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## CSCI 4000 Assignment 3

**Total estimated time** for this assignment: **12 hours** (if you are a good programmer)

The main programming language for this assignment should be **PHP** (mixed with HTML and CSS). If you do not use **PHP**, you will get **0 points**. For this assignment, you must use **PDO** (PHP Data Object) to interface with the MySQL database. If you do not use PDO, you will receive 0 points for almost all questions.

When you see “Richard Ricardo” or “richardricardo” in the examples and screen captures, change it to **<your name>**.

When you see “Richard” or “richard” in the example screen captures, change it to **<your first name>**.

If you do not put **<your name>** / **<your first name>** in the above mentioned fields, you will get **0 points** for the question(s).

**No two students** should submit webpages with exactly the same code, content, layout, or color combination. If found, **both** students will get **0 points**.

Please change the provided example’s layout and color combination (color scheme). **If you use (copy) ANY of the provide example’s color combination, 10 points will be deducted (-10 points).**

Create a folder on your hard disk, name the folder **lastname\_firstname\_assignment3**. Save all the files from this assignment in this folder.

Use XAMPP web server solution stack package to help debugging PHP code. It will make your debugging process easier. All php files must not produce any error, or any warning (**-2 points for each error, each warning**). Your program must run. A program that does not run will get at most **50% of the possible points**. All files must begin with a **comment** that identifies the author, the course code, and the program date (**- 2 points each question** if found missing). All html, css and php files must be clearly **documented (commented)**. Points will be taken off (**-2 points each question**) for insufficient comments (`<!-- -->`, `/* */`, `//`).

- When you view page source in a web browser, **<!DOCTYPE html>** must be at the top of every page. In other words, all pages must be written in HTML5. (**-20 points** if not)
  - You **can** put php code before **<!DOCTYPE html>**.
  - You **cannot** put html code before **<!DOCTYPE html>**.
- Before adding PHP code, all html files must pass html validation at <http://validator.w3.org/> without any **error** (and with only 1 warning).
- After adding PHP code, the generated html code (Firefox web browser > right-click > view page source) must also pass html validation at <http://validator.w3.org/> without any **error** (and with only 1 warning).
- All css files must pass css validation at <http://jigsaw.w3.org/css-validator/> without any **error**. (**-2 points for each error/warning**, only 1 warning is allowed for html validator)

**Question 1 – Database:** PHP Chapter 4, eg008 and knowledge of SQL (20 points) **Estimated time: 3 hours**

- Save question 1 files in folder “**lastname\_firstname\_assignment3**”: (2 points)
  - **create\_db.sql**
- Create a text file **create\_db.sql**, write sql statements in the file to
  - Create a MySQL database **richard\_ricardo\_assignment\_db**. (2 points)
  - In the database, create 1 table.
    - student (2 points)
  - Create the following fields (columns) for the table (refer to examples below for details).
    - student table: studentID, name, email (4 points)
    - studentID is the primary key of the student table (2 points)
  - Insert test records to the student table. (4 points)
  - Create a MySQL database username **richardweb** with password **richardchocolate**, with data privileges (select, insert, update, delete) for the **richard\_ricardo\_assignment\_db** database. (4 points)
  - All above must be done by SQL statements in the text file create\_db.sql. (0 points if not)
- Load **create\_db.sql** in XAMPP > phpMyAdmin to create the above mentioned database.
- Note: In the real world, do NOT put sql files in a website folder. Keep it offline and safe.

Example: “richard ricardo assignment db” database and the table inside

The screenshot shows the phpMyAdmin interface for the database 'richard\_ricardo\_assignment\_db'. The table 'student' is selected, showing 11 rows. Below the table structure, the 'Create table' form is visible, with the 'Name' field empty and 'Number of columns' set to 4. The 'Go' button is at the bottom right of the form.

