



So, you want to know more about front-end frameworks?

An introduction.



Zac Fowler

- Computer Science, MIS
- Manage, “IS&T Attic”
- Web developer since mid-90s

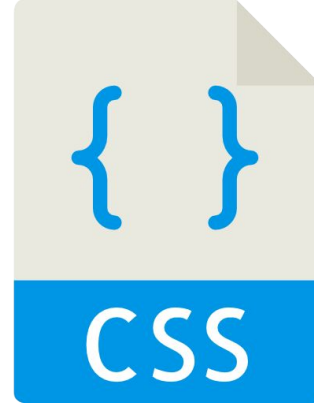
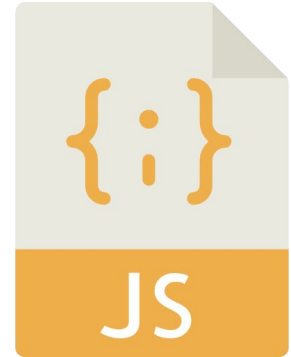
Skillsets: Fullstack development - HTML, CSS, PHP, PHP/Laravel, APIs Databases, DevOps, AppSec

GIT evangelist.

Here's what you know so far

Front-end web

- Code: .html, .css, .js
- Assets: .png, .jpg, .mov, .gif
- Some tooling:
bootstrap, jquery





HTML

- Elements, Tags
- Block structure: divs, sections, articles
- Navigation with nav, ul, lis
- Linking to CSS

```
1  <!DOCTYPE html>
2  <html lang="en">
3  <head>
4  ....<meta charset="UTF-8">
5  ....<meta name="viewport" content="width=device-width, initial-scale=1.0">
6  ....<meta http-equiv="X-UA-Compatible" content="ie=edge">
7  ....<title>Our Journey</title>
8  ....<link rel="stylesheet" href="css/style.css">
9  </head>
10 <body>
11 ....<div class="identity">
12 ....<h1>William & C Surveyors
13 ....</div>
14 ....<nav>
15 .....<ul>
16 .....<li><a href="#home">Home</a></li>
17 .....<li><a href="#blog">Blog</a></li>
18 .....<li><a href="#map">Map</a></li>
19 .....</ul>
20 ....</nav>
21
22 ....<section class="blog_index">
23 .....<h2>Blog</h2>
24 .....<article class="journal_entry">
25 .....<div class="journal_date">January 10, 1805</div>
26 .....<div class="journal_author">William Clark</div>
27 .....<div class="journal_text">about 10 oClock the boy about 13 ye
28 .....</article>
29 .....<article class="journal_entry">
30 .....<div class="journal_date">January 27, 1805</div>
31 .....<div class="journal_author">William Clark</div>
32 .....<div class="journal_text">... I bleed the man with the Pluris
33 .....</article>
```



HTML

← → ↻ ⓘ localhost:8080/vue/lc/#blog

W&C Surveyors

- [Home](#)
- [Blog](#)
- [Map](#)

January 10, 1805

William Clark

about 10 oClock the boy about 13 years of age Came to the fort with his feet frosted and had layed out last night without : more Cold than I thought it possible for man to endure.

January 27, 1805

William Clark

.... I bleed the man with the Plurisy to day & Swet him, Capt. Lewis took off the Toes of one foot of the Boy who got frost

February 11, 1805

Meriwether Lewis

about five Oclock this evening one of the wives of Charbono was delivered of a fine boy. it is worthy of remark that this administered a small portion of the rattle of the rattle-snake, which he assured me had never failed to produce the desire the fingers and added to a small quantity of water. Whether this medicine was truly the cause or not I shall not undertake confess that I want faith as to it's efficacy.

March 11, 1805

William Clark

We have every reason to believe that our Menetarre interpreter (whome we intended to take with his wife, as an interpreter to us the fact, we give him to night to reflect and deturmin whether or not he intends to go with us under the regulations :

March 12, 1805

William Clark

our Interpreter Shabonah, deturmins on not proceeding with us as interpreter under the terms mentioned yesterday, he will



CSS

- Selectors
- Properties
- Values
- Pseudo-selectors
- Units: px, em, %, ...
- Colors: hex, rgb, keywords

```
1 body {
2   font-family: Arial, Helvetica, sans-serif;
3   font-size: 16px;
4   width: 960px;
5   margin: auto;
6 }
7 #identity {
8   background-color: lightgrey;
9   color: blue;
10  padding: 8px 12px;
11 }
12 nav ul {
13   padding-left: 0;
14 }
15 nav ul > li {
16   list-style: none;
17   display: inline-block;
18 }
19 nav a {
20   display: block;
21   text-decoration: none;
22   padding: 20px 30px;
23 }
24 nav a.onpage {
25   color: white;
26   background-color: blue;
27 }
28 nav a:hover {
29   color: white;
30   background-color: darkblue;
31 }
```



Blog

January 10, 1805

William Clark

about 10 oClock the boy about 13 years of age Came to the fort with his feet frosted and had layed out last night without only a Buffalow Robe to Cover him, ... we had his feet put in cold water and they are Comeing too. ... Customs & the ha people has anured [them] to bare more Cold than I thought it possible for man to endure.

January 27, 1805

William Clark

... I bleed the man with the Plurisy to day & Swet him, Capt. Lewis took off the Toes of one foot of the Boy who got frost time ago, ...

