S R M   U N I V E R S I T Y
Kattankulathur – 603 203
Department of Information Technology

IT1020: WEB SYSTEMS AND TECHNOLOGY

General Instructions:

1. Student should make a web site right from the start of the first exercise to the end consistently maintaining same content as objective.

2. The project should have minimum 5 pages with first page being home page.

3. Submit the project title within 3 working days.

4. Maximum two students are permitted in a team.

5. Draw the page design, mention the control name and all the properties and coding in the observation before coming to the lab.

6. Complete the Lab experiment on the same day itself.

0. Understanding the functionality of web clients and web servers.

Server Side: Install XAMPP software and Host a sample website (Use sample templates) in Apache Server

Client Side: Install Firebug plugins in Mozilla Firefox browser and explore the developer's options

Lab 1:

1. a) Create a login page for your project using HTML.

   b) Create a user registration page of the project with all possible form elements.

Hint:

- Create a banner for page header using any image editor (Photoshop, MS Paint, etc.)
- Create a footer content
- HTML tags: paragraph, h1 to h6, anchor, fonts, lists
- Form elements: input box, password, list box, check box, button, radio button, option button.
- HTML 5: audio, video tags
- Layouts using tables, div and span, HTML structural elements.

Sample Web Site:
SRM Online Library Management System

Steps:

1. Install XAMPP Control Panel.

2. Install notepad++ or Aptana Studio.

3. Create a folder under *c:\xampp\htdocs* path and name it as your project title.

   Eg.:   c:\xampp\htdocs\SRMLibrary

4. Create the following folders in your project folder to store the supporting files of your project.

Eg.:

c:\xampp\htdocs\SRMLibrary\css
c:\xampp\htdocs\SRMLibrary\images
c:\xampp\htdocs\SRMLibrary\modules

5. Create/download images for your project (Eg.: header, footer, etc.) using image editors. (Eg.: MS-Paint, Photo Shop, etc.)

6. Save the images in the images folder of your project folder.

Eg.: *c:\xampp\htdocs\SRMLibrary\images*

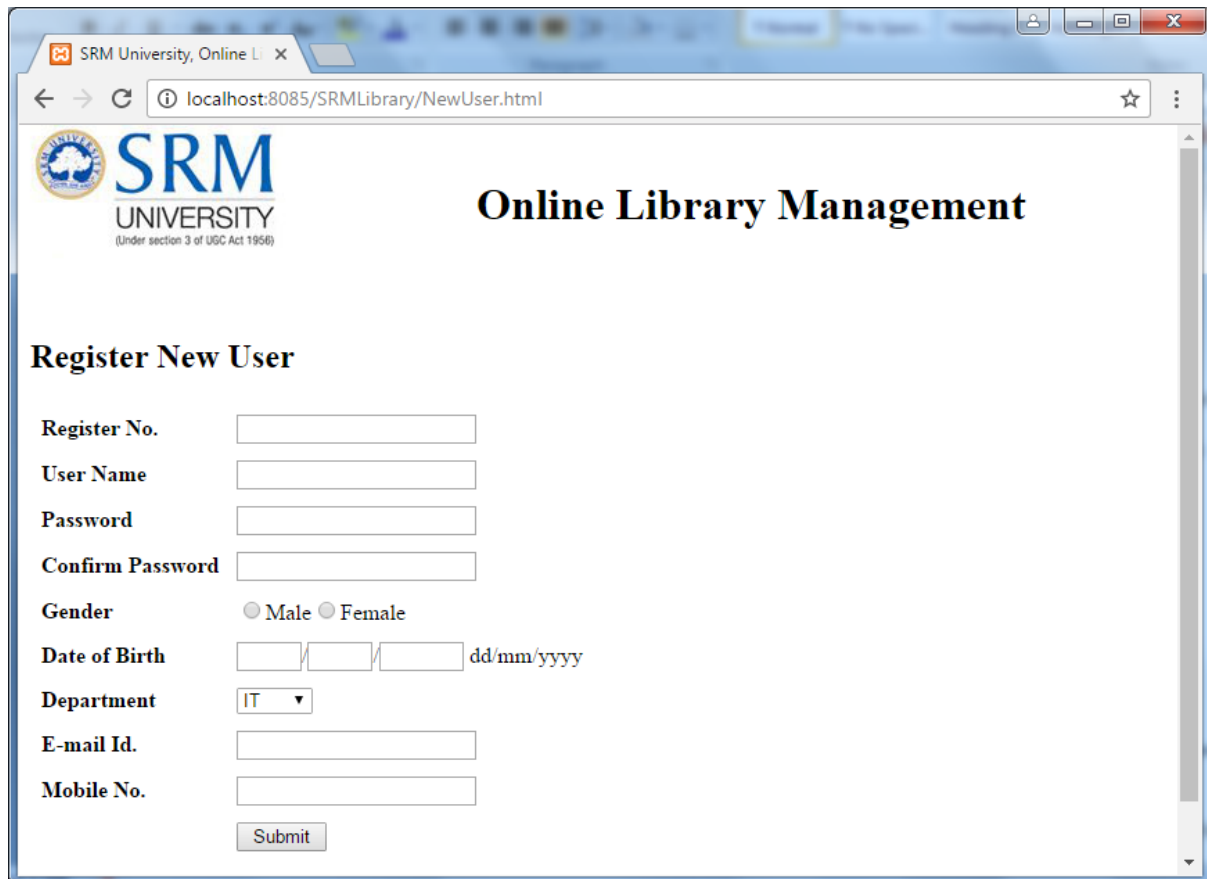**7. Create a html file, *userlogin.html* in your project folder.**

