Chapter 4: IMPLEMENTATION

4.1 HTML Form:

The basic implementation for the GUI uses an HTML form.
Here is a small code snippet that demonstrates the usage of an HTML form -

Example 4.1

```
<html>
<head>
<!-----Additional information about the webpage----->
</head>

<body>

<form  action="demo.php" method="POST">
<label> Enter Your Name : </label>
<input type="text" name="input" id="input">
<input type="submit" value="PRINT">
</form>

</body>
</html>
```

Given above is a simple HTML form that accepts a name and further sends it to be processed by a php script called as *demo.php* .

Following are the functions that are performed by the code:

- Make a form whose contents will be written between the <form> </form> tag.
- The input tag with type='text' denotes an input textfield that allows user to input any alphanumeric characters of any length(unless specified otherwise).
- The input tag type='submit' denotes a submit button which when clicked shall transfer he control to the php script if any for the parent form.
- The action='demo.php' attribute tells the HTML form to submit the data availed from the user and pass it on to the semo.php script.
- The method='POST' attribute denotes the method of sending the data received. Post means the data needs to be packed inside the HTTP packet and sent. Get shall make the data to be sent to the server as a part of the URL.

For example, here is the HTML extract that presents the homepage in the project:

```
<html lang="en">
<head>

  <title>Library Management</title>
  <meta charset="utf-8">
  <meta name="viewport" content="width=device-width, initial-scale=1">
  <link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/css/bootstrap.min.css">
  <link href="https://fonts.googleapis.com/css?family=Lato" rel="stylesheet" type="text/css">
  <link href="https://fonts.googleapis.com/css?family=Montserrat" rel="stylesheet" type="text/css">
  <script src="https://ajax.googleapis.com/ajax/libs/jquery/3.2.1/jquery.min.js"></script>
  <script src="https://maxcdn.bootstrapcdn.com/bootstrap/3.3.7/js/bootstrap.min.js"></script>

</head>
<body id="myPage" data-spy="scroll" data-target=".navbar" data-offset="50">

<nav class="navbar navbar-default navbar-fixed-top">
  <div class="container-fluid">
    <div class="navbar-header">
      <button type="button" class="navbar-toggle" data-toggle="collapse" data-target="#myNavbar">
        <span class="icon-bar"></span>
        <span class="icon-bar"></span>
        <span class="icon-bar"></span>
      </button>
      <a class="navbar-brand" href="Second.php">Library Management</a>
    </div>
    <div class="collapse navbar-collapse" id="myNavbar">
      <ul class="nav navbar-nav navbar-right">
                <li class="dropdown">
        <a class="dropdown-toggle" data-toggle="dropdown" href="#">Student
        <span class="caret"></span></a>
        <ul class="dropdown-menu">
          <li><a href="Student Details.php">Add Student</a></li>
          <li><a href="StudentDetailsView.php">Students List</a></li>
                                        <li><a href="UpdateStudentDetails.php">Update Students Details</a></li>
        </ul>
      </li>
                        <li class="dropdown">
        <a class="dropdown-toggle" data-toggle="dropdown" href="#">Books
        <span class="caret"></span></a>
        <ul class="dropdown-menu">
          <li><a href="BookDetails.php">Add Books</a></li>
          <li><a href="BookDetailsView.php">Books List</a></li>
        </ul>
      </li>
                        <li class="dropdown">
        <a class="dropdown-toggle" data-toggle="dropdown" href="#">Issue
        <span class="caret"></span></a>
        <ul class="dropdown-menu">
          <li><a href="IssueDetails.php">Issue Books</a></li>
          <li><a href="IssueDetailsView.php">Issued List</a></li>
        </ul>
      </li>
      <li><a href="ReturnDetails.php">Return of Book</a></li>
      <li><a href="Contact.php">Contact</a></li>
     <li><a href="Logout.php">Logout</a></li>
        </ul>
      </li>
     </ul>
    </div>
  </div>
</nav>
   <div id="band" class="mycontainer text-center">
  <h2>Library Rules</h2>

  <p><em>University Visveswarya College of Engineering!</em></p>
  <ul>
</div>
<!-- Footer -->
<footer class="text-center">
  <p>Project Done By <a href="Contact.php" data-toggle="tooltip" title="Visit Contact">  Akshatha Chawan
  & MD Rayyan Ali</a></p>
</footer>
</body>
</html>
```

4.2 PHP Script:

The PHP Script is written within the <?php ------ ?> tag with the filename given the *.php* extension. The server can thus recognize it as a php script and pass it on to the PHP parser to be executed.

