Lab 9 – Access MySQL database using PDO (PHP Data Object)

Purpose

- Explore MySQL using PDO (PHP Data Object)
- Upload your website to a Web server

Due Date

- This lab must be handed in:
  Friday Nov 24, 2023 – before midnight

Assessment

- This Lab is worth 2% of your total course mark.

Assigned Readings

- **Lecture Slides** posted on Brightspace
  - Module 4 -> Part 2
- The following chapters of **Fundamentals of Web Development** will be useful in completing this exercise:
  - Chapter 11

Lab Supplies

To complete this lab you will require the following lab supplies:

- Lecture Slides (**Module 4 -> Part 2**) and Code Examples (**PHP, MySQL CRUD Example-EasyPHP.zip** and **PHP, MySQL CRUD Example-SiteGround.zip**) posted on Brightspace
- Textbook: **Fundamentals of Web Development** by Randy Connolly and Ricardo Hoar
- EasyPHP, or other WAMP server
- Eclipse, Notepad++ (or other text editor, or IDE)

Summary of Tasks

1. Gather MySQL Information
2. Understanding your database
3. Develop the logic to display your web application
4. Upload your website to the webserver
5. View your webpage using a web browser
6. **Submit Lab Link on Brightspace**
7. **Submit Source Code of all PHP files on Brightspace**

Task 1

Before we can get started using MySQL on the web hosting server we need a few pieces of information.

- Host
  - The host variable should contain the value “localhost”.
  - Example: $host = “localhost”;
  - NOTE: Localhost is a networking term meaning ‘this computer’

- Username
  - The Username to access YOUR database will be generated automatically by SiteGround Web Hosting Server.
  - Example: $username = “Username_generated_by_SiteGround”;

- Password
  - The password is any legitimate password you choose

- Database Name
  - The name of your database (DB) will be generated automatically by SiteGround Web Hosting Server.
  - Example: $database = “DBname_generated_by_SiteGround”;

Task 2

To create your database, username, password and tables on the SiteGround Web server, please review the following document on Brightspace:

Course Content -> Module 4 – Dynamic Web Programming -> Part 2- PHP and MySQL -> PHP, MySQL CRUD Example-SiteGround.zip -> Instruction_MySQL_SiteGround.docx

Task 3

Now that we have a database we have to understand the tables inside it. Your database (DB) must contain a table named *Employee*.

The '*Employee*' table should have the following fields/columns:

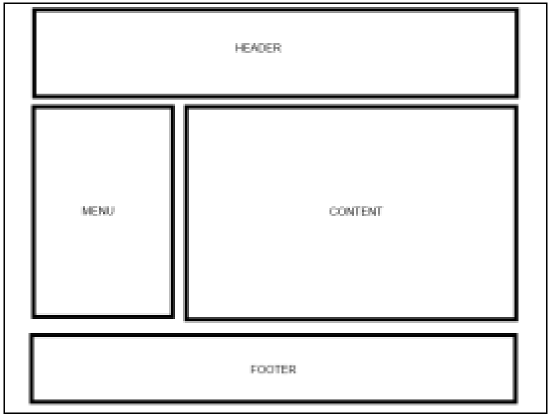
- EmployeeId, INT, Primary Key, NOT NULL, AUTO INCREMENT
- FirstName, VARCHAR(50), NULL
- LastName, VARCHAR(50), NULL
- EmailAddress, VARCHAR(255), NULL
- TelephoneNumber, VARCHAR(20), NULL
- SocialInsuranceNumber, VARCHAR(11), NULL
- Password, VARCHAR(50), NULL
- Designation, VARCHAR(50), NULL
- AdminCode, INT, NULL

❖ **NOTE**

- ➢ ***EmployeeId*** is listed as 'AUTO INCREMENT' meaning that the database will automatically populate this field.
- ➢ **You MUST access the DB using PDO (PHP Data Object) as below**:

```
$pdo = new PDO("mysql:host=$host;dbname=$database", $username, $password);
$pdo->setAttribute(PDO::ATTR_ERRMODE, PDO::ERRMODE_EXCEPTION);
```

Implement the following Design Pattern to create a 'Common Look and Feel' to be used on every page of your website.



Your web site will include the following PHP scripts:

- Header.php
- Footer.php
- Menu.php
- CreateAccount.php
- Login.php
- ViewAllEmployees.php
- Admin.php
- SelectAccount.php
- UpdateAccount.php
- UpdateComplete.php

NOTE: CreateAccount.php, Login.php, ViewAllEmployees.php, Admin.php, SelectAccount.php, UpdateAccount.php, and UpdateComplete.php must include the Common look and feel implemented in Header.php, Footer.php and Menu.php.