Example: “student” table structure

The screenshot shows the detailed structure of the 'student' table. The table has three columns:

| # | Name      | Type         | Collation         | Attributes | Null | Default | Extra          | Action                   |
|---|-----------|--------------|-------------------|------------|------|---------|----------------|--------------------------|
| 1 | studentID | int(11)      |                   |            | No   | None    | AUTO_INCREMENT | Change Drop Primary More |
| 2 | name      | varchar(255) | latin1_swedish_ci |            | No   | None    |                | Change Drop Primary More |
| 3 | email     | varchar(255) | latin1_swedish_ci |            | No   | None    |                | Change Drop Primary More |

Below the table structure, there is an 'Information' section with two tables:

| Space usage |        | Row statistics |                          |
|-------------|--------|----------------|--------------------------|
| Data        | 16 KiB | Format         | Compact                  |
| Index       | 0 B    | Collation      | latin1_swedish_ci        |
| Total       | 16 KiB | Next autoindex | 12                       |
|             |        | Creation       | Feb 24, 2015 at 08:08 PM |

## Example: "records" in student table

The screenshot shows the phpMyAdmin interface for the 'richard\_ricardo\_assignment\_db' database. The 'student' table is selected, and the records are displayed in a table format. The table has three columns: 'studentID', 'name', and 'email'. There are 11 rows of data, each with a checkbox for selection and buttons for Edit, Copy, and Delete.

| studentID | name          | email                  |
|-----------|---------------|------------------------|
| 1         | PO BLACK      | poblack@gmail.com      |
| 2         | SHIFU HOFFMAN | shifuhoffman@gmail.com |
| 3         | TIGRESS JOLIE | tigressjolie@gmail.com |
| 4         | JENNIFER YUH  | jennifersyuh@gmail.com |
| 5         | OX STORMING   | oxstorming@gmail.com   |
| 6         | MONKEY CHAN   | monkeychan@gmail.com   |
| 7         | VIPER LIU     | viperliu@gmail.com     |
| 8         | MANTIS ROGEN  | mantisrogen@gmail.com  |
| 9         | CRANE CROSS   | cranecross@gmail.com   |
| 10        | OOGWAY KIM    | oogway@gmail.com       |
| 11        | PING HONG     | pinghong@gmail.com     |

## Example: data privileges for user richardweb

The screenshot shows the 'Edit Privileges' page for the user 'richardweb' at 'localhost'. The page is titled 'Edit Privileges: User 'richardweb'@'localhost''. It displays the database-specific privileges for the user on the 'richard\_ricardo\_assignment\_db' database. The privileges are listed in a table with columns for Database, Privileges, Grant, Table-specific privileges, and Action.

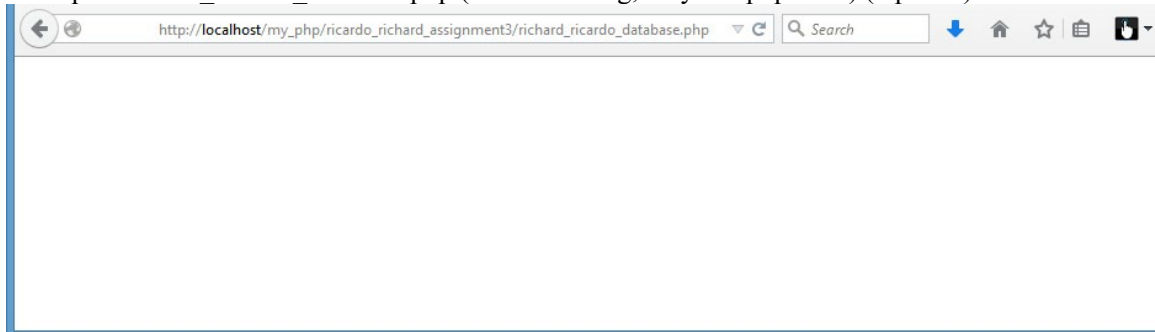
| Database                      | Privileges                     | Grant | Table-specific privileges | Action                 |
|-------------------------------|--------------------------------|-------|---------------------------|------------------------|
| richard_ricardo_assignment_db | SELECT, INSERT, UPDATE, DELETE | No    | No                        | Edit Privileges Revoke |

Below the table, there is a section for adding privileges on the following database: Use text field. A 'Go' button is located at the bottom right of the page.

