

# Web Dev I

An Introduction to Web Development  
By Chase Haddleton

# A Little Bit About Me

- Full time student
- Full-stack dev
- Full time coffee addict
- Favourite front-end framework: React.js

# What're We Talking About

- Client-server model
- Hypertext Markup Language (HTML)
- Cascading Style Script (CSS)
- JavaScript (JS, this will be discussed in brief)
- Variety of web frameworks

# What's Outside The Scope

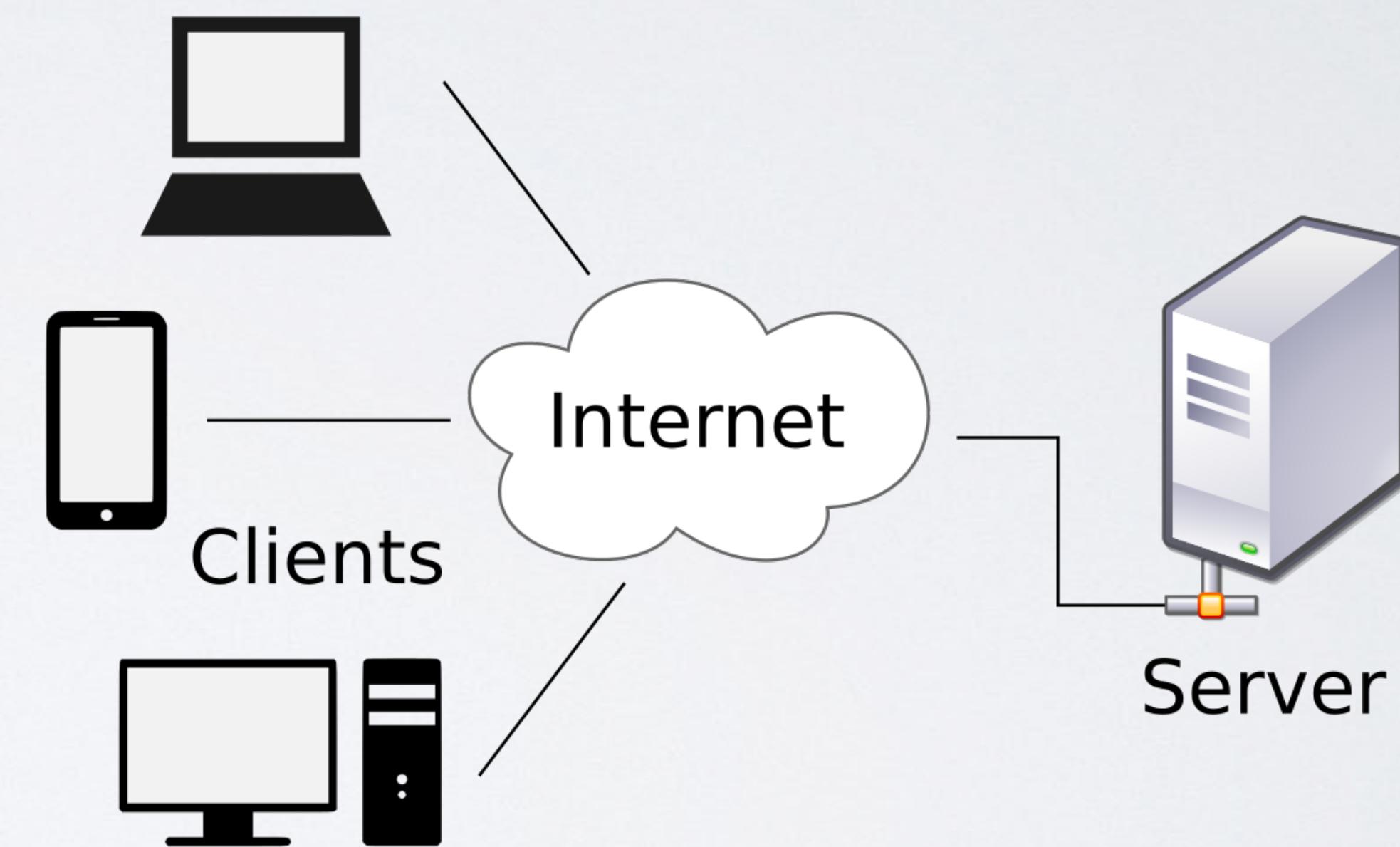
- UI/UX design
- The finer details
- Semantic HTML
- Search Engine Optimization
- CSS pre-processors (SASS, LESS, Stylus, etc)

# Our Approach

- Challenge-based learning
- Engage—What are the big concepts?
- Investigate—I want to do X, but I need to know Y
- Act—I know X, I know Y, now I can build

# How Does The Web Work?

- Clients: Devices who want data
- Internet: A bunch of pipes
- Servers: Devices with data



