

CS 328 - Week 13 Lab Exercise - 2026-04-23

Deadline

Due by the end of lab.

Purpose

To practice using PHP involving sessions AND Oracle OCI.

How to submit

Submit your files using `~st10/328submit` on nrs-projects, each time entering a lab number of **93**.

Requirements

- You are required to work in **pairs** for this lab exercise.
 - This means **two** people working at **ONE** computer, one typing ("driving"), one saying what to type ("navigating"),
while **BOTH** are looking at the **shared** computer screen and **discussing** concepts/issues along the way.
- Make sure **BOTH** of your names appear in each file submitted.
- Make a `public_html` **sub-directory** for today's lab exercise with a **not-too-obvious name** of your choice, and be sure to **chmod** it to permissions **711**.
- And, your `.php` file for this lab exercise should have permissions **644**.
- When you are done, before you leave lab, **BOTH** of you should submit appropriate versions of these files using `~st10/328submit` on nrs-projects, with a lab number of **93**.

Set up for this lab exercise

- Use the course HTML template to start up a PHP document `328lab13.php`:
`cp ~st10/html-template.html 328lab13.php`
- If a PHP using sessions on nrs-projects does not succeed in connecting to the Oracle student database, it seems like the current session should be destroyed, I think (to make it easier to fix the issue and start over).
So, you are being provided a PHP function `hum_conn_sess` that is remarkably similar to function `hum_conn_no_login` except that it also destroys the current session if its call to `oci_connect` fails.
Make a copy of a file containing this function in the **same** directory as your file `328lab13.php`:
`cp ~st10/hum_conn_sess.php . # DON'T FORGET the SPACE and PERIOD!!`
- So you can concentrate on sessions and OCI during this lab, you are also being provided with these additional files for use in today's lab exercise -- also copy each into the **same** directory as your file `328lab13.php`:
 - Some minimal CSS:
`cp ~st10/328lab13.css . # DON'T FORGET the SPACE and PERIOD!!`
 - A PHP function that builds a form with a dynamically-built select/drop-down form widget of current departments:
`cp ~st10/build_depts.php . # DON'T FORGET the SPACE and PERIOD!!`

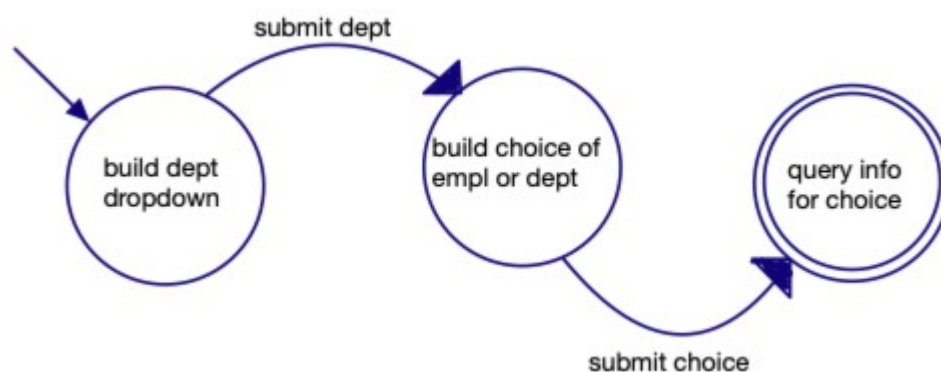
- A PHP function that builds a form with radio buttons to choose whether you want more info about a selected department itself or about its employees:

`cp ~st10/build_choice.php .` # DON'T FORGET the SPACE and PERIOD!!

Requirements for 328lab13.php

- **Add** the needed PHP tag at the beginning of this file to **enable this PHP to use sessions**.
- Fill in the opening comment block, putting in your **names**, the last modified **date**, and the **URL** that can be used to run your document.
 - (You *will* lose some credit if this URL does not work when I or the grader paste it into a browser!)
- **Within** the **head** element, edit the **title** element, giving it appropriate content.
- **Within** the **head** element: include PHP tag(s) with statement(s):
 - to enable PHP error reporting
 - to include the definition of function **hum_conn_sess**, from your local copy of file **hum_conn_sess.php**
- **Within** the **head** element, after the **link** element specifying that this document is being styled by **normalize.css**, add a second **link** element following course style standards specifying that this document will then be further styled using the provided file **328lab13.css**.
 - **Do not include any inline or internal CSS rules in your 328lab10.php.**
- Within the **body** element, include an **h1** element with appropriate content.
- **Within** the **footer** element near the end of the **body** element, add a **p** element whose content includes your names.

