Abertay University

Web Development

Week 3

Part 2

Abertay

The Goal

- Create a database
- Connect to the database
- Demonstrate database reading and writing
- Create user privileges logic

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Creating a MySQL Database

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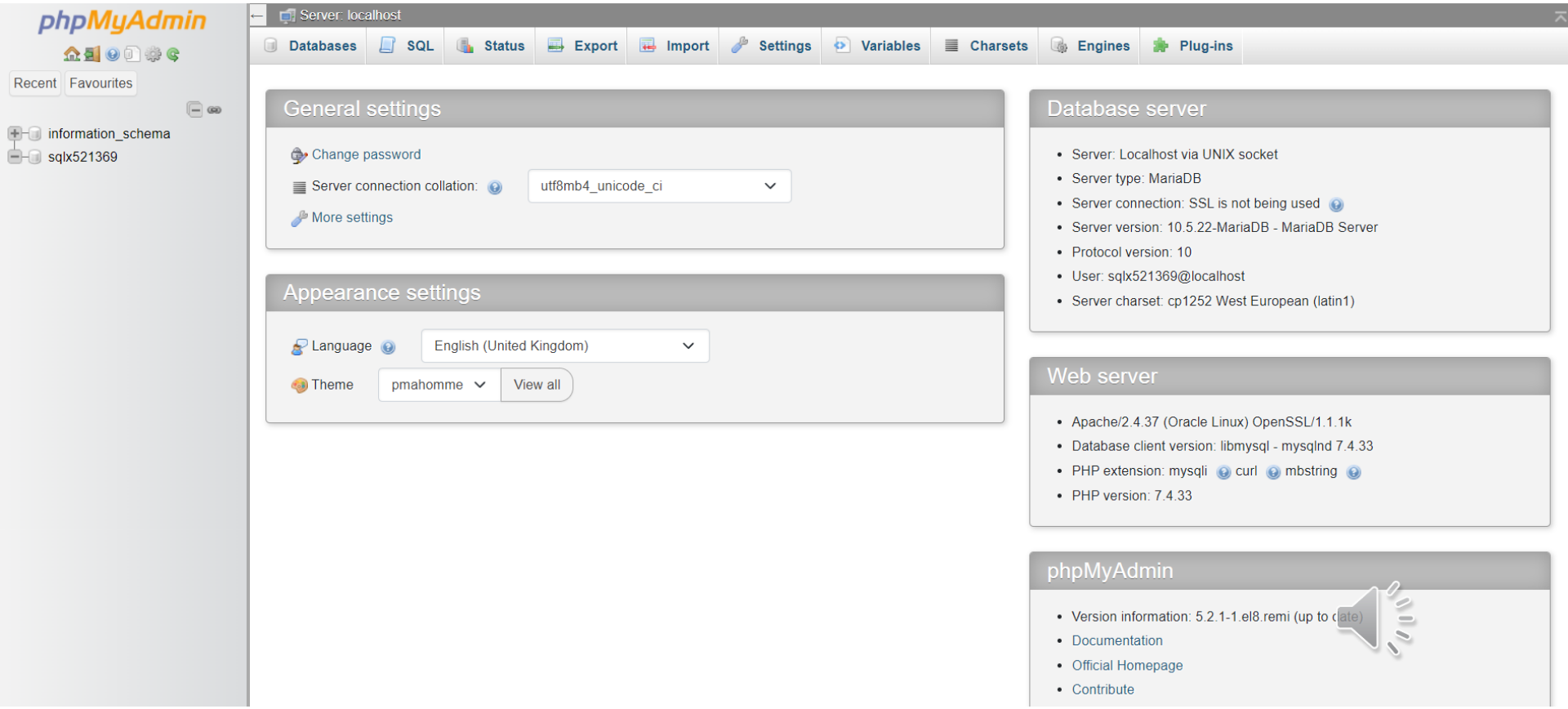
PhpMyAdmin

Login to the web authenticator
https://webauth.abertay.ac.uk/

phpMyAdmin Link
https://phpmyadmin.abertay.ac.uk/phpmyadmin

MySQL Server:
lochnagar.abertay.ac.uk
Username: XXXXXX
Password: XXXXXX
Database: XXXXXX

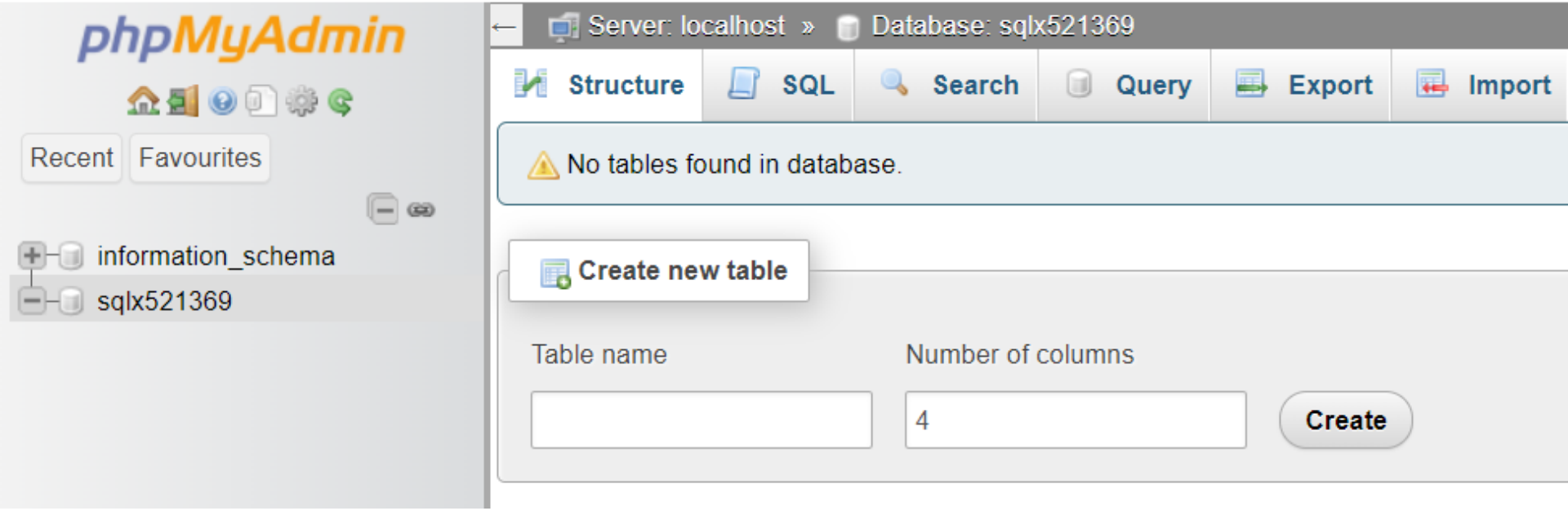
PhpMyAdmin


phpMyAdmin
Recent
Favourites
information_schema
sqlx521369
Server: localhost
Databases
SQL
Status
Export
Import
Settings
Variables
Charsets
Engines
Plug-ins
General settings
Change password
Server connection collation:
utf8mb4_unicode_ci
More settings
Appearance settings
Language
English (United Kingdom)
Theme
pmahomme
View all
Database server
Server: Localhost via UNIX socket
Server type: MariaDB
Server connection: SSL is not being used
Server version: 10.5.22-MariaDB - MariaDB Server
Protocol version: 10
User: sqlx521369@localhost
Server charset: cp1252 West European (latin1)
Web server
Apache/2.4.37 (Oracle Linux) OpenSSL/1.1.1k
Database client version: libmysql - mysqlnd 7.4.33
PHP extension: mysqli
curl
mbstring
PHP version: 7.4.33
phpMyAdmin
Version information: 5.2.1-1.el8.remi (up to date)
Documentation
Official Homepage
Contribute

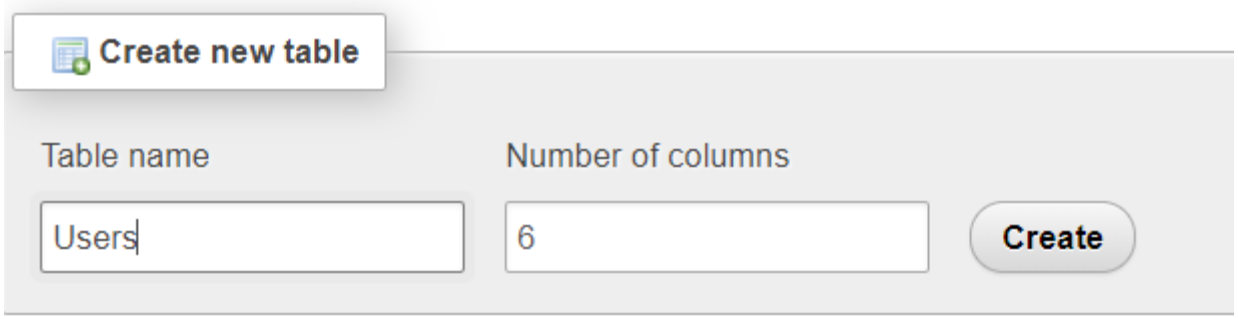
Lochnagar

- Please note that you have only one database in your Lochnagar.
- You can add as many tables as you like but no more databases.
- This is simply due to the way accounts are set up on lochnagar-it is not a limitation of mysql