# Specifics For Us

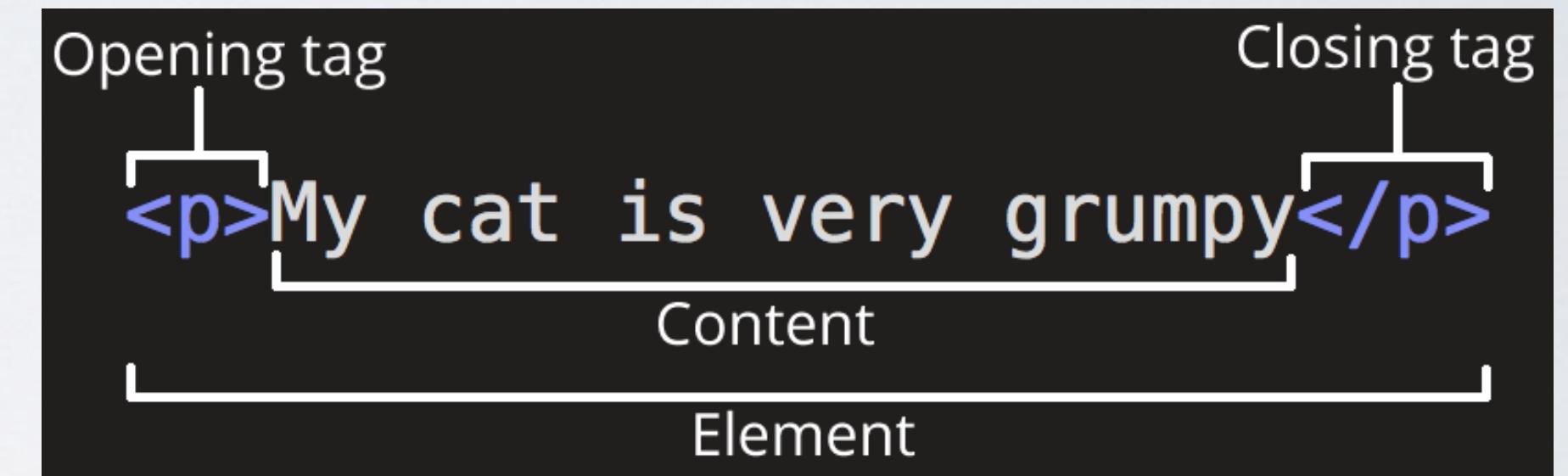
- Clients are humans using a computer or mobile device
- Servers are *Hypertext Transfer Protocol* (HTTP) servers
- The data are web pages

# What Are Web Pages Made Of?

- HTML defines the *structure* and *content* on the page
- CSS defines the *appearance* of the page

# Anatomy Of An HTML Element

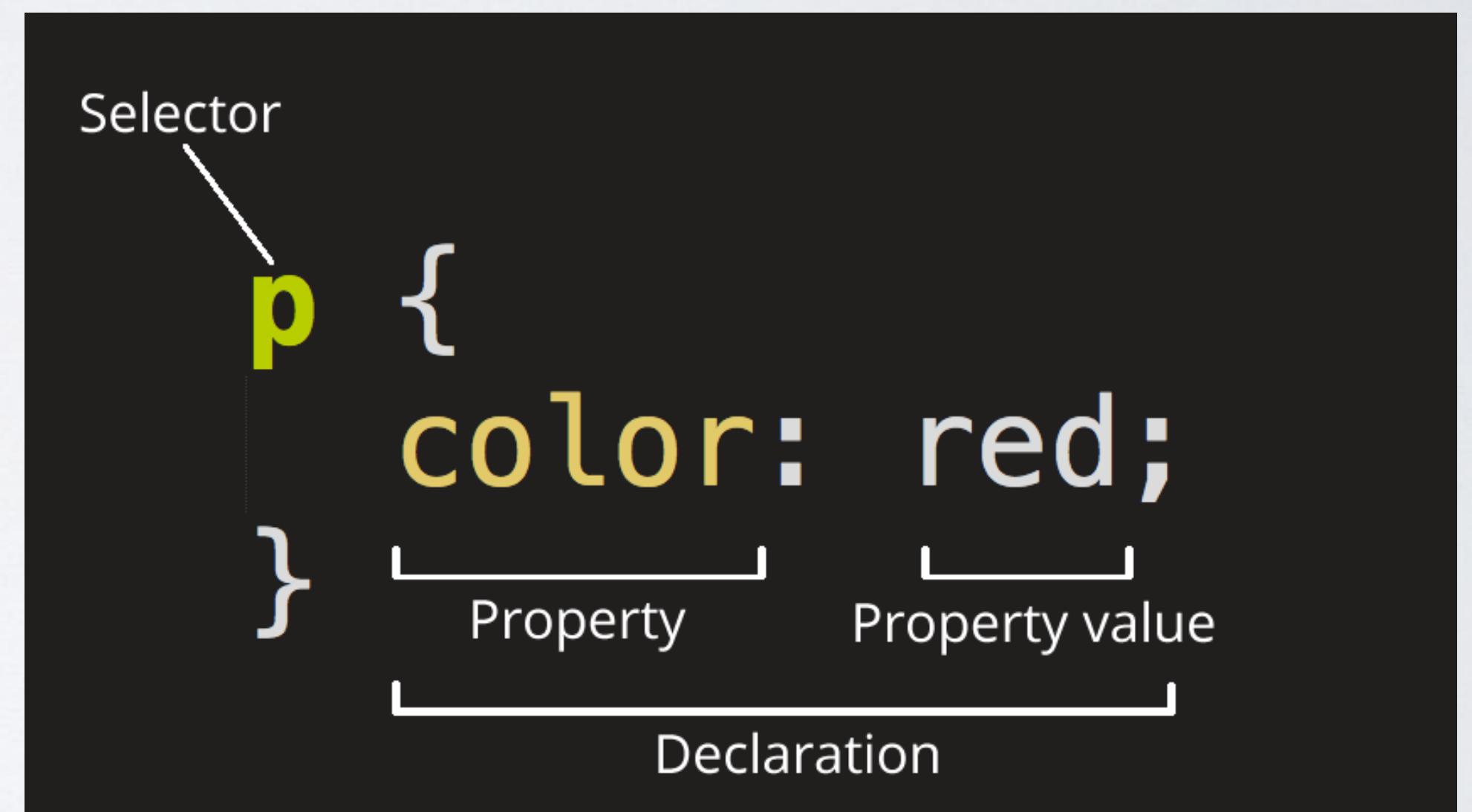
- Different tags for different tasks
- Attributes are extra info not shown on the page



