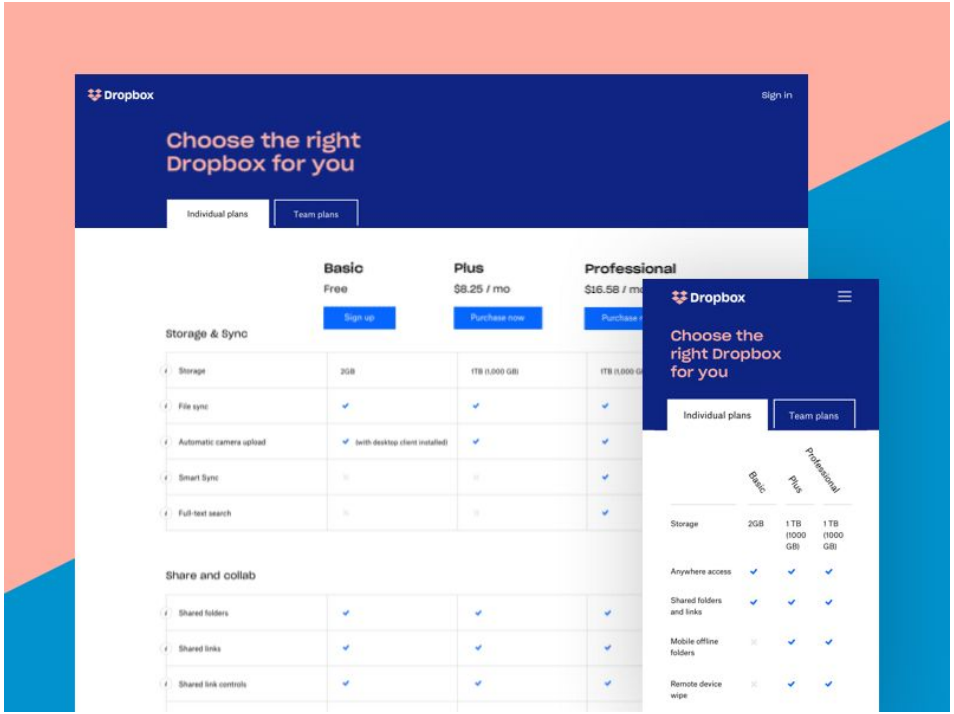
Week 8

Media Queries and Keyframe Animations

Media queries

Why media queries?



We can design how the document is presented across different medias

Is it extra to talk about medias for a web page?
Since it is *just* a web page *for screens*... or really?

screen

for computer screens

print

for printed documents

speech

for speech synthesizers

... and more

Where to place media queries?

Options 1

We can write it inside our CSS files

```
html {
    font-size: 16px;
}

@media screen and (max-width: 600px) {
    html {
        font-size: 14px;
    }
}
```

`@media` is a special directive in CSS that matches media queries

Where to place media queries?

Options 2

We can specify media query when linking CSS file in HTML (it's easier for option 1 though!)

```
<link rel="stylesheet"
      media="screen and (max-width: 600px)"
      href="assets/screen.css">
```

Option 1 -- just CSS with extra steps

```
@media (max-width: 375px) and (max-height: 667px) {
    html {
        background: red;
    }
}
```

"For screens that have a width < 375 pixels and a length < 667 pixels, use these CSS properties in addition to the ones above."

Breakdown

```
@media not|only mediatype
and (expressions) { // CSS Code }
```

Our General Layout

Breakdown

```
@media not|only mediatype
and (expressions) { // CSS Code }
```

Header -- this one tells CSS , ‘Hey I’m declaring some special rules depending on what our device sizes are’

Breakdown

```
@media not|only mediatype
and (expressions) { // CSS Code }
```

Conditional *(optional)* -- declare **not** for these styles apply for everything except the specified resolution. It is set to **only** by default.

Breakdown

```
@media not|only mediatype
and (expressions) { // CSS Code }
```

Media Type *(optional)* -- can be print, screen, or speech, default is ‘all’

Breakdown

```
@media not|only mediatype
and (expressions) { // CSS Code }
```

Expressions - how we define what states the CSS should apply to -- media queries can add or override previous code!

Expressions

Range media features

You can specify a range of values (using min-/max-prefix)

`width`, `height`, `device-width`, `device-height`

...

Discrete media features

There are only a few predefined values for a feature

`orientation`

...