c:\xampp\htdocs\SRMLibrary\userlogin.html


```html
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>SRM University, Online Library Management</title>

</head>
```

```html
<body topmargin=0 >
    <div>

            <div>
                    <img src="images/SRMEmblem.jpg" Align="left">

        <h1>            
;     Online Library Management</h1>
            </div>
        <div>
                            <br>
                            <h2>SRM Library</h2>
                <p>SRM University has an excellent library for the benefit of
students, faculties and researchers. As one of the best established libraries
according to International Standards, the University Library has a large
collection of books covering various branches of Engineering and Technology,
Medical and Health Sciences and Science and Humanities and its related fields.</p>

                            <p>The library is located in the 15-Storey
University Administrative Block, and is spread over Ground + 3 floors of 1.50 Lakh
sq ft area. The library building is
                            <ul>
                                <li>Fully air-conditioned and automated
with RFID (Radio Frequency Identification) technology</li>
                                <li>Well protected with fire alarms and
CCTV security systems</li>
                                <li>Equipped with reading halls in all the
floors, with reference collection</li>
                            </ul>
                            </p>
        </div>
                        <form action="CheckUserLogin.php" method="POST">
                        <table valign="left" border="0" cellspacing="4"
cellpadding="4">
                            <tr><td><b>User Name</b></td><td><input
type="text" name="uname"></tr>
                            <tr><td><b>Password</b></td><td><input
type="password" name="pwd"></tr>
                            <tr><td></td><td><input type="submit" value="
Sign in " name="btnnewuser">   <a href="NewUser.html">New User Sign
up</a></tr>
                        </table>
                        </form>
            </div>

        <div class="footer">
            <p> &copy;  2017 Online Library | Developed by M.Anand, Asst. Prof.
(Sr. G), Dept. of Information Technology, SRM University</p>
        </div>

</body>
</html>
```

8. Create a *newuser.html* file in your project folder.

c:\xampp\htdocs\SRMLibrary\newuser.html

```html
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>SRM University, Online Library Management</title>
</head>
<body topmargin=0 >
    <div>
            <div>
                    <img src="images/SRMEmblem.jpg" align="left">
                    <br>

        <h1>           &nbsp
;     Online Library Management</h1>
            </div>

        <div>
                    <br><br>
                    <h2>Register New User</h2>
                <form action='SaveNewUser.php' method='POST'>
                        <table valign="left" border="0" cellspacing="4"
cellpadding="4">
                                <tr><td><b>Register No.</b></td><td><input
type="text" name="regno"></td></tr>
                                <tr><td><b>User Name</b></td><td><input
type="text" name="uname"></td></tr>
                                <tr><td><b>Password</b></td><td><input
type="password" name="pwd"></td></tr>
                                <tr><td><b>Confirm Password</b></td><td><input
type="password" name="cpwd"></td></tr>
```

4

```html
                                                <tr><td><b>Gender</b></td><td><input type="radio"
name="gender" value="Male">Male<input type="radio" name="gender"
value="Female">Female</td></tr>
                                                <tr><td><b>Date of Birth</b></td><td><input
type="text" name="dd" size="2">/<input type="text" name="mm" size="2">/<input
type="text" name="yy" size="4"> dd/mm/yyyy</td></tr>
                                                <tr><td><b>Department</b></td><td><select
name="dept"><option>IT</option><option>CSE</option><option>SWE</option><option>ECE
</option></td></tr>
                                                <tr><td><b>E-mail Id.</b></td><td><input
type="text" name="email"></tr>
                                                <tr><td><b>Mobile No.</b></td><td><input
type="text" name="mobile"></tr>
                                                <tr><td></td><td><input type="submit" value="
Submit " name="btnsubmit"></td></tr>
                                </table>
                                </form>
                        </div>
                            </div>

            <div>
                    <p> &copy;  2017 Online Library | Developed by M.Anand, Asst. Prof.
(Sr. G), Dept. of Information Technology, SRM University</p>
                </div>
</body>
</html>
```

9. To execute the web page, open any web browser and type the web address.

  Eg.:

  Step 1) Start the Apache Server module
  Step 2) http://localhost:8085/SRMLibrary/UserLogin.html
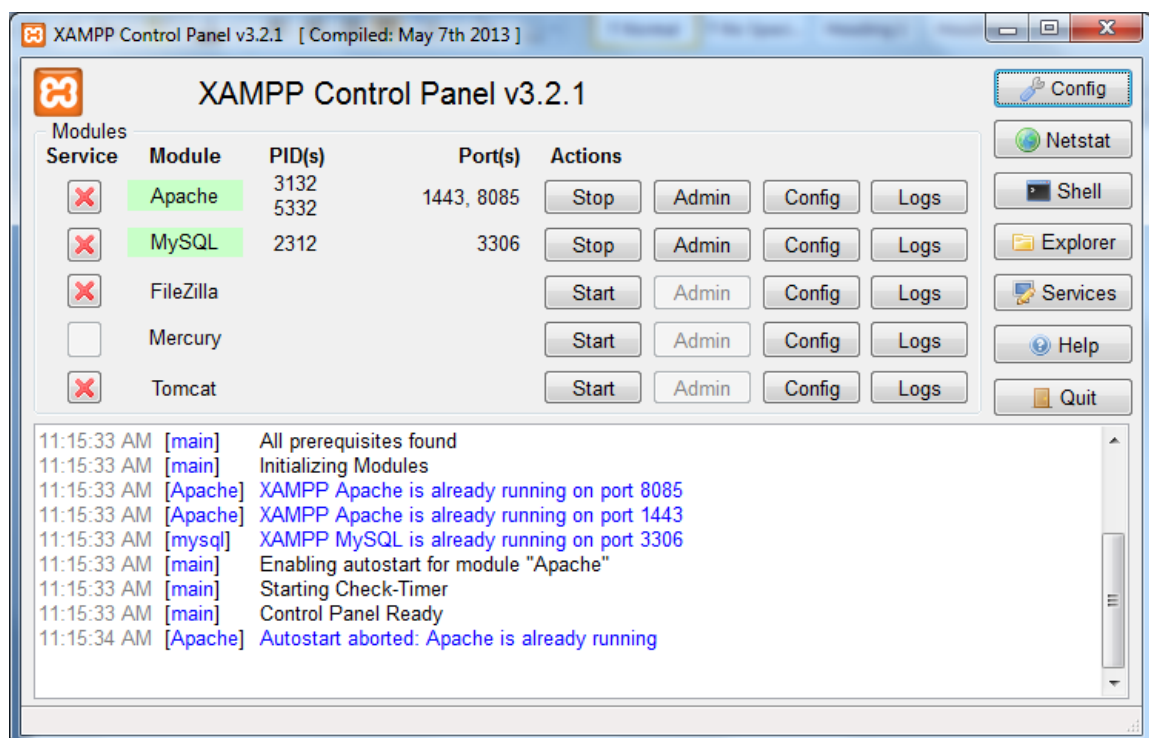
Lab 2:
2. a) Format the login page using CSS 3.0
   b) Format the user registration page using CSS 3.0