The diagram shows an HTML element with an attribute. It consists of a black rectangle containing the text "<p class='editor-note'>My cat is very grumpy</p>". Above the opening tag "<p" is the label "Attribute".

# Anatomy Of A CSS Ruleset

- Select: What elements are we going to style
- Property: What aspect are we styling
- Property value: What is the new style



## Hi, I'm Chase Haddleton

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I am knowledgeable in JS, React, Java, and C. I've worked with various back-end infrastructure software including Node.JS, MongoDb, Nginx, MySQL, Redis and Apache, and on various platforms such as Google Cloud Platform and Amazon's AWS. Check out some of my [Projects!](#)

Currently, I am studying for my Honours Bachelors of Computer Science at the University of Waterloo. In my free time, I like to take [photos](#), kayak, and help moderate the LinusTechTips forum.

[My Resume](#)

# HTML

# CSS

```
74 main .card {
75   background-color: #f1f1f3;
76   -webkit-box-shadow: 0 3px 28px 0 rgba(0, 0, 0, .16);
77   box-shadow: 0 3px 28px 0 rgba(0, 0, 0, .16);
78   border: none
79 }
80 main .center {
81   margin: 0
82 }
83 main #idCard {
84   width: 100vw;
85   height: calc(100vh - 3.75rem);
86   display: -ms-flexbox;
87   display: flex;
88   -ms-flex-direction: column;
89   flex-direction: column;
90   overflow-y: scroll
91 }
92 main #idCard .content {
93   margin: 22.65240pt
94 }
95 main #idCard #left {
96   width: 100vw;
97   height: 53vh;
98   background: url("//content.chasehaddleton.com/images/selfie-2.jpg") no-repeat 50%;
99   background-size: cover
100 }
101 main #idCard #right {
102   height: 100%
103 }
104 main #idCard #right, main #photoCard {
105   display: -ms-flexbox;
106   display: flex;
107   width: 100vw
108 }
109 main #photoCard {
110   height: calc(100vh - 3.75rem);
111   -ms-flex-direction: column;
112   flex-direction: column;
113   overflow-y: scroll
114 }
115 main #photoCard .content {
116   margin: 22.65240pt
117 }
118 main #photoCard #left, main #photoCard #right {
119   width: 100vw
120 }
```



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|

# Challenge

- Create a personal webpage
- Suggested content:
  - Blurb about you
  - Projects w/ images and descriptions
  - Links to GitHub, LinkedIn, résumé, & email

# Before We Go Further

- Create a folder for this little project (*root folder*)
  - Create a folder in there called CSS (*CSS folder*)
- Create a file called *index.html* in the root folder
- Create a file called *style.css* in the CSS folder

# It All Started With...

- A DOCTYPE tag!
- An HTML tag
  - A HEAD tag
  - A BODY tag

```
1      <!DOCTYPE html>
2      <html>
3          <head>
4              <title>Chase Haddleton Portfolio</title>
5          </head>
6          <body>
7              <p>
8                  Hi! I'm Chase Haddleton
9              </p>
10             </body>
11         </html>
```

Chase Haddleton Portfolio

Hi! I'm Chase Haddleton

Our Webpage

Open in Safari

Hi! I'm Chase Haddleton

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# Our Webpage

Open in Safari

# Creating Hierarchy In Text

- Headers
- Different levels  
1 through 6

Chase Haddleton Portfolio

## Hi! I'm Chase Haddleton

### About Me

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### Knowledge

#### Experience

I am knowledgeable in JS, React, Java, and C. I've worked with various back-end infrastructure software including Node.JS, MongoDb, Nginx, MySQL, Redis and Apache, and on various platforms such as Google Cloud Platform and Amazon's AWS. Check out some of my Projects!

