HTML5 and CSS3

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Last week...

Form // container for forms

Input attributes // name, type, value etc.

attribute makes input what it is

Input types

- Radiobuttons // one choice
- Checkboxes // multible choices

Select // dropdown with options

- Textarea // text input for longer texts
- Labels // <label for="input_id">
  <input id="input_id">
- Submitting // button, input –
  type="submit"

This session:

Units

Semantic HTML

Metadata

Responsive page

Display

Flexbox

Units

Absolute Lengths

Unit	Description
cm	centimeters
mm	millimeters
in	inches (1in = 96px = 2.54cm)
px *	pixels (1px = 1/96th of 1in)
pt	points (1pt = 1/72 of 1in)
pc	picas (1pc = 12 pt)

* Pixels (px) are relative to the viewing device. For low-dpi devices, 1px is one device pixel (dot) of the display. For printers and high resolution screens 1px implies multiple device pixels.

Relative Lengths

Unit	Description
em	Relative to the font-size of the element (2em means 2 times the size of the current font)
ex	Relative to the x-height of the current font (rarely used)
ch	Relative to width of the "0" (zero)
rem	Relative to font-size of the root element
vw	Relative to 1% of the width of the viewport*
vh	Relative to 1% of the height of the viewport*
vmin	Relative to 1% of viewport's* smaller dimension
vmax	Relative to 1% of viewport's* larger dimension
%	Relative to the parent element

* Viewport = the browser window size. If the viewport is 50cm wide, 1vw = 0.5cm.

EM vs REM vs PX

Both rem and em are relative units,

px is absolute unit.

https://www.w3schools.com/cssref/css_pxtoemconversion.asp

https://zellwk.com/blog/rem-vs-em/

Select your body font size

Conversions based on 16px browser default size

Pixels	EMs	Percent	Points
6px	0.375em	37.5%	5pt
7px	0.438em	43.8%	5pt
8px	0.500em	50.0%	6pt
9px	0.563em	56.3%	7pt
10px	0.625em	62.5%	8pt
11px	0.688em	68.8%	8pt
12px	0.750em	75.0%	9pt
13px	0.813em	81.3%	10pt
14px	0.875em	87.5%	11pt
15px	0.938em	93.8%	11pt
16px	1.000em	100.0%	12pt
17px	1.063em	106.3%	13pt
18px	1.125em	112.5%	14pt
19px	1.188em	118.8%	14pt
20px	1.250em	125.0%	15pt
21px	1.313em	131.3%	16pt
22px	1.375em	137.5%	17pt
23px	1.438em	143.8%	17pt
24px	1.500em	150.0%	18pt