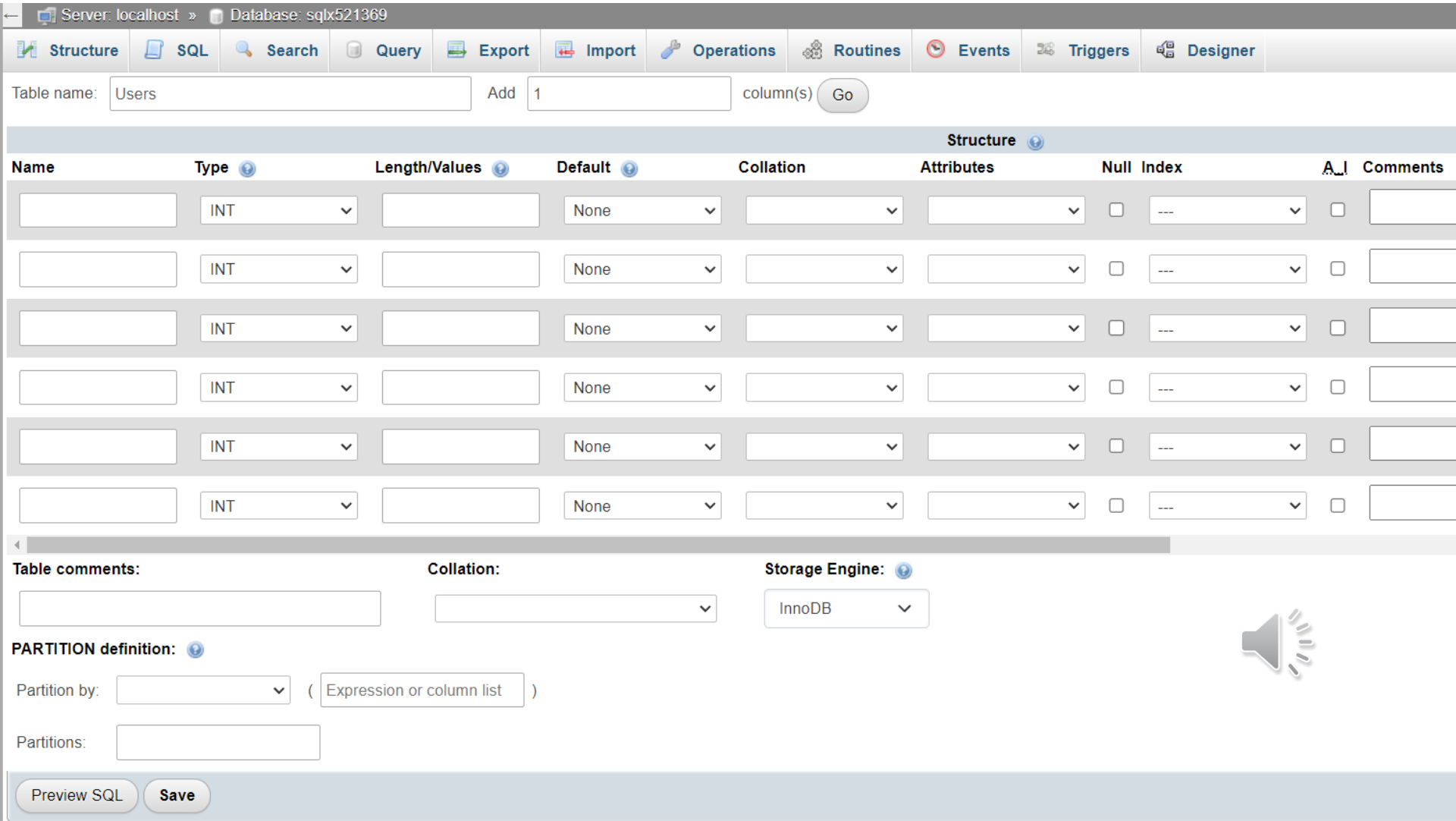
Creating a MySQL Database



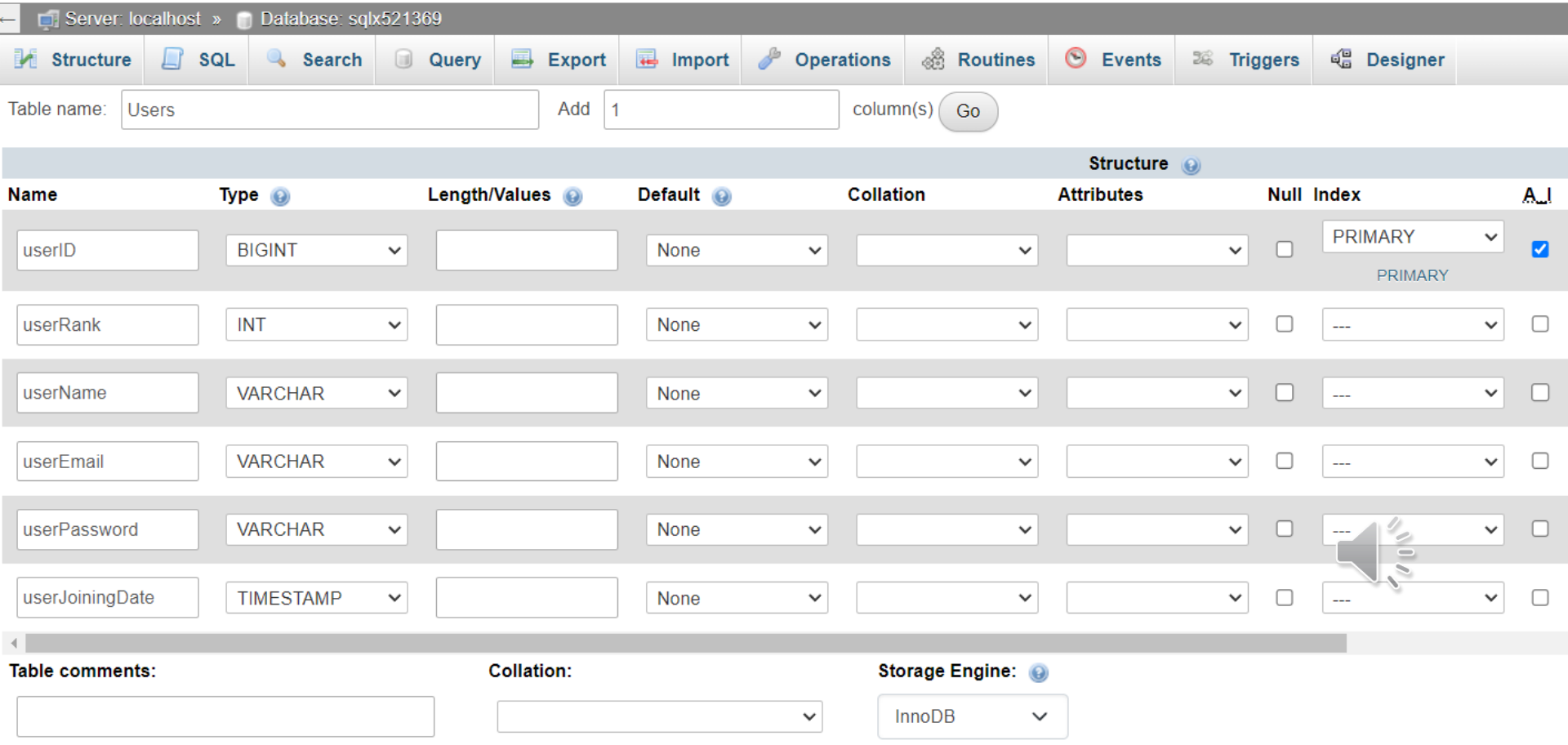
Creating a MySQL Database



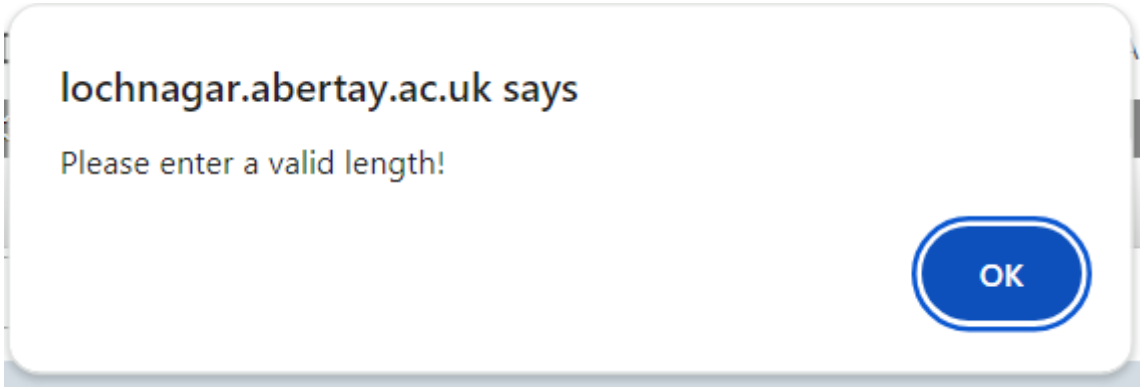
Creating a MySQL Database



Creating a MySQL Database

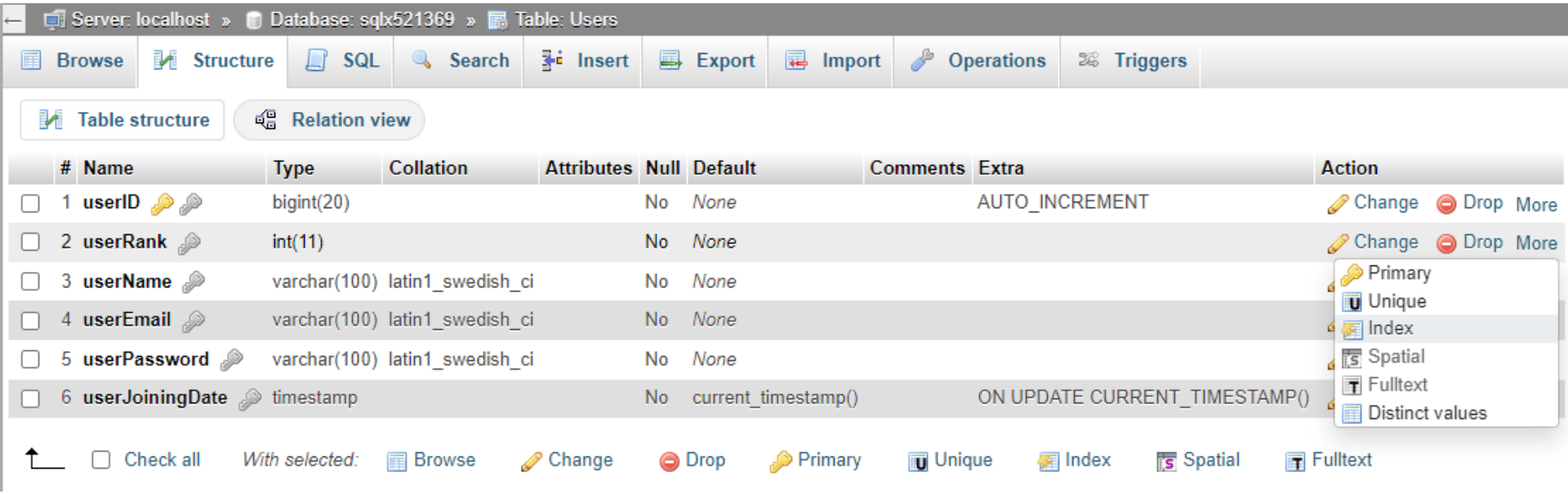


Creating a MySQL Database

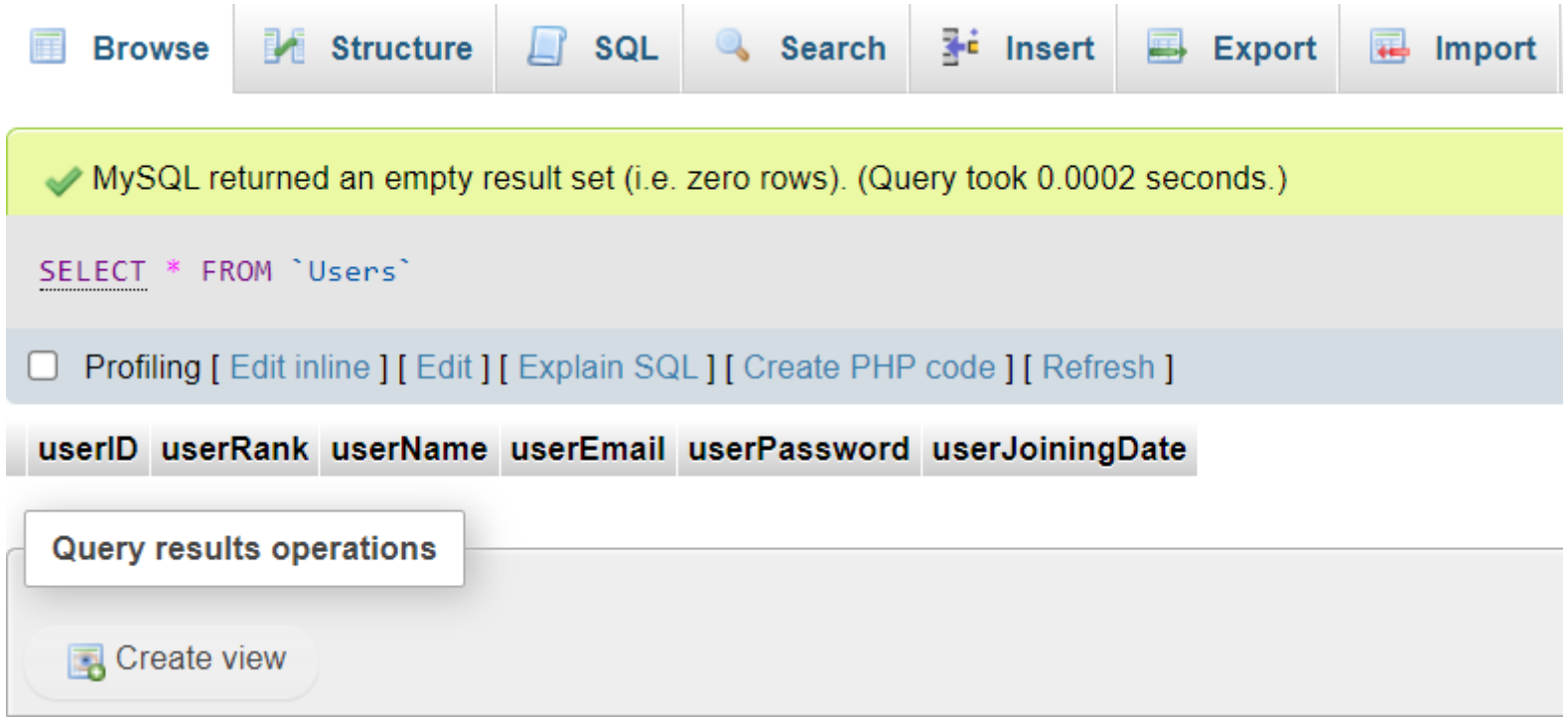


Enter valid lengths varchar should be 100

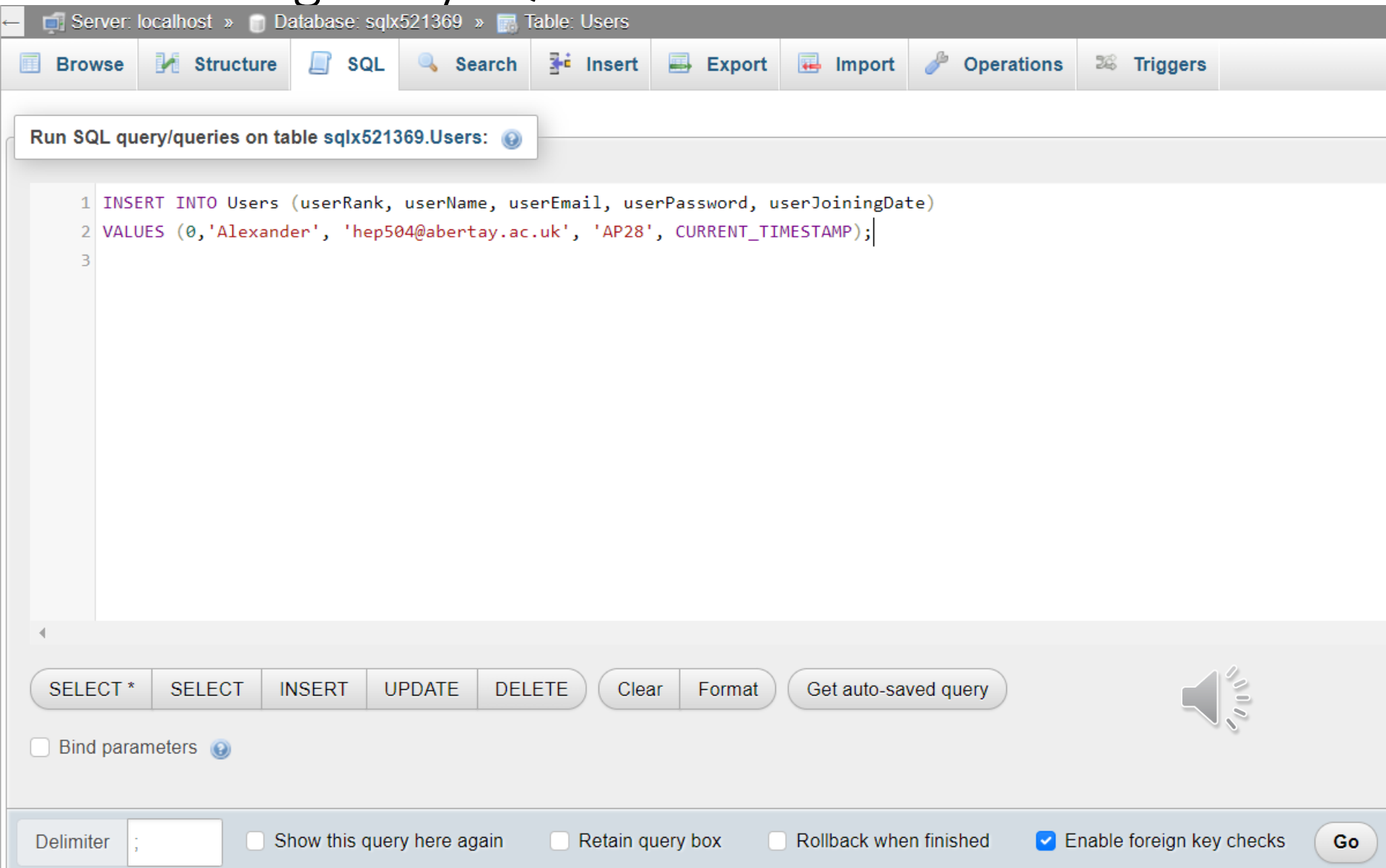
Creating a MySQL Database



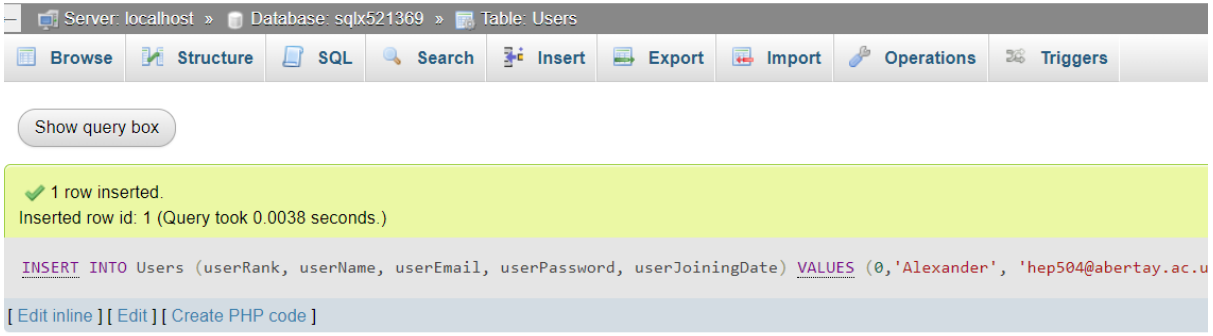
Creating a MySQL Database



Creating a MySQL Database



Creating a MySQL Database



Creating a MySQL Database

```
1 SELECT * FROM Users;
```

Server: localhost » Database: sqlx521369 » Table: Users

Browse | Structure | SQL | Search | Insert | Export | Import | Operations | Triggers

Show query box

Showing rows 0 - 0 (1 total, Query took 0.0049 seconds.)

```
SELECT * FROM Users;
```

Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]

Show all | Number of rows: 25 Filter rows: Search this table

Extra options

←T→	userID	userRank	userName	userEmail	userPassword	userJoiningDate
Edit Copy Delete	1	0	Alexander	hep504@abertay.ac.uk	AP28	2024-03-14 21:06:50

Check all *With selected:* Edit Copy Delete Export

Show all | Number of rows: 25 Filter rows: Search this table

Query results operations

Print | Copy to clipboard | Export | Display chart | Create view

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Accessing the Database

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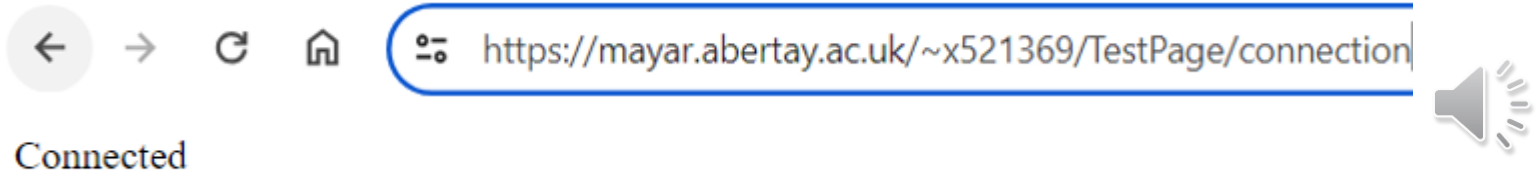
Connecting through your webpage

connection.php

```php
<?php

$dbhost = "lochnagar.abertay.ac.uk";
$dbuser = "sqlx521369";
$dbpass = "[redacted]";
$dbname = "sqlx521369";

if (!$con = mysqli_connect($dbhost, $dbuser, $dbpass, $dbname)) {
    die("Failed to connect!");

} else {
    echo "Connected";
}

?>
```

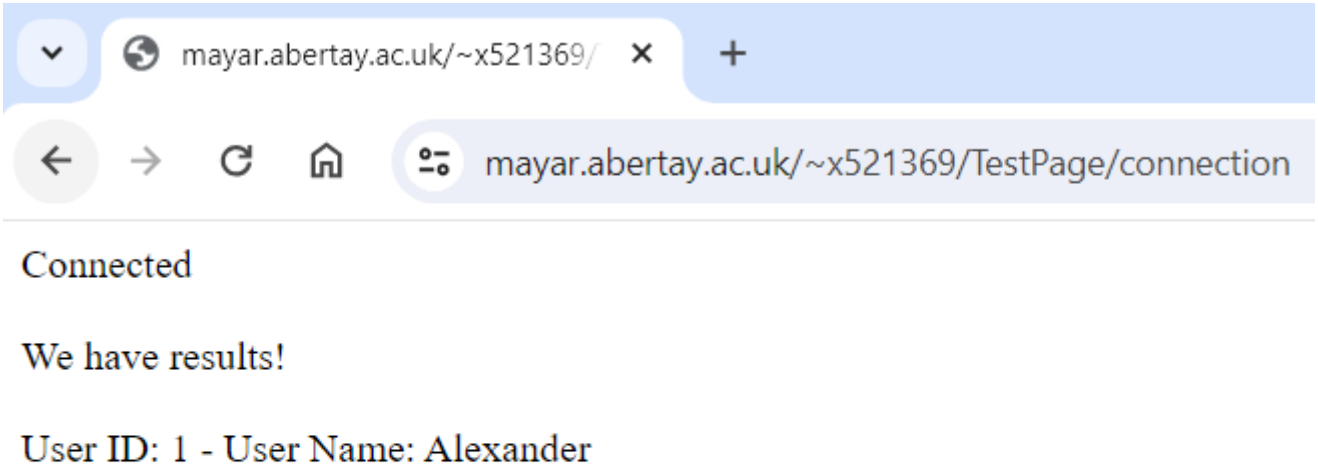


Connecting through your webpage

connection.php

```php
<?php
// variables to hold database login info
$dbhost = "lochnagar.abertay.ac.uk";
$dbuser = "sqlx521369";
$dbpass = "[redacted]";
$dbname = "sqlx521369";

//Attempt to conect to database
if (!$con = mysqli_connect($dbhost, $dbuser, $dbpass, $dbname)) {
   die("Failed to connect! ");

} else {
    echo "Connected " . "<br>";


    $sql = "SELECT userID, userName FROM Users";
    $result = $con->query($sql);

    if ($result->num_rows > 0) {
        echo "<br>" . "We have results!" . "<br>";
        // output data of each row
        while($row = $result->fetch_assoc()) {
            echo "<br> User ID: ". $row["userID"]." - User Name: ". $row["userName"]."<br>";
        }
    }
    else {
        echo "0 results" . "<br>";
    }
}
?>
```

Connecting through your webpage



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Creating a Login Form

