Media Queries

Media Queries

- Media queries allow the style to depend upon the media properties
- CSS 2.1 used media types

```
<link rel="stylesheet”… href="style.css" media="screen" />
<link rel="stylesheet”… href="print.css" media="print" />
```

CSS3

- CSS3 increased the capabilities. Style can depend on many features
  - width, height, orientation, resolution, …
  - Boolean operators can also be applied to increase power

The two query components

1. A media type
   - screen, print, all, …
2. The actual query of a media feature and "trigger" size
   - width, height, orientation, resolution, …

screen and (max-device-width: 480px) and (resolution: 163dpi)

How to implement media queries

- Use the @import rule

```
@import url(smallstyle.css) screen and (min-width:600px)
```

- Put media query directly in the style sheet

```
@media screen and (min-width:500px){..}
```

- Include query in the link

```
<link rel = "stylesheet" media = "screen and (min-width:400px)"> and (orientation: portrait)>
```

Review

```
@media screen and (min-width:500px){
    p.desc {
            display: block;
        font-size: 150%; }
}
@media screen and (min-width:900px){
    p.desc {
            display: inline-block;
        width: 35%;
        font-size:125%; }
}
```

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Wireframes

Wireframes

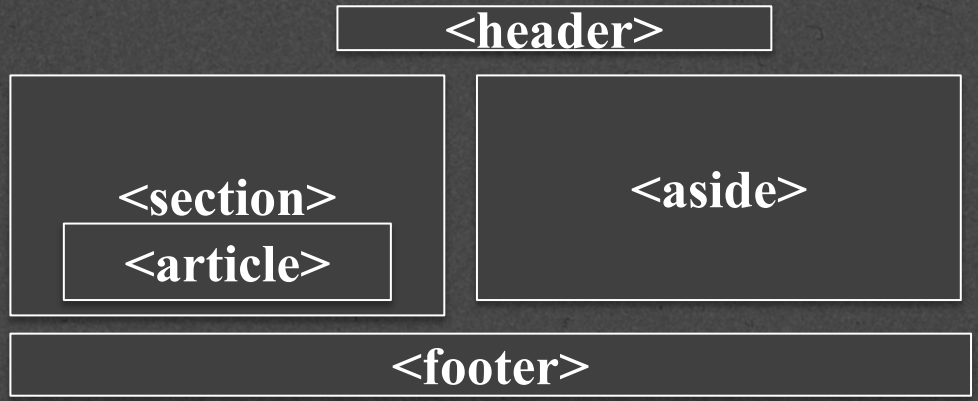
- I have done a bad, bad, thing…
- This lecture should have come earlier in the course, because your layout is one of the first things you should think about.
- Wireframes provide a visual representation of your layout.

Decide on major content

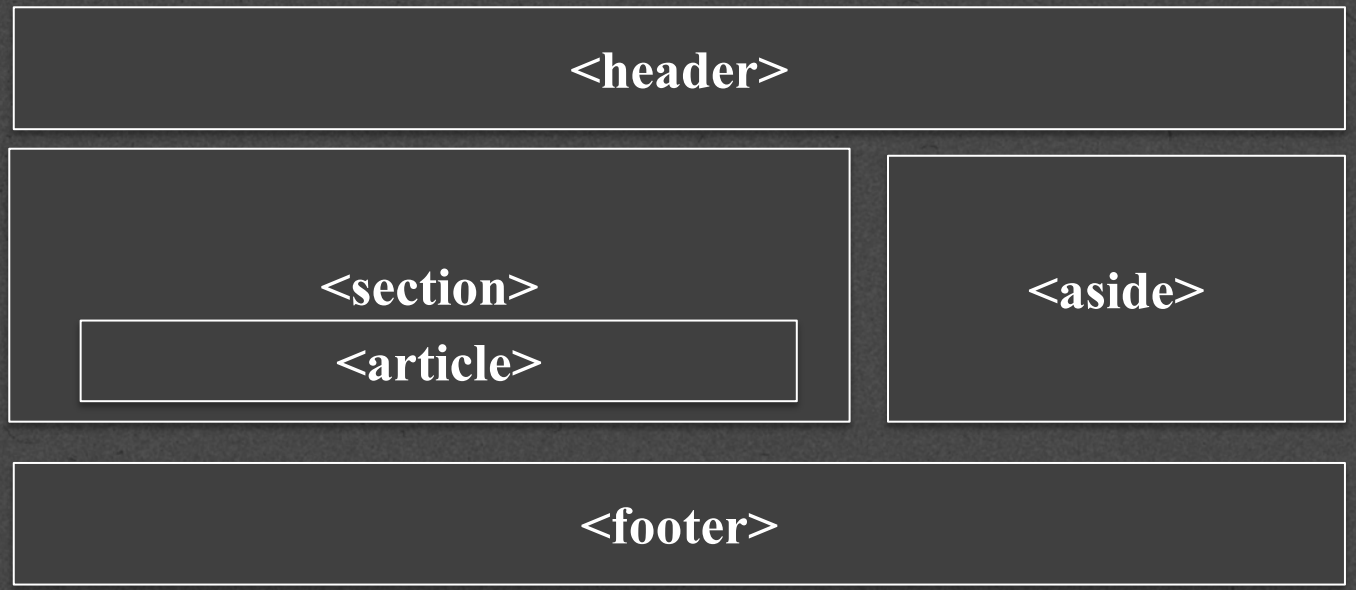
- What content (including graphical) do you NEED to have on the page?
- What is the best layout for this material?