Hint:
- Styling
    - Font
    - Color
    - Background
- Alignment
    - Box model
- Positioning
    - Static
    - Relative
    - Absolute
    - Fixed
    - Float

10. Create an external CSS (*MyStyle.css*) and store it in your *css* folder.
c:\xampp\htdocs\SRMLibrary\css\MyStyle.css

```css
body{
    font: 12px verdana, sans-serif;
    margin: 0px;
    }
    .container{
    width: 1024px;
    margin: 0 auto;
        background-color: #bbd2df;
}
.header1{
    background-color: #679BB7;
        min-height: 20px;
        background: url(../images/header_img.jpg);
}
    .header1 h1{
    font-size: 18px;
    margin: 0px;
}
.header2{
        background-color: #ffffff;
        min-height: 75px;
        margin: 0px;
}
    .header2 h1{
    font-size: 28px;
    color: #7a00cc;
        margin-top:5px;
        margin-left:20px;
}
    .header2 img{
    float: left;
        font-size:18px;
    margin: 0px;
```

```css
}
.header3{
    background-color: #679BB7;
            min-height: 50px;
            background: url(../images/header_img.jpg);
}
.sidebar1{
    float: left;
    width: 262px;
    min-height: 425px;
    text-align: left;
    background-color: #bbd2df;
}

.sidebar1 .nav{
    padding: 5px;
}


    .sidebarinfo1{
    width: 233px;
    min-height: 20px;
    text-align: left;
            border: 1px solid white;
            padding: 3px;
            border-radius: 5px;
            background: #e6f2ff;
    }
    .sidebar1 .nav table {
            border-collapse: collapse;
    }

.nav ul{
    float: left;
    list-style: none;
    display: inline;
    padding: 0px;
    margin: 0px;
}
.nav ul li{
    margin-bottom: 5px;
    width: 100%;
    float: left;
}
.nav ul li a{
    color: #3d677e;
}
.nav ul li a:hover{
    text-decoration: none;
}
.content{
    float: left;
    width: 500px;
    min-height: 400px;
            object-fit:cover;
    background-color: #e6f2ff;
            font-size: 12px;
}
.content .section{
    padding: 0px;
}
.content h2{
    font-size: 16px;
```

```css
        margin: 0px;
}


    .sidebar2{
    float: left;
    width: 262px;
    min-height: 425px;
    text-align: left;
    background-color: #bbd2df;
}


    .sidebar2 .nav{
    padding: 10px 12px;
}


    .sidebarinfo2{
    width: 210px;
    min-height: 150px;
    text-align: left;
            border: 1px solid white;
            padding: 3px;
            border-radius: 10px;
            background: #e6f2ff;
     }

.clearfix{
    clear: both;
}

.footer{
    background-color: #679BB7;
            color: #ffffff;
            background: url(../images/footer_img.jpg);
    padding: 10px 0;
}
.footer p{
    text-align: center;
    margin: 5px;
}
```