Header.php

Header.php must contain a script to display a Common Header that will appear on every page. The header must display Program Name and Course Name

Footer.php

Footer.php must contain a script to display a Common Footer that will appear on every page. The footer must contain Student Number, First Name, Last Name, and Email Address

Menu.php

Menu.php must contain a script to display a Common Menu to be shown on every page. The menu must contain links to *CreateAccount.php*, *Login.php*, *ViewAllEmployees.php*, and *SelectAccount.php*

NOTE: *Admin.php*, *UpdateAccount.php*, and *UpdateComplete.php* will be accessed by clicking on the link for *SelectAccount.php.*

CreateAccount.php

Create a form that will create employee accounts in the 'Employee' table of your database.

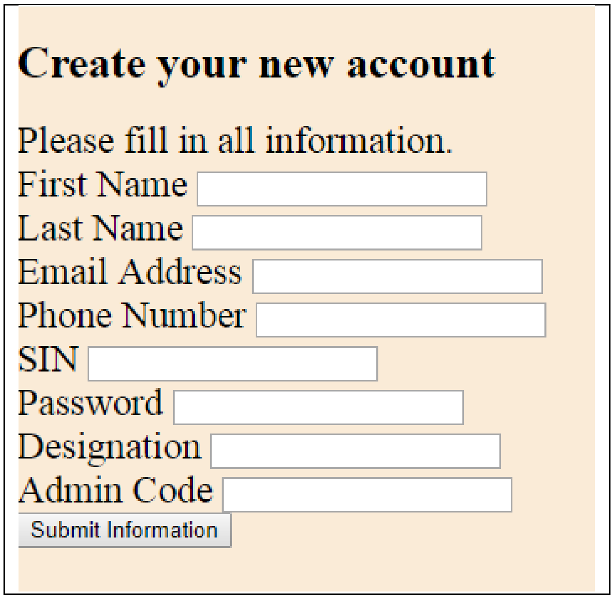
Details:

1. Use 'input' tags to accept the information listed in Task 3. Your form must populate all the columns of the 'Employee' table to create an employee account.

2. Using the above form, you have to create two types of employee account (i) ITDeveloper, and (ii) Manager. While creating an 'ITDeveloper' account, Admin Code may be set as '111' (Designation = 'ITDeveloper', Admin Code = 111). Again, while creating a 'Manager' account, it is MANDATORY to set the Admin Code as '999' (Designation = 'Manager', Admin Code = 999). You need to create at least three **ITDeveloper** accounts and one **Manager** account.

3. After the information has been submitted to the database, the user needs to be redirected to the '**ViewAllEmployees.php**' page.

Sample Screenshot for ***CreateAccount.php*** is as follows:



Create your new account

Please fill in all information.

First Name

Last Name

Email Address

Phone Number

SIN

Password

Designation

Admin Code

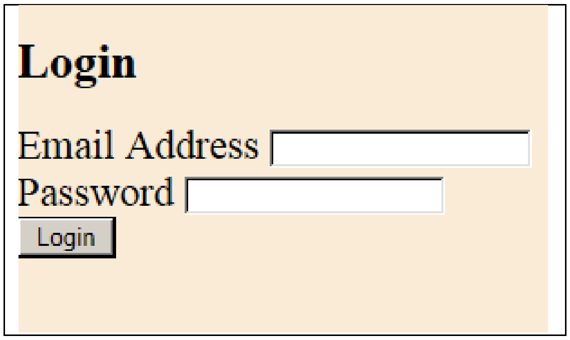
Login.php

The form ***Login.php*** allows the user to log into your application.

Details:

1. Create a form to accept the employee's EmailAddress and Password as credentials to your site. Use an SQL Query to determine if the person has an account.
2. If the user has an account, redirect the user to 'ViewAllEmployees.php'. Display an error if the user cannot log into the system.

Sample Screenshot for ***Login.php*** is as follows:



Login

Email Address

Password

ViewAllEmployees.php

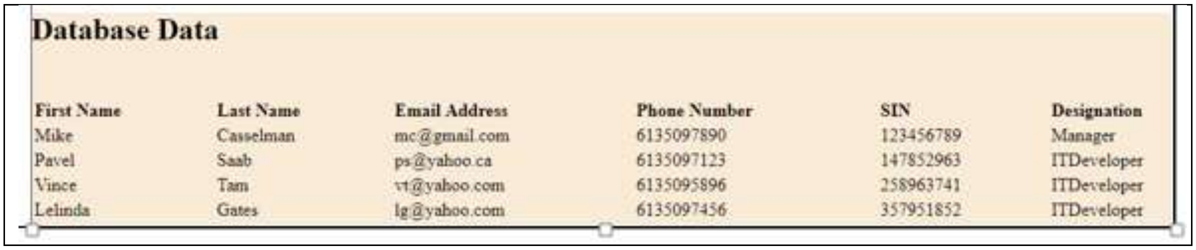
This page pulls information from the Database and displays the information to the user.