Most Commonly Used

`width, height,`
`min-width, max-width, etc`

Say you would like to match all computer screens no larger than 600px?

```
screen and (max-width: 600px)
```

Make it longer by adding more… and

To match all screens between 200px and 400px in width?

```
screen and (min-width: 200px) and (max-width: 400px)
```

To match the size of an iPad device (the very original one)?

```
screen and (device-width: 768px) and (device-height: 1024px)
```

Say you would like to match all no larger than 600px?

```
all and (max-width: 600px)
```

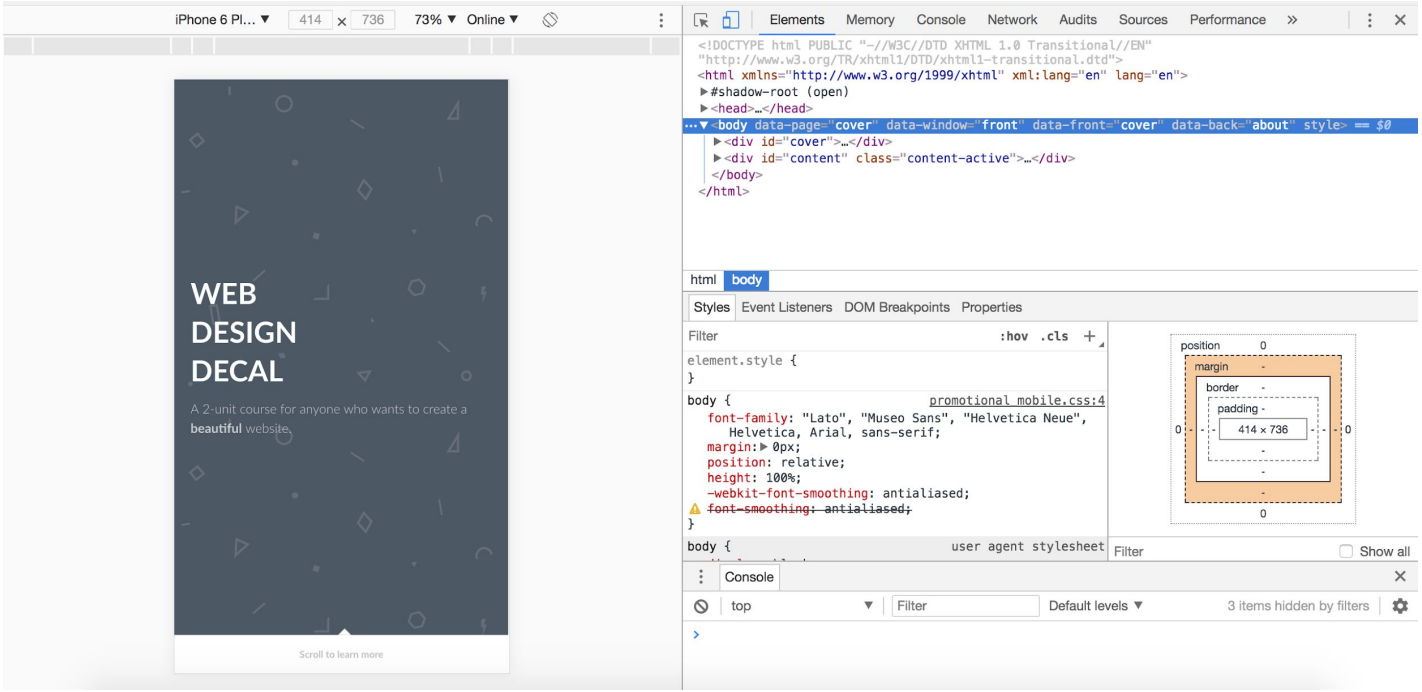
Negate by the media query by prepending... `not`

```
not all and (max-width: 500px)
```

What does this mean?

Demo

tinyurl.com/wdd-mqu



Why web inspector is so great -- see what your website looks like on different devices.

For more info

Media Queries Level 4

Also, flex and grid

Check out flex-wrap & grid layouts

Not many visuals b/c it’s hard to find good examples on dribbble :(but ya know what sites have good media responsiveness