#### Education

Currently, I am studying for my Honours Bachelors of Computer Science at the University of Waterloo.

### Hobbies

In my free time, I like to take photos, kayak, and help moderate the LinusTechTips forum.

```
1 <!DOCTYPE html>
2 <html>
3     <head>
4         <title>Chase Haddleton Portfolio</title>
5     </head>
6
7     <body>
8         <h1>
9             Hi! I'm Chase Haddleton
10        </h1>
11
12        <h2>About Me</h2>
13        <p>
14            I am an 19 year old Waterloo-based software developer. Five words to describe myself would be; leadership
15            oriented, constant learner, and driven. I enjoy challenges and love applying my knowledge to solving complex
16            problems in unique and innovative ways.
17        </p>
18
19        <h2>Knowledge</h2>
20
21        <h3>Technology</h3>
22        <p>
23            I am knowledgeable in JS, React, Java, and C. I've worked with various back-end infrastructure software
24            including Node.JS, MongoDB, Nginx, MySQL, Redis and Apache, and on various platforms such as Google Cloud
25            Platform and Amazon's AWS. Check out some of my Projects!
26        </p>
27
28        <h3>Education</h3>
29        <p>
30            Currently, I am studying for my Honours Bachelors of Computer Science at the University of Waterloo.
31        </p>
32
33        <h2>Hobbies</h2>
34        <p>
35            In my free time, I like to take photos, kayak, and help moderate the LinusTechTips forum.
36        </p>
37        </body>
38    </html>
```

Recap—What Tags Have We  
Seen So Far

- **HTML**:Wrapper for the page
- **HEAD**:Wrapper for most non-visible information
- **BODY**:Wrapper for all visible content
- **TITLE**: Page title tag (goes in **HEAD**)
- **P**:Wrapper for body-text
- **H1** to **H6**: Header tags (various sizes)

# Other Content Tags

- Ordered/Unordered Lists
- Images
- Links

```
<ul>
  <li>First item</li>
  <li>Second item</li>
</ul>
```

```

```

```
<a href="http://placeholder.it">Link!</a>
```

# What's Next?

- We have some content
- We have some hierarchy
- But it's all just... sequential

# The DIV Tag

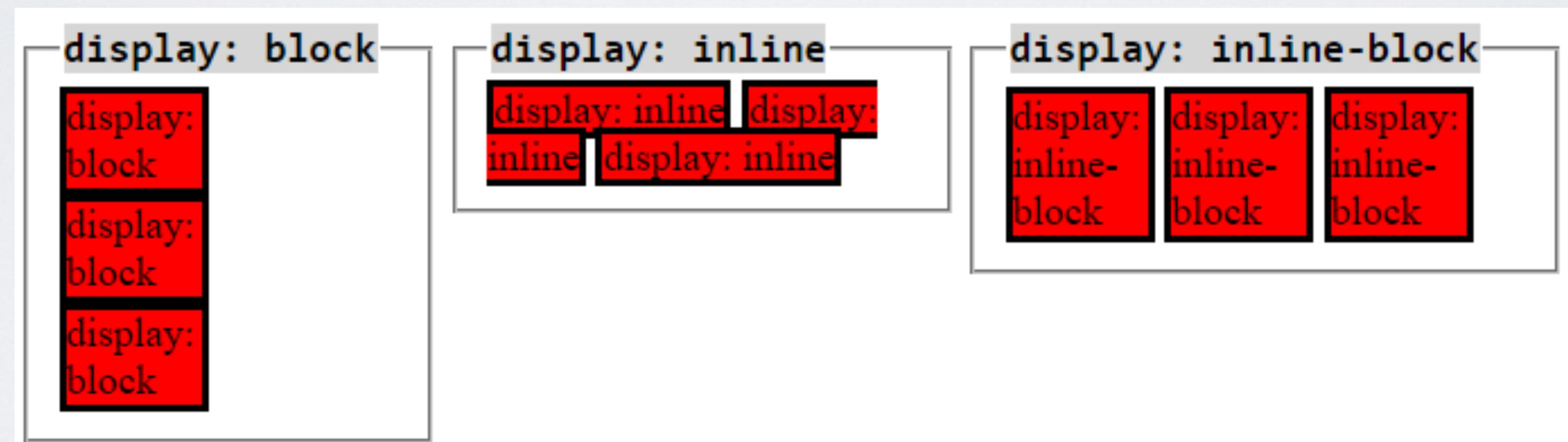
- Allows you to create **DIVisions** on your page
- Divisions allow you to organize your content and style it with CSS

```
<div>
  <!-- content here -->
</div>
```