Mobile View

- The most important step in web design is the *design*.
- You need a clear picture of what you want to create, before you can begin coding.



Larger View



Functionality

- The design should be about more than layout.
- It is possible to test the interaction as well (navigation, forms inputs, etc.)

Sketches vs Wireframes

- I recommend starting with a sketch…
- Once you have initial feedback, move to wireframe
- http://www.dtelepathy.com/blog/design/learning-to-wireframe-10-best-practices

Sketches vs Wireframes

- I recommend starting with a sketch…
- Once you have initial feedback, move to wireframe
- Wireframing: 10 Best Practices and Guidelines

Review

- When you are beginner, coming up with a design plan can be more difficult, because you don't have a client to give you feedback.
- Another challenge is keeping things simple/changeable
- If you would like to focus on design, it is still important to understand the basics of coding.

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Breakpoints

Breakpoints

- What are they?
  - Sizes that define a change in your site layout or content.
- What are they used for?
  - To provide best possible experience for users based on device information.

What does “trigger” mean

- People may use the phrase “breakpoints trigger changes”.
- To be honest, most people don’t resize their window.
- So I will use breakpoints to refer to which rules are applied.

Determining the Breakpoints

- Breakpoints should correspond to:
  - devices and/or
  - content

Common Breakpoints

- Because device sizes change, you shouldn't design for a specific device, but testing on existing sizes is helpful.
- You can use Inspect Element to do this.

Mobile first

- What does this mean?
  - You shouldn't see breakpoints for small screens. The default styling already covers that.
  - You should have min-width instead of max-width.

Beyond Viewport Sizes

- Responsive is based on more than screen size
  - Orientation
  - Resolution
  - Accessibility preference (prefers reduced motion)
  - Device preferences (color schemes, battery mode)

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Media Queries

Part Two

Easier Watched than Done

- Using/understanding media queries is key to responsive design.
- This lecture will describe the process in three steps

Step 1: Grab information

- The meta viewport tag tells mobile browser's viewport how to behave.

```
<meta name = 'viewport' content='width=device-width,
initial-scale=1'>
```

- Disallow zooming:

```
<meta name = 'viewport' content='width=device-width,
initial-scale=1, maximum-scale = 1'>
```

Step 2: Fluid layout

- If you use breakpoints, some absolute measurements are not unusual.
- percentages vs ems
  - ems are measurement of typography. 1em is width of one letter M in current typeface.
- paddings and margins affected by width, not height

Step 3: Media queries

- Fluid layout that is triggered by certain sizes.
- Design for small screen and work bigger.
  - Some sites strip out information, hiding certain aspects of the site that they deem less important. There are two issues with this.
    - penalizes mobile users browsing the website
    - doesn't mean the content doesn't get downloaded-this can affect performance

Ordering your rules

```
@media only screen and (min-width: 1024px) {
        body{ background: blue; }
}
@media only screen and (min-width: 780px) {
        body{ background: yellow; }
}
body{ background: green; }
```

RD: Media Queries Part 2

Concept Check

- Should your media queries be at the top or bottom of the page?
- Trick question - depends upon if you are using max-width or min-width
- Assuming min-width, put the rules on the bottom.

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