

CS 328 - Homework 7

Deadline

11:59 pm on Friday, March 28, 2025

Purpose

To start thinking ahead about potential PL/SQL subroutines for your "second" database, and to practice more with CSS, including laying out tables and forms using CSS.

How to submit

Each time you wish to submit your work-so-far, submit your files using `~st10/328submit` on nrs-projects, with a homework number of **7**.

Coming soon in *upcoming* homeworks:

This section is to give you a heads-up about some *future* homework problems related to your "second" database.

So you can start considering potential uses for your "second" database:

Note that, in remaining homeworks:

- You will be required to decide on and write a **PL/SQL stored procedure** or **PL/SQL stored function** for your selected "second" database.
 - It should expect at least one parameter.
 - It needs to **NOT** depend on `dbms_output.put_line` calls (since their output cannot reach the application tier).
 - It should be potentially useful to the audience for and/or to an application programmer developing applications atop your selected "second" database.
 - (This can be as simple as a stored procedure that expects info from the user and inserts, updates, or deletes it appropriately into/from a table or tables, or a stored function that conveniently grabs a piece of information such as a count or average or some such.)
- You will be creating PHP documents that create strict-style HTML documents styled by CSS and that use your selected "second" database.
 - You will definitely be asked to create a PHP document that **queries** something useful that results in **multiple rows** and displays it tastefully within an HTML **table** element and/or uses it to dynamically build a form widget such as a **select**/drop-down box.
 - You will definitely be asked to create a PHP document that **calls** your **PL/SQL stored procedure** or **PL/SQL stored function** that you will write for your "second" database.

Important notes

- Problems 2 onward assume you have read the zyBooks text's Chapter 4 sections on CSS flexbox (Section 4.1) and grid layout (Section 4.2), watched the CS 328 recordings on these when they are posted, or both.
- Remember: You are required to use **normalize.css** for all of your web pages for CS 328, and to add **link** elements for additional CSS external stylesheets *after* this (but still **within** the **head** element).

EXCEPT for **normalize.css**, **DO NOT USE ANY CSS FRAMEWORKS or PREDEFINED LIBRARIES for this course** (unless you get prior, explicit permission). One of this course's purposes is to provide you with some practice with the basics of "plain" CSS, so you can better make use of frameworks and predefined libraries later.

- Remember that there are **CS 328 CSS Coding Standards so far** posted on the public course web site, under **References** -- you are also expected to follow these for all course documents.
 - External style sheets are expected to validate as valid CSS using the validator link included in the **CS 328 CSS Coding Standards so far**.
- You are expected to follow all course coding standards posted on the public course web site; course documents are also expected to validate as strict-style HTML.

Problem 1 - formatting a table element

The purpose of this problem is to practice styling table-related elements (especially since their default style is often not what you want).

Starting from the CS 328 **html-template.html**, create a strict-style HTML document whose name includes **prob1**, styled by an external CSS style sheet whose name also includes **prob1**.

Your ***prob1*.html** should meet the class style standards as well as the following requirements:

- Fill in the opening comment block as specified, putting in your **name**, 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/the grader paste it into a browser.)
- Within its **head** element, give the **title** element appropriate descriptive content.
- Within its **head** element, *after* the **link** element styling this document with **normalize.css**, add a second **link** element so that this will be *further* styled using an external CSS style sheet ***prob1*.css**.

Within your ***prob1*.html**'s **body** element:

- Include an appropriate **h1** element.
- Include a **table** element, whose subject(s) is/are your choice, that includes at least the following:
 - at least **5** rows and **2** columns
 - an appropriate **caption** element
 - appropriate **th** elements, with appropriate **scope** attributes

- (It is fine to use a copy of your Homework 3 - Problem 2 table if you wish -- it should meet the above requirements.)

- Within its **footer** element, add a **p** element whose content includes **your name**.