The screenshot shows a hierarchical view of the DOM elements for a webpage. The root element is a body with a style attribute set to '\$0'. Inside the body is a div with the id 'root'. This div contains a main element with the attribute 'data-reactroot'. Below that is a div with the class 'fullPage'. Inside 'fullPage' is another div with the class 'center'. Within 'center' is a div with the class 'card' and attributes 'classid="idCard"' and 'id="idCard"'. This card div contains two divs: 'left' and 'right'. The 'right' div contains a 'content' div which includes an h2 heading with the text 'Hi, I'm Chase Haddleton', several p tags, and an a tag with a href attribute pointing to a content file. Below the card is another div with the class 'card' and attributes 'classid="footer"' and 'id="footer"'. The entire screenshot is framed by a blue border.

```
▼ <body style> = $0
  ▼ <div id="root">
    ▼ <main data-reactroot>
      ▼ <div class="fullPage">
        ▼ <div class="center">
          ▼ <div class="card" classid="idCard" id="idCard">
            ▶ <div id="left">...</div>
            ▶ <div id="right">
              ▼ <div class="content">
                <h2>Hi, I'm Chase Haddleton</h2>
                ▶ <p>...</p>
                ▶ <p>...</p>
                ▶ <p>...</p>
                ▶ <a href="//content.chasehaddleton.com/files/">...</a>
              </div>
            </div>
          </div>
        </div>
      </div>
    </div>
  </div>
```

# Block Vs. Inline Vs. Inline-Block



# Wait, What Were Those Attributes?

- Class
  - A string of space-separated identifiers which allow you to *group* elements together for styling
- ID
  - A unique string identifying a *specific* element on your page for styling

# Hi! I'm Chase Haddleton

## About Me

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## Knowledge

### Experience

I am knowledgeable in JS, React, Java, and C. I've worked with various back-end infrastructure software including Node.JS, MongoDb, Nginx, MySQL, Redis and Apache, and on various platforms such as Google Cloud Platform and Amazon's AWS. Check out some of my Projects!

### Education

Currently, I am studying for my Honours Bachelors of Computer Science at the University of Waterloo.

## Hobbies

In my free time, I like to take photos, kayak, and help moderate the LinusTechTips forum.

# Our Webpage

Now with DIVs

```
<div>
  <div>
    <div>
      <h1>
        Hi! I'm Chase Haddleton
      </h1>
    </div>

    <div>
      <h2>About Me</h2>
      <p>
        I am an 19 year old Waterloo-based software developer. Five words to describe myself would be; leadership oriented, constant learner, and driven. I enjoy challenges and love applying my knowledge to solving complex problems in unique and innovative ways.
      </p>
    </div>

    <div>
      <h2>Knowledge</h2>

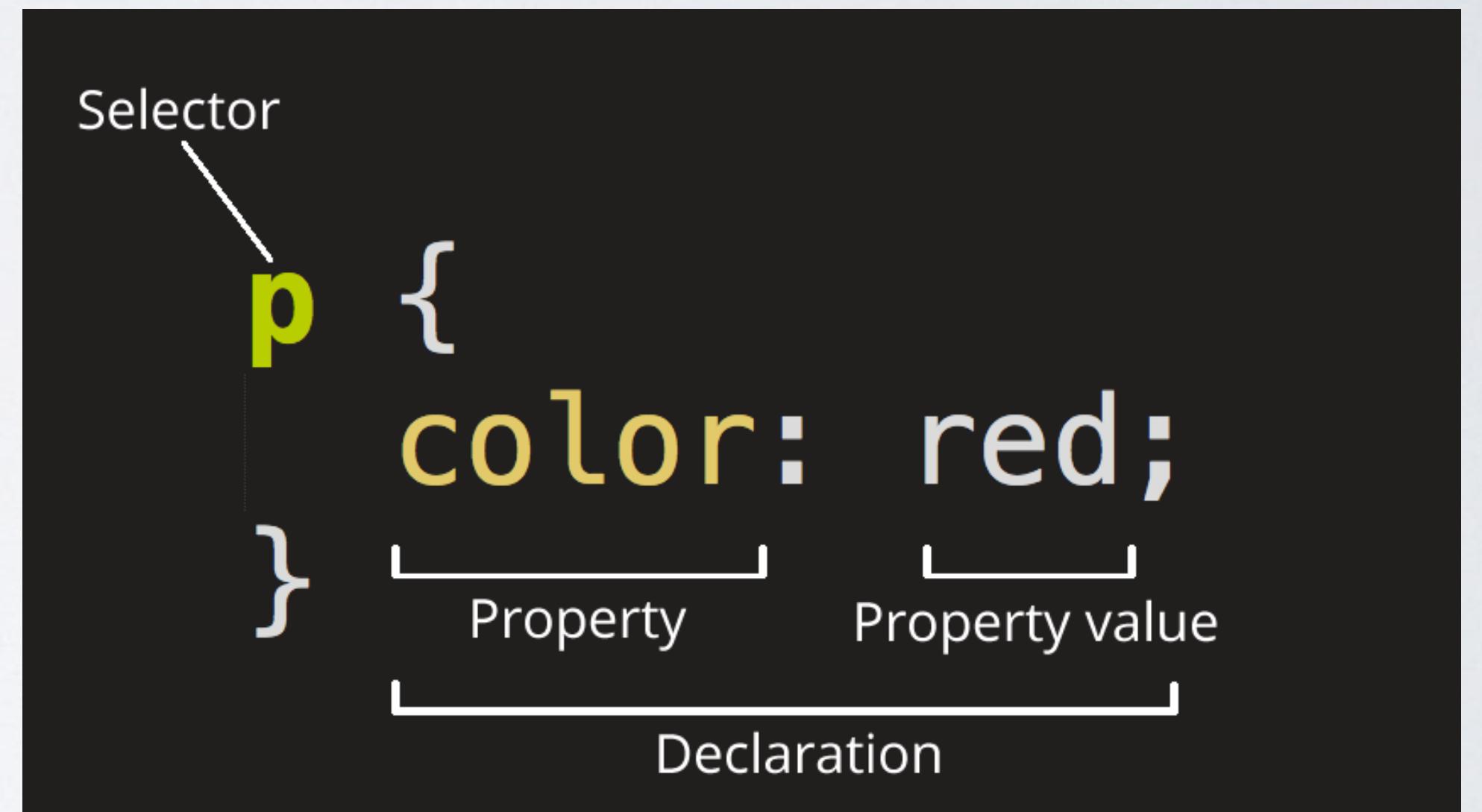
      <div>
        <div>
          <h3>Technology</h3>
          <p>
            I am knowledgeable in JS, React, Java, and C. I've worked with various back-end infrastructure software including Node.JS, MongoDB, Nginx, MySQL, Redis and Apache, and on various platforms such as Google Cloud Platform and Amazon's AWS. Check out some of my Projects!
          </p>
        </div>

        <div>
          <h3>Education</h3>
          <p>
            Currently, I am studying for my Honours Bachelors of Computer Science at the University of Waterloo.
          </p>
        </div>
      </div>
    </div>

    <div>
      <h2>Hobbies</h2>
      <p>
        In my free time, I like to take photos, kayak, and help moderate the LinusTechTips forum.
      </p>
    </div>
  </div>
</div>
```