February 11, 1805

Meriwether Lewis

about five Oclock this evening one of the wives of Charbono was delivered of a fine boy. it is worthy of remark that this child which this woman had boarn, and as is common in such cases her labour was tedious and the pain violent; Mr. Je informed me that he had freequently administered a small portion of the rattle of the rattle-snake, which he assured me failed to produce the desired effect, that of hastening the birth of the child; having the rattle of a snake by me I gave it to administered two rings of it to the woman broken in small pieces with the fingers and added to a small quantity of water. this medicine was truly the cause or not I shall not undertake to determine, but I was informed that she had not taken it ten minutes before she brought forth perhaps this remedy may be worthy of future experiments, but I must confess that as to it's efficacy.

March 11, 1805

William Clark

We have every reason to believe that our Menetarre interpeter (whome we intended to take with his wife, as an interpet his wife to the Snake Indians of which nation She is) has been Corrupted by the [blank in MS] Company &c. Some expl taken place which Clearly proves to us the fact, we give him to night to reflect and deturmin whether or not he intends to



Javascript

- Functions, Variables, Syntax
- In-page scripts
- External scripts
- Basic Validation
- jQuery / AJAX

```
13 <form action="process.php" method="post" id="form1" onsubmit="return validate()">
14 <div class="form-element">
15 <label for="first_name">
16 First Name
17 </label>
18 <input type="text" id="first_name" name="first_name" size="20">
19 </div>
20 <div class="form-element">
21 <label for="last_name">
22 Last Name
23 </label>
24 <input type="text" id="last_name" name="last_name" size="20">
25 </div>
26 <div class="form-element">
27 <label for="email">
28 Email
29 </label>
30 <input type="text" id="email" name="email" size="20">
31 </div>
32 <div class="form-element">
33 <input type="submit" value="Register Me!">
34 </div>
35 </form>
36 <script>
37 function validate() {
38 var f = document.getElementById("form1");
39 if (f.first_name.value == "") {
40 alert("First name is required!");
41 return false;
42 }
43 if (f.last_name.value == "") {
44 alert("Last name is required!");
45 return false;
46 }
47 if (!f.email.value.match(/^[a-zA-Z0-9_+.]+@[a-zA-Z0-9-]+\.[a-zA-Z0-9-]+\./)) {
48 alert("Email isn't valid!");
49 return false;
50 }
51 return true;
52 }
53 </script>
```

Frameworks



What is a framework?

Wikipedia:

an [abstraction](#) in which [software](#) providing generic functionality can be selectively changed by additional user-written code, thus providing application-specific software. A software framework provides a standard way to build and deploy applications. A software framework is a universal, reusable [software environment](#) that provides particular functionality as part of a larger [software platform](#) to facilitate development of [software applications](#), products and solutions. Software frameworks may include support programs, compilers, code libraries, tool sets, and [application programming interfaces \(APIs\)](#) that bring together all the different [components](#) to enable development of a [project](#) or [system](#).

https://en.wikipedia.org/wiki/Software_framework



What is a framework?

Collins English Dictionary

A **framework** is a particular set of rules, ideas, or beliefs which you use in order to deal with problems or to decide what to do.

<https://www.collinsdictionary.com/us/dictionary/english/framework>



What is a framework?

CodeProject.com, Marc Clifton (2003)

Makes it easier to work with complex tech, ties discrete objects into something useful, forces team to follow consistent coding (fewer bugs, more flexible apps), easy to test even if you didn't write it.

A framework consists of:

1. Wrapper: simplified interface, eliminates repetitive tasks, reusable
2. Architecture: manages a discrete set of objects, implements design elements
3. Methodologies: adherence to design approach, decouples object dependencies, re-usable parts

<https://www.codeproject.com/Articles/5381/What-Is-A-Framework>



What is a framework?

Zac says:

- A platform of structures, standards, and helpers for a particular technology stack that follows a pattern in file organization, code structure, and code style, often following common architectural design patterns and best practices.
 - A framework will follow *convention over configuration*: That is, instead of requiring that you configure all the things, or turn all the knobs before starting, the framework will have pre-determined (opinionated) settings to get going.
 - A framework will be *opinionated*: It is in your best interest to follow the conventions in the framework, instead of trying to add or create your own.



You're using one already.

Bootstrap

- A CSS framework
 - Grid system
 - UI-components
 - Preset breakpoints

.col-12.col-md-8		.col-6.col-md-4	
.col-6.col-md-4		.col-6.col-md-4	.col-6.col-md-4
.col-6		.col-6	

```
<div class="container">
  <!-- Stack the columns on mobile by making one full-width and the other half-width -->
  <div class="row">
    <div class="col-12 col-md-8">.col-12 .col-md-8</div>
    <div class="col-6 col-md-4">.col-6 .col-md-4</div>
  </div>

  <!-- Columns start at 50% wide on mobile and bump up to 33.3% wide on desktop -->
  <div class="row">
    <div class="col-6 col-md-4">.col-6 .col-md-4</div>
    <div class="col-6 col-md-4">.col-6 .col-md-4</div>
    <div class="col-6 col-md-4">.col-6 .col-md-4</div>
  </div>

  <!-- Columns are always 50% wide, on mobile and desktop -->
  <div class="row">
    <div class="col-6">.col-6</div>
    <div class="col-6">.col-6</div>
  </div>
</div>
```

Copy

jQuery Mobile

HTML Framework for Mobile

- Grid layout, pre-built styles with theming
- Fully responsive
- Uses jQuery and jQuery UI for pre-fetching content pages, transitions, ui components (accordions, navbars, sticky footers)
- Their Docs are built with it!
 - <http://demos.jquerymobile.com/1.4.5/>
- Can be wrapped into mobile tooling
 - Anyone have FNBO App?