You are now going to add to this so that **328lab13.php** will be a postback document implementing a small application involving the **empl** and **dept** tables and described using this finite state diagram:



Remember, the finite state diagram and files for **try-quad.php** are posted in the CS 328 In-class Examples.

Note that you are being provided helper functions to help handle the main actions for the first two states in the above finite state diagram; feel free to add any additional helper functions to make your task easier! (Just be sure to also submit their files along with your **328lab13.php** file.)

Requirements for state "build dept dropdown"

The state **build dept dropdown** should create a form for selecting a desired department.

- The function **build_depts**, in provided file **build_depts.php**, outputs a form with a dynamically-built **select**/drop-down form widget displaying department names but submitting the selected department's department number, and a submit button.
- Remember to consider, and include, whatever should involve **\$_SESSION** for this state.

Requirements for state "build choice of empl or dept"

The state **build choice of empl or dept** should:

- attempt to SAFELY grab the selected department number from the submitted select-a-department form
- SAVE this as the value of a suitable session key in **\$_SESSION**
- **Display the selected department number** tastefully in the response, along with a form allowing the user to now CHOOSE whether they wish to see information about that department or about employees within that department.
 - Note that the function **build_choice**, in provided file **build_choice.php**, outputs a form with **two logically-related radio buttons** to make this choice, and a submit button.
- (Note that you do **NOT** need to connect to the database in this particular state.)
- Remember to consider, and include, whatever should involve **\$_SESSION** for this state.

Requirements for state "query info for choice"

The state **query info for choice** should:

- attempt to SAFELY grab the choice of department or employees from the submitted empl-or-dept form
- grab the previously-selected department number using its session key in **\$_SESSION**
- tastefully **display this previously-selected department number** in the response
- depending on the submitted radio button choice, use this previously-selected department number (binding its value to a **BIND VARIABLE**) to query for either:
 - (if they chose department)
 - the name and location of that department,
 - displaying these tastefully within an appropriate HTML element, or
 - (if they chose employees)
 - the last names and job titles of employees within that department,
 - displaying these tastefully within a **table** element <-- (you can adapt one of your pair's Week 11 Lab Exercise code for this, if you wish)
- In **either** case: you will lose **substantial** credit if you use concatenation to include the department number within your query string -- you are **required** to use a **bind variable** instead!
- BE SURE to **FREE** your OCI statement and **CLOSE** your OCI connection before the end of this state!
- Remember to consider, and include, whatever should involve **\$_SESSION** for this state.
- Since this is the logical end of this application, be sure to appropriately **destroy** the current session,

following CS 328 course style standards.

- For more-convenient starting over, include a **hypertext** link with appropriate text that links back to your **328lab13.php**.

Quick note about 328lab13.css

In the interests of time, an external CSS file **328lab13.css** is being provided as part of the lab exercise.

HOWEVER, if you have the time and interest, you may **ADD rules** to and/or **ADD declarations** to rules in your copy of **328lab13.css**.

IF you do this:

- **ADD** an "**adapted by:** " followed by your names to 328lab13.css' opening comment block
- If you change any of the default foreground and background colors, make sure the result is **at least WCAG 2 AA Compliant** based on the tester at: https://snook.ca/technical/colour_contrast/colour.html
- Make sure your resulting 328lab13.css still validates as valid CSS.

BEFORE you leave lab:

(Note: your PHP *is* expected to generate strict-style HTML, but because of the clunkiness in trying to create .xhtml files when sessions are involved -- due to the way so many browsers seem to re-request the document for showing the source -- you are **not** required to submit .xhtml files for *this* lab exercise.)

Make sure that you **both** have copies of the files:

- **328lab13.php** and all additional files it uses
- (If you modified the provided **328lab13.css**, submit your version, also.)

...and you **BOTH** submit these using **~st10/328submit** on nrs-projects, with a lab number of **93**.