Details:

1. If the employee tries to navigate to this page without having logged in – the employee should be redirected to the login page.
2. If the employee has successfully logged into the application and is directed to the page, then display the following information
    a. HTML table containing all rows of the 'Employee' table of your database**.** The HTML table must also contain a header row that identifies the column name of the database table.

NOTE: To verify that an employee has successfully logged in, check for valid information in the Session State. If the Session State does not contain valid information redirect to the login page, otherwise, the user has logged in successfully.

Sample Screenshot for ***ViewAllEmployees.php*** is as follows:



Database Data

First Name	Last Name	Email Address	Phone Number	SIN	Designation
Mike	Casselman	mc@gmail.com	6135097890	123456789	Manager
Pavel	Saab	ps@yahoo.ca	6135097123	147852963	ITDeveloper
Vince	Tam	vt@yahoo.com	6135095896	258963741	ITDeveloper
Lelinda	Gates	lg@yahoo.com	6135097456	357951852	ITDeveloper

Note: You do NOT need to display the values of 'Password' and 'AdminCode' fields of the 'Employee' table**.**

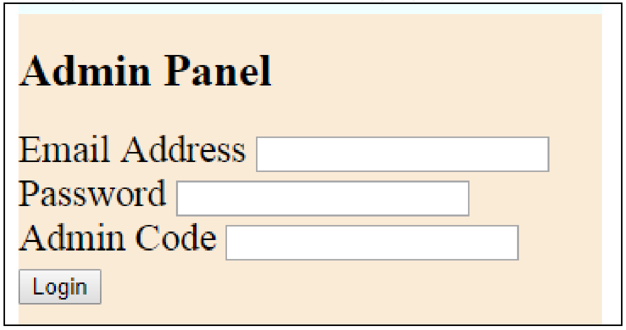
SelectAccount.php

The form **SelectAccount.php** allows the Manager to select an employee whose information (that is previously stored into Employee table) needs to be updated.

Details:

1. If anyone tries to navigate to this page, the person should be redirected to the **Admin.php** page. Create a form to accept the employee's EmailAddress, Password and Admin Code as credentials to your site. Only the Manager (Admin Code =999) will be able to access this page. Use an SQL Query to determine if the person has an account and he is a Manager.

Sample Screenshot for ***Admin.php*** is as follows:



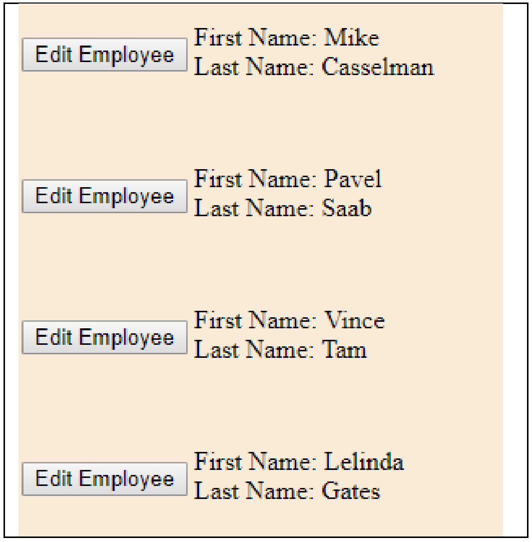
Admin Panel

Email Address

Password

Admin Code

2. If the Manager has successfully logged into the application, he/she will be directed to the ***SelectAccount.php*** page that will display the following form to select an employee whose information needs to be updated:



First Name: Mike
Last Name: Casselman

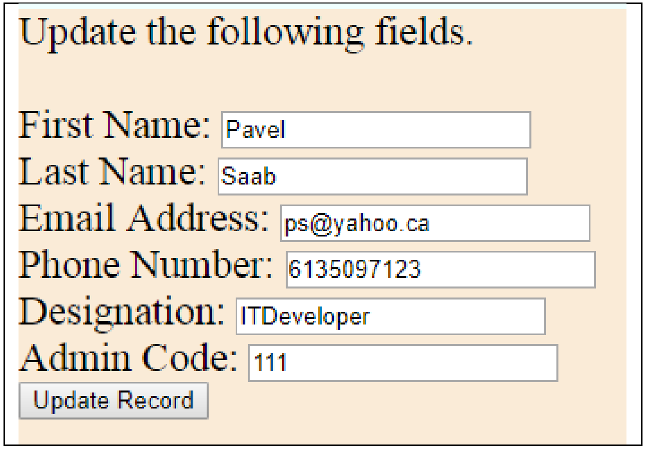
First Name: Pavel
Last Name: Saab

First Name: Vince
Last Name: Tam

First Name: Lelinda
Last Name: Gates

3. After clicking on the 'Edit Employee' button, the Manager should be redirected to the form ***UpdateAccount.php*** which allows the Manager to update the information of the corresponding employee.