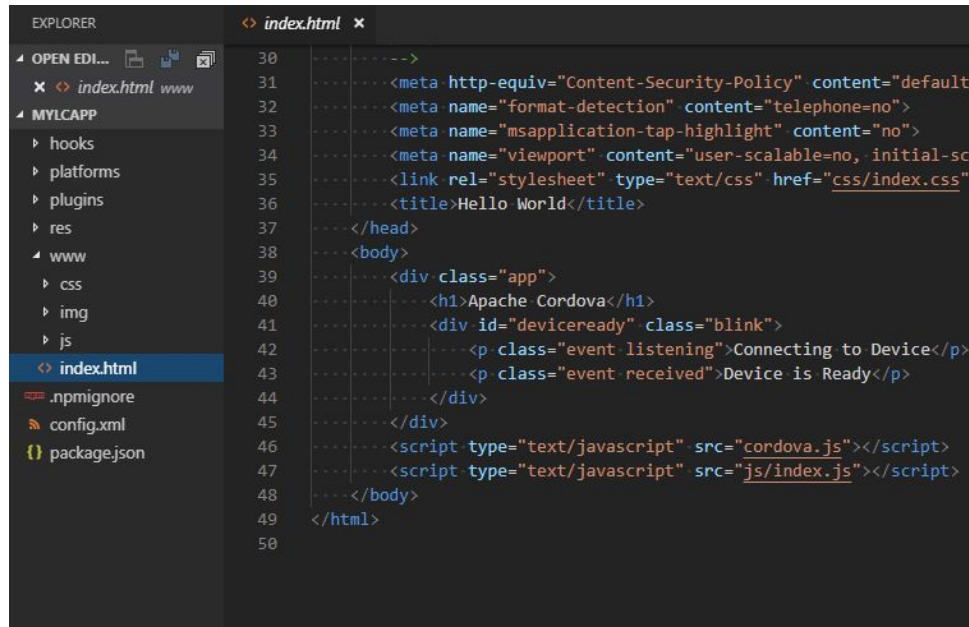
Home	🏠	jQuery Mobile
Introduction	>	
Buttons	>	
Button widget	>	Widget
Checkboxradio widget	▼	jQuery Mobile widget
Collapsible (set) widget	▼	jQuery Mobile.
Controlgroup widget	▼	Datepicker widget
Datepicker	>	Wrapper to make this
Events	▼	widget has all the
Filterable widget	>	is the jQuery UI widget.
Flipswitch widget	>	Datepicker widget please
Forms	^	picker/.
Forms	>	on the jQuery Mobile
Hide labels	>	z/jquery-mobile-
Field containers	>	

Apache Cordova / PhoneGap

Write once, deploy everywhere for mobile

- Use HTML/CSS/Javascript
- Adds access to mobile phone hardware
- Uses plugins to manage native components such as push notifications, geolocation, local storage, camera, etc.
- Like jQuery: wraps many cross-browser issues so you do not have to worry about them.

<https://cordova.apache.org/>

A screenshot of a code editor interface. On the left is the 'EXPLORER' sidebar showing a file tree for a project named 'MYLCAPP'. The tree includes folders for 'hooks', 'platforms', 'plugins', 'res', and 'www'. The 'www' folder is expanded, showing subfolders for 'css', 'img', and 'js', along with files 'index.html', '.npmignore', 'config.xml', and 'package.json'. The 'index.html' file is selected and highlighted. On the right is the code editor window for 'index.html', showing HTML code with line numbers from 30 to 50. The code includes meta tags for security and viewport, a link to a CSS file, and a body with a div containing a heading and two paragraphs. The second paragraph is wrapped in an event listener for 'device:ready'.



Vanilla Javascript

Many files, even if you're using those.

Unorganized function calls.

Mixed content, HTML, data

Just a mess!

```
1  function validate() {
2      ....var f = document.getElementById('form1');
3      ....if (f.first_name == '') {
4          ....alert("First name isn't filled out!");
5          ....return false;
6      ....}
7      ....if (f.email.text) {
8          ....alert("Email must be filled out!");
9          ....return false;
10     ....}
11     ....if (f.first_name == '') {
12         ....alert("First name isn't filled out!");
13         ....return false;
14     ....}
15     ....// Allow the form to submit
16     ....return true;
17 }
18
19 function loadLoginForm() {
20     ....$("#tabCtrl1").on('click', function() {
21         ....$("#tab1").toggle();
22     ....});
23     ....$("#formSubmit").on('click', function(){
24         ....var url = "https://someurl.com/process.cgi";
25         ....
26         ....data = {
27             ...."first_name": $("#first_name").val(),
28             ...."last_name": $("#last_name").val(),
29             ...."email": $("#email").val(),
30         ....}
31         ....$.post(url, data, function(responseData) {
32             ....if (responseData.code == 200) {
33                 ....alert("Form submitted ok!");
34             }
35         });
36     });
37 }
```



Javascript Frameworks

Many exist.

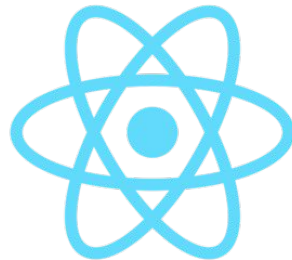
Big three: Angular, Vue, React

Files are organized.

