

CS 328 - Week 8 Lab Exercise - 2026-03-12

Deadline

Due by the end of lab.

Purpose

To practice with CSS flexbox and grid layouts.

How to submit

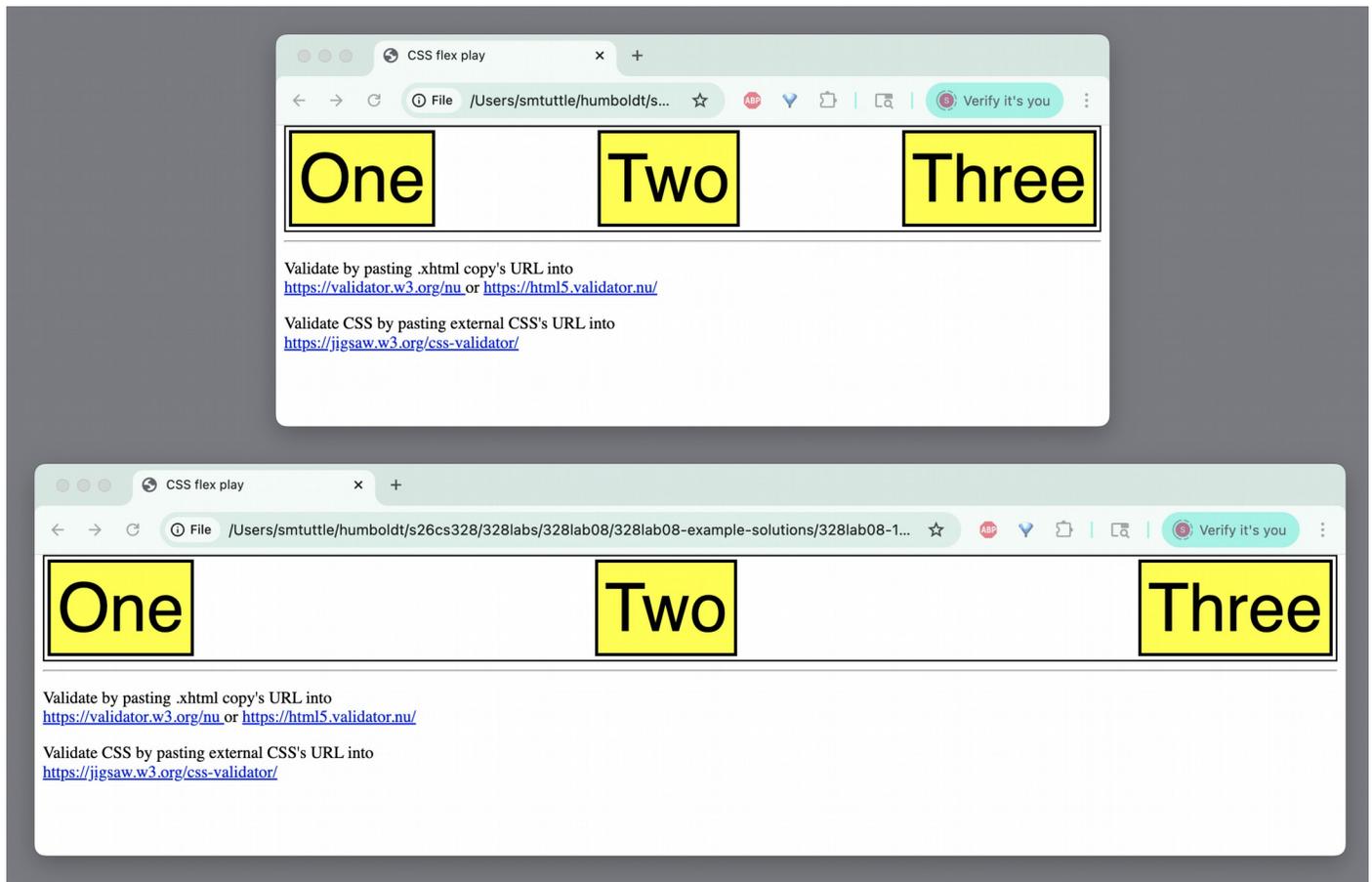
Submit your files for this lab using `~st10/328submit` on nrs-projects, each time entering a lab number of **88**.

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** 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 `.html` and `.css` files for this lab exercise should all 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 **88**.
- You are expected to follow the style standards from the posted "CS 328 CSS Coding Standards so far" (at <https://nrs-projects.humboldt.edu/~st10/s26cs328/328-css-coding-standards.pdf>).

(Problem 1 starts on the next page)

Problem 1 - practice with CSS flexbox layout



Consider the above screen shot. This is a display, in the Chrome browser on Mac OS X, of `3281ab08-1.html` styled using CSS.