http://pxtoem.com/

Semantic HTML

Semantic HTML5

<header> - Defines a header for a document or a section

<nav> - Defines a container for navigation links

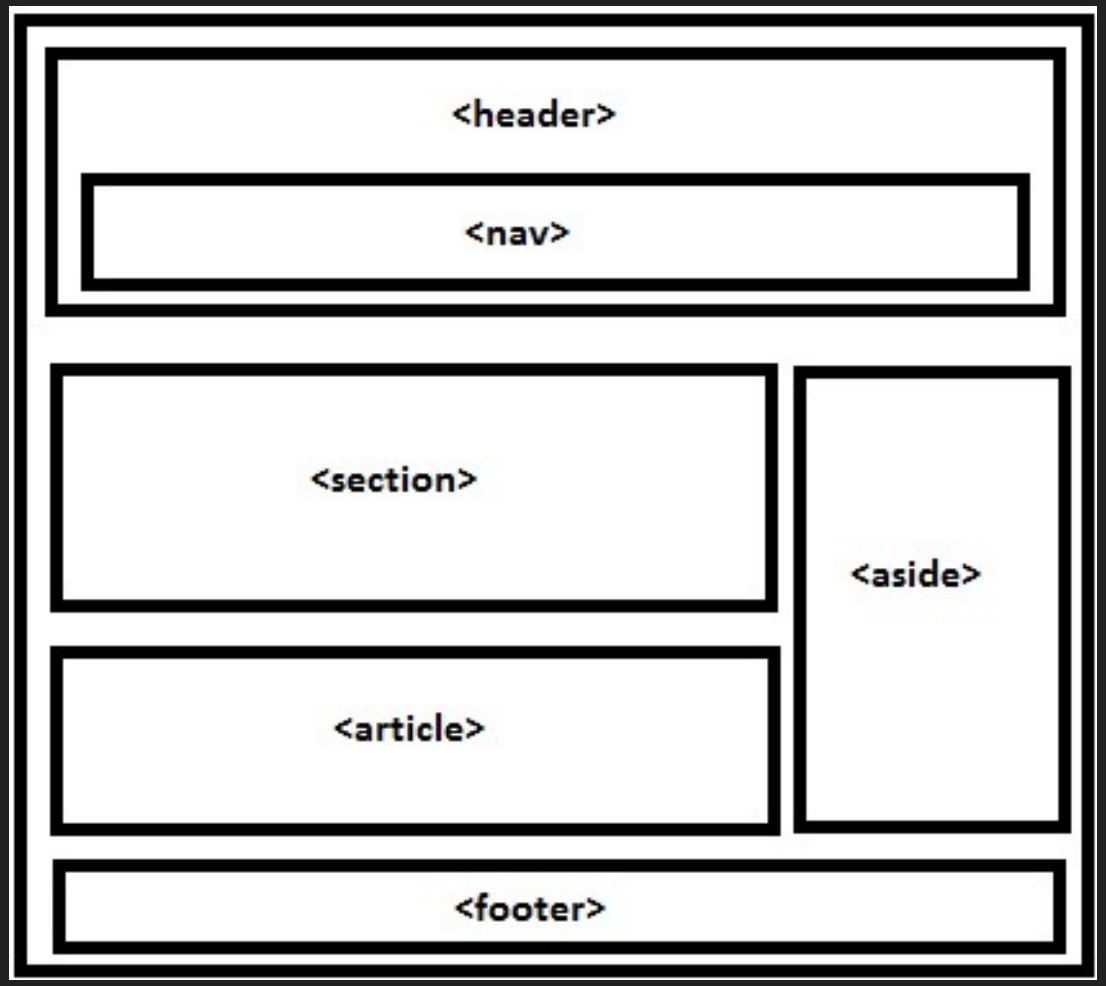
<section> - Defines a section in a document

<article> - Defines an independent self-contained article

<aside> - Defines content aside from the content (like a sidebar)

<footer> - Defines a footer for a document or a section

HTML5 offers semantic elements that define the different parts of a web page


<header>
<nav>
<section>
<aside>
<article>
<footer>

Section or article?

The <section> tag defines sections in a document, such as chapters, headers, footers, or any other sections of the document

A section is a thematic grouping of content, typically with a heading.

A home page could normally be split into sections for introduction, content, and contact information.

Section or article?

The <article> tag specifies independent, self-contained content.

An article should make sense on its own and it should be possible to distribute it independently from the rest of the site.

Potential sources for the <article> element:

- Forum post
- Blog post
- News story
- Comment

Aside

The <aside> tag defines some content aside from the content it is placed in.

The aside content should be related to the surrounding content.

It was widely used as left or right side menu.

Older browsers support

HTML5 semantic elements need a specific CSS styling in older browser that don't support them explicitly.

Unknown elements are styled as **display:inline** by default, so you'll want to set them to **display: block**

Metadata

Meta tags

<meta> tags always go inside the <head> element

Most needed/used meta tags:

- character encoding
- viewport
- title
- description
- author (optional)
- keywords (optional)

Metadata is data (information) about data

Meta - character encoding

Most used:

- UTF-8 - Character encoding for Unicode (default for HTML5)
- ISO-8859-1 - Character encoding for the Latin alphabet

```
<meta charset="UTF-8" />
```

https://www.w3schools.com/charsets/ref_html_utf8.asp

Meta - viewport

A <meta> viewport element gives the browser instructions on how to control the page's dimensions and scaling.

The width=device-width part sets the width of the page to follow the screen-width of the device (which will vary depending on the device).

