

Comp 324/424 - Client-side Web Design

Fall Semester 2019 - Week 4

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Project outline & mockup assessment

Course total = 15%

- begin outline and design of a web application
 - *built from scratch*
 - *HTML5, CSS...*
 - *builds upon examples, technology outlined during first part of semester*
 - *purpose, scope &c. is group's choice*
 - **NO** *blogs, to-do lists, note-taking...*
 - *chosen topic requires approval*
 - *presentation should include mockup designs and concepts*

Project mockup demo

Assessment will include the following:

- brief presentation or demonstration of current project work
 - *~ 5 to 10 minutes per group*
 - *analysis of work conducted so far*
 - *presentation and demonstration*
 - *outline current state of web app concept and design*
 - *show prototypes and designs*
 - *due Tuesday 24th September 2019 @ 7pm*

CSS3 Grid - intro

- grid layout with CSS is useful for structure and organisation
 - *applied to HTML page*
- usage similar to table for structuring data
- in its basic form
 - *enables developers to add columns and rows to a page*
- grid layout also permits more complex, interesting layout options
 - *e.g. overlap and layers...*
- further information on MDN website,
 - *MDN - CSS Grid Layout*

CSS3 Grid - general concepts & usage

- grid may be composed of rows and columns
 - *thereby forming an intersecting set of horizontal and vertical lines*
- elements may be added to the grid with reference to this structured layout

Grid layout in CSS includes the following general features,

- additional tracks for content
 - *option to create more columns and rows as needed to fit dynamic content*
- control of alignment
 - *align a grid area or overall grid*
- control of overlapping content
 - *permit partial overlap of content*
 - *an item may overlap a grid cell or area*
- placement of items - explicit and implicit
 - *precise location of elements &c.*
 - *use line numbers, names, grid areas &c.*
- variable track sizes - fixed and flexible, e.g.
 - *specify pixel size for track sizes*
 - *or use flexible sizes with percentages or new `fr` unit*

CSS3 Grid - grid container

- define an element as a grid container using
 - *display: grid* or *display: inline-grid*
- any children of this element become *grid items*
 - e.g.

```
.wrapper {  
  display: grid;  
}
```

- we may also define other, child nodes as a *grid container*
 - *any direct child nodes to a grid container are now defined as grid items*

CSS3 Grid - what is a grid track?

- rows and columns defined with
 - *grid-template-rows* and *grid-template-columns* properties
- in effect, these define *grid tracks*
- as MDN notes,
 - "a grid track is the space between any two lines on the grid."
 - (https://developer.mozilla.org/en-US/docs/Web/CSS/CSS_Grid_Layout/Basic_Concepts_of_Grid_Layout)
- so, we may create both row and column tracks, e.g.

```
.wrapper {  
  display: grid;  
  grid-template-columns: 200px 200px 200px;  
}
```

- wrapper class now includes three defined columns of width 200px
 - *thereby creating three tracks*
- *n.b.* a track may be defined using any valid length unit, not just px...

CSS3 Grid - fr unit for tracks - part I

- CSS Grid now introduces an additional length unit for tracks, `fr`
- `fr` unit represents fractions of the space available in the current grid container
 - e.g.

```
.wrapper {  
  display: grid;  
  grid-template-columns: 1fr 1fr 1fr;  
}
```

- we may also apportion various space to tracks, e.g.

```
.wrapper {  
  display: grid;  
  grid-template-columns: 2fr 1fr 1fr;  
}
```

- creates three tracks in the grid
 - *but overall space effectively now occupies four parts*
 - *two parts for 2fr, and one part each for remaining two 1fr*

CSS3 Grid - fr unit for tracks - part 2

- we may also be specific in this sub-division of parts in tracks, e.g.

```
.wrapper {  
  display: grid;  
  grid-template-columns: 200px 1fr 1fr;  
}
```

- first track will occupy a width of 200px
 - *remaining two tracks will each occupy 1 fraction unit*