- Copy over the following "starter" HTML file into your desired `public_html` subdirectory, that you will then add to as part of today's lab exercise:


```
cp ~st10/3281ab08-1-start.html 3281ab08-1.html
```
- Fill in the opening comment block as specified, 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, 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 a file `3281ab08-1.css` that you are about to create for this lab exercise.
 - **Do not include any inline or internal CSS rules in your `3281ab08-1.html`.**
- Do not make any other changes to your `3281ab08-1.html`.
- Read over this and notice what HTML elements are included in its **body** element.

- Display your **3281ab08-1.html** at this point, and see how it looks before you start styling it.

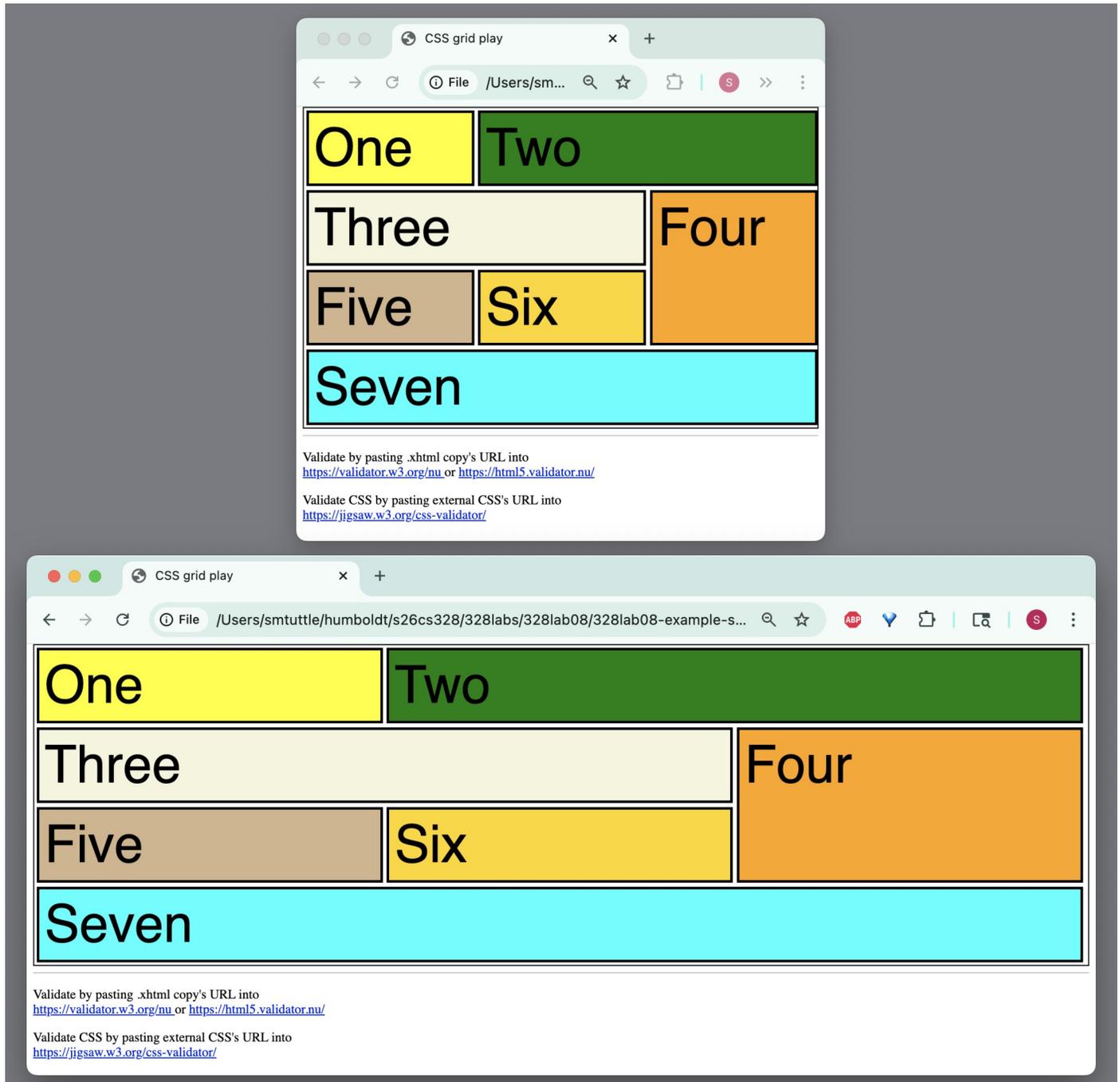
Now create the external CSS file **3281ab08-1.css** in the same directory as your **3281ab08-1.html**, adding rules to style **3281ab08-1.html** to match the above shown layout as **closely** as possible and meet the requirements below.

