Advanced CSS

Responsive design, animations, transitions, frameworks, approaches, preprocessors…

Responsive

History

Most people think that the term "Responsive Web Design" came from this article here

It was posted on A List Apart on May 25, 2010 and written by Ethan Marcotte (twitter and personal website)

What was it in response to?

> *Aim for eternity - Christopher Wren*

> *We can't break the web*

Making things future-proof

What is it?

Well, firstly, what is the web?

Designing websites that respond to the needs of users and the devices that they are using

Responsive websites respond to their environments

What is it?

Adaptive

Multiple fixed width layouts

Responsive

Multiple fluid grid layouts

Approaches

- Content-first design
- Mobile-first design
- Desktop-down design

Key Components

- Viewports
- Fluid sizing of elements
- Grids
- Units
- Media Queries
- (frameworks etc.)

Viewports

What is it?

The viewport is the user's visible area of a webpage

Why does it exist?

When mobile devices first got popular, fixed size web pages were scaled down so the entire web page would fit on the screen.

Viewports

Add this in your head element!

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

<!-- width sets the actual width -->
<!-- initial-scale sets the initial zoom -->
```

Fluid Sizing of Elements

This just means make the sizing of the elements adapt to the browser.

When adding elements to the page, be careful to not hard-code their sizing.

This could just be the differences between setting widths and max-widths and is particularly important for images.

Grids

Breaking a page down into horizontal segments can make it easy to make sites responsive.

Particularly a responsive grid system! Think Bootstrap's grid system.

Units

- em
- rem
- percentages
- vw
- vh
- vmin
- vmax

em

Historically, this is the width of a capital M character in a typeface

Now, 1em means the current font-size of the element in question.

If you haven't set a font-size, it is probably the browser default.

Why use ems?

- Easy to make responsive
- Can make ratios easier to understand
- Very browser compatible

But, they cascade like crazy!

Rem

Just the same as the em, but they are relative to the root element (the HTML element)

Percentages

Relative to the width, height (if one is set), and font-size of the parent

New CSS3 Units

vw - viewport width

vh - viewport height

vmin - minimum of vw and vh

vmax - maximum of vw and vh

Media Queries

A syntax for attaching styles based on some conditions

```
@media (min-width: 700px) { ... }

@media (min-width: 700px) and (orientation: landscape)

@media (min-width: 700px), handheld and (orientation:

@media only screen and (color) { ... }

@media (not (tv)) { ... }
```

Frameworks / Libraries

- Bootstrap
- Materialize
- Foundation
- BassCSS
- SkeletonCSS
- PureCSS

Preprocessors (and post)

- SASS
- SCSS
- Less
- Stylus
- PostCSS
- PreCSS
- CSSNext

Future of R.W.D

- New styles of Media Queries
- New styles of units
- New attributes for HTML elements (srcset)
- New styles of layouts (CSS Grids, Flexbox etc.)
- Web design for Internet of Things and Wearables
- New web APIs like the Web Audio API
- Future of CSS selectors and some other new features

Web Inspiration

Awwwards
Site Inspire
CSS DSGN
FWA
TypeWolf
Web Creme
Wow Web

One Page Love
Nice Portfolio
Landbook
Mind Sparkle
Hoverstates
Fourzerofour
Codepen

Web Design File
Media Queries
Little Big Details
The Best Designs
CSS Design

Useful Tools

- Screensiz.es
- Mydevice.io
- Google Devices
- Viewport Sizes
- DPI Love
- MQTest.io
- Device and Viewport

Useful Tools

- Google Resizer
- BrowserStack
- Chrome Developer Tools - Responsive
- Chrome Developer Tools - Video Tutorial
- XCode Emulators
- Screenfly
- Ngrok

Useful Tools

- Test my site: Think with Google
- PageSpeed
- Varvy
- ySlow
- Make the web faster

When it comes down to it...

Responsive web design is a bandwagon you will need to jump on to!

Luckily, it is comprised of things you already know!

It will take a long time to get used to, but there are lots and lots of great resources

Advanced CSS

The most boring first

Vendor Prefixing

- For non-standard, experimental features
- Based on drafts of new versions of CSS
- For browser compatibility
    - Can I Use

Vendor Prefixing

How?

Add a prefix!

```css
div {
  -webkit-transition: all 4s;
  -moz-transition: all 4s;
  -ms-transition: all 4s;
  -o-transition: all 4s;
  transition: all 4s;
}
```

Working with prefixes

- How to deal with Vendor Prefixes
- Emmet and Prefixing
- Check what needs to be prefixed
- Autoprefixer

CSS3 added a lot

Box Shadow

- You can add shadow(s) to almost any element
- If you want to add multiple shadows, it will be comma-separated

  Structure

  ```
  box-shadow: offset-x | offset-y | blur-radius | spread-radius | color;
  ```

```
div {
  box-shadow: 2px 2px 2px 2px hotpink;
}
```

Text Shadow

- Works in the same way as box-shadow

```
h1 {
  text-shadow: 2px 2px 2px 2px hotpink;
}
```

Transitions

- The CSS property transition is a shorthand property for a bunch of other things
  - transition-property
  - transition-duration
  - transition-timing-function
  - transition-delay

Transitions

```
div {
  transition: all 0.5s;

  transition: width 0.2s, background 0.3s;

  transition: margin-left 4s linear 1s;
}
```

Animations

Process

- Define your animation
- Add it to an element

Animation

```
@keyframes fade-in-and-out {
  0%   { opacity: 0; }
  100% { opacity: 1; }
}

div {
  animation: fade-in-and-out 5s infinite;
}
```

Animation

```
@keyframes just-keep-spinning {
  0% { transform: rotate(0deg); }
  100% { transform: rotate(360deg); }
}

div {
  animation: just-keep-spinning 3s infinite linear;
}
```

You can add multiple animations by separating them with commas

Libraries for this

There are lots of things that help out with animations...

- Animate.css
- Bounce.js