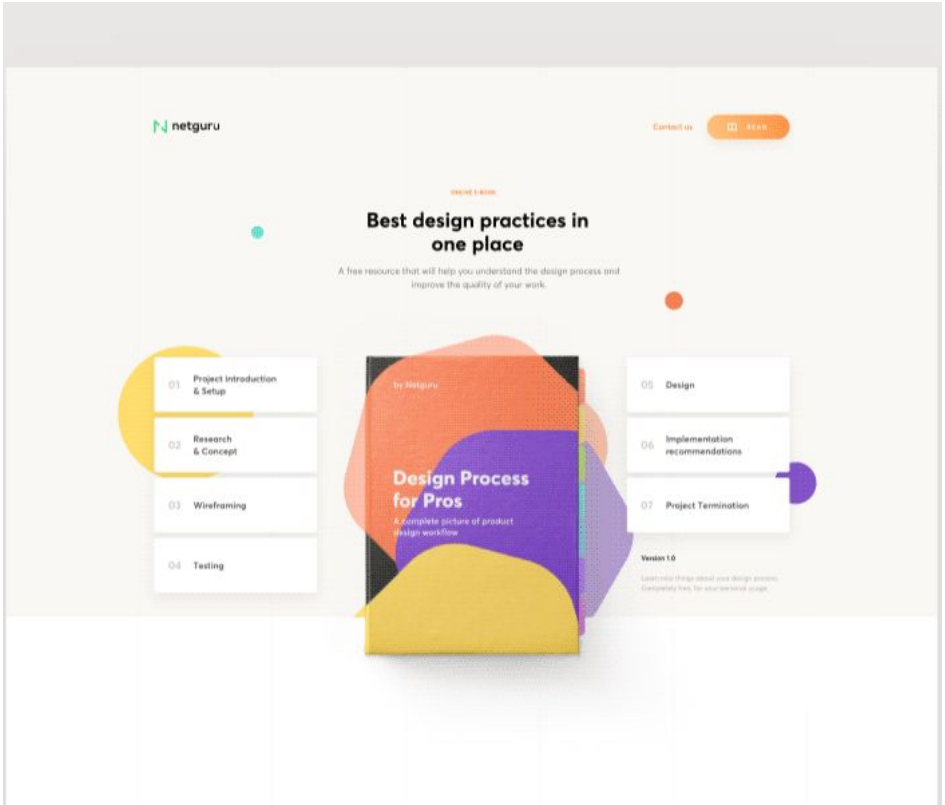
I'm a slut for good plugs

Example site of good media query usage **#ad**

hex.innovativedesign.club

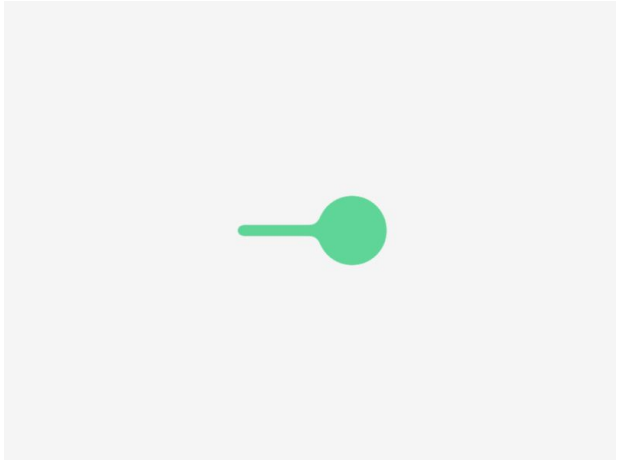
did you know? we're not a part of innovative design lol

Keyframe animations



With animations, we can create really nice, dynamic websites.

Effectively allowing to express our brands or identities in ways we haven't before.



Animation - a change of state over time

What is our starting state? What is our ending state?

Most of which, can be done in CSS.

9:41

Let’s Dive Into Design.

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Curabitur varius nibh non metus pharetra, at consectetur arcu.

Next →

Start: 0%
End: 100%

9:41

Let’s Dive Into Design.

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Curabitur varius nibh non metus pharetra, at consectetur arcu.

Next →

Mid: 50%

9:41

Let’s Dive Into Design.

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Curabitur varius nibh non metus pharetra, at consectetur arcu.

Next →

Notice the differences -- don’t worry about what’s in between

@keyframes

- Similar to the **@media** name
- Format: `@keyframes name {rules}`
- Rules: what to do during animation
- Defining animation to use **later**

```
@keyframes name {
    rules
}
```

Writing rules

- **Using from and to**
- Using percentages [0 - 100]

```
@keyframes fadeIn {
   from { opacity: 0; }
   to { opacity: 1; }
}
```

Writing rules

- Using from and to
- **Using percentages [0 - 100]**

```
@keyframes fadeInOut {
    0% { opacity: 0; }
    50% { opacity: 1; }
    100% { opacity: 0; }
}
```

Writing rules: another example

- Using from and to
- **Using percentages [0 - 100]**

```
@keyframes upDown {
    0% { top: 100px; }
    50% { top: 0px; }
    100% { top: 100px; }
}
```

Application

Using your keyframe

- **Put it in the element of choice**
  - Use the name you chose
- Add optional adjustments

```
@keyframes upDown {
    0% { top: 100px; }
    50% { top: 0px; }
    100% { top: 100px; }
}

#potato-head {
    animation-name: upDown;
}
```

Optional adjustments???

- **Duration**
- Speed curve
- Delay
- Play #
- Direction

```
#potato-head {
    animation-name: upDown
    animation-duration: 0.5s;
    animation-timing-function: ease-in;
    animation-delay: 0s;
    animation-iteration-count: 2;
    animation-direction: reverse;
}
```

Optional adjustments???