Your ***prob1*.css** should meet the following requirements:

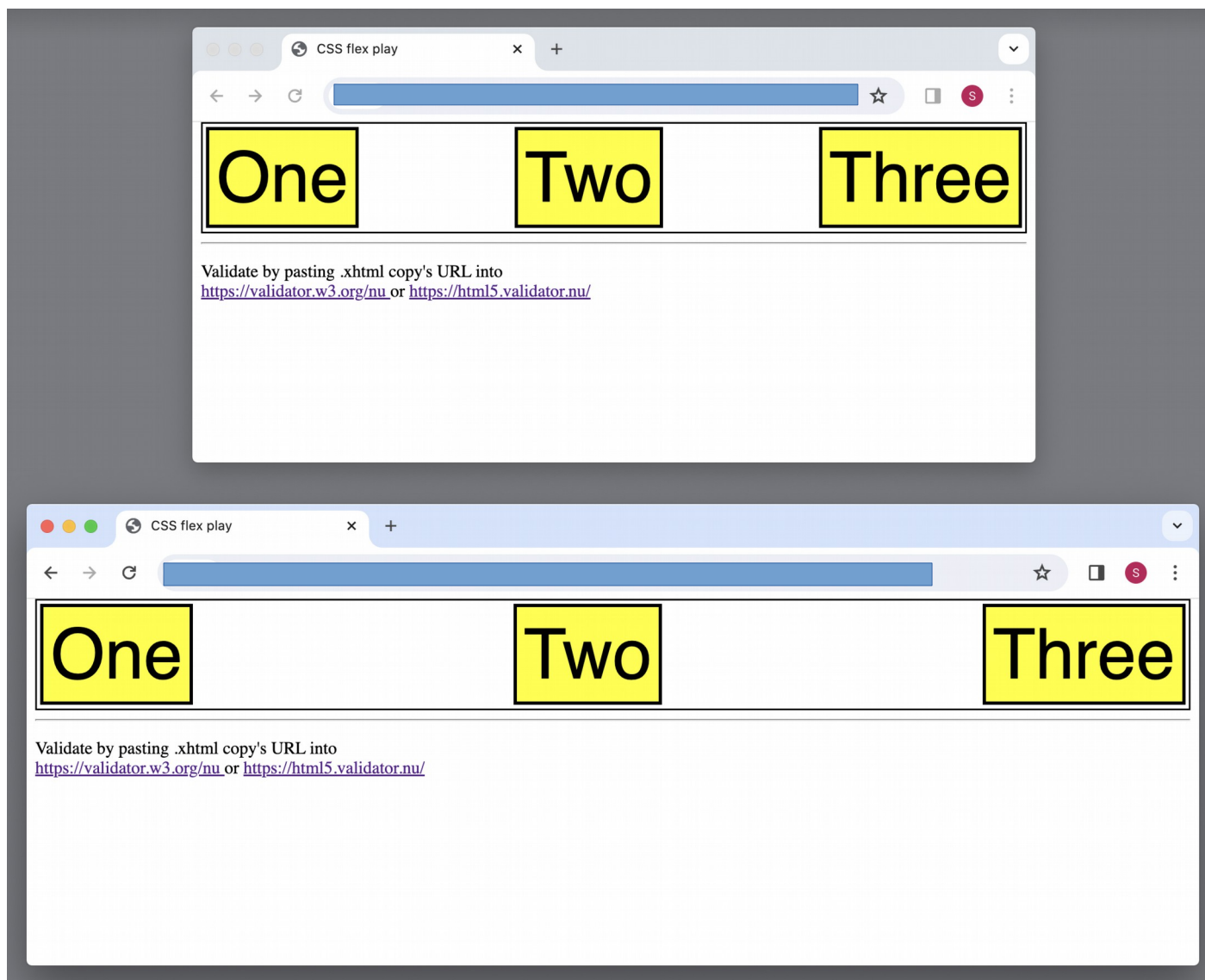
- Include a comment including at least your **file's** name, *your name*, and the last-modified date.
- Use foreground and background colors that are **at least WCAG 2 AA Compliant** based on the tester at: https://snook.ca/technical/colour_contrast/colour.html
- Include at least one rule adding an attractive **border** to the **table**, **td**, and **th** elements.
 - You also should make appropriate use of the **border-collapse** property to prevent a doubled-border in the resulting displayed table.
- At least one rule should affect one or more of the table-related elements' **padding** values in a visible and attractive way.
- At least one rule should affect one or more of the table-related elements' **margin** values in a visible and attractive way.
- **Center** this document's **table** element within the displayed document by appropriately using *either*:
 - the **width** and **margin** properties, OR
 - using flexbox and the **justify-content** property
- Add additional rules as desired to further attractively format elements of this document.

