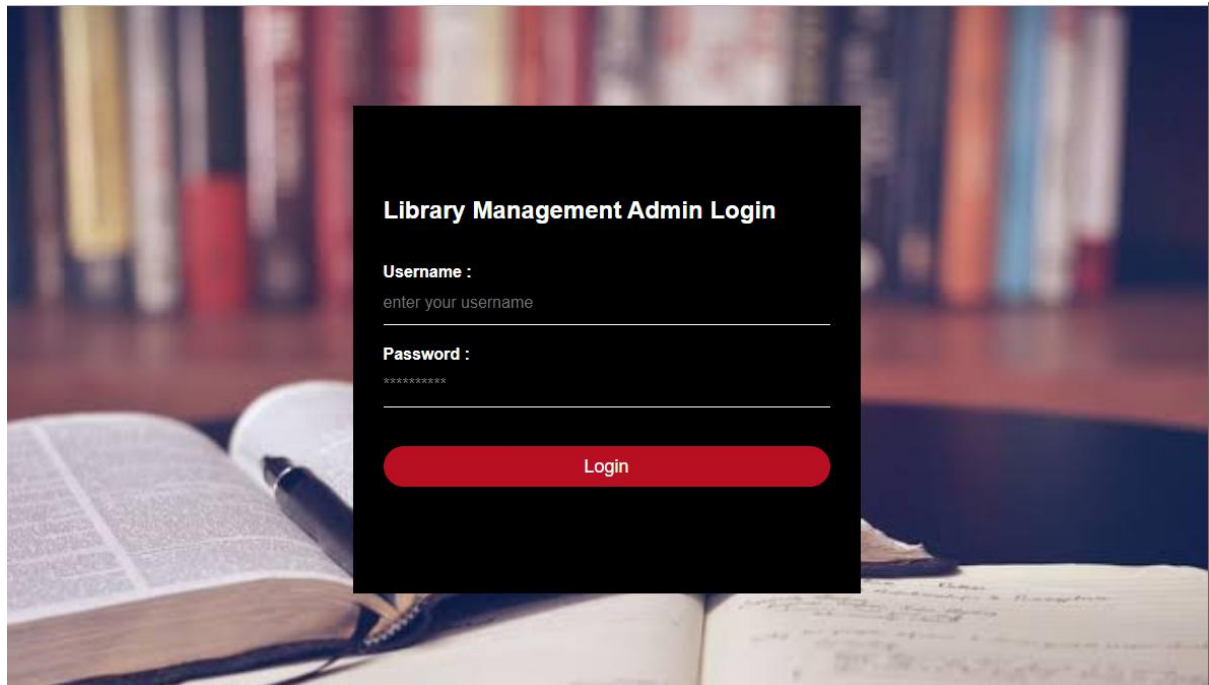
```
CREATE TRIGGER `rem_book2` BEFORE UPDATE ON `book_copies` FOR
EACH ROW set new.remainingbooks=new.totalbooks-new.issuedbooks
```

\$\$

DELIMITER ;

Chapter 5

DISCUSSION AND SCREENSHOTS



5.0 Login Page



5.1 Home Page

Welcome to our Library

DBMS Project | CMRIT Bengaluru, India

Our Project 'LIBRARY MANAGEMENT' sole purpose is to build a system is to manage library daily operation efficiently.