As you add each rule, see how it changes the display of your **3281ab08-1.html**.

- Start **3281ab08-1.css** with an opening comment block with your **names** and the last modified **date**.
- 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 **div** element with **class="wrapper"** is styled 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.
 - (HINT: this involves the flexbox **justify-content** property)
- Give the **div** elements with **class="number"** a noticeable background color -- it *can* be different from the background color shown above, but make sure the *content* in each **div** is still **readable** in your result (do not make the background color too dark!).
- Make sure your **3281ab08-1.html** validates as strict-style HTML, and that your **3281ab08-1.css** validates as valid CSS.

(Problem 2 starts on the next page)

Problem 2 - practice with CSS grid layout



Consider the above screen shot. This is a display, in the Chrome browser on Mac OS X, of `328lab08-2.html` styled using CSS.

- Copy over the following "starter" HTML file into your desired `public_html` subdirectory, that you will then add to as part of today's lab exercise:

```
cp ~st10/328lab08-2-start.html 328lab08-2.html
```

- Fill in the opening comment block as specified, 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**, 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 a file `3281ab08-2.css` that you are about to create for this lab exercise.
 - **Do not include any inline or internal CSS rules in your `3281ab08-2.html`.**
- Do not make any other changes to your `3281ab08-2.html`.
- Read over this and notice what HTML elements are included in its **body** element.
- Display your `3281ab08-2.html` at this point, and see how it looks before you start styling it.

Now create the external CSS file `3281ab08-2.css` in the same directory as your `3281ab08-2.html`, adding rules to style `3281ab08-2.html` to match the above shown layout as **closely** as possible and meet the requirements below.

As you add each rule, see how it changes the display of your `3281ab08-2.html`.

- Start `3281ab08-2.css` with an opening comment block with your **names** and the last modified **date**.
- 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 `div` element with `class="wrapper"` is styled to be a container element using grid layout. It also:
 - 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. (But there also are other acceptable ways to style this to have three columns of the same width that behave like this,)
 - 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
 - uses a `gap` property of `0.15em`
- 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 the background colors too dark!).
- You should be able to use **either** of the approaches discussed in class during Week 8 Lecture 2 for laying out the child elements within this grid container.
- Make sure your `3281ab08-2.html` validates as strict-style HTML, and that your `3281ab08-2.css` validates as valid CSS.

Validate your files:

Make sure `.xhtml` copies of your `328lab08-1.html` and `328lab08-2.html` validate as **strict-style HTML**,

and that your `328lab08-1.css` and `328lab08-2.css` validate as **valid CSS** at <https://jigsaw.w3.org/css-validator/>.

BEFORE you leave lab:

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

- `328lab08-1.html`, `328lab08-1.xhtml`, and `328lab08-1.css`
- `328lab08-2.html`, `328lab08-2.xhtml`, and `328lab08-2.css`

...and you BOTH submit these using `~st10/328submit` on nrs-projects, with a lab number of **88**.

How the navigator can get today's files:

(for a driver with username `dr12`, and a navigator with username `na89` - replace these with your *actual* usernames when you actually do this)

- Because these are files the nrs-projects web server has to be able to reach, the navigator should be able to get a copy of them from the driver using an approach like this:

- Assume the driver has, in their `public_html` directory, a sub-directory `328lab08moo` containing today's `.html` and `.css` files. (Adapt the following accordingly based on your driver's actual directory location for today's files.)

- The NAVIGATOR `na89` can now:

- log in to THEIR (`na89`'s) nrs-projects account, and run these commands:

```
cd public_html
mkdir 328lab08moo # or other desired directory name
chmod 711 328lab08moo
cd 328lab08moo
cp ~dr12/public_html/328lab08moo/328lab08-1.html . # note space & period!
cp ~dr12/public_html/328lab08moo/328lab08-1.css . # note space & period!
cp ~dr12/public_html/328lab08moo/328lab08-2.html . # note space & period!
cp ~dr12/public_html/328lab08moo/328lab08-2.css . # note space & period!
```

- Now the navigator `na89` should have their own copies of these `.html` and `.css` files.

- Either repeat for the `.xhtml` files,

or (if desired) change the URL within the navigator's `.html` files to refer to the *navigator's* copy, and then make the `.xhtml` copy (and double-check that it still validates):

```
cp 328lab08-1.html 328lab08-1.xhtml
cp 328lab08-2.html 328lab08-2.xhtml
```