# Intro To Styling

- Selector can be:
  - A tag name (see example)
  - A class name (.className)
  - An ID (#IdName)



# Some Key Properties

- color
- background-color
- font-size
- font-family
- font-weight
- height
- width
- padding
- margin
- border
- text-align
- line-height
- text-transform
- text-decoration
- display

# Some Property Values

- Colours: Hex, rgb(a), hsl(a)
  - #FFFFFF, rgba(255, 255, 255, 1), hsla(0, 100%, 100%, 1)
- Sizes: px, pt, vw, vh, %, em, rem
  - 10px, 12pt, 50vw, 50%

# Linking CSS Files

- Create a **LINK** tag in the **HEAD** section  
`<link rel="stylesheet" type="text/css" href=".css/style.css">`
- **Hyperlink REference** tells the browser the location of the file
- **RELation** tells the browser the purpose
- Type tells the browser how to read it

```
<div class="fullPage">
  <div class="container">
    <div class="header">
      <h1>
        Hi! I'm Chase Haddleton
      </h1>
    </div>

    <div class="section">
      <h2>About Me</h2>
      <p>
        I am an 19 year old Waterloo-based software developer. Five words to describe myself would be; leadership oriented, constant learner, and driven. I enjoy challenges and love applying my knowledge to solving complex problems in unique and innovative ways.
      </p>
    </div>

    <div class="section">
      <div class="flex">
        <div>
          <h3>Technology</h3>
          <p>
            I am knowledgeable in JS, React, Java, and C. I've worked with various back-end infrastructure software including Node.JS, MongoDB, Nginx, MySQL, Redis and Apache, and on various platforms such as Google Cloud Platform and Amazon's AWS. Check out some of my Projects!
          </p>
        </div>

        <div>
          <h3>Education</h3>
          <p>
            Currently, I am studying for my Honours Bachelors of Computer Science at the University of Waterloo.
          </p>
        </div>
      </div>
    </div>

    <div class="section">
      <h2>Hobbies</h2>
      <p>
        In my free time, I like to take photos, kayak, and help moderate the LinusTechTips forum.
      </p>
    </div>
  </div>
</div>
```

```
body {  
    font-family: sans-serif;  
}  
  
.fullPage {  
    height: 100vh;  
}  
  
.container {  
    width: 45vw;  
    margin: auto;  
}  
  
.section {  
    box-shadow: 0 4px 8px 0 rgba(0,0,0,0.2);  
    transition: 0.3s;  
    padding: 2px 16px;  
    margin-bottom: 16px;  
}  
  
.flex {  
    display: flex;  
}  
  
.flex > div {  
    width: 50%;  
}
```

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Cool, but that looks like a lot of  
work to do

B

F

W

# Bootstrap

Build responsive, mobile-first projects on the web with the world's most popular front-end component library.

Bootstrap is an open source toolkit for developing with HTML, CSS, and JS. Quickly prototype your ideas or build your entire app with our Sass variables and mixins, responsive grid system, extensive prebuilt components, and powerful plugins built on jQuery.

