Module 3 Day 2

Grid and Flexbox

What makes an application?

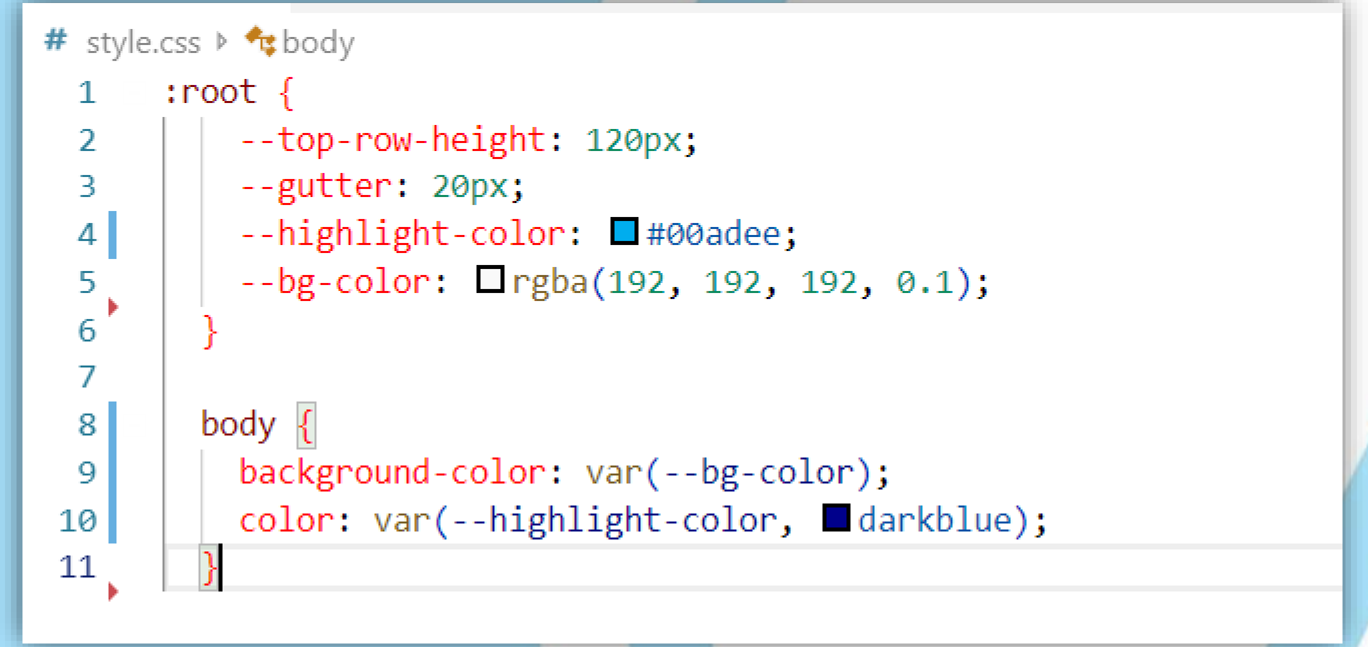
- Program Data
  - ✓ Variables & .NET Data Types
  - ✓ Arrays
  - ✓ More Collections (list, dictionary, stack, queue)
  - ✓ Classes and objects (OOP)

- Program Logic
  - ✓ Statements and expressions
  - ✓ Conditional logic (if)
  - ✓ Repeating logic (for, foreach, do, while)
  - ✓ Methods (functions / procedures)
  - ✓ Classes and objects (OOP)
  - ❑ Frameworks (MVC)

- Input / Output
  - User
    - ✓ Console read / write
    - ❖ HTML / CSS
    - ❑ Front-end frameworks (HTML / CSS / JavaScript)
  - Storage
    - ✓ File I/O
    - ✓ Relational database
    - ❑ APIs

CSS Variables

- Used to apply styles consistently and make change easier



```
:root {
    --top-row-height: 120px;
    --gutter: 20px;
    --highlight-color: #00adee;
    --bg-color: rgba(192, 192, 192, 0.1);
  }

  body {
    background-color: var(--bg-color);
    color: var(--highlight-color, darkblue);
  }
```