Here is an example that shows how a php script prints the name back to the webpage that it received from the HTML form in example 4.1:

Example 4.2

```
<?php   //demo.php
$name=$_POST[‘name’];
echo “Hello ” . $name;
die;
?>
```

Thus if the name entered in example 4.1 was “UVCE”, this example just accepts that data and it prints back on the screen as:

Hello UVCE

4.3 Connecting to the MySQL database:

The php script needs the following information to connect to the database using the in-built MySQL functions to access the database:

- Hostname
- Username
- Password
- Database Name

This is done almost in every php script throughout the project as follows:

```
<?php
require_once "login.php";
```

```
$result = mysqli_connect($db_hostname, $db_username, $db_password);
if (!$result) die("Unable to connect to MySQL: " . mysql_error());
?>
```

Where $db_hostname, $db_username,$db_password and $db_database are declared constants in the file login.php

Here is an extract form the project that is a php script responsible for displaying the rank of a student after accepting a valid Registration no from the homepage:

```
<?php include 'connection.php' ;
if(isset($_POST['submit']))
{

    $libname= $_POST['libname'];
     $libusername = $_POST['libusername'];
 $libpassword = $_POST['libpassword'];

$sql1 = "insert into librarian  values('$libname','$libusername','$libpassword')";

$res1=mysqli_query($con,$sql1);
          if($res1==1){
                                                    header("Location:http://localhost/Lib/index.php");
            //echo '<script> window.open(http://localhost/Lib/index.php","_self")</script>';
          }else {
            echo "ERROR";
          }

}
?>
```

Here is an extract form the project that is a php script responsible for displaying the rank of a student after accepting a valid name from the homepage.

```
<?php
$a=$_POST['name'];
$con=mysqli_connect("localhost","root","","librarysystem");
$result = mysqli_query($con,"SELECT * FROM  Librarian where name like '%$a%'");
while($row = mysqli_fetch_array($result))
  {
  echo "Congratulations ";
  echo $row['name'];
  echo "<br>";
  echo "Your username is : ";
  $name=$row['name'];
  echo  "$name";
  echo "<br>";
  }
?>
```

4.4 Database Queries and Transactions:

Following queries have been used for the creation of the tables:

```
CREATE TABLE `category` (
  `CategoryId` varchar(30) NOT NULL,
  `CategoryName` varchar(50) NOT NULL,
  PRIMARY KEY  (`categoryId`)
);
```

```
CREATE TABLE `librarian` (
  `libname` varchar(30) NOT NULL,
  `libusername` varchar(30) NOT NULL,
  `libpass` varchar(30) NOT NULL,
 PRIMARY KEY  (`libusername`)
);
```

```
CREATE TABLE `books` (
  `booktitle` varchar(30) NOT NULL,
  `publisher` varchar(30) NOT NULL,
  `author` varchar(30) NOT NULL,
  `categoryname` varchar(30) NOT NULL,
  `quantity` int(30) NOT NULL,
PRIMARY KEY  (`booktitle`)
  foreign key books(categoryname) refrences category(categoryname)
);
```

```
CREATE TABLE `issued` (
  `issuedid` varchar(40) NOT NULL,
  `cardno` varchar(40) NOT NULL,
  `issuedby` varchar(30) NOT NULL,
  `issuedto` varchar(30) NOT NULL,
  `issuedbook` varchar(30) NOT NULL,
  `issueddate` date) NOT NULL,
 PRIMARY KEY  (`issuedid`),
  foreign key issued(cardno) refrences student(cardno);
  foreign key issued(issuedby) refrences librarian(issuedby);
);
```

```
CREATE TABLE `Students` (
    `card_no` int(30) NOT NULL,
```

```
  `fname` varchar(30) NOT NULL,
  `lname` varchar(30) NOT NULL,
  `regno` varchar(30) NOT NULL,
  `year` varchar(30) NOT NULL,
  `gender` varchar(30) NOT NULL,
  `age` varchar(30) NOT NULL,
  `mob_no` varchar(30) NOT NULL,
  `dob` date NOT NULL,
  `email` varchar(30) NOT NULL,
);

CREATE TABLE `returndetails` (
  `returnid` varchar(30) NOT NULL,
  `returnbook` varchar(50) NOT NULL,
`returndate` date NOT NULL,
`fine` varchar(50) NOT NULL
);
```

To Calculate Fine

"SELECT

IF ((DATEDIFF (CURDATE (), Issued_Date) - 10) <0, 0 ,

DATEDIFF (CURDATE (), IssuedDate)-10)*2 as Fine

FROM issued where CardNo='".$cardno."');

Update the Quantity in Books Table

"UPDATE Books

SET Quantity=Quantity+1

WHERE BookTitle='".$returnbook."';