11. Update the *UserLogin.html* file, created in Lab 1.

       c:\xampp\htdocs\SRMLibrary\UserLogin.html

```html
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>SRM University, Online Library Management</title>
    <link rel="stylesheet" type="text/css" href="css/MyStyle.css">
</head>
<body topmargin=0 >
    <div class="container">
          <div class="header1">
        </div>

            <div class="header2">
                    <img src="images/SRMemblem.jpg">
                    <br>
        <h1>           &nbsp
;     Online Library Management</h1>
            </div>

            <div class="header3">
        </div>

        <div class="wrapper">
                    <div class="sidebar2">
                            <div class="nav">
                                <table style="width:100%;" valign="left"
border="0" cellspacing="4" cellpadding="4">
                                        <tr height="7px"></tr>
                                        <tr><td><div class="sidebarinfo2"
style="background: url(images/SRM1.jpg)"></div></td></tr>
                                        <tr height="25px"></tr>
                                        <tr><td><div class="sidebarinfo2"
style="background: url(images/SRM5.jpg)"></div></td></tr>
                                </table>
                            </div>
                    </div>
```

```html
            <div class="content" style="background-color: #bbd2ff;">
        <div class="section">
                    <br><br>
                    <h2>SRM Library</h2>
            <p>SRM University has an excellent library for the benefit of
students, faculties and researchers. As one of the best established libraries
according to International Standards, the University Library has a large
collection of books covering various branches of Engineering and Technology,
Medical and Health Sciences and Science and Humanities and its related fields.</p>

                    <p>The library is located in the 15-Storey
University Administrative Block, and is spread over Ground + 3 floors of 1.50 Lakh
sq ft area. The library building is
                    <ul>
                        <li>Fully air-conditioned and automated
with RFID (Radio Frequency Identification) technology</li>
                        <li>Well protected with fire alarms and
CCTV security systems</li>
                        <li>Equipped with reading halls in all the
floors, with reference collection</li>
                    </ul>
                    </p>
        </div>
                <form action="CheckUserLogin.php" method="POST">
                <table valign="left" border="0" cellspacing="4"
cellpadding="4">
                    <tr><td><b>User Name</b></td><td><input
type="text" name="uname"></tr>
                    <tr><td><b>Password</b></td><td><input
type="password" name="pwd"></tr>
                    <tr><td></td><td><input type="submit" value="
Sign in " name="btnnewuser">   <a href="NewUser.html">New User Sign
up</a></tr>
                </table>
                </form>
        </div>

            <div class="sidebar2">
                <div class="nav">
                    <table style="width:100%;" valign="left"
border="0" cellspacing="4" cellpadding="4">
                        <tr height="7px"></tr>
                        <tr><td><div class="sidebarinfo2"
style="background: url(images/SRM6.jpg)"></div></td></tr>
                        <tr height="25px"></tr>
                        <tr><td><div class="sidebarinfo2"
style="background: url(images/SRM4.jpg)"></div></td></tr>
                    </table>
                </div>
            </div>

            <div class="clearfix">
            </div>
        </div>
        <div class="footer">
            <p> &copy;  2017 Online Library | Developed by M.Anand, Asst. Prof.
(Sr. G), Dept. of Information Technology, SRM University</p>
        </div>
    </div>
</body>
</html>
```

12. Update the *NewUser.html* file, created in Lab 1.

c:\xampp\htdocs\SRMLibrary\NewUser.html


```
<!DOCTYPE html>
<html lang="en">
<head>
    <meta charset="UTF-8">
    <title>SRM University, Online Library Management</title>
    <link rel="stylesheet" type="text/css" href="css/MyStyle.css">
</head>
<body topmargin=0 >
    <div class="container">
          <div class="header1">
        </div>
            <div class="header2">
                    <img src="images/SRMemblem.jpg">
                    <br>
        <h1>           &nbsp
;     Online Library Management</h1>
            </div>
            <div class="header3">
            </div>


    <div class="wrapper">
            <div class="sidebar2">
                <div class="nav">
                    <table style="width:100%;" valign="left"
border="0" cellspacing="4" cellpadding="4">
                            <tr height="7px"></tr>
                            <tr><td><div class="sidebarinfo2"
style="background: url(images/SRM1.jpg)"></div></td></tr>
                            <tr height="25px"></tr>
                            <tr><td><div class="sidebarinfo2"
style="background: url(images/SRM5.jpg)"></div></td></tr>
                    </table>
                </div>
```

11

```html
                </div>

                <div class="content" style="background-color: #bbd2ff;">
            <div class="section">
                        <br><br>
                        <center><h2>Register New User</h2></center>
            <form action='SaveNewUser.php' method='POST'>
                    <table valign="left" border="0" cellspacing="4"
cellpadding="4">
                        <tr><td><b>Register No.</b></td><td><input
type="text" name="regno"></td></tr>
                        <tr><td><b>User Name</b></td><td><input
type="text" name="uname"></td></tr>
                        <tr><td><b>Password</b></td><td><input
type="password" name="pwd"></td></tr>
                        <tr><td><b>Confirm Password</b></td><td><input
type="password" name="cpwd"></td></tr>
                        <tr><td><b>Gender</b></td><td><input type="radio"
name="gender" value="Male">Male<input type="radio" name="gender"
value="Female">Female</td></tr>
                        <tr><td><b>Date of Birth</b></td><td><input
type="text" name="dd" size="2">/<input type="text" name="mm" size="2">/<input
type="text" name="yy" size="4"> dd/mm/yyyy</td></tr>
                        <tr><td><b>Department</b></td><td><select
name="dept"><option>IT</option><option>CSE</option><option>SWE</option><option>ECE
</option></td></tr>
                        <tr><td><b>E-mail Id.</b></td><td><input
type="text" name="email"></tr>
                        <tr><td><b>Mobile No.</b></td><td><input
type="text" name="mobile"></tr>
                        <tr><td></td><td><input type="submit" value="
Submit " name="btnsubmit"></td></tr>
                    </table>
                    </form>
                </div>
                </div>

                <div class="sidebar2">
                    <div class="nav">
                        <table style="width:100%;" valign="left"
border="0" cellspacing="4" cellpadding="4">
                            <tr height="7px"></tr>
                            <tr><td><div class="sidebarinfo2"
style="background: url(images/SRM6.jpg)"></div></td></tr>
                            <tr height="25px"></tr>
                            <tr><td><div class="sidebarinfo2"
style="background: url(images/SRM4.jpg)"></div></td></tr>
                        </table>
                    </div>
                </div>

                <div class="clearfix">
                </div>
            </div>
        <div class="footer">
            <p> &copy;  2017 Online Library | Developed by M.Anand, Asst. Prof.
(Sr. G), Dept. of Information Technology, SRM University</p>
        </div>
    </div>
</body>
</html>
```

Home Work:

System Analysis phase

      i) Database design: Database Name, Tables, Fields with data type, constraints and size in a tabular form.

      ii) Draw all the web pages of the project and mention all the control names and its properties.

   iii) Draw the data flow diagram of the project.