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Making the Web Pages

functions.php | index.php | connection.php

```php
<?php

function DisplayAllUsers($con)
{

// Submit an sql query to the database
$sql = "SELECT userID, userName FROM Users";
$result = $con->query($sql);

    //Check if results were found
    if ($result->num_rows > 0) {
        echo "<br>" . "We have results!" . "<br>";
        // output data of each row
        while($row = $result->fetch_assoc()) {
            echo "<br> User ID: ". $row["userID"]." - User Name: ". $row["userName"]."<br>";
        }
    }
    else {
        echo "0 results" . "<br>";
    }
}
?>
```

Making the Web Pages

connection.php | functions.php | index.php

```php
<?php

$dbhost = "lochnagar.abertay.ac.uk";
$dbuser = "sql1x521369";
$dbpass = "[redacted]";
$dbname = "sql1x521369";

if(!$con = mysqli_connect($dbhost,$dbuser,$dbpass,$dbname))
{

    die("failed to connect!");
}
?>
```

Making the Web Pages

index.php | connection.php | functions.php | login.php | signup.php | logout.php

```php
<?php

function DisplayAllUsers($con)
{

$sql = "SELECT userID, userName FROM Users";
    $result = $con->query($sql);

    if ($result->num_rows > 0) {
        echo "<br>" . "We have results!" . "<br>";
        // output data of each row
        while($row = $result->fetch_assoc()) {
            echo "<br> User ID: ". $row["userID"]." - User Name: ". $row["userName"]."<br>";
        }
    }
    else {
        echo "0 results" . "<br>";
    }
}

function CheckLogin($con)
{

    if(isset($_SESSION['userID']))
    {

        $userID = $_SESSION['userID'];
        $query = "select * from Users where userID = '$userID' limit 1";

        $result = mysqli_query($con,$query);
        if($result && mysqli_num_rows($result) > 0)
        {

            $user_data = mysqli_fetch_assoc($result);
            return $user_data;
        }
    }

    //redirect to login
    header("Location: login.php");
    die;

}

?>
```

Making the Web Pages

index.php | connection.php | functions.php | login.php | signup.php | logout.php

```php
<?php
session_start();

    include("connection.php");
    include("functions.php");


    $user_data = CheckLogin($con);
?>

<!DOCTYPE html>
<html>
<head>
    <title>Alexander's Data Demo Page</title>
</head>

<body>

<h1>Welcome to the index page!</h1>

<h3>Hello <?php echo $user_data['userName']; ?>, we've been expecting you<h3>

<?php DisplayAllUsers($con); ?>

</body>
</html>
```

Making the Web Pages

index.php | connection.php | functions.php | login.php | signup.php | logout.php

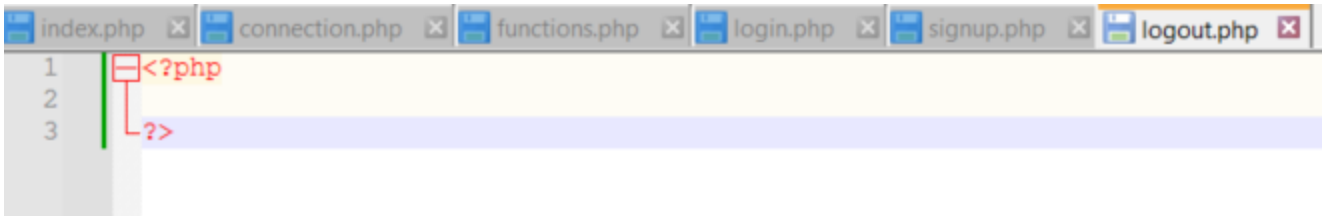
```php
<?php

?>


<!DOCTYPE html>
<html>
<head>
    <title>Login Page</title>
</head>

<body>

<h1>This is the Login page</h1>

</body>
</html>
```