Make sure your resulting documents successfully validate as strict-style HTML and valid CSS.

Submit your ***prob1*.html**, ***prob1*.xhtml**, and ***prob1*.css** files.

(Problem 2 starts on the next page.)

Problem 2 - practice with CSS flexbox layout, part 1



The purpose of this problem is to practice using CSS flexbox layout.

Consider the above screen shot. This is a display, in the Chrome browser on Mac OS X, of a file `hw7-2.html` styled using CSS.

- There is an example unformatted version of this in `~st10/hw7-2.html`. Copy this document into an appropriate location on one of your nrs-projects accounts:

```
cp ~st10/hw7-2.html . # DON'T FORGET the SPACE and PERIOD!!
```

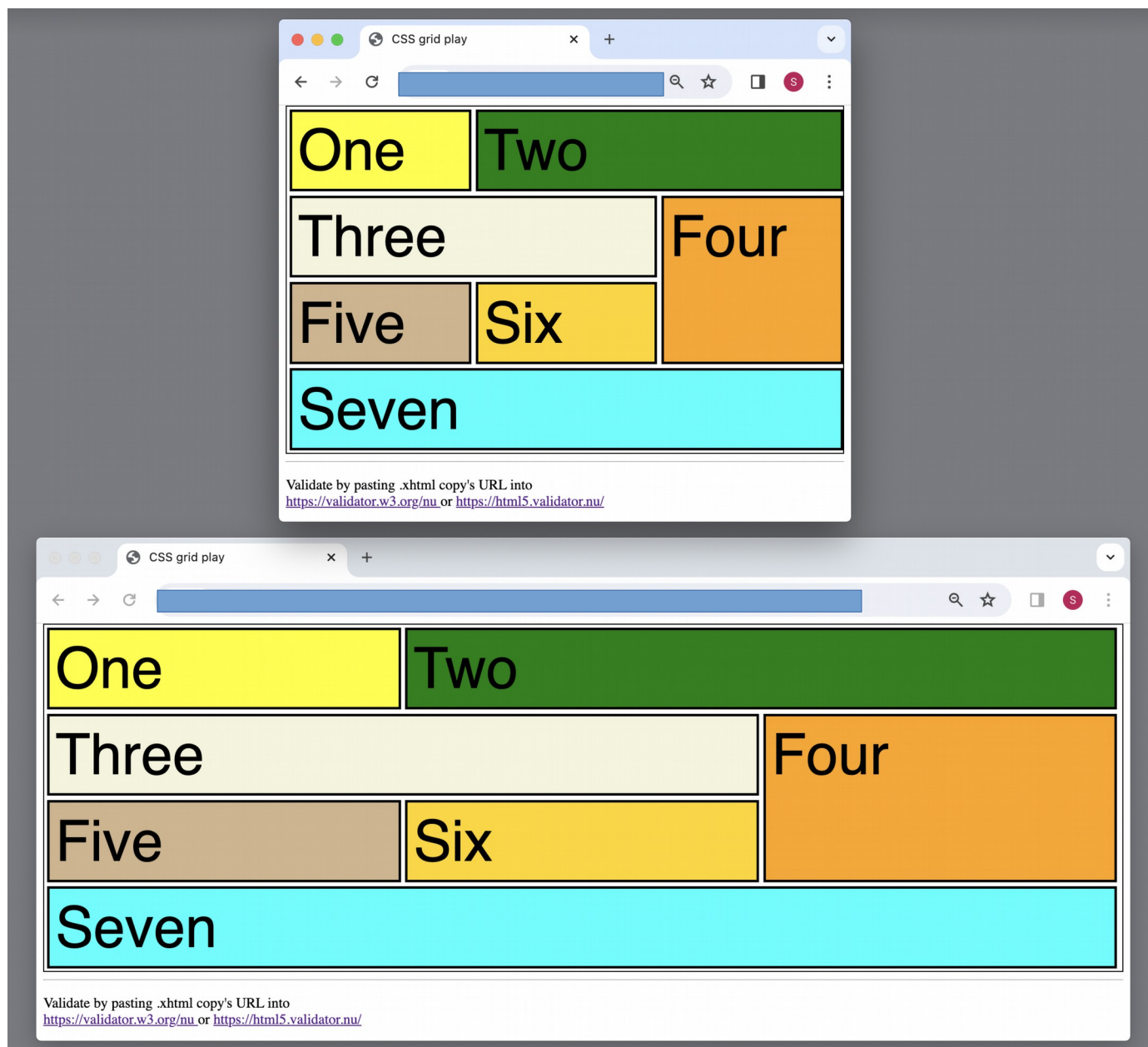
- Fill in the opening comment block with your name in the **adapted by:** part, an updated **last-modified** date, and the URL I can use to run your formatted version.
- (You *will* lose some credit if this URL does not work when I/the grader paste it into a browser.)