Sample Screenshot for ***UpdateAccount.php*** is as follows:



Update the following fields.

First Name: Pavel

Last Name: Saab

Email Address: ps@yahoo.ca

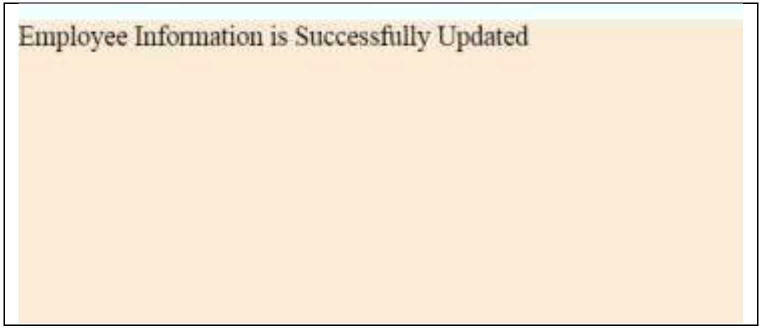
Phone Number: 6135097123

Designation: ITDeveloper

Admin Code: 111

4. After clicking on the ‘Update Record’ button, the modified information of the corresponding employee should be updated into the Employee table of the database and a success/error message will be displayed in ***UpdateComplete.php***.

   Sample Screenshot for ***UpdateComplete.php*** is as follows:



Employee Information is Successfully Updated

NOTE: All the sample screenshots must include common header, footer and menu files.

Task 4

Create Lab 9 submission folder ‘**Lab9**’ and copy ***CreateAccount.php***, ***Login.php***, ***ViewAllEmployees.php***, ***SelectAccount.php, Admin.php***, ***UpdateAccount.php***, ***UpdateComplete.php, Header.php, Footer.php, Menu.php*** and any other required files **(**e.g**. css file)** into this folder**.**

Task 5

Upload your websites for Lab 9 into a Web Hosting Server by uploading ‘**Lab9**’ folder inside the ‘public_html’ directory of ‘SiteGround’ Web Hosting domain using DashBoard.

The ‘File Upload’ instruction is posted on Brightspace (**Course Contents -> Module 1 -> Part 2 -> SiteGround_FileUpload_Instruction.docx**).

Task 6

View your websites for Lab 9 using a web browser. Open a web browser and navigate to the following web address:

http://your_web-hosting_domain_name/Lab9/<filename>

For example, the sample URL for Lab 9 on an arbitrary web hosting domain is:

rejaulc.sgedu.site/Lab9/CreateAccount.php

where ‘*rejaulc.sgedu.site*’ is the name of an arbitrary web hosting domain, ‘*Lab9*’ is the submission folder for Lab 9, ‘*CreateAccount.php*’ is the homepage of Lab 9.

Task 7

Once you have confirmed that your webpage is available online, you are ready to hand in your lab.

Create a compressed file (**Lab9.zip**) which will contain the following PHP files:

- Header.php, Footer.php, Menu.php
- CreateAccount.php
- Login.php
- ViewAllEmployees.php
- Admin.php
- SelectAccount.php
- UpdateAccount.php
- UpdateComplete.php

(N.B. Please keep in mind that ONLY **.zip** file is accepted as the format of the compressed file.)

Create a word document (**Lab9.doc**) in which write the following Information:

- Student Number
- First Name
- Last Name
- The URL, or hyperlink of the home page (CreateAccount.php) of Lab 9

To hand in your lab go to Brightspace and navigate to Content → Labs and click on 'Lab 9 – PHP and MySQL' link.

Upload the word document (**Lab9.doc**) and the compressed file **(Lab9.zip**) on Brightspace. Finally, click the 'Submit' button to send the lab to your professor.

IMPORTANT NOTE:
If the URL, or hyperlink, does not direct the professor to the lab you will receive a ZERO for the lab assignment.

IMPORTANT NOTE:
If you do not upload either Lab9.zip or Lab9.doc on Brightspace, you will receive a ZERO for the lab assignment.