Making the Web Pages

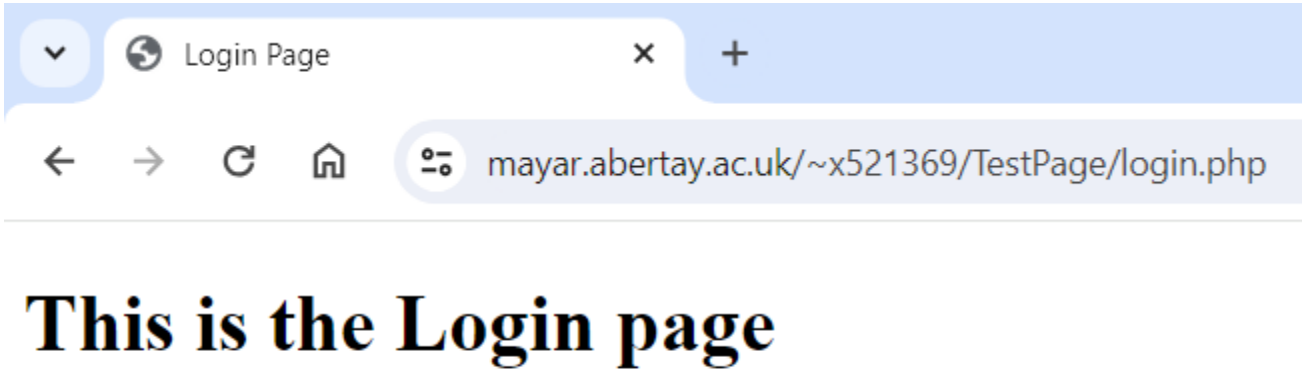
index.php | connection.php | functions.php | login.php | signup.php | logout.php

```
1  <?php
2
3  ?>
4
5
6  <!DOCTYPE html>
7  <html>
8  <head>
9      <title>Sign Up Page</title>
10 </head>
11
12 <body>
13
14 <h1>This is the Sign Up page</h1>
15
16
17 </body>
18 </html>
```

Making the Web Pages



Validation


Login Page
mayar.abertay.ac.uk/~x521369/TestPage/login.php
This is the Login page

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Login Form

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Login

index.php | connection.php | functions.php | login.php | signup.php | logout.php

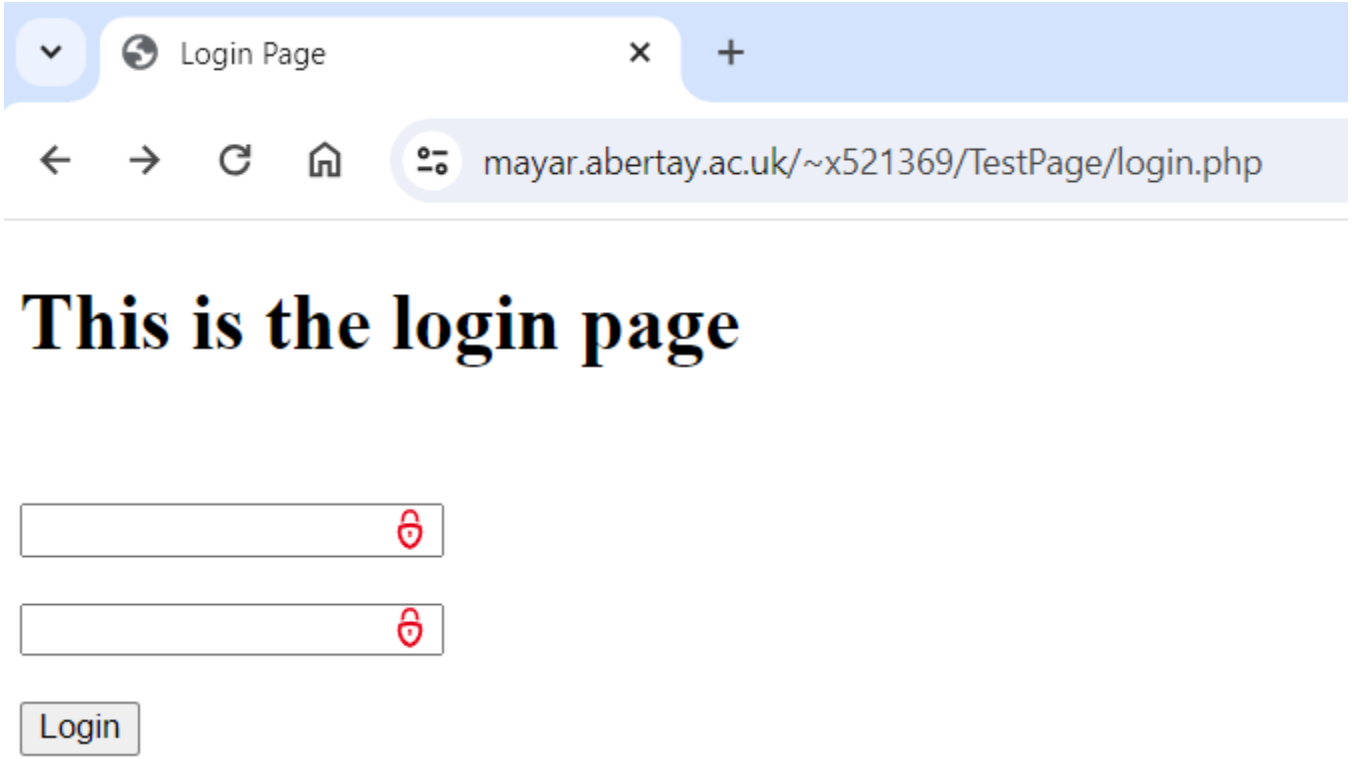
```
40      }
41  ?>
42
43
44  <!DOCTYPE html>
45  <html>
46  <head>
47      <title>Login Page</title>
48  </head>
49
50  <body>
51
52  <h1>This is the login page</h1>
53
54  </body>
55  </html>
56
57  <body>
58      <div id="box">
59          <form method="post">
60              <div style="font-size: 20px;margin: 10px;color: white;">Login</div>
61              <input id="textBoxUserName" type="text" name="userName"><br><br>
62              <input id="textBoxPassword" type="password" name="userPassword"><br><br>
63              <input id="button" type="submit" value="Login"><br><br>
64          </form>
65      </div>
66
67  </body>
68  </html>
```

Login

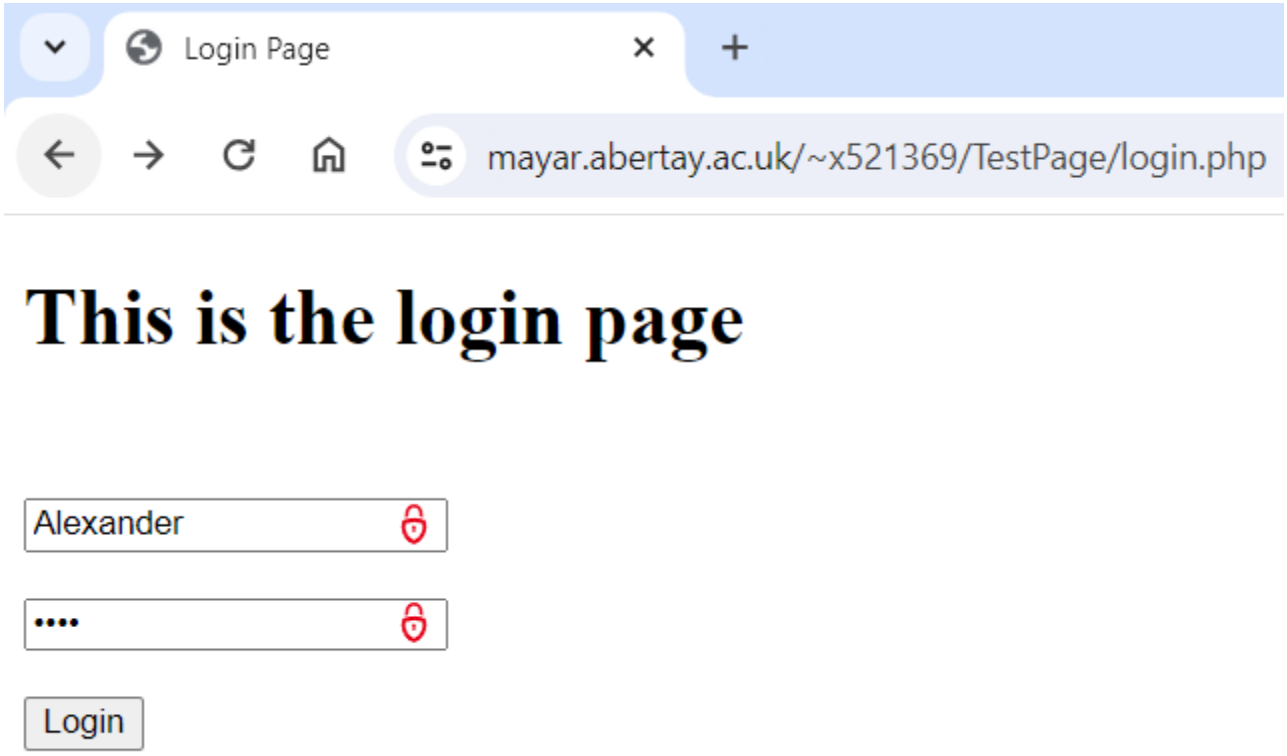
index.php | functions.php | connection.php | login.php | signup.php | logout.php

```php
<?php
session_start();

    include("connection.php");
    include("functions.php");

    if($_SERVER['REQUEST_METHOD'] == "POST")
    {
        //something was posted
        $userName = $_POST['userName'];
        $userPassword = $_POST['userPassword'];

        if(!empty($userName) && !empty($userPassword) && !is_numeric($userName))
        {
            //read from database
            $query = "select * from Users where userName = '$userName' limit 1";
            $result = mysqli_query($con, $query);


            if($result && mysqli_num_rows($result) > 0)
            {
                $user_data = mysqli_fetch_assoc($result);

                if($user_data['userPassword'] === $userPassword)
                {
                    $_SESSION['userID'] = $user_data['userID'];
                    header("Location: index.php");
                    die;
                }
            }

            echo "wrong username or password!";
        }else
        {
            echo "wrong username or password!";
        }
    }
?>


<!DOCTYPE html>
<html>
```

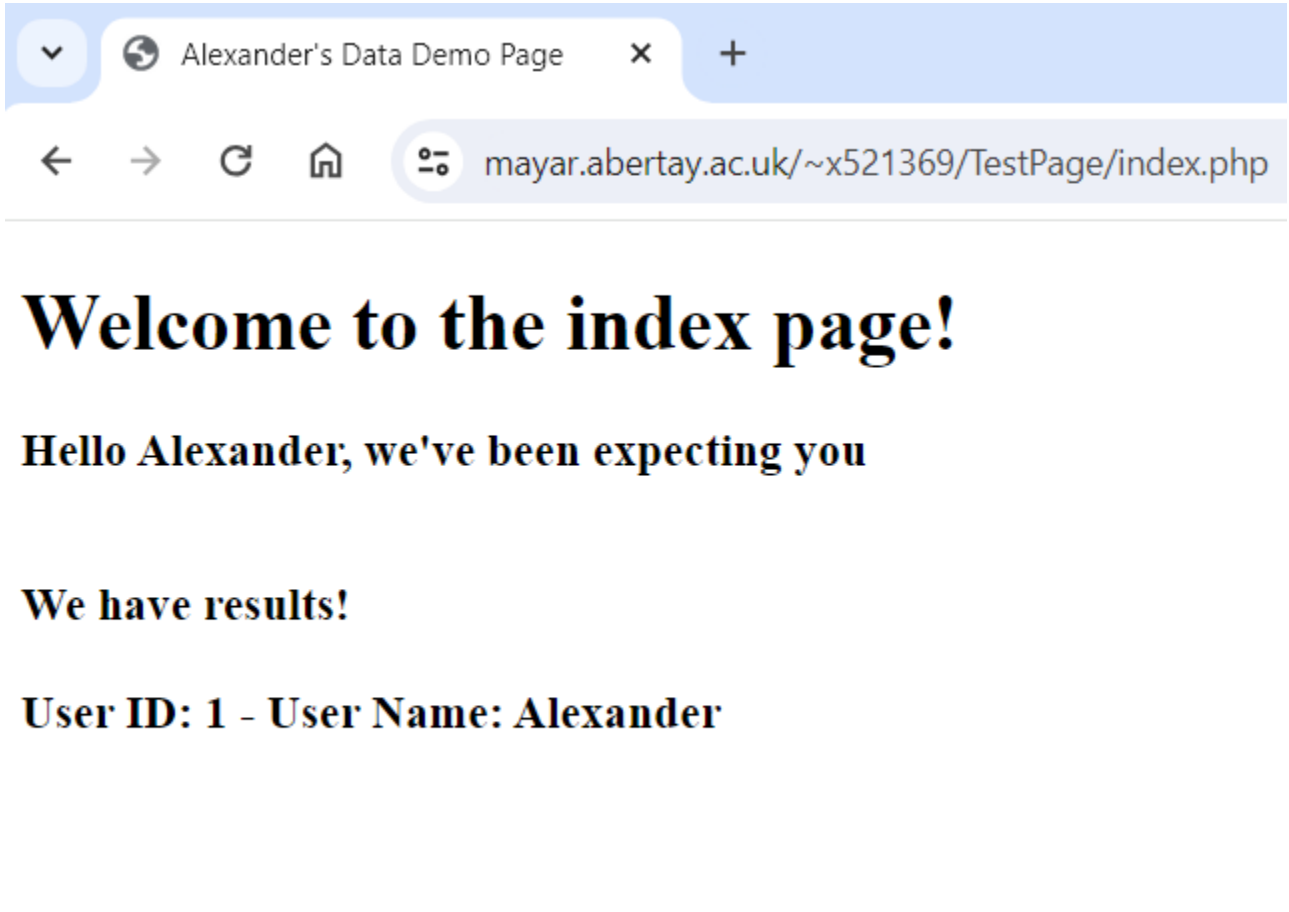
Login


Login Page
mayar.abertay.ac.uk/~x521369/TestPage/login.php
This is the login page
Login

