

## JavaScript Frameworks

### *Speaker: Ray Ryon*

In the last unit we looked at JavaScript libraries. This week we are checking out JavaScript Frameworks. Libraries help with common tasks that are commonly used and thereby making available solutions for implementing these tasks into web pages. A framework offers a bigger perspective as we are not looking at tasks but whole site development. Frameworks offer the structure used to build the entire web site. By using a specific framework, you are identifying the technique that you will use to develop the web pages. For example, some frameworks use the MVC pattern where the web application is divided into three parts, the Model, View and Controller. Using a framework allows for faster development because it already had predefined structure that is the basis to add the webpage functionality.

The Angular.js framework was developed by Google and first released in 2009. It has become very popular. It uses the MVC pattern of development. It was created for developing Single Page Web Applications and is known for its two-way data binding.

React.js was already discussed as a JavaScript library. It was developed by Facebook and was released in 2013. It uses the concept of a virtual DOM. The virtual DOM is rendered at the server side and compared to with the actual DOM at the client side. When differences are detected then selective changes are made of the differences instead of re-rendering the entire DOM. It works well for the View portion of MVC. Because React deals mostly with the view development and not the Model, it has not been called a framework. However, it is often discussed with and compared to frameworks.

There are several other JavaScript frameworks. Vue.js (2014), Meteor.js (2012), and Ember.js (2011) are all becoming relatively popular. In fact, Angular has a new look with versions 2.0 and 4.0 becoming known simply as Angular and version 1.0 keeping the name of Angular.js.

In this unit I will focus on Angular/Angular.js since it is the most commonly used JavaScript Framework. At IHCC, we have several business advisors that recommend to us various concepts to be taught. They have stressed an interest in finding employees with more Angular experience.

Following are some topics that we will explore further in the discussion area. Be sure you understand each of these concepts by the time you are done with this unit.

1. What is Angular?
2. How is Angular set up? (CLI, TypeScript, transpile, Node.js, npm, ES2015)
3. What is the basic architecture of Angular? (Application, Modules, Components, Templates, Data Binding, Directive, Dependency Injection, Service)
4. How do you decorate a component?
5. How do you bootstrap a component?
6. How do you load component properties with interpolation?
7. How can you use ngFor to loop through an Array of objects?
8. How can you use ngIf to make a decision?

9. How are pipes used?
10. How do you use methods in components?
11. How do you import and export classes?
12. How do you add styles array metadata?
13. How do you split HTML, CSS and mock data into their own files?
14. How do you create and use a model?

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