- Within its **head** element, *after* the **link** element styling this document with **normalize.css**, add a second **link** element so that this will be *further* styled using an external CSS style sheet **hw7-2.css**.
- Within its **footer** element, add a **p** element whose content includes **your name**.
- These should be the **only** changes you make to **hw7-2.html**, *unless* you OK them with me first.
- Your **hw7-2.css** should meet the following requirements:
 - Include a comment including at least **hw7-2.css**, *your name*, and the last-modified date.
 - Add CSS rules to style **hw7-2.html** to match the above shown layout as **closely** as possible (except see the note about colors below).
 - The above is styled adding a **0.5em** left and right margin to the **body** element.
 - All of the **div** elements are styled with:
 - a font size of **2em**
 - a font family of **sans-serif**
 - a border that is **0.05em** wide, solid, and black
 - padding of **0.1em**
 - The above styles the **div** element with **class="wrapper"** to be a container element using flexbox layout.
 - If displayed in a wider browser window, the gaps *between* the **div** elements with **class="number"** will increase, but the width of these **div** elements themselves will not change.
 - Give the **div** elements with **class="number"** a noticeable background color -- it can be different from that shown above, but make sure the *content* in each **div** is still readable in your result (do not make it too dark!).
- **hw7-2.html** should validate as strict-style HTML, but of course make sure this is still the case.. Also make sure that your resulting **hw7-2.css** validates as valid CSS.

Submit your **hw7-2.html**, **hw7-2.xhtml**, and **hw7-2.css** files.

(Problem 3 starts on the next page.)

Problem 3 - practice with CSS grid layout, part 1



The purpose of this problem is to practice using CSS grid layout.

Consider the above screen shot. This is a display, in the Chrome browser on Mac OS X, of a file **hw7-3.html** styled using CSS.

- There is an example unformatted version of this in **~st10/hw7-3.html**. Copy this document into an appropriate location on one of your nrs-projects accounts:

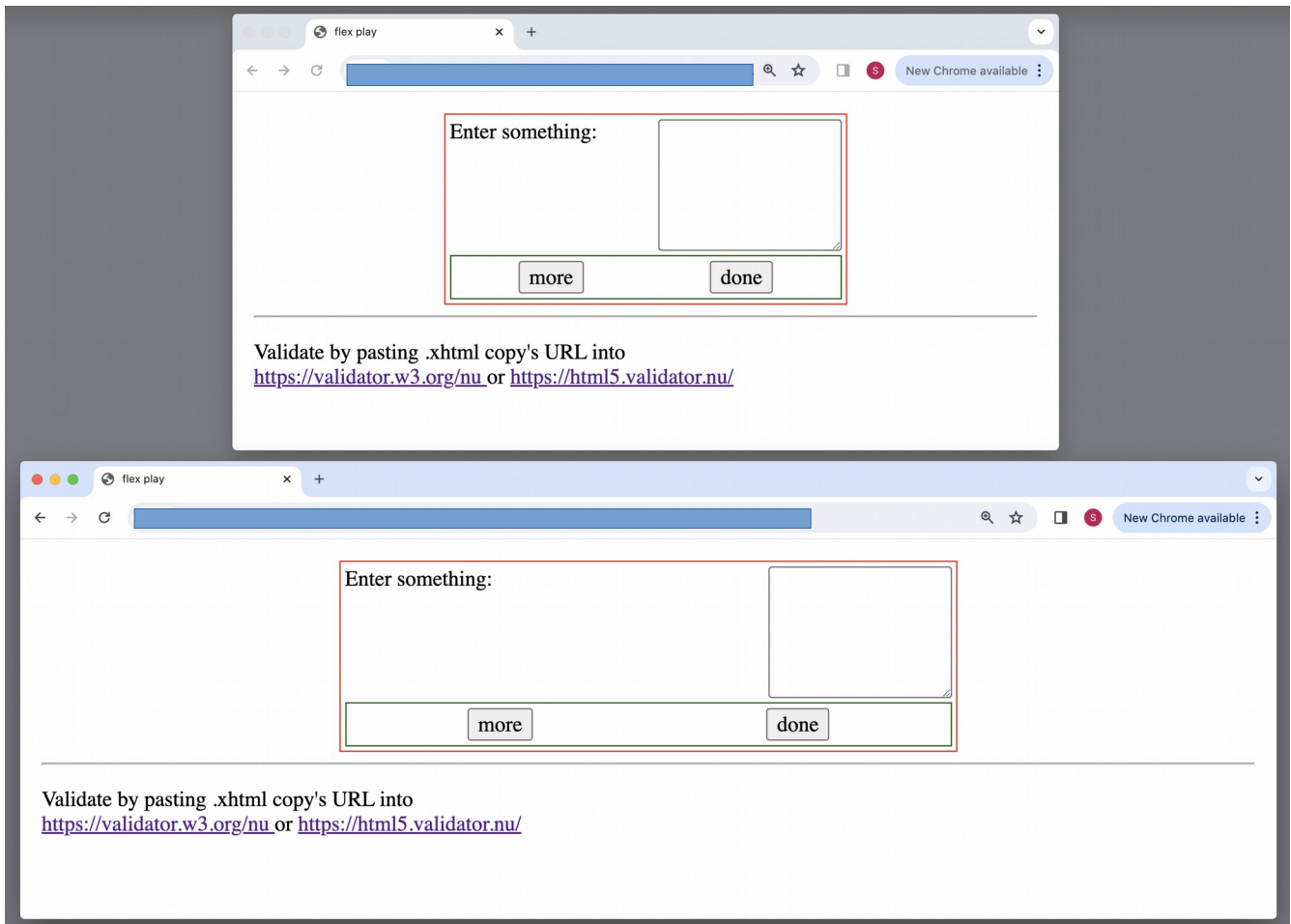
```
cp ~st10/hw7-3.html . # DON'T FORGET the SPACE and PERIOD!!
```

- Fill in the opening comment block with your name in the **adapted by:** part, an updated **last-modified** date, and the URL I can use to run your formatted version.

- (You *will* lose some credit if this URL does not work when I/the grader paste it into a browser.)
- Within its **head** element, *after* the **link** element styling this document with **normalize.css**, add a second **link** element so that this will be *further* styled using an external CSS style sheet **hw7-3.css**.
- Within its **footer** element, add a **p** element whose content includes **your name**.
- These should be the **only** changes you make to **hw7-3.html**, *unless* you OK them with me first.
- Your **hw7-3.css** should meet the following requirements:
 - Include a comment including at least **hw7-3.css**, *your name*, and the last-modified date.
 - Add CSS rules to style **hw7-3.html** to match the above shown layout as **closely** as possible (except see the note about colors below).
 - The above is styled adding a **0.5em** left and right margin to the **body** element.
 - All of the **div** elements are styled with:
 - a font size of **2em**
 - a font family of **sans-serif**
 - a border that is **0.05em** wide, solid, and black
 - padding of **0.1em**
 - The above styles the **div** element with **class="wrapper"** to be a container element using grid layout. It also:
 - uses a **gap** property of **0.15em**
 - specifies a width of **33%** for each of the three columns in this container -- so these WILL be "stretched" if displayed in a wider browser window
 - uses the **grid-auto-rows** property with a value of **minmax(2em, auto)** so that the browser will automatically determine the number of rows in the container element, with a minimum height of **2em** for each row and a maximum height of **auto** for each row
 - Give the **div** elements contained **within** the **div** with **class="wrapper"** different noticeable background colors -- they can be different from those shown above, but make sure the *content* in each **div** is still readable in your result (do not make it too dark!).
- You should be able to use **either** of the approaches discussed in zyBooks Chapter 4 Section 4.3 and in the posted recording discussing grid layout for laying out the child elements within this grid container.
- **hw7-3.html** should validate as strict-style HTML, but of course make sure this is still the case. Also make sure that your resulting **hw7-3.css** validates as valid CSS.