Login


Login Page
mayar.abertay.ac.uk/~x521369/TestPage/login.php
This is the login page
Alexander
Login

Login


Alexander's Data Demo Page
mayar.abertay.ac.uk/~x521369/TestPage/index.php
Welcome to the index page!
Hello Alexander, we've been expecting you
We have results!
User ID: 1 - User Name: Alexander

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Login Out

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Log Out

index.php | connection.php | functions.php | login.php | signup.php | logout.php

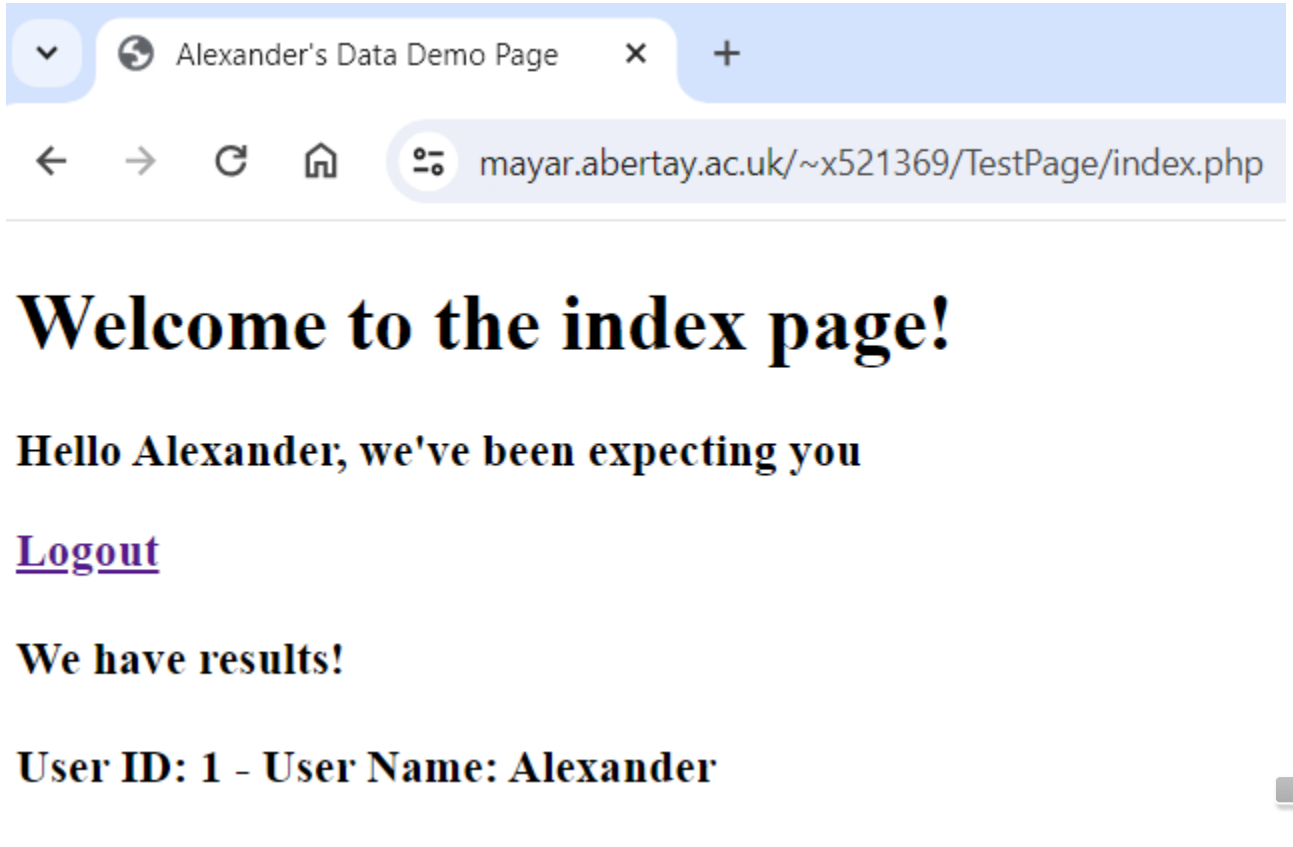
```php
<?php
session_start();

    include("connection.php");
    include("functions.php");


    $user_data = CheckLogin($con);
?>

<!DOCTYPE html>
<html>
<head>
    <title>Alexander's Data Demo Page</title>
</head>

<body>

<h1>Welcome to the index page!</h1>

<h3>Hello <?php echo $user_data['userName']; ?>, we've been expecting you<h3>

<a href="logout.php">Logout</a><br>

<?php DisplayAllUsers($con); ?>

</body>
</html>
```

Log Out

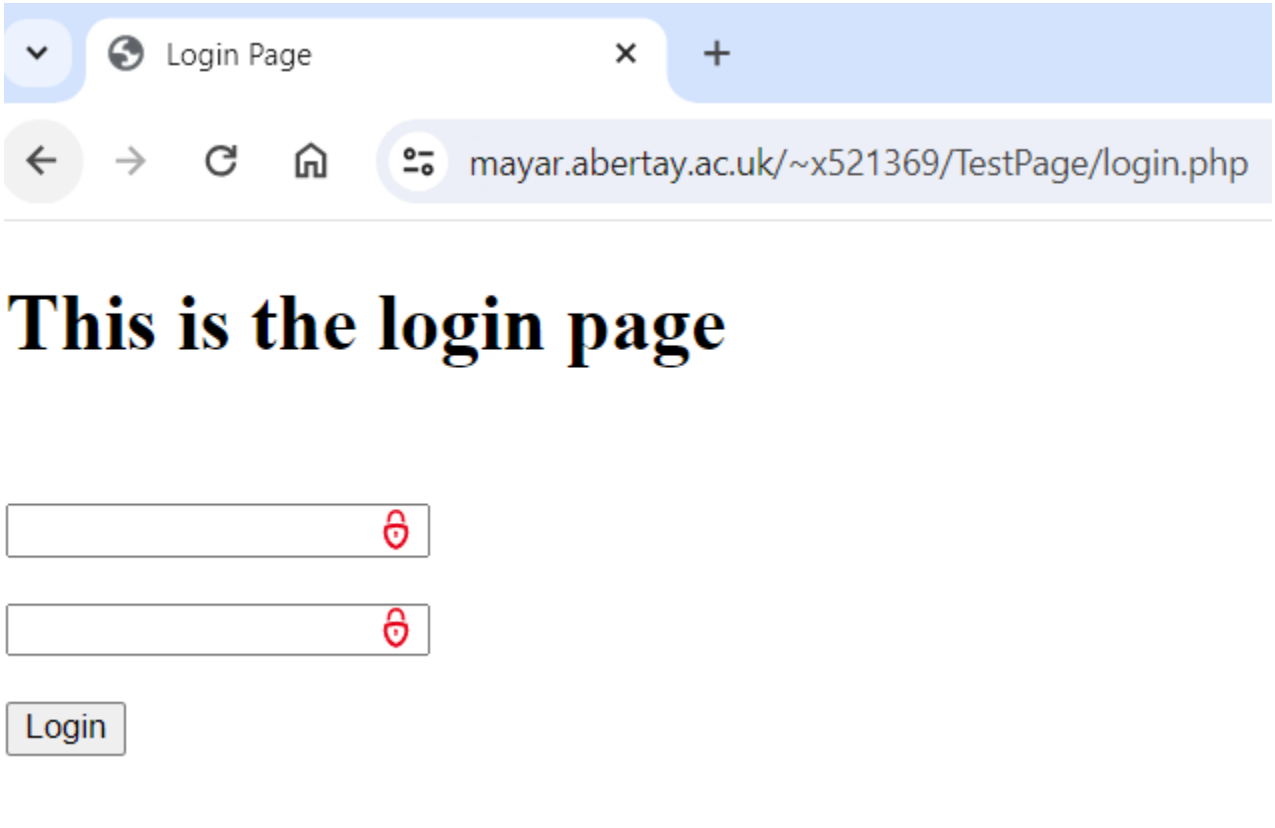
index.php | connection.php | functions.php | login.php | signup.php | logout.php

```php
<?php
session_start();

if(isset($_SESSION['userID']))
{
    unset($_SESSION['userID']);
}

header("Location: login.php");
die;

?>
```

Log Out


Alexander's Data Demo Page
mayar.abertay.ac.uk/~x521369/TestPage/index.php
Welcome to the index page!
Hello Alexander, we've been expecting you
Logout
We have results!
User ID: 1 - User Name: Alexander

Log Out


Login Page
mayar.abertay.ac.uk/~x521369/TestPage/login.php
This is the login page
Login

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Sign Up

Abertay

Sign Up

index.php | connection.php | functions.php | login.php | signup.php | logout.php

```
50  <body>
51
52  <h1>This is the login page</h1>
53
54  </body>
55  </html>
56
57  <body>
58      <div id="box">
59          <form method="post">
60              <div style="font-size: 20px;margin: 10px;color: white;">Login</div>
61              <input id="textBoxUserName" type="text" name="userName"><br><br>
62              <input id="textBoxPassword" type="password" name="userPassword"><br><br>
63              <input id="button" type="submit" value="Login"><br><br>
64          </form>
65      </div>
66
67
68      <br><h4>Don't Have an account?</h4>
69      <a href="signup.php">Click to Signup</a><br><br>
70  </body>
71  </html>
```