[Get started](#)[Download](#)

Currently v4.0.0-beta



Get a 12-month free trial  
to get you started on  
GCP. Try it free today.  
ads via Carbon



## Installation

Include Bootstrap's source Sass and JavaScript files via Bower, Composer, Meteor, or npm. Package managed installs don't include documentation, but do include our build system and readme.

```
npm install bootstrap@4.0.0-beta
```

```
gem install bootstrap -v 4.0.0.alpha6
```



## Bootstrap CDN

When you only need to include Bootstrap's compiled CSS or JS, you can use the Bootstrap CDN.

### CSS only

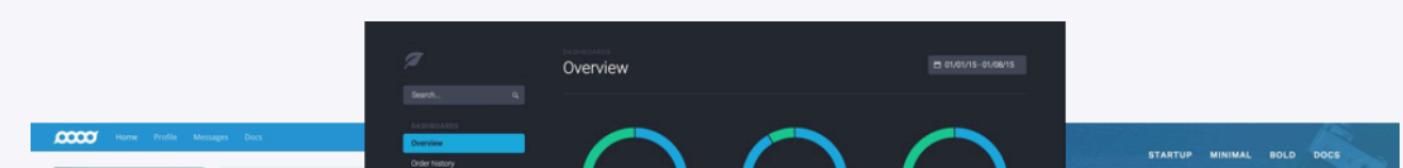
```
<link rel="stylesheet" href="https://maxcdn.bootstrapcdn.com/bootstrap/4.0.0-beta/css/bootstrap.min.css" integrity="sha384-M2w7ZEtH1D4Ej2K4hpqLjZm9F3jzD+AbtWmWgEVa+eC9fPcZD0dMnE7kQ" crossorigin="anonymous"/>
```

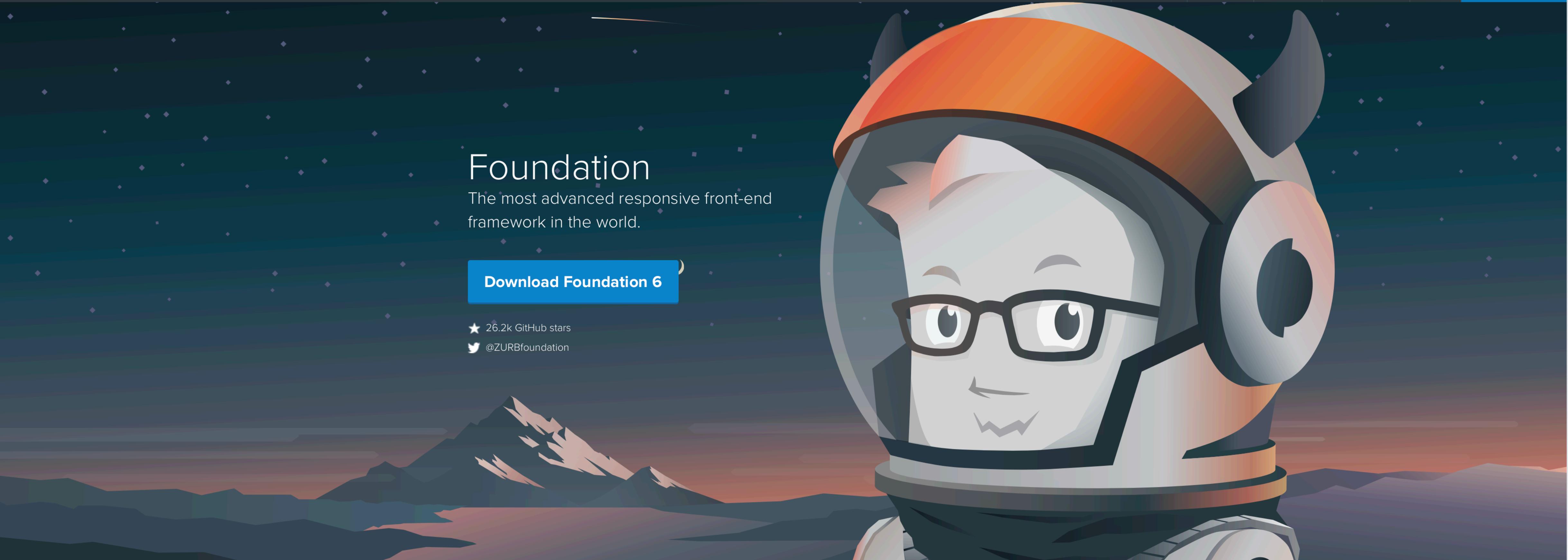
### JS, Popper, and jQuery



## Official Themes

Take Bootstrap 4 to the next level with official premium themes—toolkits built on Bootstrap with new components and plugins, docs, and build tools.





# Foundation

The most advanced responsive front-end framework in the world.

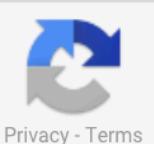
[Download Foundation 6](#)

★ 26.2k GitHub stars

🐦 @ZURBfoundation

## Responsive design gets a whole lot faster

A Framework for any device, medium, and accessibility. Foundation is a family of responsive front-end frameworks that make it easy to design beautiful responsive websites, apps and emails that look amazing on any device. Foundation is semantic, readable, flexible, and completely customizable. We're constantly adding new resources and code snippets, including these handy HTML templates to help get you started!