CSS3 Grid - repeat () notation for fr - part I

- for larger, repetitive grids, easier to use repeat ()
 - *helps define multiple instances of the same track*
 - e.g.

```
.wrapper {  
  display: grid;  
  grid-template-columns: repeat(4, 1fr);  
}
```

- this creates four separate tracks - each defined as 1fr unit's width

CSS3 Grid - repeat () notation for fr - part 2

- repeat () notation may also be used as part of the track definition
 - e.g.

```
.wrapper {  
  display: grid;  
  grid-template-columns: 200px repeat(4, 1fr) 100px;  
}
```

- this example will create
 - one track of *200px* width
 - then four tracks of *1fr* width
 - and finally a single track of *100px* width
- repeat () may also be used with multiple track definitions
 - thereby repeating multiple times
 - e.g.

```
.wrapper {  
  display: grid;  
  grid-template-columns: repeat(4, 1fr 2fr);  
}
```

- this will now create eight tracks
 - the first four of width *1fr*
 - and the remaining four of *2fr*

CSS3 Grid - implicit and explicit grid creation

- in the above examples
 - *we simply define tracks for the columns*
 - *and CSS grid will then apportion content to required rows*
- we may also define an explicit grid of columns and rows
 - e.g.

```
.wrapper {  
  display: grid;  
  grid-template-columns: repeat(2 1fr);  
  grid-auto-rows: 150px;  
}
```

- this slightly modifies an implicit grid to ensure each row is 200px tall

CSS3 Grid - track sizing

- a grid may require tracks with a minimum size
 - *and the option to expand to fit dynamic content*
- e.g. ensuring a track does not collapse below a certain height or width
 - *and that it has the option to expand as necessary for the content...*
- CSS Grid provides a `minmax()` function, which we may use with rows
 - e.g.

```
.wrapper {  
  display: grid;  
  grid-template-columns: repeat(2 1fr);  
  grid-auto-rows: minmax(150px, auto);  
}
```

- ensures each row will occupy a minimum of 150px in height
 - *still able to stretch to contain the tallest content*
 - *whole row will expand to meet the `auto` height requirements*
 - *thereby affecting each track in the row*

CSS3 Grid - grid lines

- a grid is defined using *tracks*
 - *and not lines in the grid*
- created grid also helps us with positioning by providing numbered lines
- e.g. in a three column, two row grid we have the following,
 - *four lines for the three vertical columns*
 - *three lines for the two horizontal rows*
- such lines start at the left for columns, and at the top for rows
- *n.b.* line numbers start relative to written script
 - *e.g left to right for western, right to left for arabic...*

CSS3 Grid - positioning against lines

- when we place an item in a grid
 - *we use these lines for positioning, and not the tracks*
- reflected in usage of
 - *grid-column-start, grid-column-end, grid-row-start, and grid-row-end properties.*
- items in the grid may be positioned from one line to another
 - *e.g. column line 1 to column line 3*
- *n.b.* default span for an item in a grid is one track,
 - *e.g. define column start and no end - default span will be one track...*
 - *e.g.*

```
.content1 {  
  grid-column-start: 1;  
  grid-column-end: 4;  
  grid-row-start: 1;  
  grid-row-end: 3;  
}
```

CSS3 Grid - grid cell & grid area

grid cell

- a *cell* is the smallest unit on the defined grid layout
- it is conceptually the same as a cell in a standard table
- as content is added to the grid, it will be stored in one cell

grid area

- we may also store content in multiple cells
 - *thereby creating grid areas*
- grid areas must be rectangular in shape
- e.g. a grid area may span multiple row and column tracks for required content

CSS3 Grid - add some gutters

- gutters may be created using the *gap* property
 - *available for either column or row*
 - *column-gap and row-gap*
 - e.g.

```
.wrapper {  
  display: grid;  
  grid-template-columns: repeat(4, 1fr 2fr);  
  column-gap: 5px;  
  row-gap: 10px;  
}
```

- *n.b.* any space used for gaps will be determined prior to assigned space for `fr` tracks

CSS3 Grid - working examples

- [grid basic - page zones and groups](#)
- [grid basic - article style page](#)
- [grid layout - articles with scroll](#)