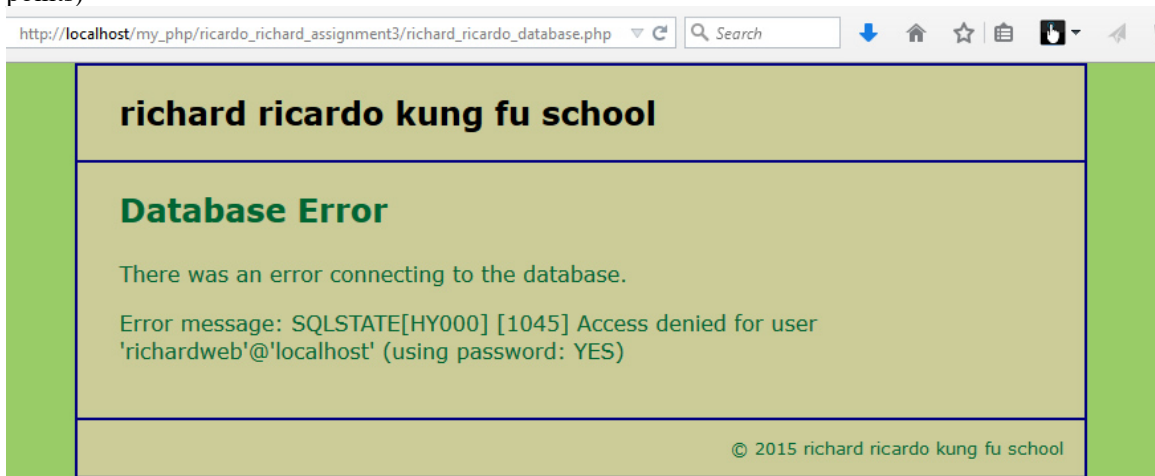
**Question 2 – Display:** PHP Chapter 4, eg008/9 and knowledge of SQL (40 points) **Estimated time: 4 hours**

- Save question 2 files in “**lastname\_firstname\_assignment3**”: (4 points)
  - **index.php**
  - **main.css**
  - **richard\_ricardo\_database.php**
  - **richard\_ricardo\_database\_error.php**
- Create web page(s) that displays the default information (example shown).
- The initial page and related outputs should look like the examples shown below.
- Create your page(s) using “richard ricardo’s kung fu school” as the page title(s) (<title> tag). (2 points)
- Save the first page as index.php. (2 points)
- Create file richard\_ricardo\_database.php (php code only, no html code) to connect to database
  - Use PDO (PHP Data Object) to interface with your MySQL database.
  - Connect to the **richard\_ricardo\_assignment\_db** MySQL database (created in Q1), using username **richardweb** with password **richardchocolate**.
  - Use try {} catch () {} exception handling to detect if the connection is successful.
  - If the connection is not successful, show an error page **richard\_ricardo\_database\_error.php**.
- Create a css file named **main.css** to format all pages by creating your own layout (no two students should have the same layout). You should use **the same css file** to format all questions. (6 points)
- index.php
  - Uses **richard\_ricardo\_database.php** to connect to the database.
  - This page lists the students from the “student” table (created in Q1).

Example: richard\_ricardo\_database.php (shows nothing, only has php code) (5 points)



Example: richard\_ricardo\_database\_error.php (shows this if something is wrong with database connection) (5 points)



Example: index.php (16 points)

**Richard Ricardo Kung Fu School - Students**

**Student List**

| Student ID | Name          | Email                  |        |
|------------|---------------|------------------------|--------|
| 1          | PO BLACK      | poblack@gmail.com      | Delete |
| 2          | SHIFU HOFFMAN | shifuhoffman@gmail.com | Delete |
| 3          | TIGRESS JOLIE | tigressjolie@gmail.com | Delete |
| 4          | JENNIFER YUH  | jenniferyuh@gmail.com  | Delete |
| 5          | OX STORMING   | oxstorming@gmail.com   | Delete |
| 6          | MONKEY CHAN   | monkeychan@gmail.com   | Delete |
| 7          | VIPER LIU     | viperliu@gmail.com     | Delete |
| 8          | MANTIS ROGEN  | mantisrogen@gmail.com  | Delete |
| 9          | CRANE CROSS   | cranecross@gmail.com   | Delete |
| 10         | OOGWAY KIM    | oogway@gmail.com       | Delete |
| 11         | PING HONG     | pinghong@gmail.com     | Delete |