Sign Up

index.php | functions.php | connection.php | login.php | signup.php | logout.php

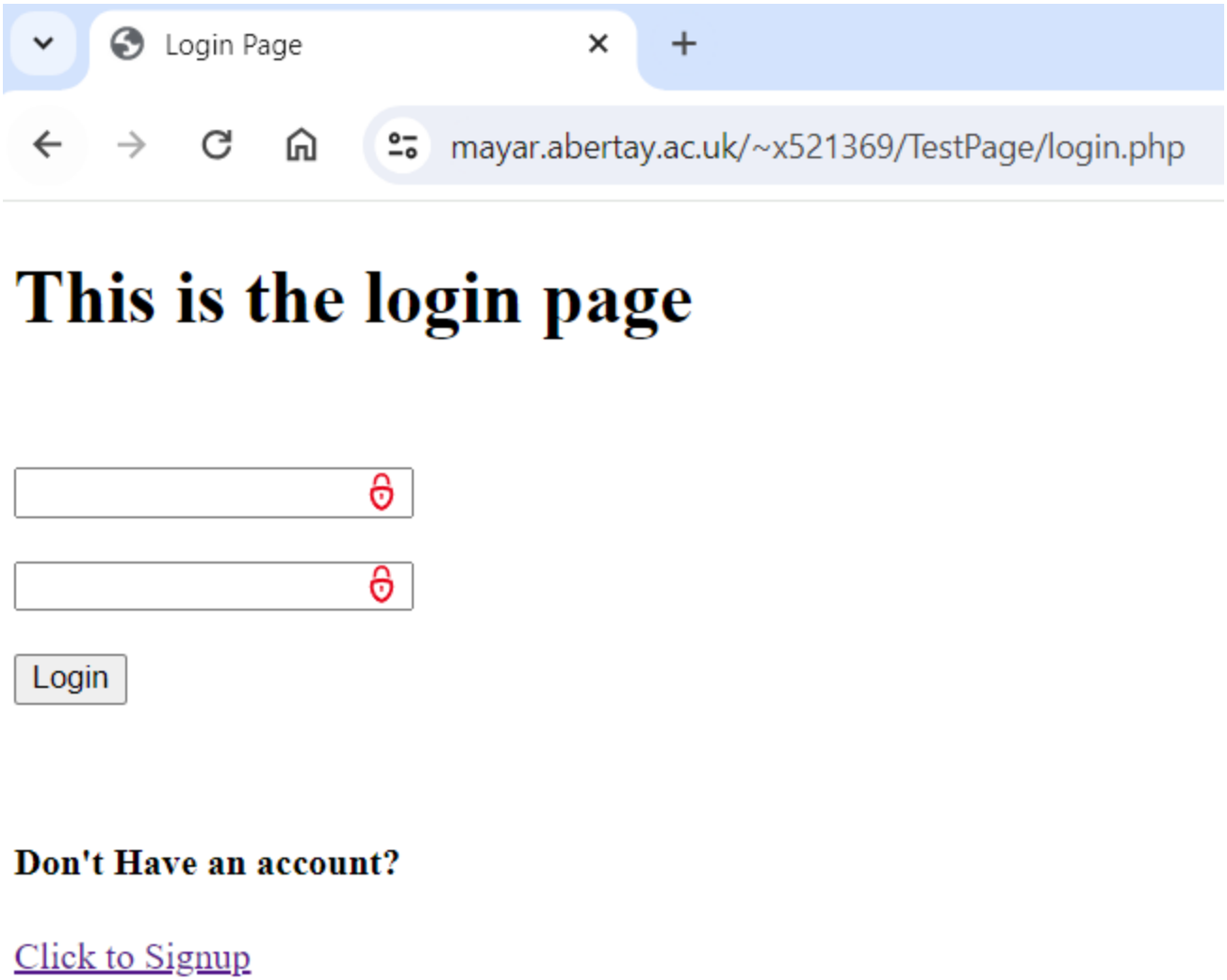
```
37      }
38  ?>
39
40  <!DOCTYPE html>
41  <html>
42  <head>
43      <title>Sign Up Page</title>
44  </head>
45
46  <body>
47
48  <h1>This is the Sign Up page</h1>
49
50  <div id="box">
51
52      <form method="post">
53          <div style="font-size: 20px;margin: 10px;color: white;">Signup</div>
54          <input id="text" type="text" name="userRank"><br><br>
55          <input id="text" type="text" name="userName"><br><br>
56          <input id="text" type="text" name="userEmail"><br><br>
57          <input id="text" type="password" name="userPassword"><br><br>
58
59          <input id="button" type="submit" value="Signup"><br><br>
60
61      </form>
62  </div>
63
64      <a href="login.php">Back to Login</a><br><br>
65  </body>
66  </html>
```

Sign Up

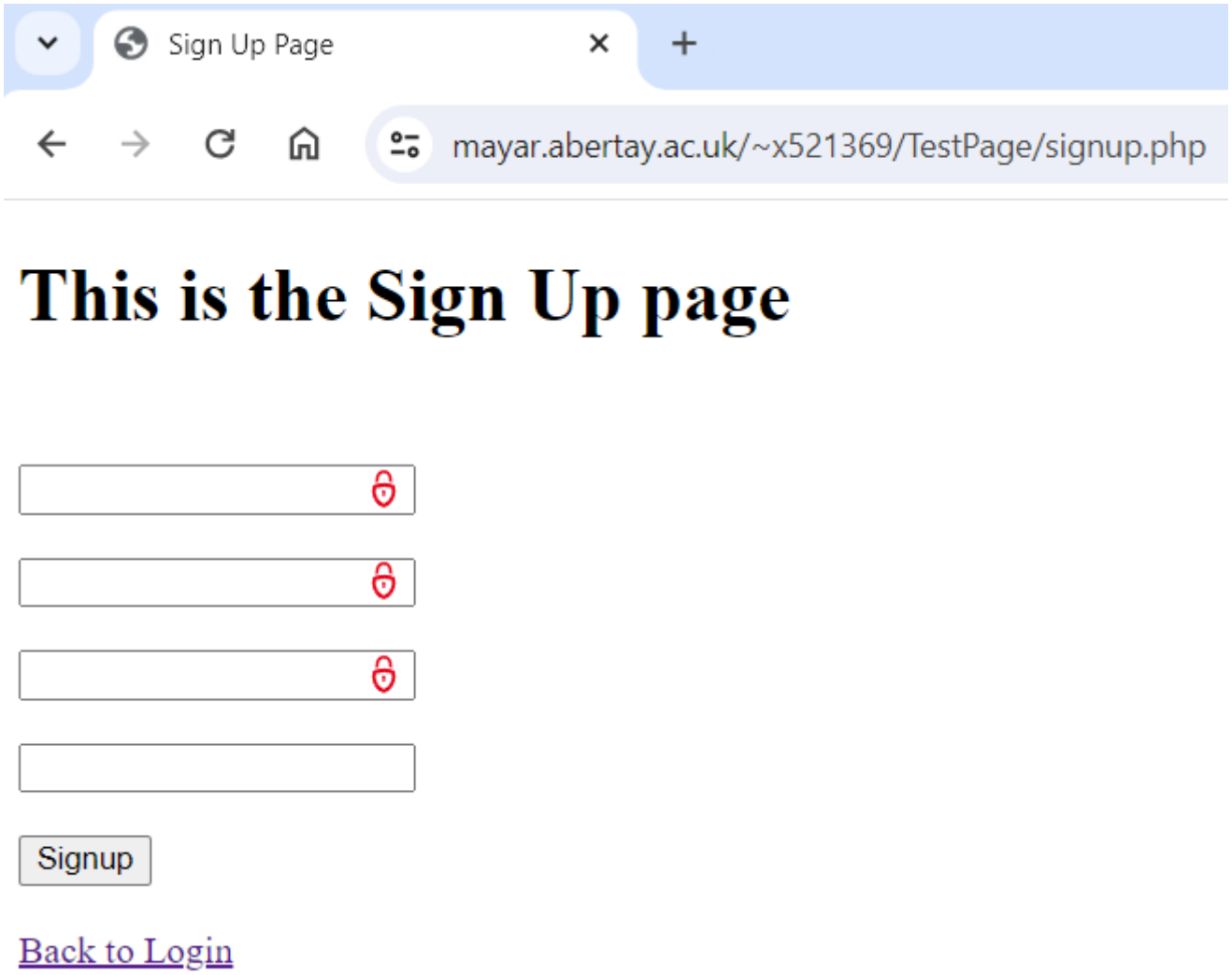
index.php | functions.php | connection.php | login.php | signup.php | logout.php

```php
<?php
session_start();

    include("connection.php");
    include("functions.php");


    if($_SERVER['REQUEST_METHOD'] == "POST")
    {
        //something was posted
        $userRank = (int) $_POST['userRank'];
        $userName = $_POST['userName'];
        $userEmail = $_POST['userEmail'];
        $userPassword = $_POST['userPassword'];

        if(!empty($userRank) && !empty($userName) && !empty($userEmail) && !empty($userPassword) && !is_numeric($userName))
        {

            //save to database
            $query = "insert into Users (userRank, userName, userEmail, userPassword) values ($userRank,'$userName','$userEmail','$userPassword')";

            $ver = mysqli_query($con, $query);
            if(!$ver)
            {
                echo "Query unsuccessful!";
                die();
            }
            else
            {
                header("Location: login.php");
                die;
            }
        }else
        {
            echo "Please enter some valid information!";
        }
    }
?>

<!DOCTYPE html>
<html>
```

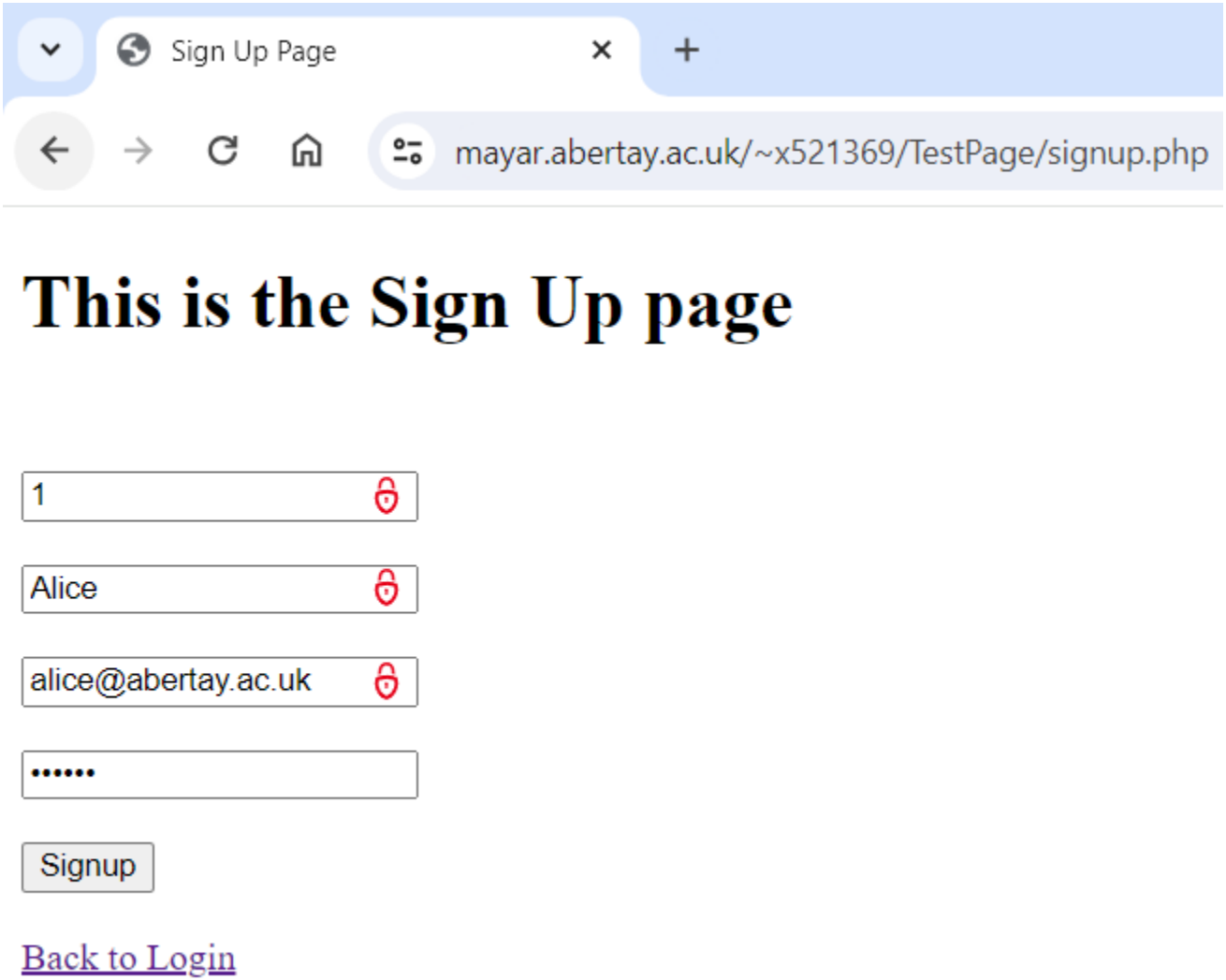
Sign Up


Login Page
mayar.abertay.ac.uk/~x521369/TestPage/login.php
This is the login page
Login
Don't Have an account?
Click to Signup