CSS3 Grid - sample layouts

intro

- grid layout enables more complex and interesting layout options
 - *overlap, layers...*
- sample layouts using CSS grid structure
 - *common layout options and designs*
 - *useful repetition of design*
 - *modify base layouts for various site requirements*
- sample layouts
 - *responsive layouts*
 - *auto placement for dynamic content and media*
 - *platform agnostic designs*
 - *useful with SPA, SVG, async patterns &c.*

CSS3 Grid - responsive layout

intro

- display a layout with a variety of patterns and structures, e.g.
 - *single column for a phone*
 - *add a sidebar for a tablet of lower window resolution*
 - *full width view with dual sidebars &c.*
- use responsive designs and structures for various games, media playback...
- responsive works with variety of markup
 - *e.g. transform SVG designs*

CSS3 Grid - responsive layout

page structure

- start with a sample page structure for a HTML page

```
<!doctype html>
<html lang="en">
  <head>
    <meta charset="utf-8">
    <title>CSS Grid - Responsive Layout</title>
    <link rel="stylesheet" type="text/css" href="./assets/style.css">
  </head>
  <body>
    <div class="wrapper">
      ...
    </div>
  </body>
</html>
```

CSS3 Grid - responsive layout

page structure - HTML5

- add some HTML5 markup for a header, navigation, footer, and some main content

```
<div class="wrapper">
  <header class="site-header">
    <h3>Spire & the Signpost</h3>
    <h5>Shine through the gloom, and point to the stars...</h5>
  </header>
  <nav class="site-nav">
    <ul>
      <li><a href="">Home</a></li>
      <li><a href="">Charts</a></li>
      <li><a href="">Data</a></li>
      <li><a href="">Views</a></li>
    </ul>
  </nav>
  <!-- use aside for tangentially related content for parent section... -->
  <aside class="content-side">
    <header>
      <h5>sidebar...</h5>
    </header>
  </aside>
  <main class="content">
    <article class="content-article">
      <header class="article-header">
        <h5>Welcome</h5>
      </header>
      <p>...</p>
    </article>
  </main>
  <section class="site-links">
    <h6>social links...</h6>
  </section>
  <footer class="site-footer">
    <h6>footer...</h6>
  </footer>
</div>
```

- demo - basic responsive

CSS3 Grid - responsive layout

CSS and structure - part I

- for the page structure
 - *need to define some template areas for our grid in the CSS*
 - e.g.

```
/* CONTENT */  
.content {  
    grid-area: content;  
}
```

- use such template area names
 - *defined with the `grid-area` property*
 - *define a layout for the overall page or part of a page*

CSS3 Grid - responsive layout

CSS and structure - part 2

- template areas may then be used with the parent for the grid structure
 - e.g. *wrapper* for the overall page

```
.wrapper {  
  display: grid;  
  grid-gap: 10px;  
  grid-template-areas:  
    "site-header"  
    "site-nav"  
    "content-side"  
    "content"  
    "site-links"  
    "site-footer"  
}
```

- wrapper class will display as a grid
 - with a gap between each area of the grid
 - has a single column in this example
 - includes the required order for the grid areas

CSS3 Grid - responsive layout

define media query

- current example would be suitable for a collapsed phone view
 - *single column view*
 - *will also render for other resolutions and devices*
- then add a media query for alternative layouts and displays
 - *may be triggered using a check of current width for screen*
 - *check width of window...*

```
/* min 700 */
@media (min-width: 700px) {
  .wrapper {
    grid-template-columns: 1fr 3fr;
    grid-template-areas:
      "site-header site-header"
      "site-nav site-nav"
      "content-side content"
      "site-links site-footer"
  }
}
```

CSS3 Grid - responsive layout

specific media query

- add further media queries to handle various rendering requirements
 - e.g. add *height* property to fix footer at bottom of page

```
@media (min-width: 700px) {  
  .wrapper {  
    grid-template-columns: 1fr 3fr;  
    grid-template-rows: 120px 60px calc(98vh - 240) 60px;  
    grid-template-areas:  
      "site-header site-header"  
      "site-nav site-nav"  
      "content-side content"  
      "site-links site-footer";  
    height: 98vh;  
  }  
}
```

