

# CMPS 350 – Spring 2023

## Web Development Fundamentals

### Lab 04

#### CSS Layout

#### Objective

1. Flex layout
2. Grid layout
3. Responsive layouts
4. RAM grid pattern
5. Responsive images
6. Mixing and matching different layouts

#### Resources

1. CSS layout: [https://developer.mozilla.org/en-US/docs/Learn/CSS/CSS\\_layout](https://developer.mozilla.org/en-US/docs/Learn/CSS/CSS_layout)
2. Grid layout: [https://developer.mozilla.org/en-US/docs/Web/CSS/CSS\\_Grid\\_Layout/Relationship\\_of\\_Grid\\_Layout](https://developer.mozilla.org/en-US/docs/Web/CSS/CSS_Grid_Layout/Relationship_of_Grid_Layout)
3. Flex cheatsheet: <https://flexbox.malven.co>
4. Grid cheatsheet: <https://grid.malven.co>

#### 1. Flex Layout

1. You can learn more about flexbox using the guide at <https://css-tricks.com/snippets/css/a-guide-to-flexbox>.
2. Use an external stylesheet to style the provided quantum.html and qubit.html pages as shown in screenshot-1a.png and screenshot-1b.png.
  - 2.1. You must modify the structure of your pages to be able to use a flex layout.
  - 2.2. Notice how the three-column layout is not adequate for smaller screen sizes.
3. Complete the Flexbox Froggy game at <https://flexboxfroggy.com> to test your flexbox layout skills.

#### 2. Responsive Layouts

1. You can learn more about media queries using the guide at <https://css-tricks.com/a-complete-guide-to-css-media-queries>.
2. Modify your external stylesheet to implement a responsive layout with three breakpoints as shown in screenshot-2a.png, screenshot-2b.png, screenshot-2c.png, and screenshot-2d.png.

#### 3. Grid Layout

1. You can learn more about grid using the guide at <https://css-tricks.com/snippets/css/complete-guide-grid>.

2. Use a grid layout to style the provided `quantum.html` and `qubit.html` pages as shown in `screenshot-3.png`.
  - 2.1. Notice how the two-column grid is not adequate for smaller screen sizes.
3. Modify your external stylesheet to implement a responsive layout with one breakpoint as shown in `screenshot-3a.png` and `screenshot-3b.png`.
4. Complete the Grid Garden game at <https://cssgridgarden.com> to test your grid layout skills.

#### 4. RAM Grid Pattern

1. Use a RAM (repeat-auto-minmax: <https://web.dev/patterns/layout/repeat-auto-minmax>) layout to style the gallery of figures as shown in `screenshot-4*.png`.

#### 5. Additional Exercises

1. Online challenges:
  - 1.1. News homepage: <https://www.frontendmentor.io/challenges/news-homepage-H6SWTa1MF1>
  - 1.2. Sunnyside agency landing page: <https://www.frontendmentor.io/challenges/sunnyside-agency-landing-page-7yVs3B6ef>
2. Further expand your understanding of media queries by completing these three mini projects: <https://www.freecodecamp.org/news/learn-css-media-queries-by-building-projects>