40000

e-Books 

1700

Journals 

Student Registration | Registered Student Details

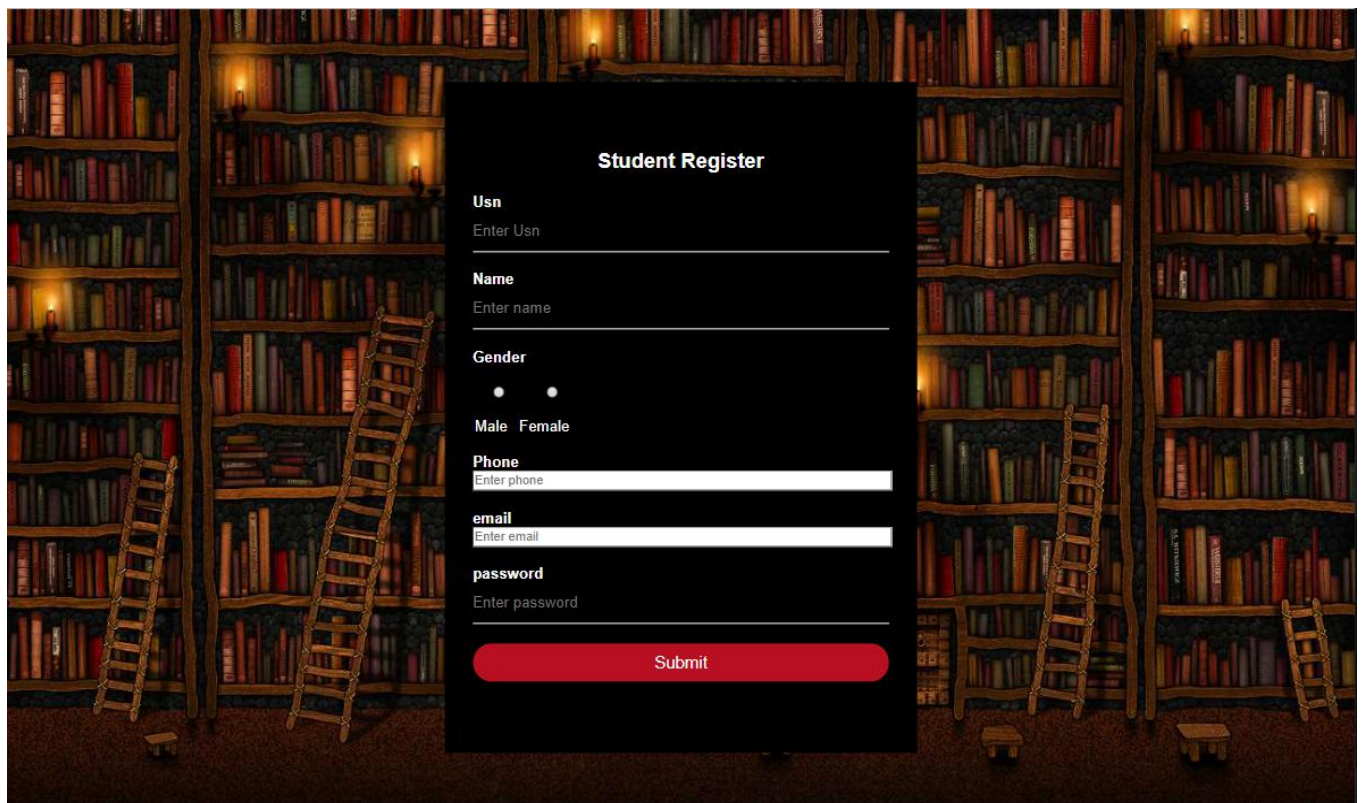
Student Registration

Student Register

Student Details

Student Details

5.2 Student Register & Details Section



The image shows a 'Student Register' form overlaid on a background of a library with bookshelves and ladders. The form is titled 'Student Register' and contains the following fields:

- Usn**: Enter Usn
- Name**: Enter name
- Gender**: ☐ Male ☐ Female
- Phone**: Enter phone
- email**: Enter email
- password**: Enter password

A red 'Submit' button is located at the bottom of the form.

5.2.1 Student Register Page

Usn	Username	Gender	Phone	Email
1cr17cs032	anjali	f	121892832	anjali@gmail.com
1cr17cs043	Supriya	f	345923923	supriya@gmail.com
1cr17cs066	Ahsish	m	797655722	mbas17cs@cmrit.ac.in
1cr17cs070	Mamta	f	637922892	mamt17cs@cmrit.ac.in
1cr17cs080	Neeraj Kumar	m	854716603	neer17ec@cmrit.ac.in
1cr17cs090	pavan	m	778776655	pavan@gmail.com
1cr17cs099	john lennon	m	698665246	john@gmail.com
1cr17cs120	Nitin	m	329282829	nitk17cs@cmrit.ac.in
1cr17cs121	Sathuryan	m	384992398	sars17cs@cmrit.ac.in

5.2.2 Student Details Page

LIBRARY MANAGEMENT CMRIT

[Home](#)
[Book Info.](#)
[Register](#)
[Contact](#)
[Log Out](#)

Books Available | Issue | Update



Books Available

This section contains the list of available books- currently in our CMRIT library depository.