- specify height of current *viewport* using a relative unit, *vh*
- add `grid-template-rows` to define known heights for three of the four rows
- add a variant height for the main content
 - *main content is only given a height corresponding to available space in viewer window*
 - *height achieved using the `calc()` function*
- demo - responsive with specific media query

CSS3 Grid - responsive layout

relative lengths

- use relative lengths and calculations for CSS property values
- for example,
 - *vw* - variable width relative to 1% of width of current viewport
 - *vh* - variable height relative to 1% of height of current viewport
 - *vmin* - relative to 1% of viewport's smaller dimension
 - *vmax* - relative to 1% of viewport's larger dimension

CSS3 Grid - responsive layout

sample updates - part I

- after testing this type of responsive layout
 - *we might add various updates*
 - *e.g. create a parent banner area for a header, user login, site search, and site nav*

```
.banner {  
  grid-area: site-banner;  
  display: grid;  
  grid-template-columns: auto 300px;  
  grid-template-rows: 120px 60px;  
  grid-template-areas:  
    "site-header banner-extras"  
    "site-nav site-nav";  
}
```

- helps manage layout and relative sizes of banner content
 - *regardless of page width and height*

CSS3 Grid - responsive layout

sample updates - part 2

- banner-extras might be styled as follows,

```
.banner-extras {  
  grid-area: banner-extras;  
  display: grid;  
  grid-template-areas:  
    "site-user"  
    "site-search";  
  padding: 5%;  
}
```

- use of a child grid helps us manage fixed places within the parent banner area

CSS3 Grid - responsive layout

sample updates - part 3

- update our current media query for a min-width of 900px

```
/* min 900 */
@media (min-width: 900px) {
  .wrapper {
    grid-template-areas:
      "site-banner site-banner"
      "content-side content"
      "site-links site-footer";
    height: 98vh;
    grid-template-columns: 250px 3fr;
    grid-template-rows: 180px auto 60px;
  }
}
```

- demo - responsive layout - part 1
- demo - responsive layout - part 2

CSS3 Grid - auto placement

dynamic content and media - part I

- also use CSS grid with Flexbox to create content layouts
 - e.g. *similar to placing cards in the UI*
- we might create a layout to dynamically render images for a photo album
 - *or a series of products in a brochure &c.*
- start by defining a simple list with various list items

```
<ul class="items">
  <li>One</li>
  <li>Two</li>
  <li>Three</li>
  <li>Four</li>
  <li>Five</li>
  <li>Six</li>
  <li>Seven</li>
  <li>Eight</li>
  <li>Nine</li>
</ul>
```

CSS3 Grid - auto placement

dynamic content and media - part 2

- then render these list items in flexible columns within our grid layout
 - *define a minimum size*
 - *then ensure they expand to equally fill available space*
- ensures rendered layout includes equal width columns regardless of available content

```
/* content items */
.items {
  display: grid;
  grid-gap: 5px;
  grid-template-columns: repeat(auto-fill, minmax(200px, 1fr));
  list-style: none;
}
```

- and render individual items using flexbox

```
.items li {
  border: 1px solid #3b8eb4;
  display: flex;
  flex-direction: column;
}
```

- demo - dynamic content - part 1
- demo - dynamic content - part 2

CSS3 Grids - fun layout

a game board

- also use a grid layout for internal uses
 - e.g. *design a game board*
- basic HTML list use for 3x3 game board
 - *each list item as a square on the board*

```
<main class="content">
  <ul class="items">
    <li>
      <h5>One</h5>
    </li>
    <li>
      <h5>Two</h5>
    </li>
    <li>
      <h5>Three</h5>
    </li>
    <li>
      <h5>Four</h5>
    </li>
    <li>
      <h5>Five</h5>
    </li>
    <li>
      <h5>Six</h5>
    </li>
    <li>
      <h5>Seven</h5>
    </li>
    <li>
      <h5>Eight</h5>
    </li>
    <li>
      <h5>Nine</h5>
    </li>
  </ul>
</main>
```