[Add Student](#)

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**Question 3 – Delete Student:** PHP Chapter 4, eg008/9 and SQL (20 points) **Estimated time: 2 hours**

- Save question 3 files in folder “**lastname\_firstname\_assignment3**”. (2 points)
  - **richard\_ricardo\_delete\_student.php**
- The initial page and related outputs should look like the examples shown below.
- Create your page(s) using “richard ricardo’s kung fu school” as the page title(s) (<title> tag). (2 points)
- When a user click on a “Delete” link on index.php, (16 points)
  - the user should be directed to **richard\_ricardo\_delete\_student.php**.
  - richard\_ricardo\_delete\_student.php uses **richard\_ricardo\_database.php** to connect to the database.
  - the selected student record will be deleted from the database table “student”.
  - index.php will be shown again with updated records.

Example: index.php, before deletion, click on the delete button on Student ID 4

http://localhost/my\_php/ricardo\_richard\_assignment3/

## Richard Ricardo Kung Fu School - Students

### Student List

| Student ID | Name          | Email                  |        |
|------------|---------------|------------------------|--------|
| 1          | PO BLACK      | poblack@gmail.com      | Delete |
| 2          | SHIFU HOFFMAN | shifuhoffman@gmail.com | Delete |
| 3          | TIGRESS JOLIE | tigressjolie@gmail.com | Delete |
| 4          | JENNIFER YUH  | jenniferyuh@gmail.com  | Delete |
| 5          | OX STORMING   | oxstorming@gmail.com   | Delete |
| 6          | MONKEY CHAN   | monkeychan@gmail.com   | Delete |
| 7          | VIPER LIU     | viperliu@gmail.com     | Delete |
| 8          | MANTIS ROGEN  | mantisrogen@gmail.com  | Delete |
| 9          | CRANE CROSS   | cranecross@gmail.com   | Delete |
| 10         | OOGWAY KIM    | oogway@gmail.com       | Delete |
| 11         | PING HONG     | pinghong@gmail.com     | Delete |

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Example: After deletion, student ID 4 was deleted. Now click on the delete button on Student ID 11.

http://localhost/my\_php/ricardo\_richard\_assignment3/ricardo\_ricardo\_delete\_student

## Richard Ricardo Kung Fu School - Students

### Student List

| Student ID | Name          | Email                  |        |
|------------|---------------|------------------------|--------|
| 1          | PO BLACK      | poblack@gmail.com      | Delete |
| 2          | SHIFU HOFFMAN | shifuhoffman@gmail.com | Delete |
| 3          | TIGRESS JOLIE | tigressjolie@gmail.com | Delete |
| 5          | OX STORMING   | oxstorming@gmail.com   | Delete |
| 6          | MONKEY CHAN   | monkeychan@gmail.com   | Delete |
| 7          | VIPER LIU     | viperliu@gmail.com     | Delete |
| 8          | MANTIS ROGEN  | mantisrogen@gmail.com  | Delete |
| 9          | CRANE CROSS   | cranecross@gmail.com   | Delete |
| 10         | OOGWAY KIM    | oogway@gmail.com       | Delete |
| 11         | PING HONG     | pinghong@gmail.com     | Delete |

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Example: After deletion, student ID 11 was deleted

**Richard Ricardo Kung Fu School - Students**

**Student List**

| Student ID | Name          | Email                  |        |
|------------|---------------|------------------------|--------|
| 1          | PO BLACK      | poblack@gmail.com      | Delete |
| 2          | SHIFU HOFFMAN | shifuhoffman@gmail.com | Delete |
| 3          | TIGRESS JOLIE | tigressjolie@gmail.com | Delete |
| 5          | OX STORMING   | oxstorming@gmail.com   | Delete |
| 6          | MONKEY CHAN   | monkeychan@gmail.com   | Delete |
| 7          | VIPER LIU     | viperliu@gmail.com     | Delete |
| 8          | MANTIS ROGEN  | mantisrogen@gmail.com  | Delete |
| 9          | CRANE CROSS   | cranecross@gmail.com   | Delete |
| 10         | OOGWAY KIM    | oogway@gmail.com       | Delete |