They use “packages” as dependencies

Think, “import java.io”

Adhere to patterns and conventions.





Framework Terms

Modules: Self-contained pieces of code that may include controller functionality (Javascript), templates (html), and styling (css), accessible through a series of routes

Controllers: typically Javascript objects that contain functional logic for a module or subcomponent

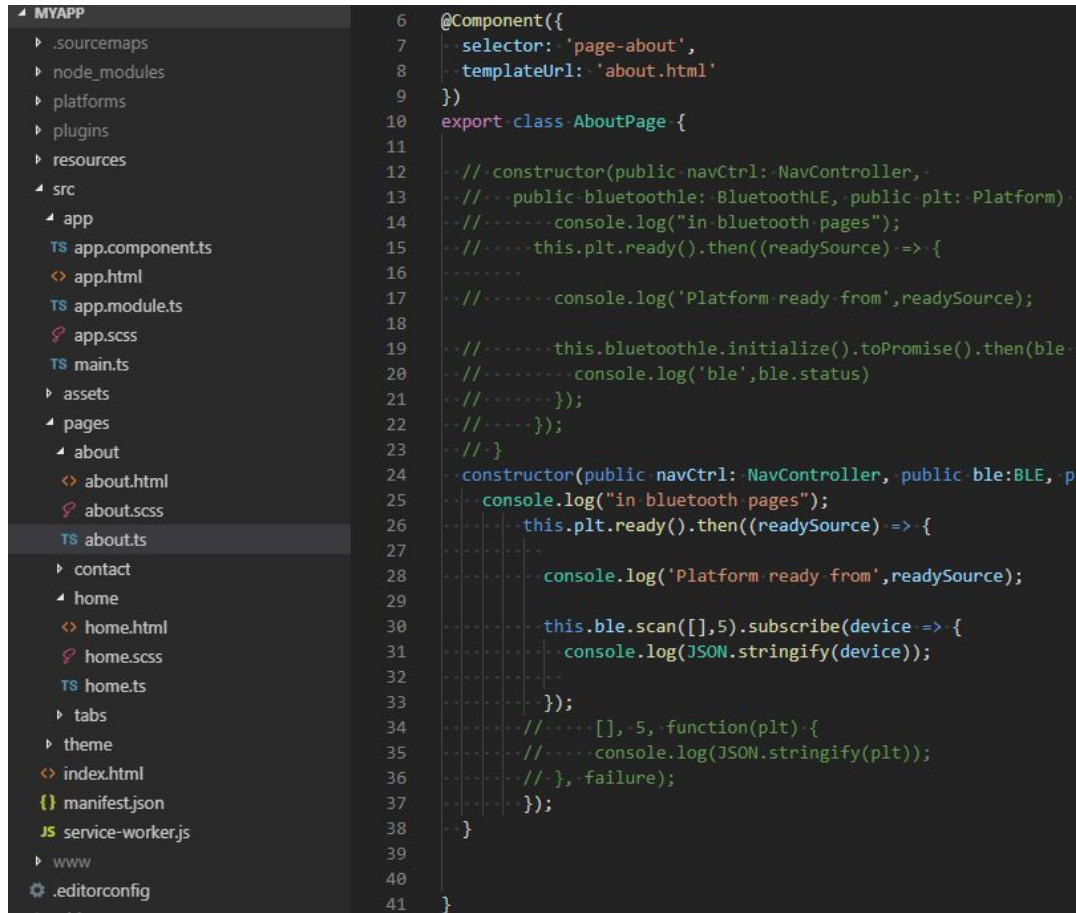
Templates: HTML based snippet, used to populate content in a larger page system

Routes: defined endpoints - URLs - that take your user to a certain state of your application

Ionic Framework

Another mobile, write-once build everywhere framework.

- Uses Angular + Cordova
- Has a set of pre-built UI components
- Follows component-based organization



The screenshot shows an IDE with a file explorer on the left and a code editor on the right. The file explorer displays a project structure for 'MYAPP' with folders like 'src', 'pages', and 'assets'. The 'pages' folder is expanded, showing 'about' and 'home' subfolders. The 'about' folder is selected, and the 'about.ts' file is highlighted. The code editor shows the TypeScript code for the 'AboutPage' component, including the '@Component' decorator, 'selector', 'templateUrl', and the 'constructor' method.

```
6 @Component({
7   selector: 'page-about',
8   templateUrl: 'about.html'
9 })
10 export class AboutPage {
11
12   // constructor(public navCtrl: NavController,
13   // public bluetoothle: BluetoothLE, public plt: Platform) {
14   // console.log("in bluetooth pages");
15   // this.plt.ready().then((readySource) => {
16   // console.log('Platform ready from', readySource);
17   // console.log('ble', ble.status)
18   // });
19   // }
20   // constructor(public navCtrl: NavController, public ble: BLE,
21   // console.log("in bluetooth pages");
22   // this.plt.ready().then((readySource) => {
23   // console.log('Platform ready from', readySource);
24   // this.ble.scan([], 5).subscribe(device => {
25   // console.log(JSON.stringify(device));
26   // });
27   // }, 5, function(plt) {
28   // console.log(JSON.stringify(plt));
29   // }, failure);
30   // });
31 }
32
33
34
35
36
37
38
39
40
41 }
```

VueJS Binding Walkthrough



VueJS

<https://vuejs.org/>

Start with Basic HTML(5) Template.