CSS3 Grids - fun layout

a game board - part 2

- then create the grid for the content class

```
/* CONTENT */
.content {
  grid-area: content;
  display: grid;
  grid-template-areas:
    "items";
  grid-template-columns: 1fr;
  align-self: center;
  justify-self: center;
  align-items: center;
  padding: 50px;
  border: 1px solid #aaa;
}
```

- we can embed this content area within other grids
 - *then add child items for the grid content itself*
- content container will be aligned and justified to the centre of the parent
- each child column will occupy the same proportion of available space
 - *using `grid-template-columns: 1fr`*
- each item will also be aligned to the centre of the available space
- properties such as padding and border are optional
 - *e.g. dictated by aesthetic requirements...*

CSS3 Grids - fun layout

grid items for the board - part I

- each square will be a child list item to the parent `ul`
 - e.g. style `ul` as follows

```
.items {  
  grid-area: items;  
  display: grid;  
  grid-gap: 10px;  
  grid-template-columns: repeat(3, 150px);  
  grid-template-rows: 150px 150px 150px;  
}
```

CSS3 Grids - fun layout

grid items for the board - part 2

- then style each item, which creates the squares on the game board

```
.items li {  
    margin: 0;  
    list-style-type: none;  
    border: 1px solid #333;  
    background-color: #333;  
    color: #fff;  
    padding: 10%;  
}
```

- styling is for aesthetic purposes
 - e.g. to render a list item as a square without the default list style
- also define an alternating colour scheme for our squares, e.g.

```
.items li:nth-child(even) {  
    border: 1px solid #ccc;  
    background-color: #ccc;  
    color: #333;  
}
```

- demo - Fun with Squares

CSS3 Grid - structure and layout

fun exercise

Choose one of the following app examples,

- **sports** website for latest scores and updates
 - *e.g. scores for current matches, statistics, team data, player info &c.*
- **shopping** website
 - *product listings and adverts, cart, reviews, user account page &c.*
- **restaurant** website
 - *introductory info, menus, sample food images, user reviews &c.*

Then, consider the following

- use of a **grid** to layout your example pages
 - *where is it being used?*
 - *why is it being used for a given part of the UI?*
- how is the defined **grid** layout working with the **box model**?
- rendering of **box model** in the main content relative to **grid** usage
 - *i.e. box model updates due to changes in content*

CSS - Flexbox

intro

- helps solve many issues that have continued to plague layout and positioning
- used with HTML elements and components
 - *both client-side and cross-platform apps*
- a few issues it tries to solve
 - *vertical and horizontal alignment*
 - *defining a centred position for child elements relative to their parent*
 - *equal spacing and proportions for child nodes regardless of available space*
 - *equal heights and widths for varied content*
 - *& lots more...*

CSS - Flexbox

basic usage

- for any app layout, we need to define specific elements as *flexible boxes*
- i.e. those allowed to use flexbox in a given app
 - e.g.

```
section {  
  display: flex;  
}
```

- ruleset will define a `section` element as a parent flex container
 - *child elements may now accept flex declarations*
- initial declaration, `display: flex`
 - *also includes default values for flexbox layout of child elements*
- e.g. `<div>` elements in a section
 - *by default now arranged as equal sized columns with the same initial height*

CSS - Flexbox

axes

- elements arranged using flexbox are laid out on two axes
- main axis
 - *axis running in the direction of the currently laid out flex items*
 - *e.g. rows or columns*
 - *start and end of axis = main start & main end*
- cross axis
 - *axis running perpendicular to the current main axis*
 - *start and end of axis = cross start & cross end*
- each child element laid out inside flex container called a *flex item*

CSS - Flexbox

flex direction

- set a property for the flex direction
 - *defines direction of flex items relative to main axis*
 - *i.e. layout direction for child elements*
- default setting is `row`
 - *direction will be relative to current browser language setting*
 - *e.g. for English language browsers = left to right*

```
section {  
  flex-direction: column;  
}
```