Lab 3:

3. a) Create a *mysql* database and all the tables of the project in *phpmyadmin*.

b) Write a PHP code to store user registration information in the database.

c) Write a PHP code for user login page.

13. Steps to create *mysql* database:

Step 1) Open XAMPP Control Panel.

Step 2) Start the Apache Server module

Step 3) Start the MySQL module
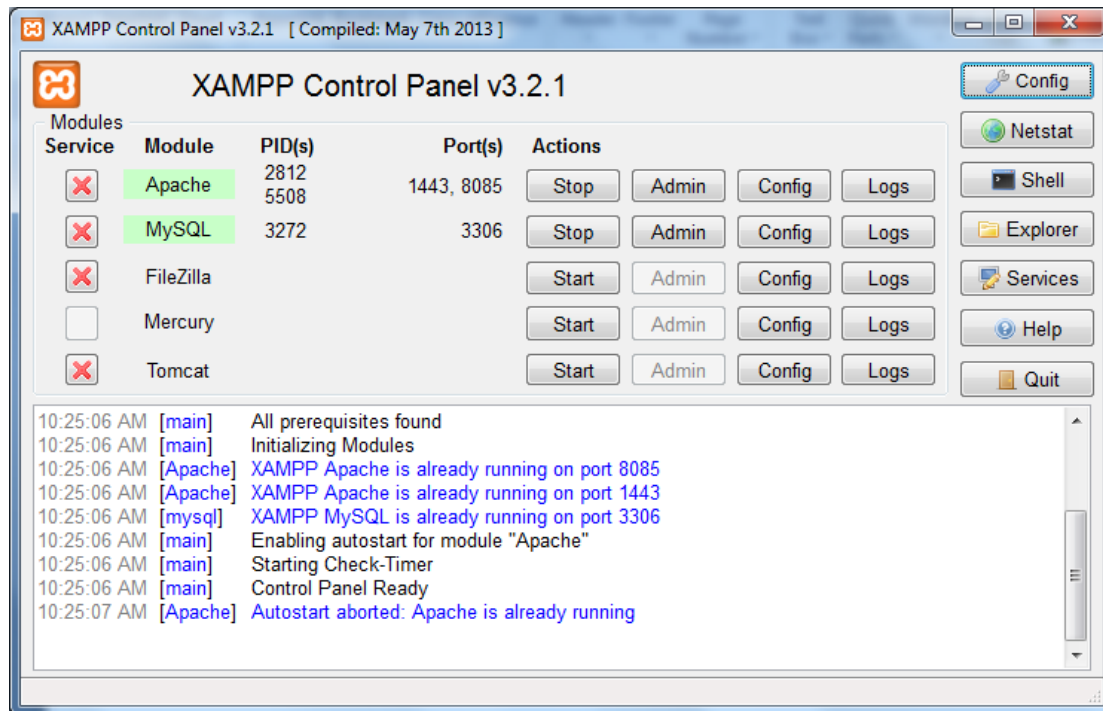
Step 4) Open web browser and type the url *http://localhost:8085/phpmyadmin*