Grid

- Often used to divide a page into sections
- Setup a *Grid Container*

```
display: grid;
grid-template-columns:  100px 1fr 1fr 1fr
grid-template-areas: ". name1 name2 name3"
                     ". name4 name4 name4“
grid-gap: 10px; /* or grid-column-gap / grid-row-gap */
grid-template-rows
```

- Assign *Grid Items* to a grid area
  - Grid Items are direct children of the grid container in the HTML

```
grid-area: name1;
grid-column-start/end, grid-row-start/end: <linenumber>
```

Grid Examples and Docs

- FireFox Grid Tools
- https://www.mozilla.org/en-US/developer/css-grid/
- https://gridbyexample.com/
- https://css-tricks.com/snippets/css/complete-guide-grid/
- https://developer.mozilla.org/en-US/docs/Web/CSS/CSS_Grid_Layout/Basic_Concepts_of_Grid_Layout
- http://cssgridgarden.com/

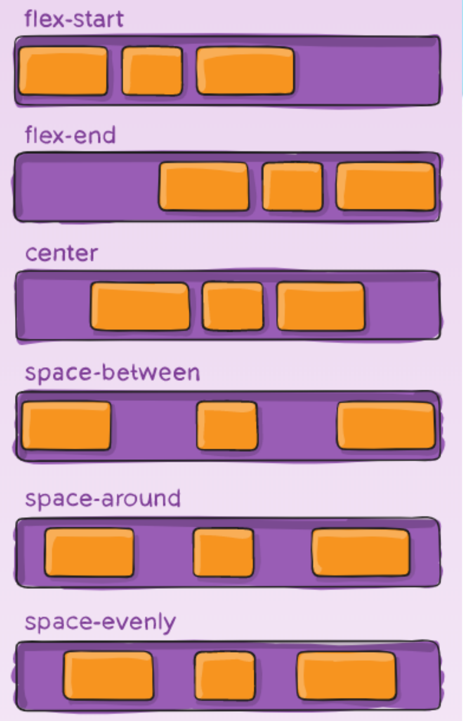
Demo

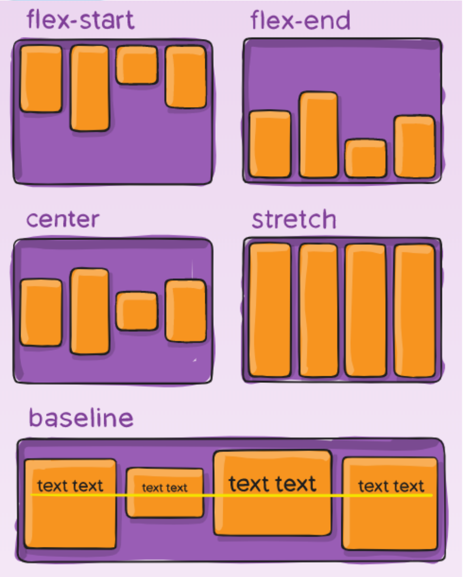
Flexbox

- Usually used to display a series of similar items, such as products, images or cards
- Has a direction: row or column (horizontal / vertical “main” axis)
- Define a flex-container
- The container’s direct children are the flex items

Flex Container

- Display: flex;
- Flex-direction: row, column, row-reverse, column-reverse
- Flex-wrap: wrap, nowrap
- Justify-content: alignment along “main” axis
- Align-items: alignment along the “cross” axis





Flex Items

- Order: n; sequence of items in the container
- Flex-basis: default size
- Flex-grow, flex-shrink
- Align-self: Overrides parent align-items for this one item

Demo

Flex Examples and Docs

- https://css-tricks.com/snippets/css/a-guide-to-flexbox/
- https://developer.mozilla.org/en-US/docs/Web/CSS/CSS_Flexible_Box_Layout/Basic_Concepts_of_Flexbox
- https://flexboxfroggy.com/

Let’s Code