- override the default `row` setting
 - *arrange child items in a column*

```
section {  
  display: flex;  
  flex-direction: column;  
}
```

- ensures child flex items were laid out in a single column
- then override specific `section` elements
 - *allow child flex items in a `row` direction*

```
#tabs {  
  flex-direction: row;  
}
```

Image - CSS Flexbox

flex direction

spire and the signpost

Lorem Ipsum Dolor

Get Distance

footer tab 1

footer tab 2

footer tab 3

CSS Flexbox - flex direction

CSS - Flexbox

flex item wrapping

- ensure child items do not overlap their parent flex container
 - *add a declaration for `flex-wrap` to a required ruleset*
 - e.g.

```
#tabs {  
  flex-direction: row;  
  flex-wrap: wrap;  
}
```

Image - CSS Flexbox

without wrap

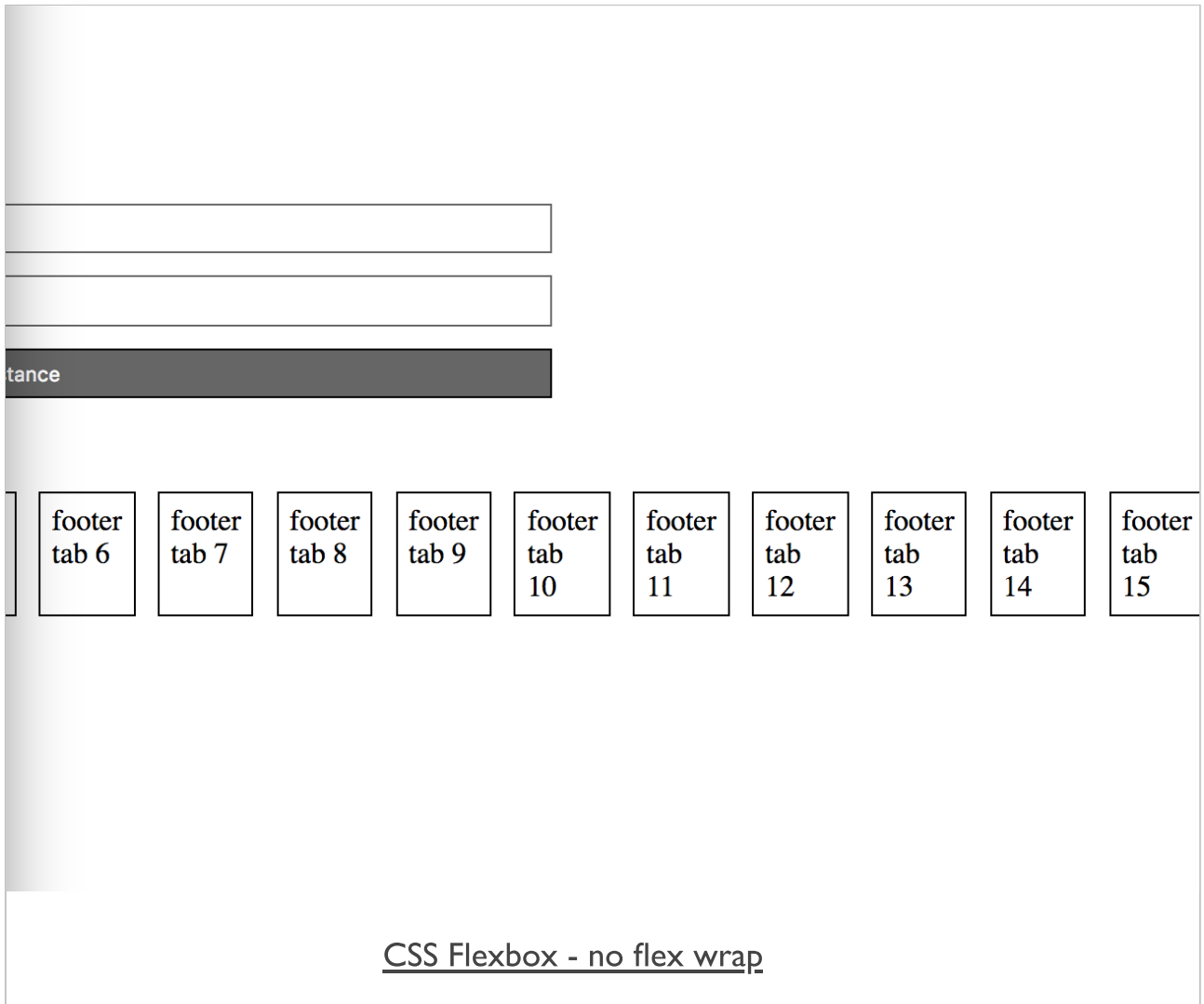


Image - CSS Flexbox

with wrap

spire and the signpost

Lorem Ipsum Dolor

Get Distance

footer tab 1 footer tab 2 footer tab 3 footer tab 4 footer tab 5 footer tab 6

footer tab 7 footer tab 8 footer tab 9 footer tab 10 footer tab 11

footer tab 12 footer tab 13 footer tab 14 footer tab 15

CSS Flexbox - flex wrap

CSS - Flexbox

flex direction reverse

- also set flex direction to reverse
 - *starts flex items from the right on an English language browser*

```
#tabs {  
  flex-direction: row-reverse;  
  flex-wrap: wrap;  
}
```

Image - CSS Flexbox

flex direction reverse

spire and the signpost

Lorem Ipsum Dolor

Get Distance

footer tab 6	footer tab 5	footer tab 4	footer tab 3	footer tab 2	footer tab 1
footer tab 11		footer tab 10	footer tab 9	footer tab 8	footer tab 7
		footer tab 15	footer tab 14	footer tab 13	footer tab 12

CSS Flexbox - flex direction reverse

CSS - Flexbox

flex-flow shorthand

- also combine *direction* and *wrap* into a single declaration
 - *flex-flow*
 - now contain values for both *row* and *wrap*
 - e.g.

```
#tabs {  
