Front-end Frameworks

An overview of commonly used front-end frameworks.

We'll cover the following

In the previous lesson, we discussed the different types of frameworks that exist and enumerated a few of each type. Now, we will briefly outline the specifics of each front-end framework to see what options are available to ease the process of developing the user interface and client-side of your application.

Angular

Angular is a JavaScript framework created by Google that has been designed specifically for creating dynamic web applications. AngularJS addresses the limitations of HTML dynamic views in web applications and allows you to extend HTML vocabulary for your application. The resulting environment is highly expressive, readable, and quick to develop. Angular is used primarily to update the user interface in real time and provide a highly interactive website. Given below is an example of how that is done:

Output

HTML

```
<html>
 <head>
 </head>
  <script src="https://ajax.googleapis.com/ajax/libs/angularjs/1.6.9/angular.min.js"></s
 <body>
```

```
    <div id="content"/>
    <div ng-app="">

<p>Enter your name:</p>
<p>Name : <input type="text" ng-model="name" placeholder="Enter name here"></p>
<h1>Hello {{name}}</h1>

</div>
 </body>
</html>
```

Bootstrap

Bootstrap, which can easily be categorized as the most used open-source framework in the world, was created by Twitter developers and primarily served to ease up the process of adding CSS to HTML. Bootstrap, like any other front-end framework, includes CSS, HTML, and JavaScript components. It adheres to responsive web design standards, and thus, allows users to develop responsive websites of all complexities and sizes.

React.js

React is a JavaScript library for building user interfaces. While there are doubts about whether it is an actual framework, it is a highly popular library that is used to build the View layer of an MVC application and warrants discussion in the context of front-end development. React is a component-based library that allows users to build encapsulated components, each of which manages its own state, and then compose them to make complex User Interfaces. The benefit of this is that when data changes, React makes sure that only the concerned components are updated. Given below is an example of what a simple React component looks like:

/

index.js

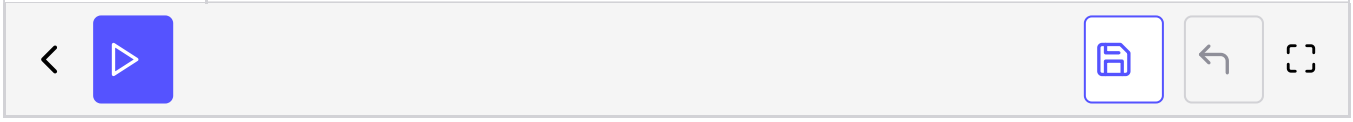
app.js

style.css

```
import React from 'react';

export default class App extends React.Component {
  render() {
    return (
      <WelcomeMessage uid="user1"/>
    );
  }
}
```

```
class WelcomeMessage extends React.Component {
 render() {
   return (
     <div>
       Welcome to my Website {this.props.uid}
     </div>
   );
 }
}
```

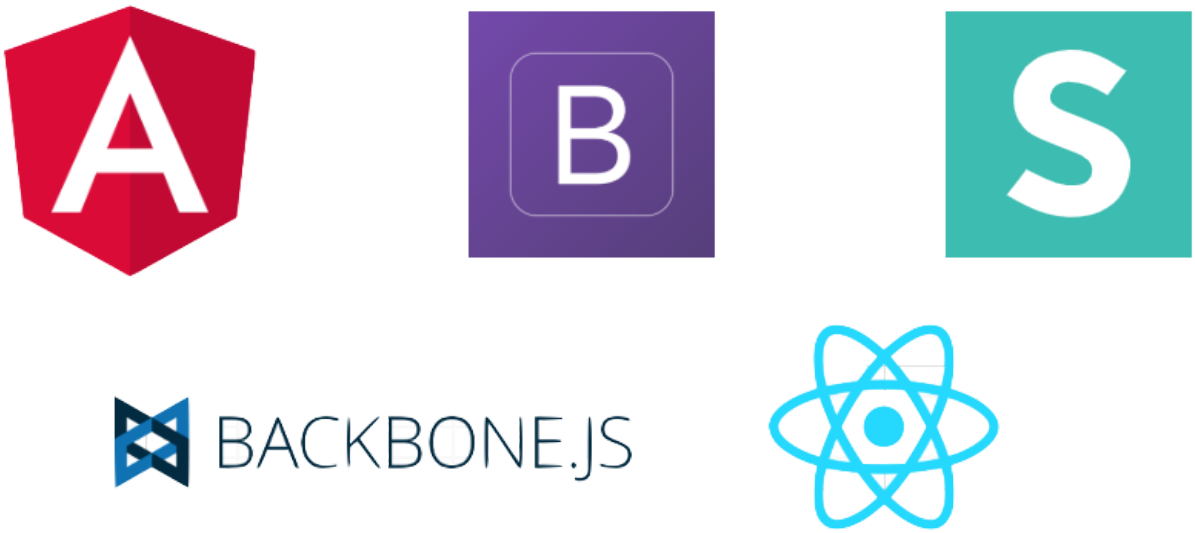


Backbone

Backbone.js is an extremely light framework that allows you to structure your JavaScript code in an MVC (Model, View, Controller) form. Backbone makes use of **models**, **views**, and **collections** to ensure that your program does not become entangled in a myriad of callbacks and other extraneous pieces of code that make changes complicated. Instead, the models represent the data of the application and Backbone ensures that any changes to these models automatically trigger changes to any views that display these models.

Semantic-UI

While Semantic-UI is a relatively new framework, it stands out in a number of ways. The primary distinction this particular framework enjoys is its simplicity. Semantic-UI uses natural language, and the code is, therefore, largely self-explanatory, thus making it highly desirable for beginners, particularly those with little or no coding experience. In addition to this, Semantic-UI is also integrated with a myriad of third-party libraries. This means that the development process becomes much easier because, for simpler applications, all the libraries you might require might already be integrated with the framework. Semantic-UI, therefore, is a great starting point for developing the front-end of beginner level websites. However, its package sizes are considerably larger than those of Foundation and Bootstrap, and it may not be a viable option when developing websites with more complex structures.



Popular Front-end Frameworks

Now that we know the many front-end frameworks that are available to streamline the front-end development process of your web application and their benefits, let's move on to look into the frameworks that exist for the back-end.