[View](#)


Book Issue/Return

This section of Books Info. contains the list of issued/return books.

[Issue](#)
[Return](#)


Update

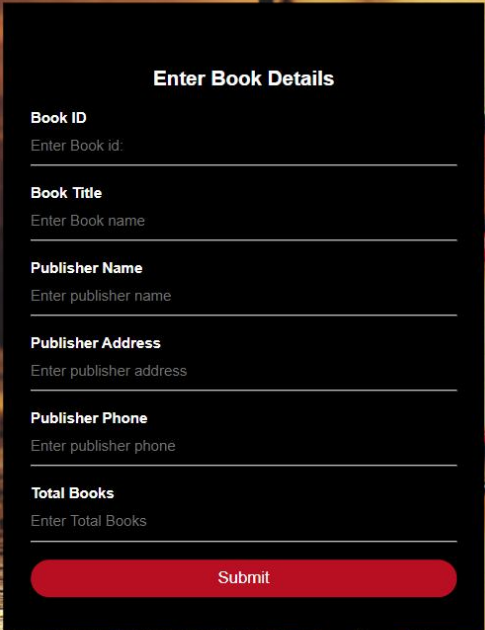
Updating on the books information- i.e addition of books.

[Enter](#)

CONNECT WITH US.



5.3 Books Info. Section



Enter Book Details

Book ID
Enter Book id:

Book Title
Enter Book name

Publisher Name
Enter publisher name

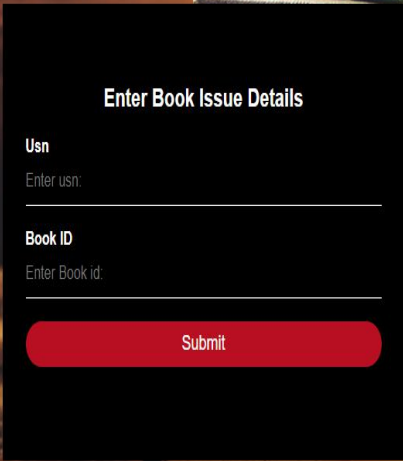
Publisher Address
Enter publisher address

Publisher Phone
Enter publisher phone

Total Books
Enter Total Books

Submit

5.3.1 Enter Book Details Page

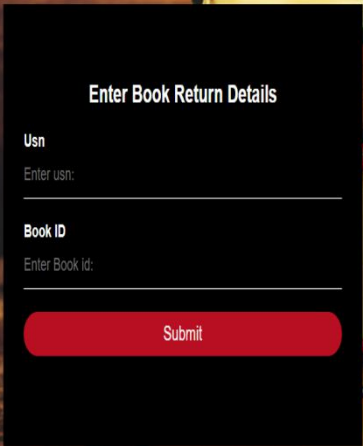


Enter Book Issue Details

Usn
Enter usn:

Book ID
Enter Book id:

Submit



Enter Book Return Details

Usn
Enter usn:

Book ID
Enter Book id:

Submit

5.3.2 Book Issue Page & 5.3.3 Book Return Page

Book Id	Book Title	Book Author	Total Books	Issued Books	Remainig Books	Book Publisher	Phone_no
1	Wings Of Fire	chetan bagat	10	2	8	Dr. A P J Abdul Kalam	32283729
2	In Search Of Lost Time	george rr martin	7	1	6	Marcel Proust	68883239
3	The Oath of the Vayuputras	j k rowling	2	2	0	Amish Tripathi	33937895

5.4 Book Available Page

New record inserted sucessfulsly

5.5 Successfully Inserted Page

Chapter 6

CONCLUSION AND FUTURE SCOPE

Section 6.1

Conclusion

This report has discussed the development of a stand-alone application that allows a Librarian to register students to register new students, view student details, update the books catalogue, issue books to students and view all issued books to students.

An Admin Login is provided to manage the Library Management for the desired purpose.

Section 6.2

Future Scope

This project has the ability to maintain a simple Library Management System through authorized personnel which can later be automated.

We can have a general Library Management for Transaction on Book-issue and use a simple desktop application or a web app to access everything making it convenient and simple for everyone.

REFERENCES

1. <http://www.mysqltutorial.org>
2. <https://stackoverflow.com/>
3. <https://w3schools.com/>