About

Getting Started

CSS

Components

JavaScript

Mobile

Showcase

Themes

new

# Materialize

A modern responsive front-end framework based on Material Design

GET STARTED

beta release v0.100.2



Don't let debugging ruin your day. Find errors before you deploy!

Airbrake.io

ads via Carbon

Latest Commit on Github: 9bc43a1199ad5dfb78d58ba47726ab039218a939 18 days ago

GITHUB



# How Do You Pick?

- Evaluate the *style* of the framework
- Evaluate the syntax
- Evaluate what JS plugins they come with
- Or just pick one

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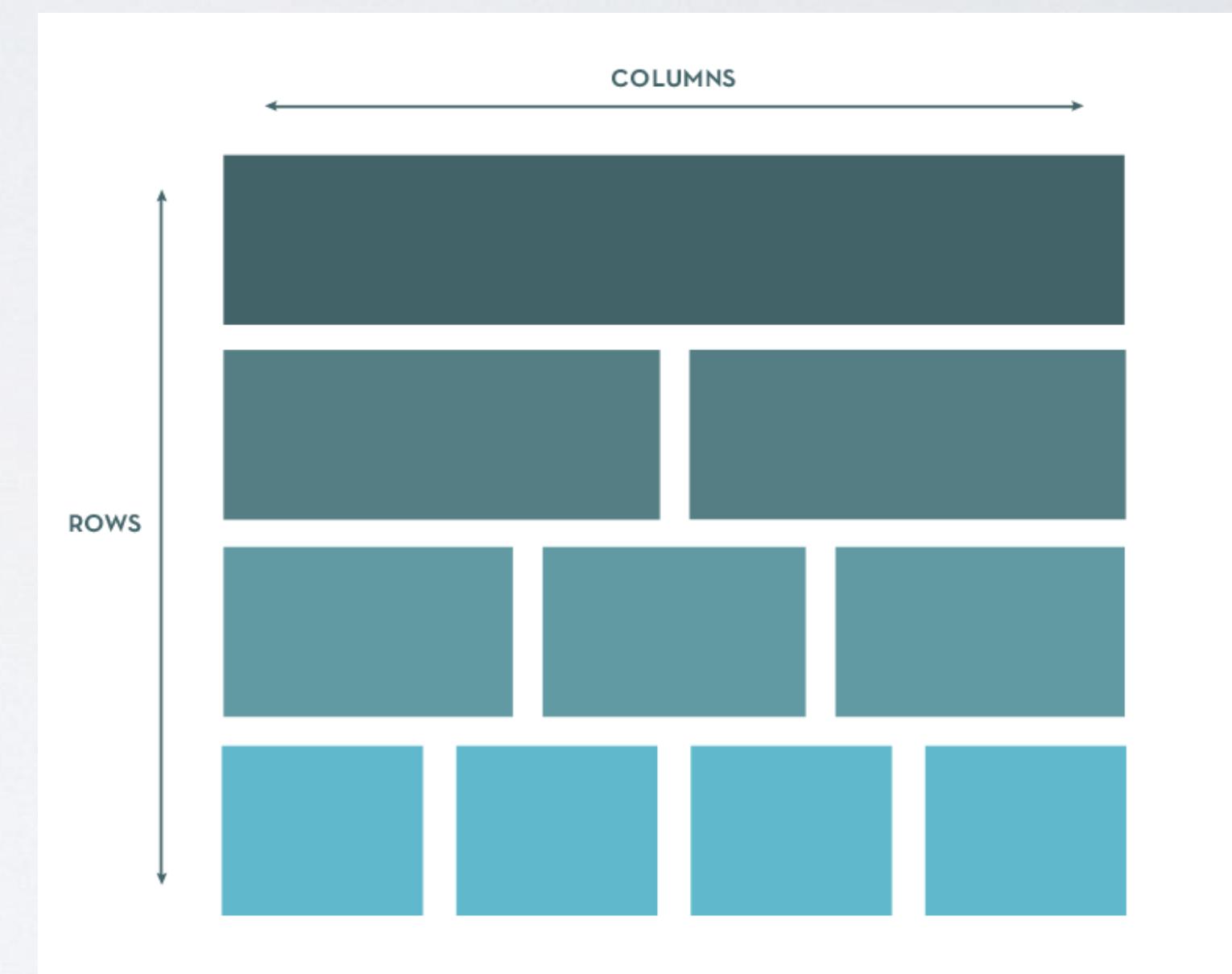
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# How Frameworks Work

- Row/column system
- Additional classes for styling content
- JS plugins to do useful things



# Javascript

- Similar to Java, influenced by Scheme
- Dynamically & weakly typed

# Variables & Other Data

- Var — essentially a global variable, don't use it
- Let — a normal variable in every other language
- Const — a constant