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**ANGULARJS**

Angular JS is a client-side JavaScript framework that is used to add interactivity to HTML, it is a structural framework for dynamic web application. Angular JS is popular for its ability to create single page web applications. Angular JS basically lets one extends the HTML’s syntax and expression.

**Concepts of Angular JS**

* **Module:** These are container like structures used to separate logic e.g services, controllers, applications etc.
* **Directives:** This are attributes or elements that argument existing DOM elements.
* **Controllers:** These are JavaScript functions bound to a particular scope.
* **Expressions:** This is data within double curly braces used to bind data to html.
* **Filters:** The are elements of Angular JS that govern the way data is formatted for display.
* **Form Control:** These represent angular JS’ input Validation of data input.
* **Services:** The se are Angular JS Functions that implement Dependency Injection and are used to perform specific tasks.

**Advantages of Using AngularJS**

* Allows development of single page applications
* Developer write less code with more functionality
* It provides Data Binding that enables development sophisticated responsive applications
* Testing is possible per unit of development
* Provides reusable components
* Views are simply pure HTML files while Controllers are the JavaScript code that does the business processing
* AngularJS utilizes dependency Injection that makes it Possible for separation of concerns.

**Disadvantages**

* For a JavaScript disabled browser, a user will only see a basic page and all the embedded AngularJS will not work.
* AngularJS depends mainly on Server side authentication and authorization to keep the application secure since JavaScript can be used to access user data inappropriately.

**Adding Script to file**

To build an Angular JS application, download the latest release of angular.min.js script and add the script to the html file using the script HTML element.

***<script src="angular.min.js"></script>***

***MVC ARTCHITECTURE***

AngularJS utilizes the software design pattern called MVC(Model View Controller) where by the model which acts as the lowest level of the pattern is responsible for managing data, View displays all or a portion of the data to the User when triggered by the controller, while the controller controls the interactions between the model and the view.

**MODULE**

Modules are defined on separate JS file, modules in an application can represent: A feature, A reusable component or an application level which depended on the above mentioned modules and contains an initialization code.

Syntax of a module:

***var myModule=angular.module(‘mainPageModule’, []);***

A module has a module name(mainPageModule) and an array which may contain dependent modules.

To use the module on the HTML code simply use the ng-app directive as below

***ng-app= “<body ng-app=“mainPageModule” >”***

**DIRECTIVES**

Angular JS contains special directives that are used to perform major functions: these directives include:

* **ng-app**-starts an AngularJS Application
  + ***example: <div ng-app=”myApp”></div>***
* **ng-init-**Initializes application data
  + ***example:<div ng-app=”myapp” ng-init=”Numbers=[1,2,3,4,5,6,7]”></div***
* ***ng-model***-defines model to be used in AngularJS
* ***ng-repeat-***repeats HTML element in a collection.
* ***ngForm:*** Nestable alias of form directive.
* ***ng-bind:*** tells angular to replace text content of the specified HTML element with the value of a given expression.

Other directives include ng-show***, ng-bind, ngsrc, ngDisabled, ngChecked, ngreadOnly, ngOpen***. Etc.

**EXPRESSIONS**

These are code snippets within double curly braces, expressions can be simple mathematics or scope names from the referenced module.

Examples:

{{**“Hello” +” You”}}** will output ***hello you***

{{**Hello” + name}}** if name in the module is defined as Charity it will output **Hello Charity**

**TEMPLETES**

Templets are written in HTML and contain angular specific elements and attributes; some of the elements and attributes include: directives, markup, filter and form Controls. A simple template for angular JS will contain HTML, CSS and Angular directives. A complex template may contain multiple views with one main page having segments.

**SERVICE**

In AngularJS, services are just substitutable objects that are wired together using dependency injection. Services can be inbuilt, or user defined. Inbuilt s of inbuilt services include: $http.

* Services provide methods to keep data across the lifetime of the angular application.
* They provide method of communication across the controller in a consistent way.
* They are a singleton Objects and they get instantiated only once per application
* They are used to organize and share data and functions across applications

Services can be created or registered in four different ways:

* Using the service() method
* Using the factory() method
* Using the provider() method
* Using the value() method

**FILTERS**

Filters in AngularJS are used to format the value of an expression fro display to the user. Filters are used in templates, controllers or services.

Syntax: {{expression | filter}}

Filter chaining is the applying filters to the result of another filter.

Syntax:

{{ expression | filter1 | filter2 | filter3| …..}}

**DATABINDING**

Data Binding in Angular JS is basically the automatic synchronization of data between the model and the view component. Any changes made to the view are immediately reflected in the model and any changes made in the model are immediately reflected on the view.

**References**

<https://docs.angularjs.org/guide>

<http://www.tutorialspoint.com/angularjs/index.htm>

<https://lostechies.com/gabrielschenker/2013/12/28/angularjspart-6-templates/>