[Add Student](#)

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**Question 4 – Add Student:** PHP Chapter 4, eg008/9 and SQL (20 points)

**Estimated time: 3 hours**

- Save question 4 files in folder “**lastname\_firstname\_assignment3**”. (2 points)
  - **richard\_ricardo\_add\_student\_form.php**
  - **richard\_ricardo\_add\_student.php**
- The initial page and related outputs should look like the examples shown below.
- Create your page(s) using “richard ricardo’s kung fu school” as the page title(s) (<title> tag). (2 points)
- When a user click on “Add Student” link on index.php, (16 points)
  - the user should be directed to richard\_ricardo\_add\_student\_form.php.
  - a link “View All Students” giver the user option to go back to index.php.
  - richard\_ricardo\_add\_student\_form.php uses **richard\_ricardo\_database.php** to connect to the database.
  - After the user keyed in new student data, and press the submit (Add Students) button, richard\_ricardo\_add\_student.php will be used to add student record to the “student” database table, and index.php will be shown again with updated records.
    - richard\_ricardo\_add\_student.php uses **richard\_ricardo\_database.php** to connect to the database.

Example: richard\_ricardo\_add\_student\_form.php, user input

**Richard Ricardo Kung Fu School - Add Student**

**Add Student**

Name:

Email:

[View All Students](#)

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Example: after successfully adding student record

**Richard Ricardo Kung Fu School - Students**

**Student List**

| Student ID | Name          | Email                  |                                       |
|------------|---------------|------------------------|---------------------------------------|
| 1          | PO BLACK      | poblack@gmail.com      | <input type="button" value="Delete"/> |
| 2          | SHIFU HOFFMAN | shifuhoffman@gmail.com | <input type="button" value="Delete"/> |
| 3          | TIGRESS JOLIE | tigressjolie@gmail.com | <input type="button" value="Delete"/> |
| 5          | OX STORMING   | oxstorming@gmail.com   | <input type="button" value="Delete"/> |
| 6          | MONKEY CHAN   | monkeychan@gmail.com   | <input type="button" value="Delete"/> |
| 7          | VIPER LIU     | viperliu@gmail.com     | <input type="button" value="Delete"/> |
| 8          | MANTIS ROGEN  | mantisrogen@gmail.com  | <input type="button" value="Delete"/> |
| 9          | CRANE CROSS   | cranecross@gmail.com   | <input type="button" value="Delete"/> |
| 10         | OOGWAY KIM    | oogway@gmail.com       | <input type="button" value="Delete"/> |
| 12         | RHINO GARBER  | rhinogarber@gmail.com  | <input type="button" value="Delete"/> |

[Add Student](#)

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Example: richard\_ricardo\_add\_student\_form.php, user input

**Richard Richardo Kung Fu School - Add Student**

**Add Student**

Name:

Email:

[View All Students](#)

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Example: after successfully adding student record

**Richard Ricardo Kung Fu School - Students**

**Student List**

| Student ID | Name          | Email                  |                                       |
|------------|---------------|------------------------|---------------------------------------|
| 1          | PO BLACK      | poblack@gmail.com      | <input type="button" value="Delete"/> |
| 2          | SHIFU HOFFMAN | shifuhoffman@gmail.com | <input type="button" value="Delete"/> |
| 3          | TIGRESS JOLIE | tigressjolie@gmail.com | <input type="button" value="Delete"/> |
| 5          | OX STORMING   | oxstorming@gmail.com   | <input type="button" value="Delete"/> |
| 6          | MONKEY CHAN   | monkeychan@gmail.com   | <input type="button" value="Delete"/> |
| 7          | VIPER LIU     | viperliu@gmail.com     | <input type="button" value="Delete"/> |
| 8          | MANTIS ROGEN  | mantisrogen@gmail.com  | <input type="button" value="Delete"/> |
| 9          | CRANE CROSS   | cranecross@gmail.com   | <input type="button" value="Delete"/> |
| 10         | OOGWAY KIM    | oogway@gmail.com       | <input type="button" value="Delete"/> |
| 12         | RHINO GARBER  | rhinogarber@gmail.com  | <input type="button" value="Delete"/> |
| 13         | BOAR VERNON   | boarvernon@gmail.com   | <input type="button" value="Delete"/> |