Add the CDN-based Vue file.

Link a block, to Vue.

Goal right now:

1. Add VueJS to your application
2. Use data binding to replace HTML

```
<> index.html ...\vue-basics ● <> index.html lc x ...
10 <body>
11 <div id="app">
12   <div id="identity">
13     W&C Surveyors
14   </div>
15   <nav>
16     <ul>
17       <li><a href="#home">Home</a></li>
18       <li><a href="#blog" class="onpage">
19       <li><a href="#map">Map</a></li>
20     </ul>
21   </nav>
22
23   <section class="blog_index">
```

```
JS main.js x
1 var app = new Vue({
2   el: '#app',
3 });
```

```
63 </div>
64 <script src="https://cdn.jsdelivr.net/npm/vue"></script>
65 <script src="js/main.js"></script>
66 </body>
```



How do we know it works?

Let's "bind" some data.

Add a block for data, into the JS

Use an expression in `{{ }}` to "show" the variable

Vue will interpolate and expand the data item called title, into the `{{ title }}` position.


```

</ul>
</nav>

<section class="blog_index">
  <h1>{{ title }}</h1>
  <article class="journal_entry">
    <div class="journal_date">January
    <div class="journal_author">William
    <div class="journal_text">about 10
  </article>
  <article class="journal_entry">
    <div class="journal_date">January

```

```

1 var app = new Vue({
2   el: '#app',
3   data: {
4     title: "Blog Page"
5   }
6 });

```

W&C Surveyors

Home

Blog

Map

Blog Page

```

22 .....<section class="blog_index">
23 .....<h1>{{ title }}</h1>
24 .....<article class="journal_entry">
25 .....<div class="journal_date">January 10, 1805</div>
26 .....<div class="journal_author">William Clark</div>
27 .....<div class="journal_text">about 10 oClock the boy about 13 years of age Can
28 .....</article>
29 .....<article class="journal_entry">
30 .....<div class="journal_date">January 27, 1805</div>
31 .....<div class="journal_author">William Clark</div>
32 .....<div class="journal_text">... I bleed the man with the Plurisy to day & Swe
33 .....</article>
34 .....<article class="journal_entry">
35 .....<div class="journal_date">February 11, 1805</div>
36 .....<div class="journal_author">Meriwether Lewis</div>
37 .....<div class="journal_text">about five Oclock this evening one of the wives o
38 .....</article>
39 .....<article class="journal_entry">
40 .....<div class="journal_date">March 11, 1805</div>
41 .....<div class="journal_author">William Clark</div>
42 .....<div class="journal_text">We have every reason to believe that our Menetarr
43 .....</article>
44 .....<article class="journal_entry">
45 .....<div class="journal_date">March 12, 1805</div>
46 .....<div class="journal_author">William Clark</div>
47 .....<div class="journal_text">our Interpreter Shabonah, deturmins on not proceed
48 .....</article>
49 .....<article class="journal_entry">
50 .....<div class="journal_date">March 17, 1805</div>
51 .....<div class="journal_author">William Clark</div>
52 .....<div class="journal_text">Mr. Chabonah Sent a frenchman of our party [to co
53 .....

```

Blog Page

January 10, 1805

William Clark

about 10 oClock the boy about 13 years of age Can
only a Buffalow Robe to Cover him, ... we had his
people has anured [them] to bare more Cold than

January 27, 1805

William Clark

... I bleed the man with the Plurisy to day & Sweet
time ago, ...

February 11, 1805

Meriwether Lewis

about five Oclock this evening one of the wives of
child which this woman had boarn, and as is comr
informed me that he had freequently administere
failed to produce the desired effect, that of hasten
administered two rings of it to the woman broken i
this medicine was truly the cause or not I shall not



Wouldn't this be nice?

```
.....<article class="journal_entry">
.....  |.....<div class="journal_date">{{ journal_date }}</div>
.....  |.....<div class="journal_author">{{ journal_author }}</div>
.....  |.....<div class="journal_text">{{ journal_text }}</div>
.....</article>
```



List Binding

We can use a for-loop inside of blocks that we want to repeat.

Inside the app, add a “v-for” attribute to any tag.

Example:

```
<ul>
```

```
<li v-for="item in items">{{item}}</li>
```

```
</ul>
```



Let's bind our navbar first

In the HTML:

```
<ul>
  <li v-for="n in nav">
    <a href="{{n.link}}">{{n.text}}</a>
  </li>

</ul>
```



Let's bind our navbar first

In the Javascript, add the data

```
1  var app = new Vue({
2    el: '#app',
3    data: {
4      title: "Blog Page",
5      nav: [
6        {
7          link: "#home",
8          text: "Home"
9        },
10       {
11         link: "#blog",
12         text: "BogoVision"
13       },
14       {
15         link: "#map",
16         text: "Map"
17       }
18     ],
19     articles: []
20   }
21 });
```

Blog Page

January 27, 1805

William Clark

... I bleed the man with the Plurisy to day & Swet him, Capt. Lewis to
time ago, ...

February 11, 1805

Meriwether Lewis



What about those articles?

First, we need to convert the articles into data.