- Duration
- **Speed curve**
- Delay
- Play #
- Direction

```
#potato-head {
    animation-name: upDown
    animation-duration: 0.5s;
    animation-timing-function: ease-in;
    animation-delay: 0s;
    animation-iteration-count: 2;
    animation-direction: reverse;
}
```

Optional adjustments???

- Duration
- Speed curve
- **Delay**
- Play #
- Direction

```
#potato-head {
    animation-name: upDown
    animation-duration: 0.5s;
    animation-timing-function: ease-in;
    animation-delay: 0s;
    animation-iteration-count: 2;
    animation-direction: reverse;
}
```

Optional adjustments???

- Duration
- Speed curve
- Delay
- **Play #**
- Direction

```
#potato-head {
    animation-name: upDown
    animation-duration: 0.5s;
    animation-timing-function: ease-in;
    animation-delay: 0s;
    animation-iteration-count: 2;
    animation-direction: reverse;
}
```

Optional adjustments???

- Duration
- Speed curve
- Delay
- Play #
- **Direction**

```
#potato-head {
    animation-name: upDown
    animation-duration: 0.5s;
    animation-timing-function: ease-in;
    animation-delay: 0s;
    animation-iteration-count: 2;
    animation-direction: reverse;
}
```

Animation shorthand

In this order:

- Name
- Duration
- Speed curve
- Delay
- Play #
- Direction

```
#potato-head {
   animation: upDown 0.5s ease-in 0s 2 reverse;
}
```

Stop in final state

Use special property to stop animation in a specific final state

```
#potato-head {
    animation: upDown 0.5s ease-in 0s 2 reverse;
    animation-fill-mode: forwards;
}
```

Demo

tinyurl.com/keyframe-wdd

Solutions: tinyurl.com/keyframe-sol

Transitions: Pseudo-selectors

Responding to a user's action

Use transition property to determine time, speed curve, and pseudo-selector to determine states

Example

```
div:hover { rules }
```

Animations: Keyframes

Continuous and automatically instigated animations

Does not depend on user states, more control over animation and timeframes

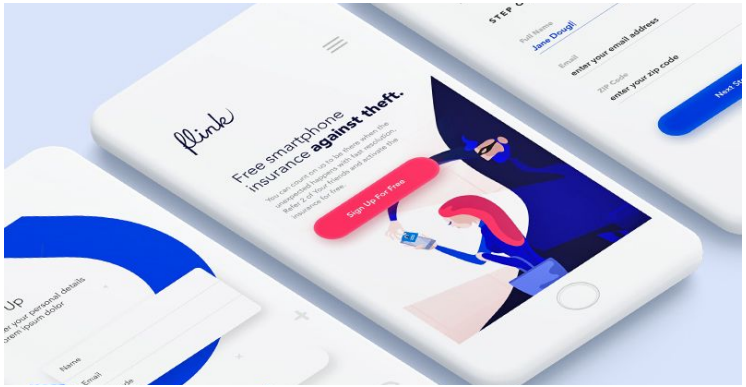
Example

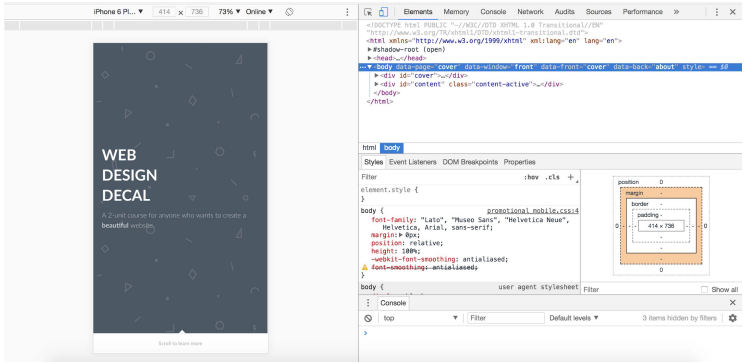
```
div { animation: name }
@keyframe name { rules }
```

Project Spec

After consulting with staff, this semester, we have two solo projects instead of one final project. We will be splitting the grade between the **final project (40%)** into **proj2 (20%)** and **proj3 (20%).**

Project: Mobile First Design





- Redesign a business website of your choice.
- Minimum 6 screens, including the home screen.
- Use 5 distinct keyframe animations and media queries to support the following screens:
  - 1920px by 1080
  - 1168 x 560px
  - 375px by 580px
- **Due in 2 weeks April 15th**
- Will hold extra OH during this time! Come visit us!

Project Spec

Check it out here:

Attendance: sodales

tinyurl.com/wdd-spec