Learn AngularJS in 1 Day

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Chapter 1: What is AngularJS?

What is AngularJS?

AngularJS is an open source Model-View-Controller framework which is similar to the JavaScript framework.

Angular JS is probably one of the most popular modern day web frameworks available today. This framework is used for developing mostly Single Page applications. This framework has been developed by a group of developers from Google itself.

Because of the sheer support of Google and ideas from a wide community forum, the framework is always kept up to date. Also, it always incorporates the latest development trends in the market.

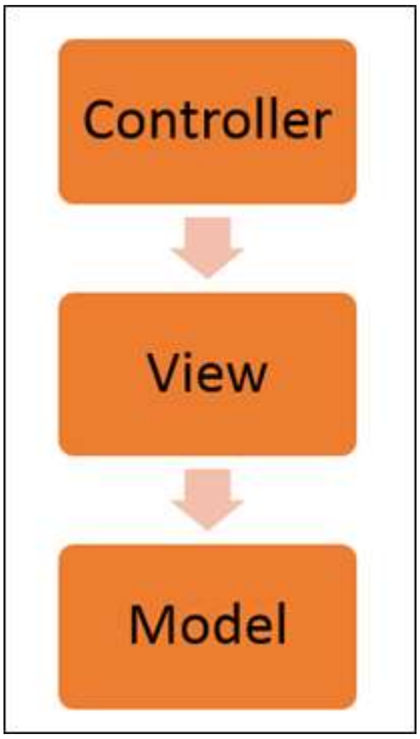
AngularJS Features

Angular has the following key features which makes it one of the powerful frameworks in the market.

1. **MVC** – The framework is built on the famous concept of MVC (Model-View-Controller). This is a design pattern used in all modern day web applications. This pattern is based on splitting the business logic layer, the data layer, and presentation layer into separate sections. The division into different sections is done so that each one could be managed more easily.
2. **Data Model Binding** – You don't need to write special code to bind data to the HTML controls. This can be done by Angular by just adding a few snippets of code.
3. **Writing less code** – When carrying out DOM manipulation a lot of JavaScript was required to be written to design any application. But with Angular, you will be amazed with the lesser amount of code you need to write for DOM manipulation.
4. **Unit** Testing ready – The designers at Google not only developed Angular but also developed a testing framework called "Karma" which helps in designing unit tests for AngularJS applications.

AngularJS Architecture

Angular.js follows the MVC architecture, the diagram of the MVC framework as shown below.

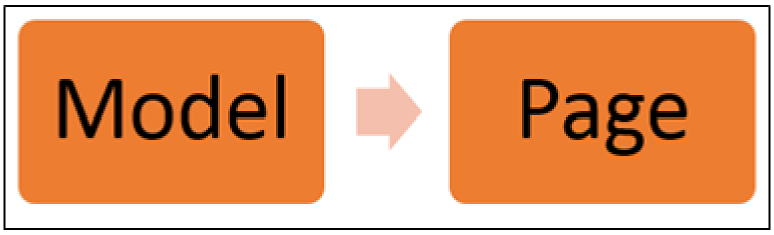


Angularjs Architecture Diagram

- The Controller represents the layer that has the business logic. User events trigger the functions which are stored inside your controller. The user events are part of the controller.
- Views are used to represent the presentation layer which is provided to the end users
- Models are used to represent your data. The data in your model can be as simple as just having primitive declarations. For example, if you are maintaining a student application, your data model could just have a student id and a name. Or it can also be complex by having a structured data model. If you are maintaining a car ownership application, you can have structures to define the vehicle itself in terms of its engine capacity, seating capacity, etc.

AngularJS Advantages

- Since it's an open source framework, you can expect the number of errors or issues to be minimal.
- Two-way binding – Angular.js keeps the data and presentation layer in sync. Now you don't need to write additional JavaScript code to keep the data in your HTML code and your data later in sync. Angular.js will automatically do this for you. You just need to specify which control is bound to which part of your model.



- Routing – Angular can take care of routing which means moving from one view to another. This is the key fundamental of single page applications; wherein you can move to different functionalities in your web application based on user interaction but still stay on the same page.
- Angular supports testing, both Unit Testing, and Integration Testing.
- It extends HTML by providing its own elements called directives. At a high level, directives are markers on a DOM element (such as an attribute, element name, and comment or CSS class) that tell AngularJS's HTML compiler to attach a specified behavior to that DOM element. These directives help in extending the functionality of existing HTML elements to give more power to your web application.

Chapter 2: Hello World

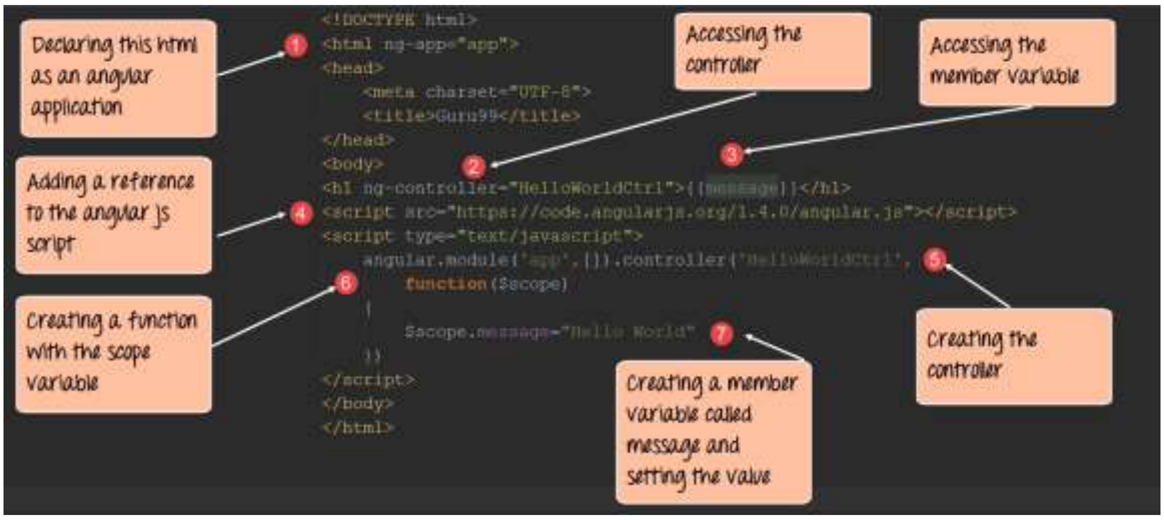
The best way to see the power of an AngularJS Application is to create your first basic program "Hello World" app in Angular.JS.