  flex-flow: row wrap;  
}
```


CSS - Flexbox

sizing of flex items

- for each flex item, we may need to specify apportioned space in the layout
 - e.g. *set space as an equal proportion for each flex item*
 - *we may add the following to a child item ruleset*

```
div.fTab {  
  flex: 1;  
}
```

- defines each child flex item `<div class="fTab">`
 - *occupy an equal amount of space within the given row*
 - *after considering margin and padding*
- **n.b.** this value is proportional
 - *doesn't matter if the value is 1 or 100 &c.*
- define additional flex proportions for specific child items
 - e.g.

```
div.fTab:nth-child(odd) {  
  flex: 2;  
}
```

- each odd *flex-item* will now occupy twice available space
 - *space in the current direction*

Image - CSS Flexbox

flex item sizing

spire and the signpost

Lorem Ipsum Dolor

Get Distance

footer tab 1

footer
tab 2

footer tab 3

footer
tab 4

footer tab 5

footer
tab 6

footer tab 7

CSS Flexbox - flex item sizing

CSS - Flexbox

minimum size

- then set a minimum size for a flex item
 - e.g.

```
div.fTab {  
  flex: 1 100px;  
}
```

- or a relative unit for the size

```
div.fTab {  
  flex: 1 20%;  
}
```

- each flex item will initially be given a minimum
 - e.g. *20% of the available space*
 - *the remaining space will be defined relative to proportion units*

Image - CSS Flexbox

flex item sizing

spire and the signpost

Lorem Ipsum Dolor

Get Distance

footer
tab 1

footer tab 2

footer
tab 3

footer tab 4

footer
tab 5

footer tab 6

footer tab 7

CSS Flexbox - flex item sizing - minimum size

CSS - Flexbox

flex item alignment

- Flexbox allows us to define alignment for flex items in each flex container
 - *relative to the main and cross axes*
- e.g. we might want to specify a centred alignment for flex items

```
#tabs {  
  flex-direction: row;  
  flex-wrap: wrap;  
  align-items: center;  
}
```