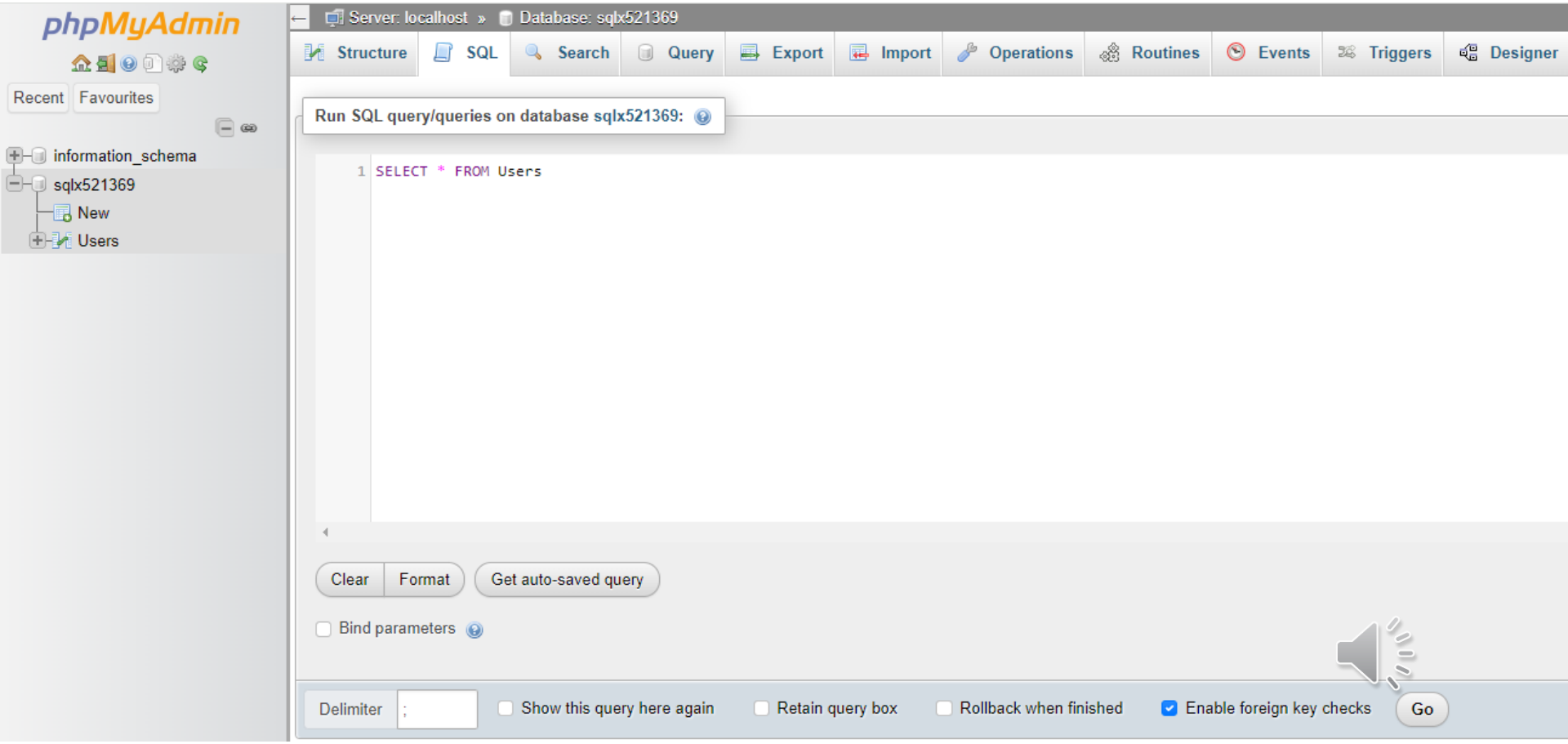
Sign Up


Sign Up Page
mayar.abertay.ac.uk/~x521369/TestPage/signup.php
This is the Sign Up page
Signup
Back to Login

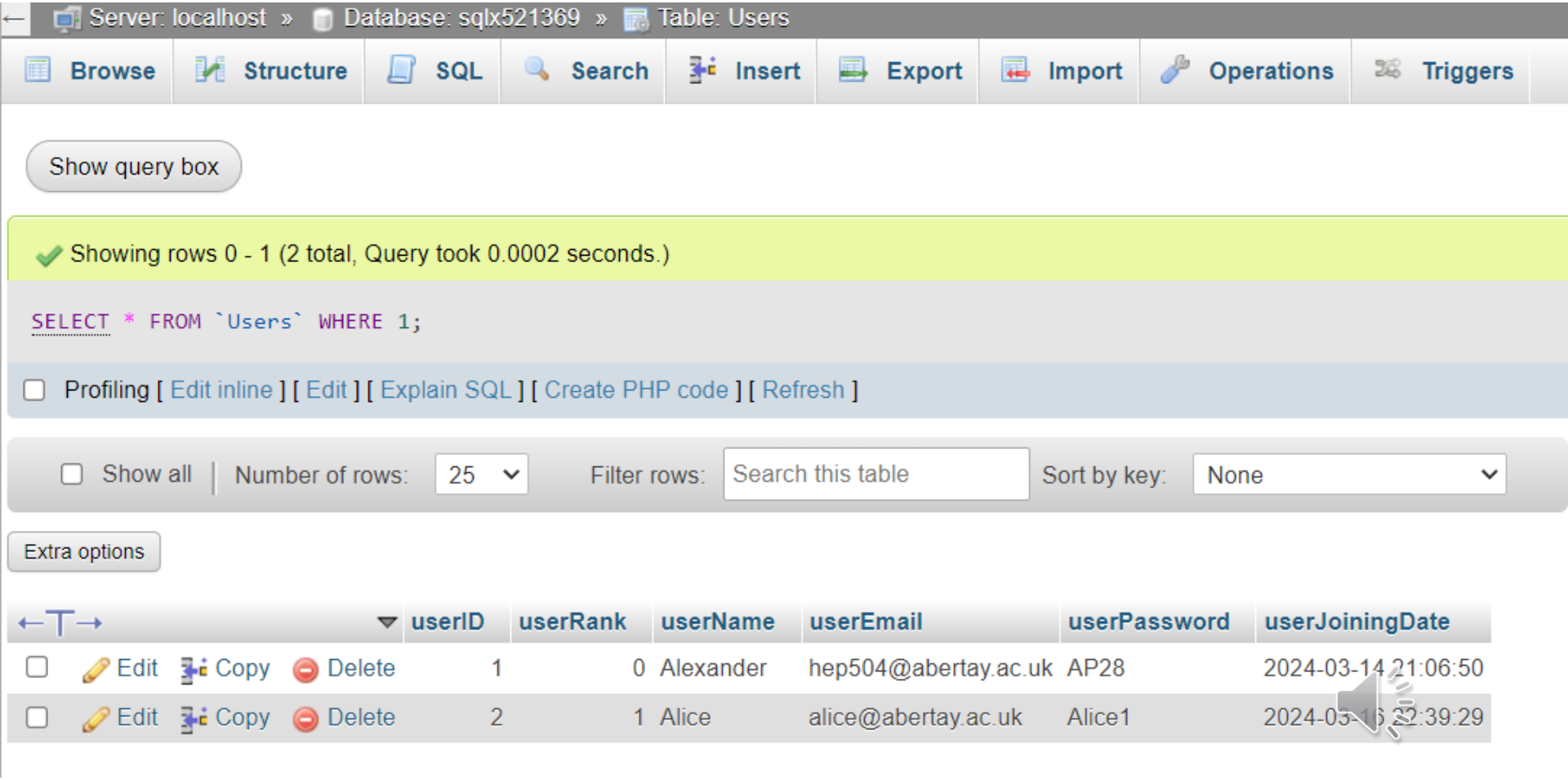
Sign Up


Sign Up Page
mayar.abertay.ac.uk/~x521369/TestPage/signup.php
This is the Sign Up page
1
Alice
alice@abertay.ac.uk
Signup
Back to Login

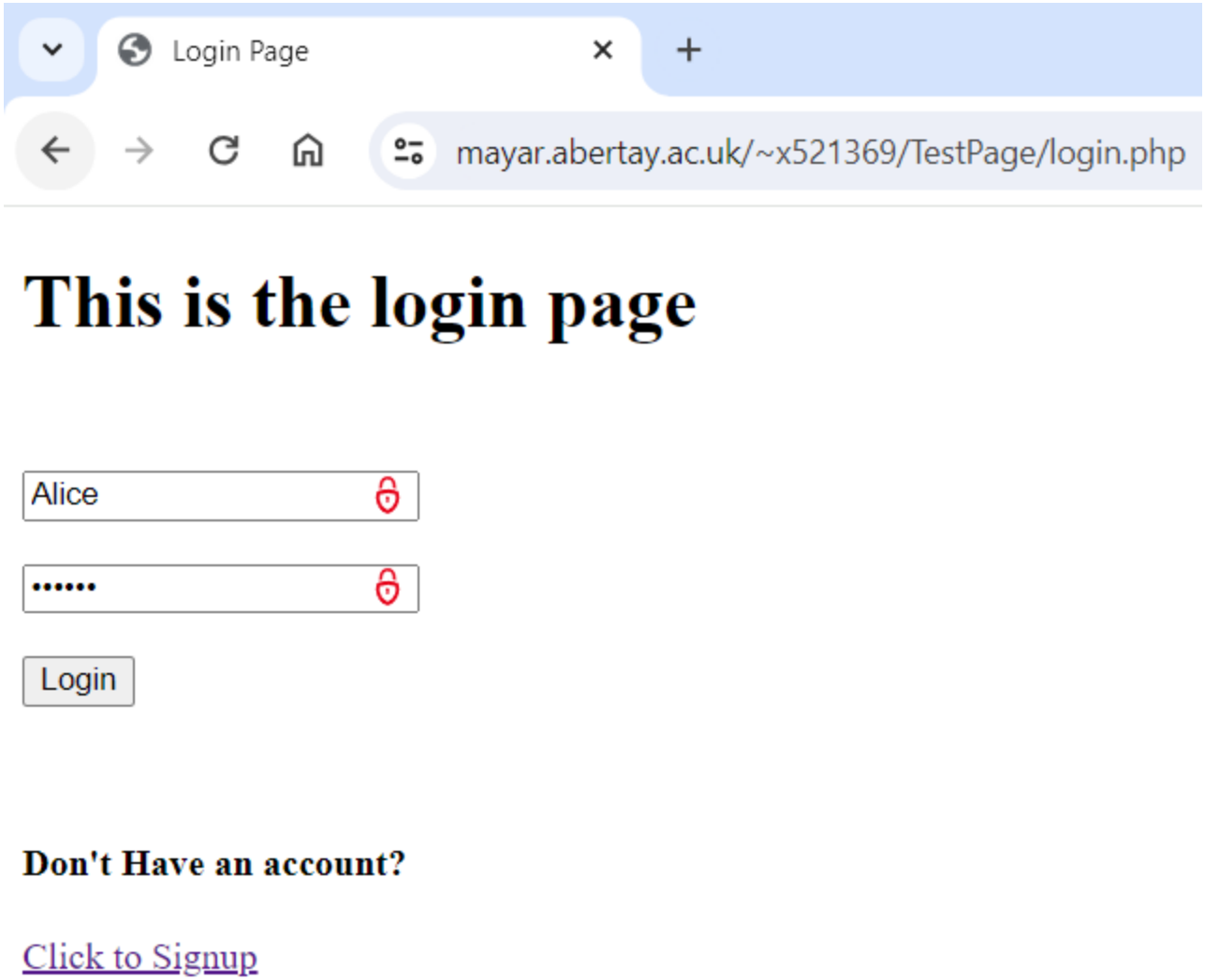
Sign Up


phpMyAdmin
Recent
Favourites
information_schema
sqlx521369
New
Users
Server: localhost » Database: sqlx521369
Structure
SQL
Search
Query
Export
Import
Operations
Routines
Events
Triggers
Designer
Run SQL query/queries on database sqlx521369:
1 SELECT * FROM Users
Clear
Format
Get auto-saved query
Bind parameters
Delimiter
;
Show this query here again
Retain query box
Rollback when finished
Enable foreign key checks
Go