Change the tags, into JSON format{

```
{  
  data: value,  
  data: value,  
  data: value  
}
```

```
1  {  
2    journal_date: "January 10, 1805",  
3    journal_author: "William Clark",  
4    journal_text: "about 10 oClock the boy about  
5  },  
6  {  
7    journal_date: "January 27, 1805",  
8    journal_author: "William Clark",  
9    journal_text: "... I bleed the man with the P  
10 },  
11 {  
12   journal_date: "February 11, 1805",  
13   journal_author: "Meriwether Lewis",  
14   journal_text: "about five Oclock this evening  
15 },  
16 {  
17   journal_date: "March 11, 1805",  
18   journal_author: "William Clark",  
19   journal_text: "We have every reason to believ  
20 },  
21 {
```




Add them to the script

Each item will be a single element in a JSON array.

The array ([...]) contains an “article” separated by a comma.

```
3  ...data: {
4      ...title: "Blog Page",
5      ...nav: [
6          ...{
7              ...link: "#home",
8              ...text: "Home"
9          },
10         ...{
11             ...link: "#blog",
12             ...text: "BogoVision"
13         },
14         ...{
15             ...link: "#map",
16             ...text: "Map"
17         }
18     ],
19     ...articles: [
20         ...{
21             ...journal_date: "January 10, 1805",
22             ...journal_author: "William Clark",
23             ...journal_text: "about 10 o'clock the boy about 13 years of age C
24         },
25         ...{
26             ...journal_date: "January 27, 1805",
27             ...journal_author: "William Clark",
28             ...journal_text: "... I bleed the man with the Plurisy to day & S
29         },
30         ...{
31             ...journal_date: "February 11, 1805",
32             ...journal_author: "Meriwether Lewis",
33             ...journal_text: "about five Oclock this evening one of the wives
34         },
35         ...{
```



Convert the HTML into a block with expressions

Note there is no loop yet.

One step at a time.

```

1 .....<ul>
2 .....
3 .....<li v-for="n in nav">
4 .....<a href="{{n.link}}">{{n.text}}</a>
5 .....</li>
6 .....</ul>
7 .....</nav>
8 .....
9 .....<section class="blog_index">
10 .....<h1>{{ title }}</h1>
11 .....
12 .....
13 .....<article class="journal_entry">
14 .....<div class="journal_date">{{ journal_date }}</div>
15 .....<div class="journal_author">{{ journal_author }}</div>
16 .....<div class="journal_text">{{ journal_text }}</div>
17 .....</article>
18 .....
19 .....</section>
20 .....
21 .....</div>
22 .....<script src="https://cdn.jsdelivr.net/npm/vue"></script>
23 .....<script src="js/main.js"></script>
24 .....</body>
25 .....</html>
```



Add the loop

```
.....<section class="blog_index">
.....  <h1>{{ title }}</h1>

.....
.....  <article class="journal_entry" v-for="entry in articles">
.....    <div class="journal_date">{{ entry.journal_date }}</div>
.....    <div class="journal_author">{{ entry.journal_author }}</div>
.....    <div class="journal_text">{{ entry.journal_text }}</div>
.....  </article>
.....
.....</section>
.....
</div>
<script src="https://cdn.jsdelivr.net/npm/vue"></script>
<script src="js/main.js"></script>
</body>
</html>
```

```

22 .....
23 .....<section class="blog_index">
24 .....<h1>{{ title }}</h1>
25 .....
26 .....
27 .....<article class="journal_entry" v-for="e in articles">
28 .....<div class="journal_date">{{ e.journal_date }}</div>
29 .....<div class="journal_author">{{ e.journal_author }}</div>
30 .....<div class="journal_text">{{ e.journal_text }}</div>
31 .....</article>
32 .....
33 .....</section>
34 .....
35 </div>
36 <script src="https://cdn.jsdelivr.net/npm/vue"></script>
37 <script src="js/main.js"></script>

```

```

19 .....articles: [
20 .....{
21 .....  journal_date: "January 10, 1805",
22 .....  journal_author: "William Clark",
23 .....  journal_text: "about 10 oClock the boy
24 .....},
25 .....{
26 .....  journal_date: "January 27, 1805",
27 .....  journal_author: "William Clark",
28 .....  journal_text: "... I bleed the man wi
29 .....},
30 .....{
31 .....  journal_date: "February 11, 1805",
32 .....  journal_author: "Meriwether Lewis",
33 .....  journal_text: "about five Oclock this
34 .....},
35 .....]

```

localhost:8080/vue/ic/

Apps BibViz Project - Bibl... data.sparkfun.com Anonymous Sugge... Learning JavaScript... http/transport_secu... UMR Benefits - Uni... Database: Query Bu... ista

Elements Console Sources Network Performance Memory >>

View: Group by frame Preserve log Disable cache Offline Or

Filter Hide data URLs All XHR JS CSS Img Media Font Doc WS Manifest Other

50 ms 100 ms 150 ms 200 ms

Name	Status	Type	Initiator	Size	Time	Waterfall
lc/	200	docu...	Other	1.4 KB	26 ms	
style.css	200	styles...	(index)	1.1 KB	33 ms	
vue	200	script	(index)	32.6 KB	41 ms	
main.js	200	script	(index)	4.6 KB	32 ms	
in-page-script.js	200	script	content-scri...	1.4 KB	2 ms	
favicon.ico	200	x-icon	Other	198 KB	20 ms	

6 requests | 239 KB transferred | 297 KB resources | Finish: 188 ms | DOMContentLoaded: 132 ms | Load: 163 ms