There are many integrated development environments you can use for AngularJS development, some of the popular ones are mentioned below. In our example, we are using Webstorm as our IDE.

1. Webstorm
2. Sublime Text
3. AngularJS Eclipse
4. Visual Studio

Hello world, AngularJS

The example below shows the easiest way to create your first "Hello world" application in AngularJS.



```
<!DOCTYPE html>
<html ng-app="app">
<head>
    <meta charset="UTF-8">
    <title>Guru99</title>
</head>
<body>
<h1 ng-controller="HelloWorldCtrl">{{message}}</h1>
<script src="https://code.angularjs.org/1.4.0/angular.js"></script>
<script type="text/javascript">
    angular.module('app',[]).controller('HelloWorldCtrl',
        function($scope)
    {
        $scope.message="Hello World"
    })
</script>
</body>
</html>
```

Declaring this html as an angular application
Adding a reference to the angular js script
Creating a function with the scope variable
Accessing the controller
Accessing the member variable
Creating the controller
Creating a member variable called message and setting the value
1
2
3
4
5
6
7

```
<!DOCTYPE html>

<html lang="en">

<head>

   <meta chrset="UTF 8">

   <title>Guru99</title>

</head>

<body ng-app="app">

<h1 ng-controller="HelloWorldCtrl">{{message}}</h1>

<script src="https://code.angularjs.org/1.6.9/angular.js"></script>

<script>

   angular.module("app", []).controller("HelloWorldCtrl", function($scope) {

   $scope.message="Hello World"

   } )

</script>



</body>

</html>
```

Code Explanation:

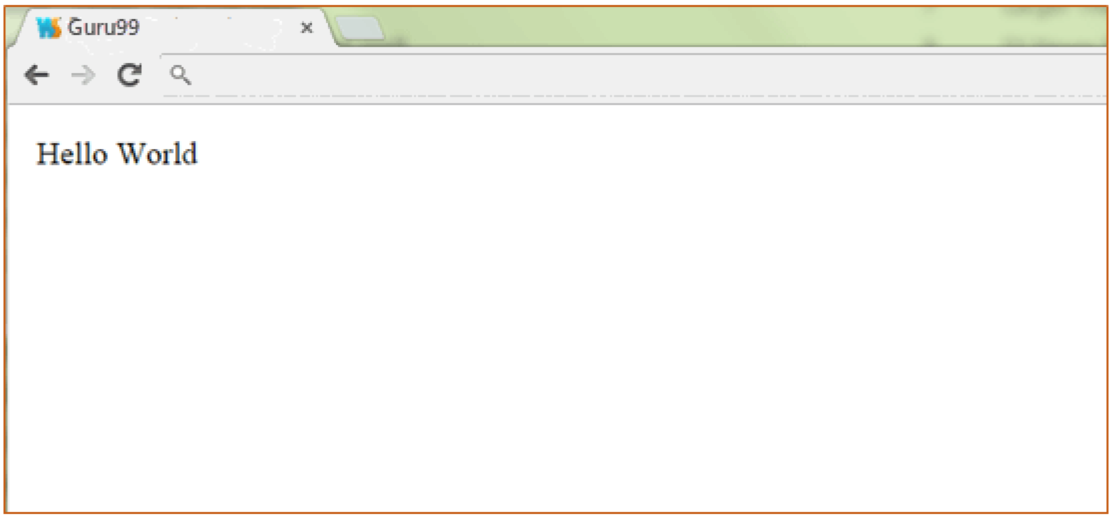
1. The "**ng-app**" keyword is used to denote that this application should be considered as an angular js application. Any name can be given to this application.
2. The controller is what is used to hold the business logic. In the h1 tag, we want to access the controller, which will have the logic to display "HelloWorld", so we can say, in this tag we want to access the controller named "HelloWorldCtrl".
3. We are using a member variable called "message" which is nothing but a placeholder to display the "Hello World" message.
4. The "script tag" is used to reference the angular.js script which has all the necessary functionality for angular js. Without this reference, if we try to use any AngularJS functions, they will not work.
5. "Controller" is the place where we are actually creating our business logic, which is our controller. The specifics of each keyword will be explained in the subsequent chapters. What is important to note that we are defining a controller method called 'HelloWorldCtrl' which is being referenced in Step2.
6. We are creating a "function" which will be called when our code calls this controller. The $scope object is a special object in AngularJS which is a global object used within Angular.js. The $scope object is used to manage the data between the controller and the view.
7. We are creating a member variable called "message", assigning it the value of "HelloWorld" and attaching the member variable to the scope object.

NOTE: The ng-controller directive is a keyword defined in AngularJS (step#2) and is used to define controllers in your application. Here in our application, we have used the ng-controller keyword to define a controller named 'HelloWorldCtrl'. The actual logic for the controller will be created in (step#5).

If the command is executed successfully, the following Output will be shown when you run your code in the browser.

Output:

The message 'Hello World' will be displayed.



Hello World