- `align-items: center`
 - *causes flex item in flex container to be centred along the cross axis*
 - *however, they'll still maintain their basic dimensions*
- also modify value for `align-items` to either `flex-start` or `flex-end`
- such values will align flex items to either start or end of cross axis

CSS - Flexbox

override align per flex item

- as with `flex`
 - *also override alignment per flex item*
 - *using `align-self` property add a value for positioning*
- e.g. a sample declaration might be as follows

```
div.fTab:nth-child(even) {  
  flex: 2;  
  align-self: flex-end;  
}
```

CSS - Flexbox

justify content for flex item

- also specify `justify-content` for flex items in a flex container
 - *property allows us to define position of a flex item relative to main axis*
- default value is `flex-start`
- then modify it relative to one of the following
 - *flex-end*
 - *center*
 - *space-around*
 - distributes each flex item evenly along main axis with space at either end
 - *space-between*
 - same as `space-around` without space at either end...

CSS - Flexbox

alignment and order - part I

- define alignment relative to each axis using a specific declaration
 - e.g. for the main we may use *justify-content*
 - for the cross axis we use *align-items*
- also modify layout order of flex items
 - without directly changing underlying source order
- use the following pattern to specify order

```
div.fTab:first-child {  
  order: 1;  
}
```

- first flex item will now move to the end of the tab list

Image - CSS Flexbox

flex item order

spire and the signpost

Lorem Ipsum Dolor

Get Distance

footer tab 2

footer
tab 3

footer tab 4

footer
tab 5

footer tab 6

footer
tab 7

footer
tab 1

[CSS Flexbox - flex item order I](#)

CSS - Flexbox

alignment and order - part 2

- due to default order for flex items
 - *by default, all flex items have an `order` value set to 0*
- higher the `order` value, later the item will appear in the list &c.
- items with the same order will revert to the order in the source code
- also possible to ensure certain items will always appear first
 - *or at least before default `order` values*
 - *by using a negative value for the `order` declaration*
 - e.g.

```
div.fTab:last-child {  
  order: -1;  
}
```

CSS - Flexbox

nesting flex containers and items - part I

- Flexbox can also be used to create nested patterns and structures
 - e.g. we may set a flex item as a flex container for its child nodes
- we might add a banner to the top of a page

```
<section id="banner">
  <header id="page-header">
    <h3>spire and the signpost</h3>
    <h5>point to the stars...</h5>
  </header>
  <section id="search">
    <input type="text" id="searchBox"/>
    <button id="searchBtn">Search</button>
  </section>
</section>
```

CSS - Flexbox

nesting flex containers and items - part 2

- set #banner, #page-header, and #search as flex containers
 - e.g.

```
#search {  
  display: flex;  
}
```

- then specify various declarations for #search
 - e.g.

```
#search {  
  display: flex;  
  flex-direction: row;  
  flex: 2;  
  align-self: flex-start;  
}
```

- includes values for itself and any child elements
 - *if we then add some rulesets for the nested flex items*
 - e.g.

```
#searchBox {  
  flex: 4;  
}  
  
#searchBtn {  
  flex: 1;  
}
```

- we get a simple proportional split of 4 : 1 for the input field to the button

Image - CSS Flexbox

nested flex containers

spire and the signpost

Search

point to the stars...

Get Distance

footer tab 7

footer tab 2

footer tab 3

footer tab 4

footer tab 5

footer tab 6

footer tab 1

CSS Flexbox - nested flex containers

Demos

CSS - Grid

- grid basic - page zones and groups
- grid basic - article style page
- grid layout - articles with scroll
- grid layout - basic responsive
- grid layout - responsive with specific media query
- grid layout - responsive layout - part 1
- grid layout - responsive layout - part 2
- grid layout - dynamic content - part 1
- grid layout - dynamic content - part 2
- grid layout - Fun with Squares

Resources

- [MDN - CSS3 Grid](#)
- [MDN - CSS Flexbox](#)
- [W3 Schools - CSS Grid View](#)
- [W3 Schools - CSS Flexbox](#)