Submit your **hw7-3.html**, **hw7-3.xhtml**, and **hw7-3.css** files.

Problem 4 - practice with CSS flexbox layout, part 2



The purpose of this problem is to practice using CSS flexbox to layout a form.

Consider the above screen shot. This is a display, in the Chrome browser on Mac OS X, of a file **hw7-4.html** styled using CSS.

- There is an example unformatted version of this in `~st10/hw7-4.html`. Copy this document into an appropriate location on one of your nrs-projects accounts:

cp ~st10/hw7-4.html . # DON'T FORGET the SPACE and PERIOD!!

- Fill in the opening comment block with your name in the **adapted by:** part, an updated **last-modified** date, and the URL I can use to run your formatted version.
 - (You *will* lose some credit if this URL does not work when I/the grader paste it into a browser.)
- Within its **head** element, *after* the **link** element styling this document with **normalize.css**, add a second **link** element so that this will be *further* styled using an external CSS style sheet **hw7-4.css**.
- Within its **footer** element, add a **p** element whose content includes **your name**.
- These should be the **only** changes you make to **hw7-4.html**, *unless* you OK them with me

first.

- Your **hw7-4.css** should meet the following requirements:
 - Include a comment including at least **hw7-4.css**, *your name*, and the last-modified date.
 - For this problem, you may add additional rules to customize **fonts** and **colors**, but otherwise **only** add rules for the following.
 - Give the **body** element a non-zero **margin** of your choice.
 - For the **form** element:
 - **Center** it using one of the ways discussed in class or in zyBooks Chapter 3 or Chapter 4.
 - Give it a **visible border** of thickness, style, and color of your choice
 - Give it **non-zero padding** of your choice
 - For an element with **class="info"**:
 - Use **flexbox** layout for this element
 - **Justify** its children elements such that they have space **between** them that can grow and shrink as the browser window is resized
 - For an element with **class="next-step"**:
 - Use **flexbox** layout for this element
 - **Justify** its children elements such that they have space **around** them that can grow and shrink as the browser window is resized.
 - Give it a **visible border** of thickness, style, and color of your choice.
 - Give it **non-zero padding** of your choice.
 - Give the **textarea** element a **non-zero bottom margin** of your choice.
 - You may add additional rules to customize **fonts** and **colors** if you would like, but, for **any text atop a background**, make sure that the **contrast** between their colors is **at least WCAG 2 AA Compliant** based on the tester at https://snook.ca/technical/colour_contrast/colour.html.
- **hw7-4.html** should validate as strict-style HTML, but of course make sure this is still the case. Also make sure that your resulting **hw7-4.css** validates as valid CSS.

Submit your **hw7-4.html**, **hw7-4.xhtml**, and **hw7-4.css** files.

Problem 5

The purpose of this problem is both to practice more with form layout and to continue work on an eventual web application using the bookstore database.

Consider your HTML document **about-bks.html** from Homework 2, Problem 3, describing your chosen theme for your instance of the bookstore database, and your HTML document **bks-isbn-choice.html** from Homework 4, Problem 4, which includes a form element for selecting an ISBN of a title.