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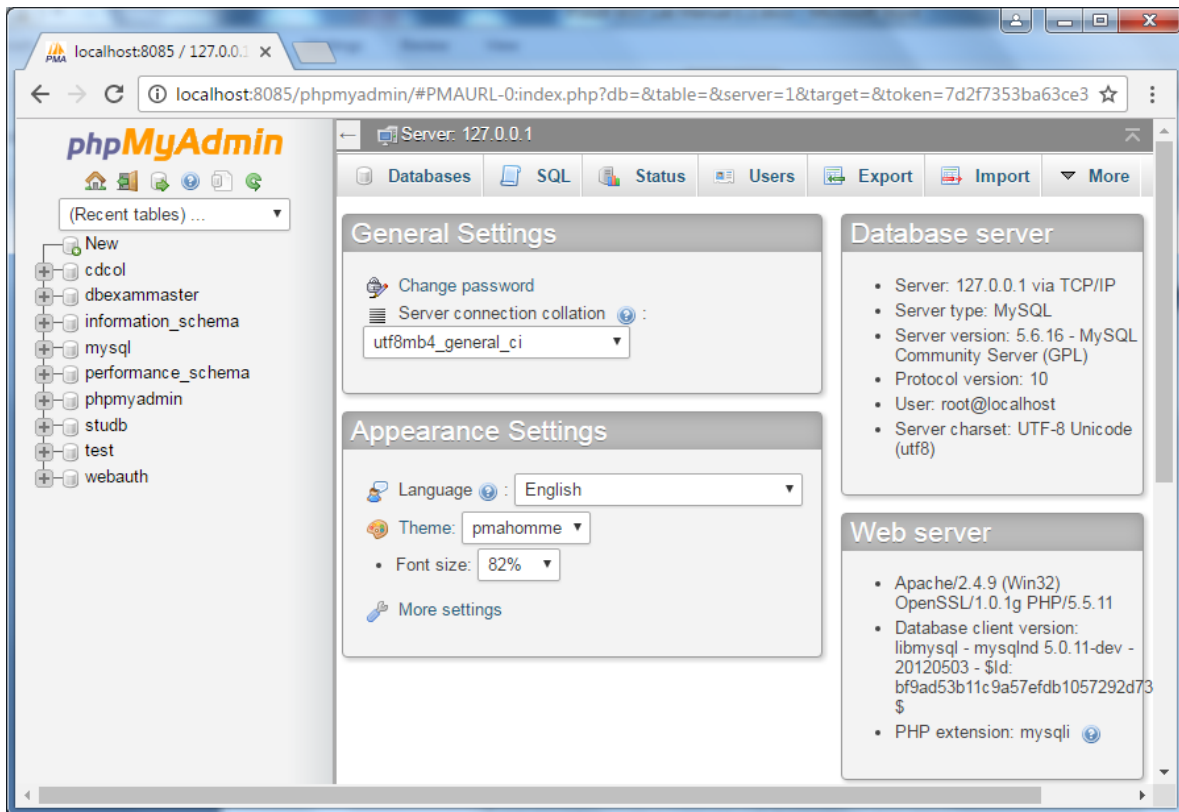
Step 5) Select *New* to create a new database and enter the database name
Eg.: *db_srm_library*
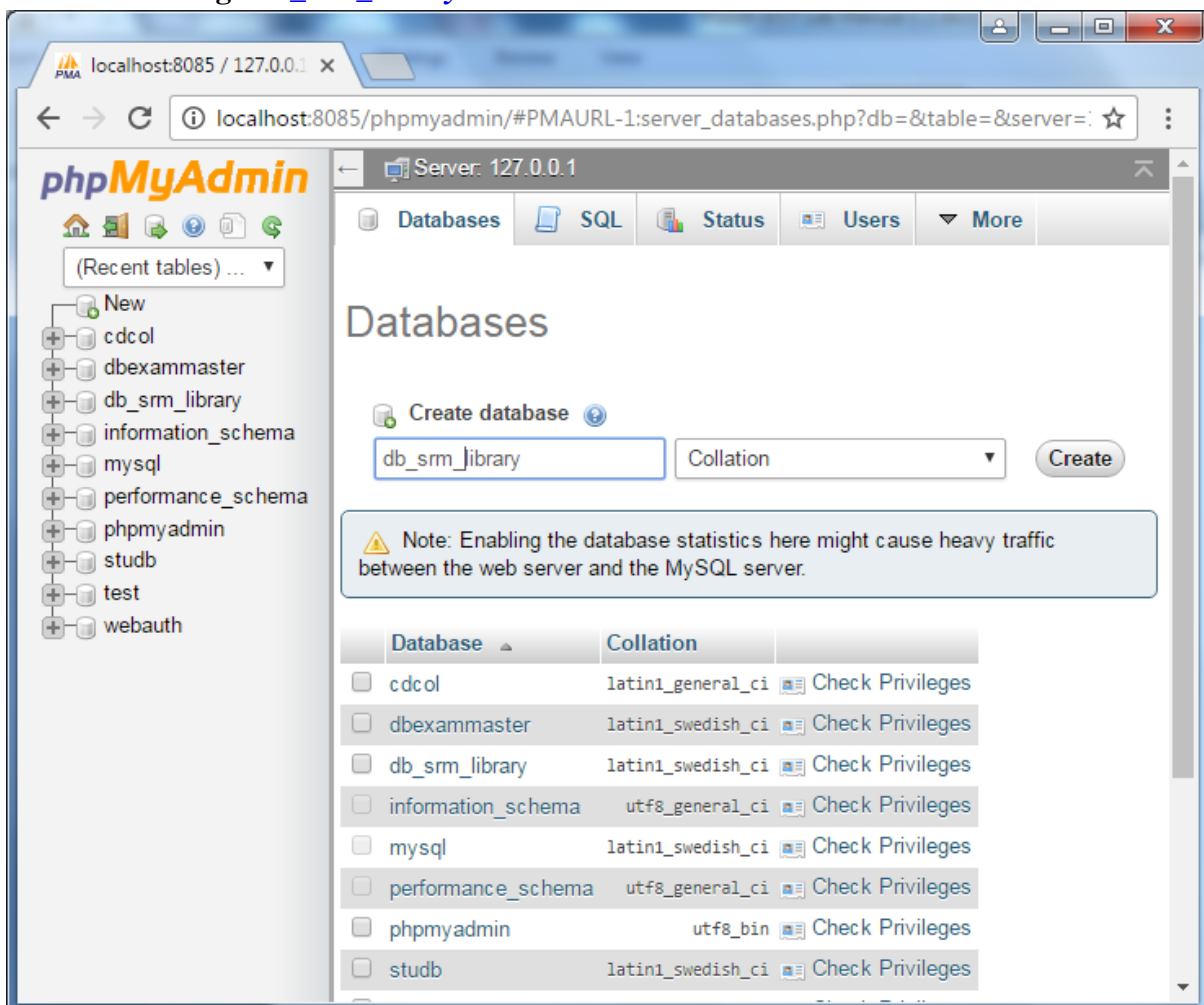
Step 6) Select the database name and enter the table name and number of columns and click on *Go* button