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**Important:**

1. If you do not put `<your name>` / `<your first name>` in the above mentioned fields (as shown in the examples), you will get **0 points** for the question(s).
2. **No two students** should submit webpages with exactly the same code, content, layout, or color combination. If found, both students will get **0 points**.
3. When you view page source in a web browser, `<!DOCTYPE html>` must be at the top of every page. In other words, all pages must be written in HTML5. (**-20 points** if not)
  - You **can** put php code before `<!DOCTYPE html>`.
  - You **cannot** put html code before `<!DOCTYPE html>`.
4. Before adding PHP code, all html files must pass html validation at <http://validator.w3.org/> without any **error** (and with only 1 warning).
5. After adding PHP code, the generated html code (Firefox web browser > right-click > view page source) must also pass html validation at <http://validator.w3.org/> without any **error** (and with only 1 warning).
6. All css files must pass css validation at <http://jigsaw.w3.org/css-validator/> without any **error/warning**.
7. If your files do not pass the html and css validations, **2 points will be deducted for each html or css error/warning** found (1 warning allowed for html validator).
8. Document (comment) your HTML files (`<!-- -->`), CSS files (`/* */`), and PHP files (`/* */` OR `//`). **Points will be taken off** for insufficient comments (`<!-- -->`, `/* */`, `//`).

**Submission instructions:**

- You need to test all document(s).
- Do screen capture(s) of the **input** and the related **output(s)**. Use any graphic editing software (e.g. Microsoft Paint, Adobe Fireworks, GIMP, or Microsoft Expression Design etc) to cut out the browser output (from the screen capture), paste them into a word document.
- Provide **2 different test cases** for each question. In other words, for **each question**, you may need to have **2 input** screen captures and **2 related output** screen captures.
- Do NOT need to do screen capture(s) of html validation results and css validation results for this assignment.
- Save the word document as a pdf file.

You need to submit the following:

1. A pdf file containing the screen capture(s) of the web browser input and output pages, name the file **lastname\_firstname\_assignment3.pdf**.
2. All html file(s), php file(s), css file(s), and other related files (e.g. image files). Zip your file folder (**lastname\_firstname\_assignment3**) into a single zip file (or rar file) **lastname\_firstname\_assignment3.zip**. In the above example, the zip file should contain the following files and subfolders. If there is any image, there should be a `\images\` subfolder.

- lastname\_firstname\_assignment3\create\_db.sql
- lastname\_firstname\_assignment3\index.php
- lastname\_firstname\_assignment3\main.css
- lastname\_firstname\_assignment3\richard\_ricardo\_add\_student.php
- lastname\_firstname\_assignment3\richard\_ricardo\_add\_student\_form.php
- lastname\_firstname\_assignment3\richard\_ricardo\_database.php
- lastname\_firstname\_assignment3\richard\_ricardo\_database\_error.php
- lastname\_firstname\_assignment3\richard\_ricardo\_delete\_student.php

Please submit the above mentioned **two files** (.pdf and .zip) to D2L digital dropbox.

**Grading guidelines (programming questions):**

Your programs will be judged on several criteria, which are shown below.

- Correctness (50%): Does the program compile (run) correctly? Does the program do what it's supposed to do?
- Design (20%): Are operations broken down in a reasonable way (e.g. classes and methods)?
- Style (10%): Is the program **indented** properly? Do variables have **meaningful names**?
- Robustness (10%): Does the program handle erroneous or unexpected input gracefully?
- Documentation (10%): Do all program files begin with a **comment** that identifies the author, the course code, and the program date? Are all the classes, methods and data fields clearly **documented (commented)**? Are unclear parts of code **documented (commented)**? (Some items mentioned may not apply to some languages)

A program that does not compile (run) will get at most **50% of the possible points**.