Make **COPIES** of your files **about-bks.html** and **bks-isbn-choice.html** in a **DIFFERENT** directory on nrs-projects (so you will not interfere with your earlier homework's files!).

And, consider your CSS external style sheet **bks.css** from Homework 6, Problem 4, which you created to style your HTML document **about-bks.html**.

Make a **COPY** of your **bks.css** in this homework problem's directory on nrs-projects, also, (so you will not interfere with that earlier homework's files, either!).

- Be sure to update the **last-modified date** in these Homework 7 versions of all three of these files **about-bks.html**, **bks-isbn-choice.html**, and **bks.css**.
- Also **MAKE SURE** you update the **URL** from which I can run these Homework 7 versions of your **about-bks.html** and **bks-isbn-choice.html** in the appropriate spot in their opening comment blocks.
 - (You *will* lose some credit if these URLs do not work when I/the grader paste them into a browser.)
- Within its **head** element, add a second **link** element so that this will be further styled using Homework 7's version of **bks.css**.
- You may find you need to to modify your **bks-isbn-choice.html** to style it, and possibly also your **about-bks.html** so that both can be styled by Homework 7's version of **bks.css** -- that's acceptable, but try to minimize such modifications.

Now **modify** Homework 7's version of **bks.css** to also format the **form** in **bks-isbn-choice.html**, meeting the following requirements:

- Include rules that "nicely" (tastefully, attractively, and readably) lay out and format this form.
- **Center** this form within the displayed document using one of the ways discussed in class or in zyBooks Chapter 3 or Chapter 4.
- Use either **CSS flexbox layout** or **CSS grid layout**, your choice, to noticeably layout the elements within this form.
- **Center** the **submit button** in your form.
- Ensure that, for any text atop a background, the **contrast** between their colors is **at least WCAG 2 AA Compliant** based on the tester at https://snook.ca/technical/colour_contrast/colour.html.
- Add additional CSS rules as desired to further attractively format elements of these documents.
- Make sure your resulting modified **bks.css** still **validates** as valid CSS.

Submit your resulting versions of:

- **about-bks.html**, **about-bks.xhtml**,
- **bks-isbn-choice.html**, **bks-isbn-choice.xhtml**, and
- **bks.css**.

Problem 6

The purpose of this problem is both to practice more with form layout and to continue work on an eventual web application using your "second" database.

Consider your HTML document **custom-choice.html** from Homework 4, Problem 5, which includes a form element for selecting something that could be used to answer a question from an expected user of your "second" database.

Make a **COPY** of your file **custom-choice.html** in a **DIFFERENT** directory on nrs-projects (so you will not interfere with your earlier homework's file!).

- Be sure to update the **last-modified date** in the Homework 7 version of **custom-choice.html**.
- **MAKE SURE** you update the **URL** from which I can run this Homework 7 version of your **custom-choice.html** in the appropriate spot in its opening comment block.
 - (You *will* lose some credit if this URL does not work when I/the grader paste it into a browser.)
- Within its **head** element, add a second **link** element so that this will be further styled using an external CSS style sheet **custom.css**.
- You may find you need to to modify your **custom-choice.html** to style it -- that's acceptable, but try to minimize such modifications.

Create a CSS external style sheet **custom.css** to style this document that meets the following requirements:

- Include at least **custom.css**, your name, and the last-modified date in its opening comment block.
- Include rules that "nicely" (tastefully, attractively, and readably) lay out and format this document, including laying out the form within this document.
- **Center** this form within the displayed document using one of the ways discussed in class or in zyBooks Chapter 3 or Chapter 4.
- Use either **CSS flexbox layout** or **CSS grid layout**, your choice, to noticeably layout the elements within this form.
- **Center** the **submit button** in your form.
- Ensure that, for any text atop a background, the **contrast** between their colors is **at least WCAG 2 AA Compliant** based on the tester at https://snook.ca/technical/colour_contrast/colour.html.
- Add additional CSS rules as desired to further attractively format elements of this document.
- Make sure your resulting modified **custom.css** **validates** as valid CSS.

Submit your resulting versions of **custom-choice.html**, **custom-choice.xhtml**, and **custom.css**.