Eg.:   *user_login*
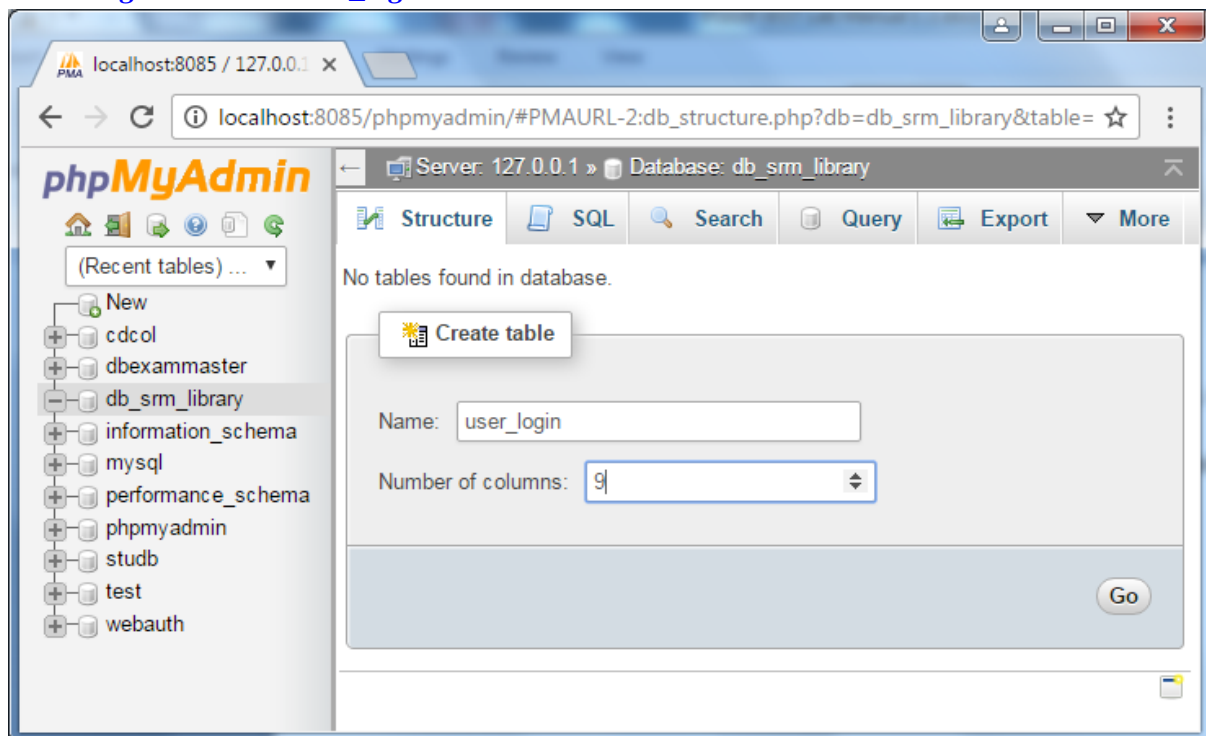
Step 7) Enter the field names with data type and click on *Save* button
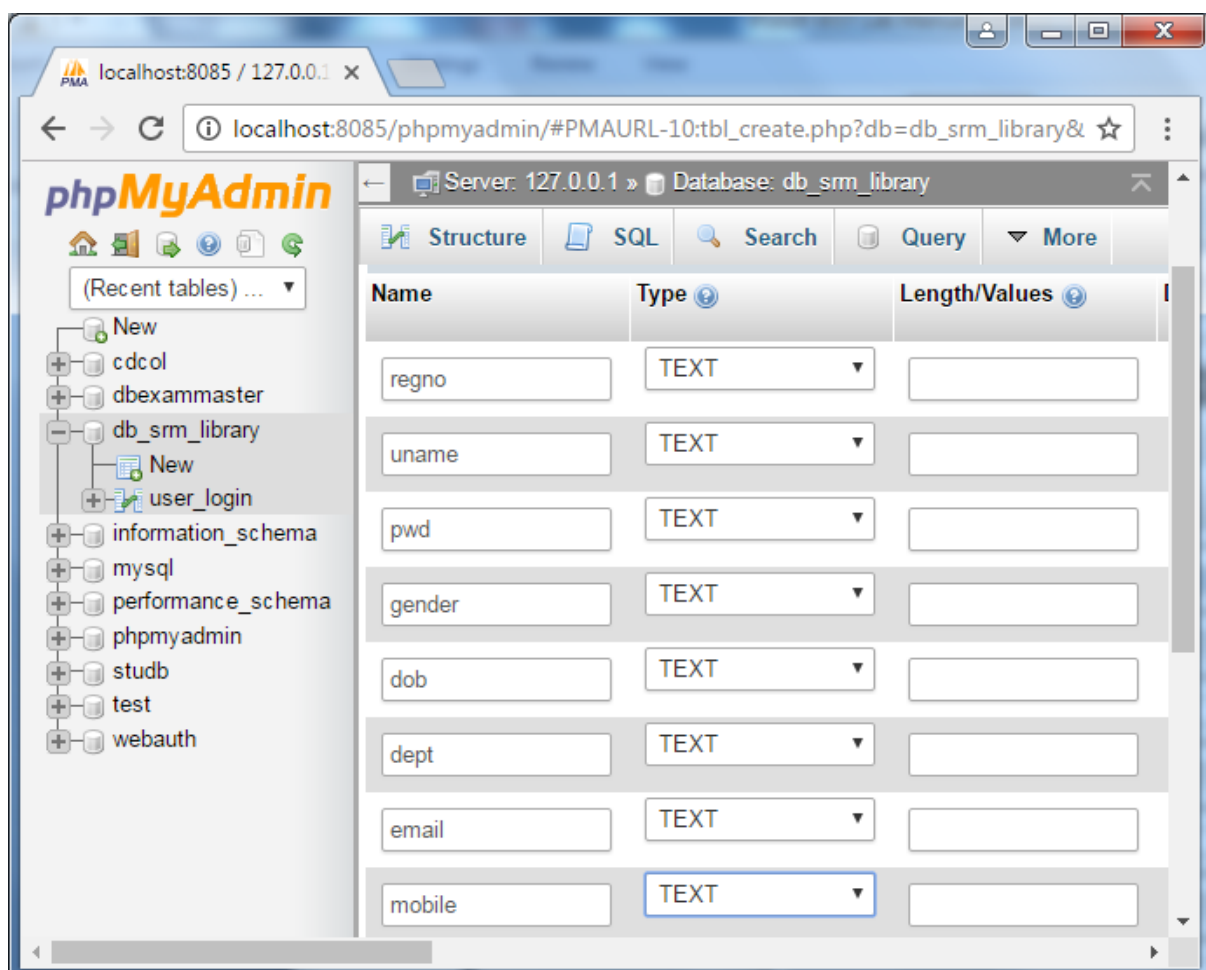
14) Create a php file, *SaveNewUser.php* in the project folder
      c:\xampp\htdocs\SRMLibrary\SaveNewUser.php

```php
<?php
    extract($_POST);
    $mysqli = new mysqli('localhost', 'root', 'server', 'db_srm_library');

    if($mysqli->connect_errno > 0){
            die('Unable to connect to database [' . $db->connect_error . ']');
    }

    $dob=$dd.'/'.$mm.'/'.$yy;

    $query = "INSERT INTO user_login VALUES
                    ('$regno','$uname','$pwd','$gender','$dob','$dept','$email','$mobile')";

    $insert_row = $mysqli->query($query);

    if($insert_row){
             header("location:RegistrationSuccess.html");
    }
    else{
            die('Error : ('. $mysqli->errno .') '. $mysqli->error);
    }
?>
```