Console What's New Quick source Request blocking Remote devices

top Filter Default levels

```

> app.articles
< (7) [{"__ob__": we}, {"__ob__": we}, {"__ob__": we}, {"__ob__": we}, {"__ob__": we}, {"__ob__": we}, {"__ob__": we}]
  ▶ 0: {"__ob__": we}
  ▶ 1: {"__ob__": we}
  ▶ 2: {"__ob__": we}
  ▶ 3: {"__ob__": we}
  ▶ 4: {"__ob__": we}
  ▶ 5: {"__ob__": we}
  ▶ 6: {"__ob__": we}
    length: 7
  ▶ __ob__: we {value: Array(7), dep: ce, vmCount: 0}
  ▶ __proto__: Array
  >

```

W&C Surveyors

[Home](#)

[BogoVision](#)

[Map](#)

Blog Page

January 10, 1805

William Clark

about 10 oClock the boy about 13 years of age Came to I
only a Buffalow Robe to Cover him, ... we had his feet pu
people has anured [them] to bare more Cold than I thoug

January 27, 1805

William Clark

... I bleed the man with the Plurisy to day & Swet him, Ca
time ago, ...

February 11, 1805

Meniwether Lewis

about five Oclock this evening one of the wives of Charbc
child which this woman had boarn, and as is common in s
informed me that he had freequently administered a sm
failed to produce the desired effect, that of hastening the
administered two rings of it to the woman broken in small
this medicine was truly the cause or not I shall not undert
ten minutes before she brought forth perhaps this remedy
as to it's efficacy.

March 11, 1805

William Clark

We have every reason to believe that our Menetarre inter
his wife to the Snake Indians of which nation She is) has



Walkthrough of VueJS App

(Remote Desktop)

What's Next?

Try the VueJS Introduction

<https://www.vuemastery.com/>

 **Vue Mastery**

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Our Courses



Free Course

Intro to Vue.js

 **11 Lessons**

 **56min**

 **Beginner**

If you're just getting started with Vue, here's where to get going. We cover all the basics and give you challenges so you can learn by doing.

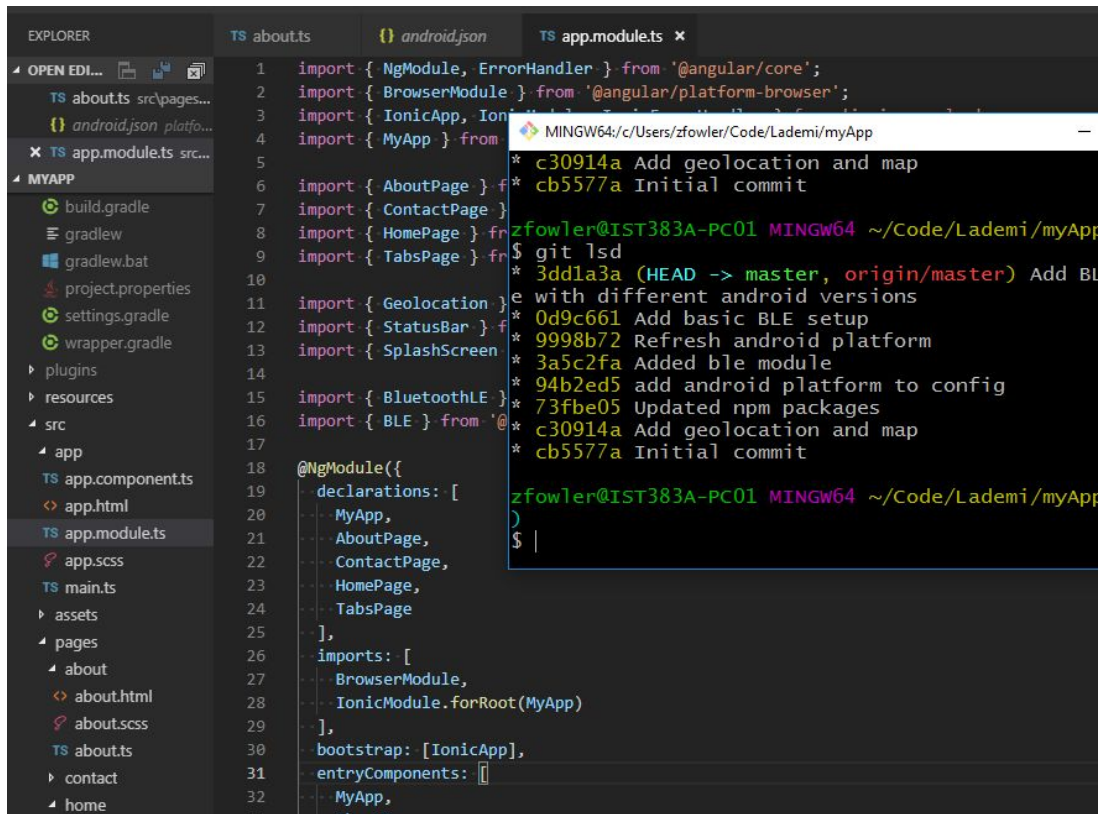
Skill to Learn or Enhance

—

Tooling

Localhost development environment

- Windows: get git-bash, use powershell, or install the linux subsystem
- Mac/Linux: you're good.
- Install:
 - git
 - npm
 - A good editor: VS Code