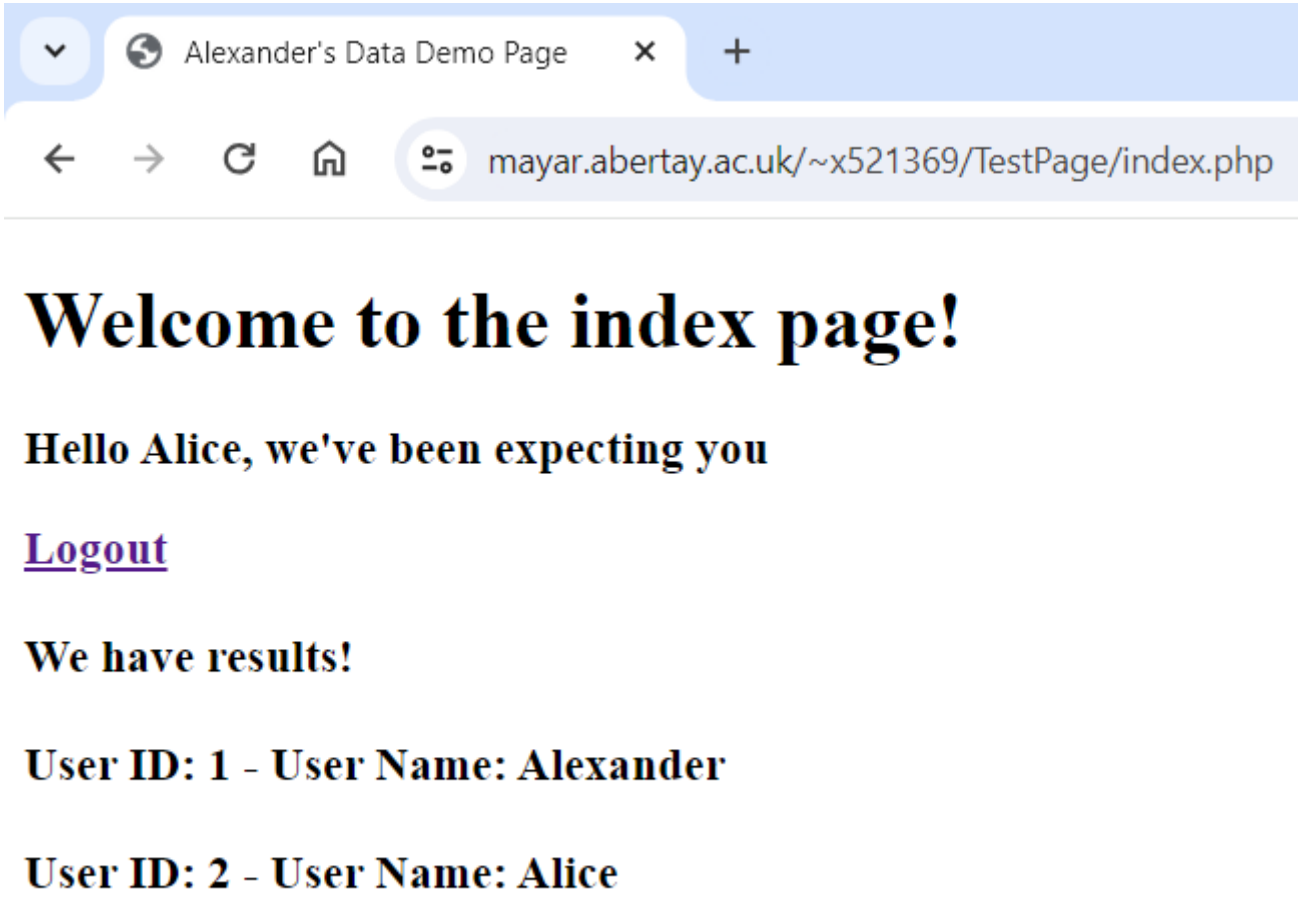
Sign Up


Server: localhost » Database: sqlx521369 » Table: Users
Browse
Structure
SQL
Search
Insert
Export
Import
Operations
Triggers
Show query box
Showing rows 0 - 1 (2 total, Query took 0.0002 seconds.)
SELECT * FROM `Users` WHERE 1;
Profiling [Edit inline] [Edit] [Explain SQL] [Create PHP code] [Refresh]
Show all
Number of rows: 25
Filter rows: Search this table
Sort by key: None
Extra options
userID userRank userName userEmail userPassword userJoiningDate
Edit Copy Delete 1 0 Alexander hep504@abertay.ac.uk AP28 2024-03-14 21:06:50
Edit Copy Delete 2 1 Alice alice@abertay.ac.uk Alice1 2024-03-16 22:39:29

Sign Up


Login Page
mayar.abertay.ac.uk/~x521369/TestPage/login.php
This is the login page
Alice
Login
Don't Have an account?
Click to Signup

Sign Up


Alexander's Data Demo Page
mayar.abertay.ac.uk/~x521369/TestPage/index.php
Welcome to the index page!
Hello Alice, we've been expecting you
Logout
We have results!
User ID: 1 - User Name: Alexander
User ID: 2 - User Name: Alice

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User Permissions

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Permissions

index.php | functions.php | connection.php | login.php | signup.php | logout.php

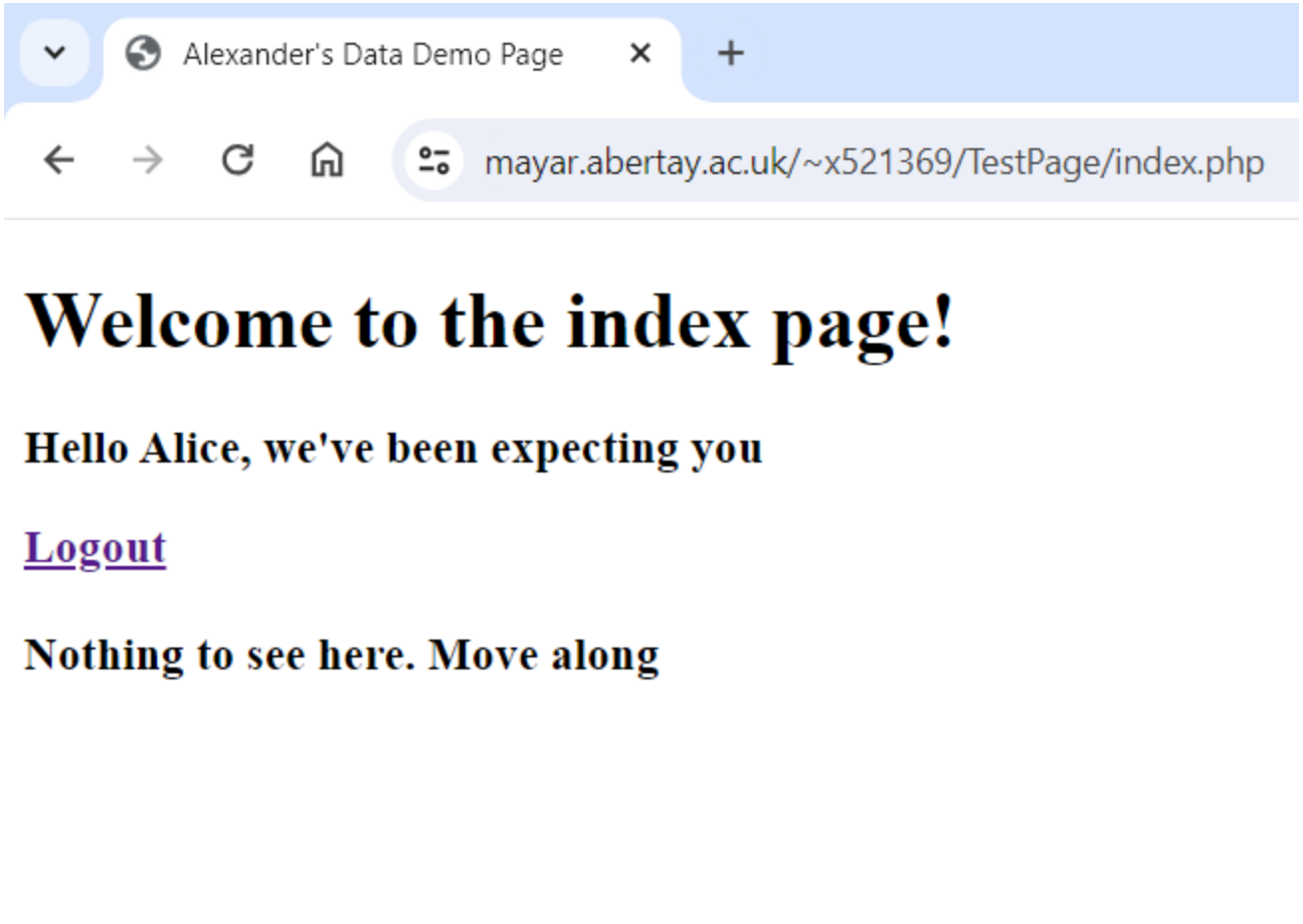
```
34      }
35
36      //redirect to login
37      header("Location: login.php");
38      die;
39  }
40
41  function CheckRankAccess($requiredRank,$user_data)
42  {
43      $userRank = $user_data['userRank'];
44      if($userRank <= $requiredRank)
45      {
46          return true;
47      }
48      else{
49          return false;
50      }
51  }
52
53  ?>
```

Permissions

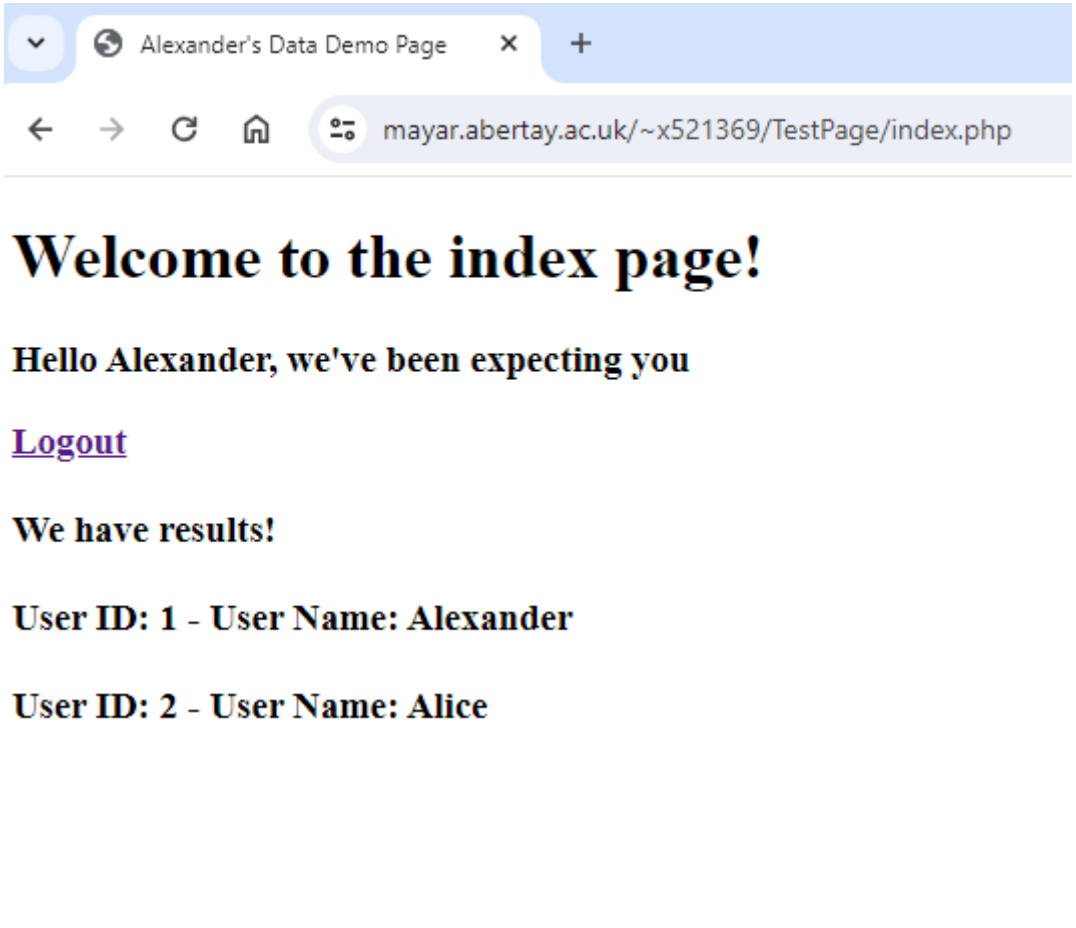
index.php | functions.php | connection.php | login.php | signup.php | logout.php

```php
<?php
session_start();

    include("connection.php");
    include("functions.php");


    $user_data = CheckLogin($con);
    $requiredRank = 0;
?>

<!DOCTYPE html>
<html>
<head>
    <title>Alexander's Data Demo Page</title>
</head>

<body>

<h1>Welcome to the index page!</h1>

<h3>Hello <?php echo $user_data['userName']; ?>, we've been expecting you<h3>

<a href="logout.php">Logout</a><br>

<?php

if(CheckRankAccess($requiredRank,$user_data)){
    DisplayAllUsers($con);
}
else{
    echo "<br>" . "Nothing to see here. Move along" . "<br>";
}
?>

</body>
</html>
```

Permissions



Permissions



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What's Next

Login

index.php | functions.php | connection.php | login.php | signup.php | logout.php

```php
<?php
session_start();

    include("connection.php");
    include("functions.php");

    if($_SERVER['REQUEST_METHOD'] == "POST")
    {
        //something was posted
        $userName = $_POST['userName'];
        $userPassword = $_POST['userPassword'];

        if(!empty($userName) && !empty($userPassword) && !is_numeric($userName))
        {
            //read from database
            $query = "select * from Users where userName = '$userName' limit 1";
            $result = mysqli_query($con, $query);


            if($result && mysqli_num_rows($result) > 0)
            {
                $user_data = mysqli_fetch_assoc($result);

                if($user_data['userPassword'] === $userPassword)
                {
                    $_SESSION['userID'] = $user_data['userID'];
                    header("Location: index.php");
                    die;
                }
            }

            echo "wrong username or password!";
        }else
        {
            echo "wrong username or password!";
        }
    }
?>


<!DOCTYPE html>
<html>
```

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See you in the discussion