15) Create a html file, *RegistrationSuccess.html* in the project folder
      c:\xampp\htdocs\SRMLibrary\RegistrationSuccess.html

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```
                    …..
                    …..
                    …..
        <div class="content" style="background-color: #bbd2ff;">
            <div class="section">
                <br><br>
                <center>
                        <h2>New User Successfully Registered!</h2><br><br>
                        <a href="UserLogin.html">Login</a>
                </center>
            </div>
        </div>
                    …..
                    …..
                    …..
```

16) Create a html file, *CheckUserLogin.php* in the project folder
     c:\xampp\htdocs\SRMLibrary\ CheckUserLogin.php

```php
<?php

$host="localhost"; // Host name
$username="root"; // Mysql username
$password="server"; // Mysql password
$db_name="db_srm_library"; // Database name
$tbl_name="user_login"; // Table name

// Connect to server and select databse.
mysql_connect("$host", "$username", "$password")or die("cannot connect");
mysql_select_db("$db_name")or die("cannot select DB");

// Define $myusername and $mypassword
$myusername=$_POST['uname'];
$mypassword=$_POST['pwd'];

$sql="SELECT * FROM $tbl_name WHERE uname='$myusername' and
pwd='$mypassword'";
$result=mysql_query($sql);

// Mysql_num_row is counting table row
$count=mysql_num_rows($result);

// If result matched $myusername and $mypassword, table row must be 1 row
if($count==1){
//      $row=mysql_fetch_row($result);
//      $sname=$row[0];
//      print("<h1>Welcome, $sname!<br></h1>");
//      echo "<h2>Login Success!!!</h2>";
        header("location:UserMainMenu.php");
}
```

```php
else {
        //echo "<h2>Login Failed!!!</h2>";
        header("location:UserLogin.html");
}
?>
```

Lab 4:
4. a) Create the web pages of the project.
   b) Design menus and navigation of the project.

Lab 5:
5. a) Implement business logic of the project.

Lab 6:
6. a) Validating user inputs of the web pages using Java Script.
Hint:
- Validate empty field, password field and confirm password field etc.
- Use regular expressions to check ten digit phone number, email format etc.

Lab 7:
7. a) Create a cookie to save the username and password and display it in the respective field when the user returns to the webpage.
   b) Fetch the user name from the data base and display it in all the web pages of the project through session tracking.

Lab 8:
- **Hosting the web site**
- **Project Documentation submission**
- **Project Demo**

8. a) Creating user login and registration pages using JSP.
   b) Creating user login and registration pages using Servlet.

Lab 9: Understanding the server AJAX Technology and SOAP based Webservices
9. a) Make a registration form with username, email, password, phone number and submit it to the database.(include client side and server side validation).Use AJAX to check for username availability in database while user is tying in input field and immediately update the status of user name availability in nearby span field. You can either use PHP or JSP for server side coding

   b) Consume a Web service from following Web service providers. The service provider provides Temperature Unit conversion from one unit to other. Develop a client side java program to include the webservice component in its application. The value to be converted is taken from user and call for webservice should be done and result should be displayed back in the application.

ConvertTemp - A free Web service that converts temperature values in Celsius, Fahrenheit, Rankine, Reaumur, and Kelvin.

Technical information on the Web service:
- Service Operation Name: ConvertTemp
- Service Provider: WebserviceX.NET
- Service URL: http://www.webservicex.net/ConvertTemperature.asmx
- WSDL Document: http://www.webservicex.net/ConvertTemperature.asmx?WSDL
- WSDL version: WSDL 1.1
- SOAP version: SOAP 1.1 and SOAP 1.2
- SOAP message style: Document

Create a SoapUI project called "ConvertTemperature" with WSDL at "http://www.webservicex.net/ConvertTemperature.asmx?WSDL". You will see "ConvertTemp" displayed in the list of operations.

Lab 10: Understanding xml applied in Document Markup and for Data Exchange.
- Students should learn the features of xml syntax, DTD, Schema.
- Students should learn XSLT and CSS for document markup presentation.
- Students should learn DOM and SAX parsers for understanding data exchange through java program.

10. a) Make a XML which contains data of a product catalog for computer device specification.
    Apply CSS and XSL to enable proper presentation in the browser.
10. b) Create a java program for given XML and DTD to check whether the given XML is well
    formed and valid.
10. c) Use DOM parser to fetch the XML content and display in the console through java
    program.
10. d) Use SAX parser to fetch the XML content and display in the console through java
    program.

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