The screenshot shows the Visual Studio Code editor interface. On the left is the Explorer sidebar showing a project structure with files like `build.gradle`, `gradlew`, `gradlew.bat`, `project.properties`, `settings.gradle`, `wrapper.gradle`, `plugins`, `resources`, `src`, `app`, `TS app.component.ts`, `app.html`, `TS app.module.ts`, `app.scss`, `TS main.ts`, `assets`, `pages`, `about`, `about.html`, `about.scss`, `TS about.ts`, `contact`, and `home`. The main editor area displays the `TS app.module.ts` file, which contains imports for `NgModule`, `ErrorHandler`, `BrowserModule`, `IonicApp`, `MyApp`, `AboutPage`, `ContactPage`, `HomePage`, `TabsPage`, `Geolocation`, `StatusBar`, `SplashScreen`, `BluetoothLE`, and `BLE`. The code defines a `@NgModule` with declarations for `MyApp`, `AboutPage`, `ContactPage`, `HomePage`, and `TabsPage`, and imports for `BrowserModule` and `IonicModule.forRoot(MyApp)`. The bootstrap array includes `IonicApp`, and the entry components include `MyApp`. A terminal window is open on the right, showing the output of `git commit` and `git ls` commands, with commit hashes like `c30914a` and `cb5577a`.

```
1 import { NgModule, ErrorHandler } from '@angular/core';
2 import { BrowserModule } from '@angular/platform-browser';
3 import { IonicApp, IonicModule } from '@ionic/angular';
4 import { MyApp } from './app.component';
5
6 import { AboutPage } from './pages/about';
7 import { ContactPage } from './pages/contact';
8 import { HomePage } from './pages/home';
9 import { TabsPage } from './pages/tabs';
10
11 import { Geolocation } from '@ionic-native/geolocation';
12 import { StatusBar } from '@ionic-native/status-bar';
13 import { SplashScreen } from '@ionic-native/splash-screen';
14
15 import { BluetoothLE } from '@ionic-native/bluetooth-le';
16 import { BLE } from '@ionic-native/ble';
17
18 @NgModule({
19   declarations: [
20     MyApp,
21     AboutPage,
22     ContactPage,
23     HomePage,
24     TabsPage
25   ],
26   imports: [
27     BrowserModule,
28     IonicModule.forRoot(MyApp)
29   ],
30   bootstrap: [IonicApp],
31   entryComponents: [
32     MyApp,
33     AboutPage,
34     ContactPage,
35     HomePage,
36     TabsPage
37   ]
38 })
39 export class AppModule {}
```

```
* c30914a Add geolocation and map
* cb5577a Initial commit
zsfowler@IST383A-PC01 MINGW64 ~/Code/Lademi/myApp
$ git ls
* 3dd1a3a (HEAD -> master, origin/master) Add BL
e with different android versions
* 0d9c661 Add basic BLE setup
* 9998b72 Refresh android platform
* 3a5c2fa Added ble module
* 94b2ed5 add android platform to config
* 73fbe05 Updated npm packages
* c30914a Add geolocation and map
* cb5577a Initial commit
zsfowler@IST383A-PC01 MINGW64 ~/Code/Lademi/myApp
$ |
```



GIT - know it.

Github.com is great ... for a start

Know about, and how to:

- Clone
- Push / Pull (Sync)
- Branch
- Merge, Pull-Requests
- Undo your GIT mistakes

Command-line:

- `git clone git@github.com:user/repo.git`
- `git status`
- `git add [filename]`
- `git commit [-m "Commit message"]`
- `git pull`
- `git push origin master`
- `git checkout -b new_branch`
- `git merge [branch]`
- `git log --oneline --graph --decorate`
- `git config --global alias.lsd "log --oneline --graph --decorate --date-order"`



NPM: Packages, Build tools

Most front-end frameworks and toolsets will use npm/node as their core packaging system

```
npm install -g cordova
```

```
npm install -g ionic
```

```
npm install -g @angular/cli
```

Node.js is a Javascript toolset that is used to manage packages, package dependencies, run pre-compilers and transpilers, and even run build commands.

An npm project is defined by the “package.json” file, which includes author information as well as dependencies and built scripts.



NPM package.json

Example

This app is called “myApp”, and its version is 0.0.1.

The Scripts section has start, clean, built, link

The dependencies has all the angular deps.

```
1 {
2   "name": "myApp",
3   "version": "0.0.1",
4   "author": "Ionic Framework",
5   "homepage": "http://ionicframework.com/",
6   "private": true,
7   "scripts": {
8     "start": "ionic-app-scripts serve",
9     "clean": "ionic-app-scripts clean",
10    "build": "ionic-app-scripts build",
11    "lint": "ionic-app-scripts lint"
12  },
13  "dependencies": {
14    "@angular/animations": "5.2.11",
15    "@angular/common": "5.2.11",
16    "@angular/compiler": "5.2.11",
17    "@angular/compiler-cli": "5.2.11",
18    "@angular/core": "5.2.11",
19    "@angular/forms": "5.2.11",
20    "@angular/http": "5.2.11",
21    "@angular/platform-browser": "5.2.11",
22    "@angular/platform-browser-dynamic": "5.2.11",
```

Looking for Front End Dev Jobs?



IS&T Attic is Hiring

Several projects that have needs:

- Back-end programming: php/laravel or python/django
- Front-end development:
 - Ionic!
 - Vue! (OK just one right now)

Skills required:

HTML: Know tags, elements, attributes, validation

CSS: Know selectors, properties, values, SCSS a plus, so is NPM build tools

Javascript: any vanilla JS is a plus. jQuery/AJAX a bonus.

(This class.)



Other Credits

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VueJS work derived from <https://www.vuemastery.com/>