The initial-scale=1.0 part sets the initial zoom level when the page is first loaded by the browser.

```
<meta name="viewport" content="width=device-width, initial-scale=1.0" />
```

https://developer.mozilla.org/en-US/docs/Mozilla/Mobile/Viewport_meta_tag

Meta - description

The meta description is an HTML attribute that provides a brief summary of a web page. Search engines such as Google often display the meta description in search results, which can influence click-through rates.

```
<meta name="description" content="Free Web tutorials on HTML and CSS">
```

https://moz.com/learn/seo/meta-description

Meta – author and keywords

```
<meta name="author" content="John Doe" />

<meta name="keywords" content="HTML, CSS, XML, XHTML, JavaScript">
```

All together:

```
<head>
   <meta charset="UTF-8" />
   <meta name="viewport" content="width=device-width, initial-scale=1.0" />
   <meta name="description" content="Free Web tutorials on HTML and CSS" />
   <meta name="author" content="John Doe" />
   <meta name="keywords" content="HTML, CSS, XML, XHTML, JavaScript" />
   <title>My first homepage</title>
</head>
```

Responsive webpage

Mobile first approach

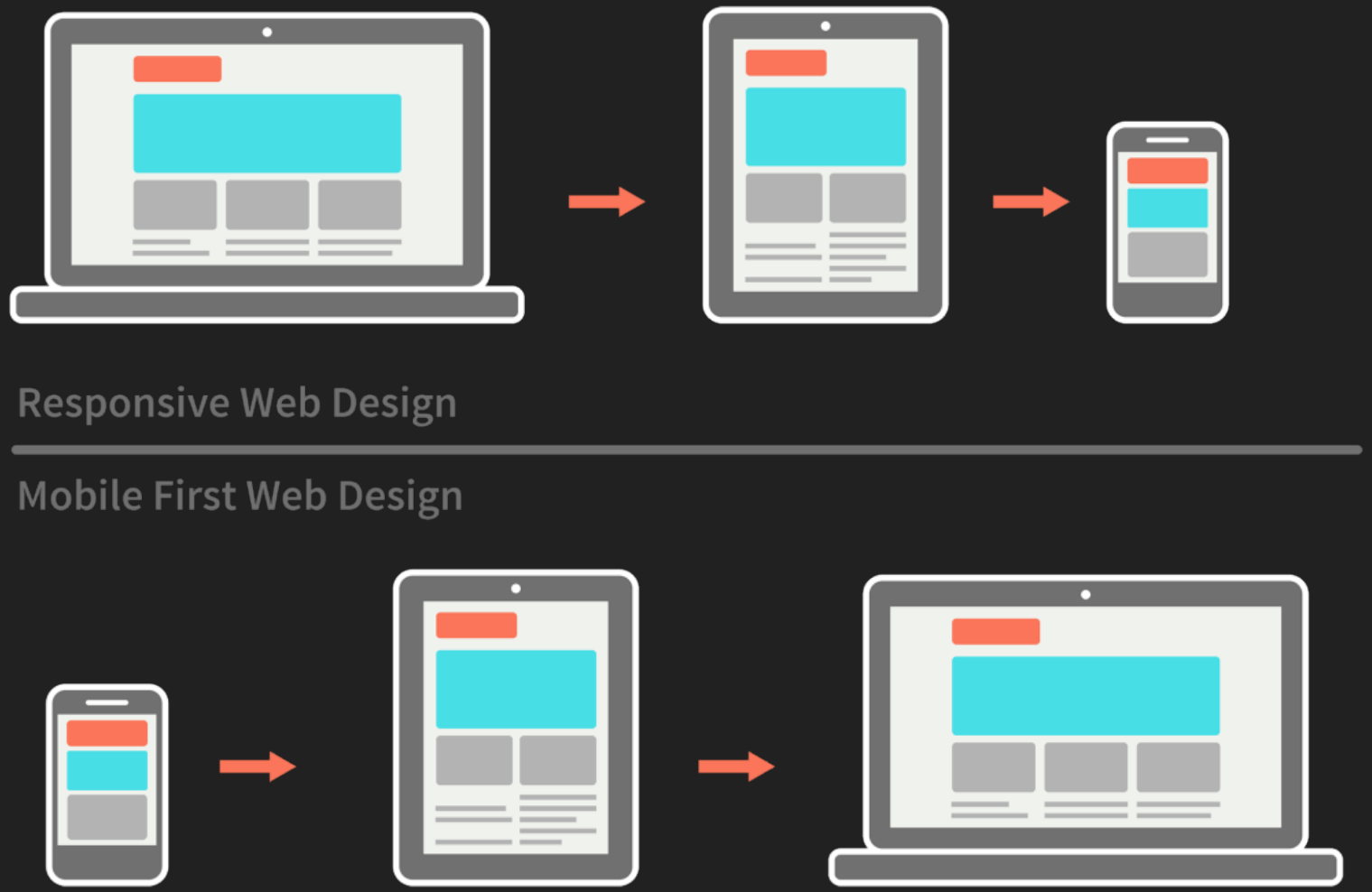
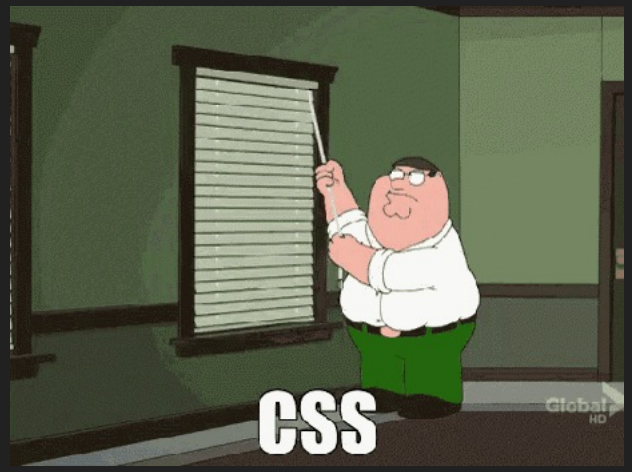


Image source: http://fredericgonzalo.com/en/2017/03/01/understanding-the-difference-between-mobile-first-adaptive-and-responsive-design/

Responsive Web Design

Responsive Web Design is about using HTML and CSS to automatically resize, hide, shrink, or enlarge, a website, to make it (desktops, tablets, and phones)

Responsive web design with CSS



Viewport

```
<meta name="viewport" content="width=device-width, initial-scale=1.0">
```

A <meta> viewport element gives the browser instructions on how to control the page's dimensions and scaling.

The **width=device-width** part sets the width of the page to follow the screen-width of the device (which will vary depending on the device).

The **initial-scale=1.0** part sets the initial zoom level when the page is first loaded by the browser.

The viewport is the user's visible area of a web page

Media Queries

```
@media screen and (max-width: 480px) {
  body {
    background-color: lightgreen;
  }
}
```

Media queries and breakpoints

```
/* Extra small devices (phones, 600px and down) */
@media only screen and (max-width: 600px) {...}

/* Small devices (portrait tablets and large phones, 600px and up) */
@media only screen and (min-width: 600px) {...}

/* Medium devices (landscape tablets, 768px and up) */
@media only screen and (min-width: 768px) {...}

/* Large devices (laptops/desktops, 992px and up) */
@media only screen and (min-width: 992px) {...}

/* Extra large devices (large laptops and desktops, 1200px and up) */
@media only screen and (min-width: 1200px) {...}
```

Task

Make webpage which background color changes when you change device.

Use Chrome Web Developer tool for checking different devices.

Breakpoints:

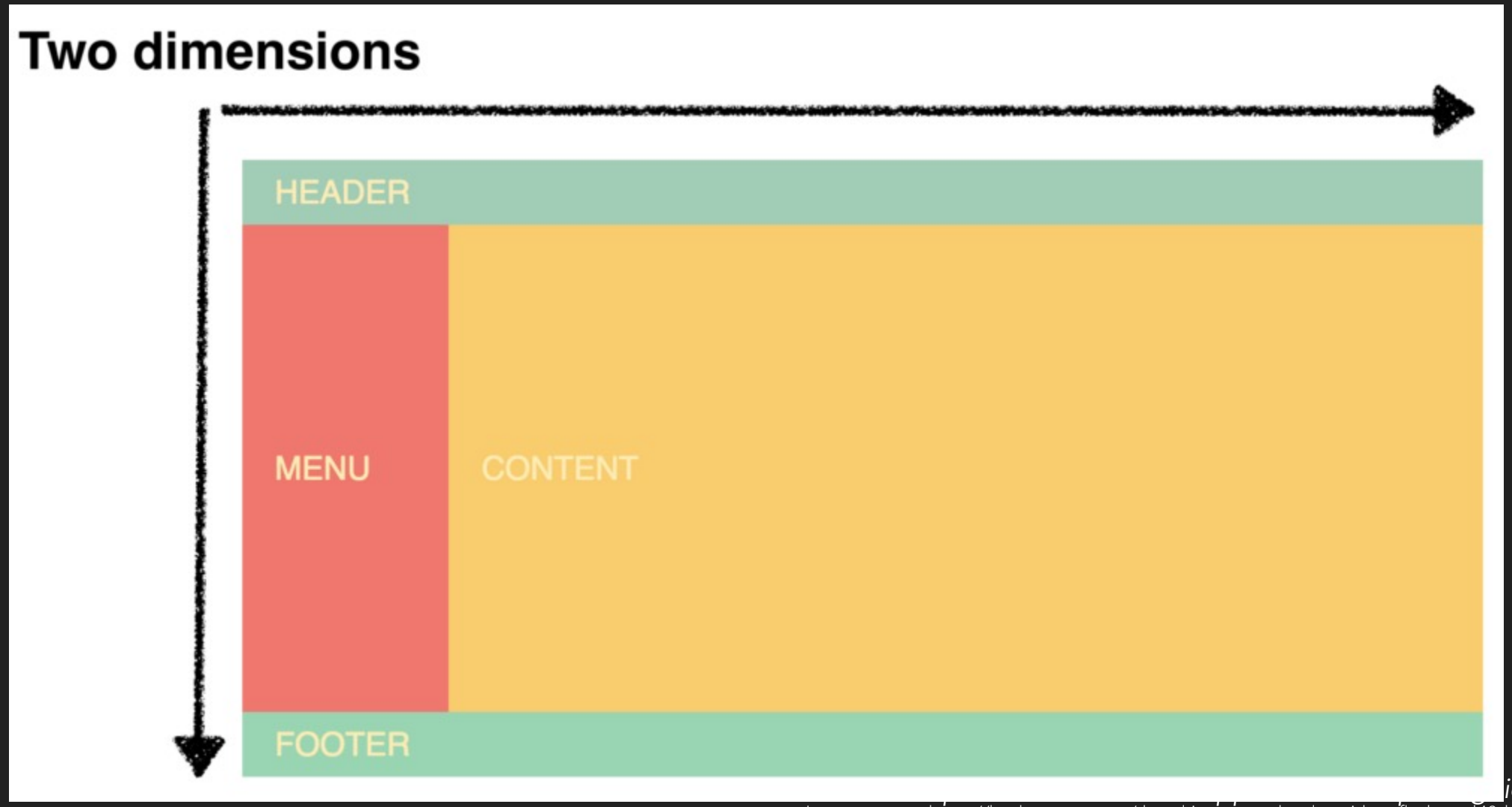
- Mobile - iPhone 5/SE
- Tablet – iPad

Flexbox

Display: flex;

https://css-tricks.com/snippets/css/a-guide-to-flexbox/

Display: grid;



ide-grid/

Image source: https://hackernoon.com/the-ultimate-css-battle-grid-vs-flexbox-d40da0449faf

Display: flex;

Parent properties

- flex-direction
- flex-wrap
- justify-content
- align-items
- align-content

Children properties

- flex
- order
- align-self

https://css-tricks.com/snippets/css/a-guide-to-flexbox/

Task

Let’s see what we can do with flex

Homework

https://flexboxfroggy.com/

Portfolio 4

HTML

- Metadata
- Cards for the project section
  - image
  - third level heading
  - paragraph for description
  - read more link

CSS

- Absolute units to relative units where it makes sense (px to rem and vh/vw)
- Display:flex in header, projects and footer
- Project cards stying
- Make support to iPhone SE
- Make support to iPad
- Clean code!

Flex challenge