Introduction to AngularJs and their components

Participants

1st presentation by Faisal (Introduction of angularJs)

2nd presentation by Atif (Advanced features and components of angularJs)

3rd presentation by Haider (Best practises of angularJs)

4th presentation will be on AngularJs 2 (coming soon)

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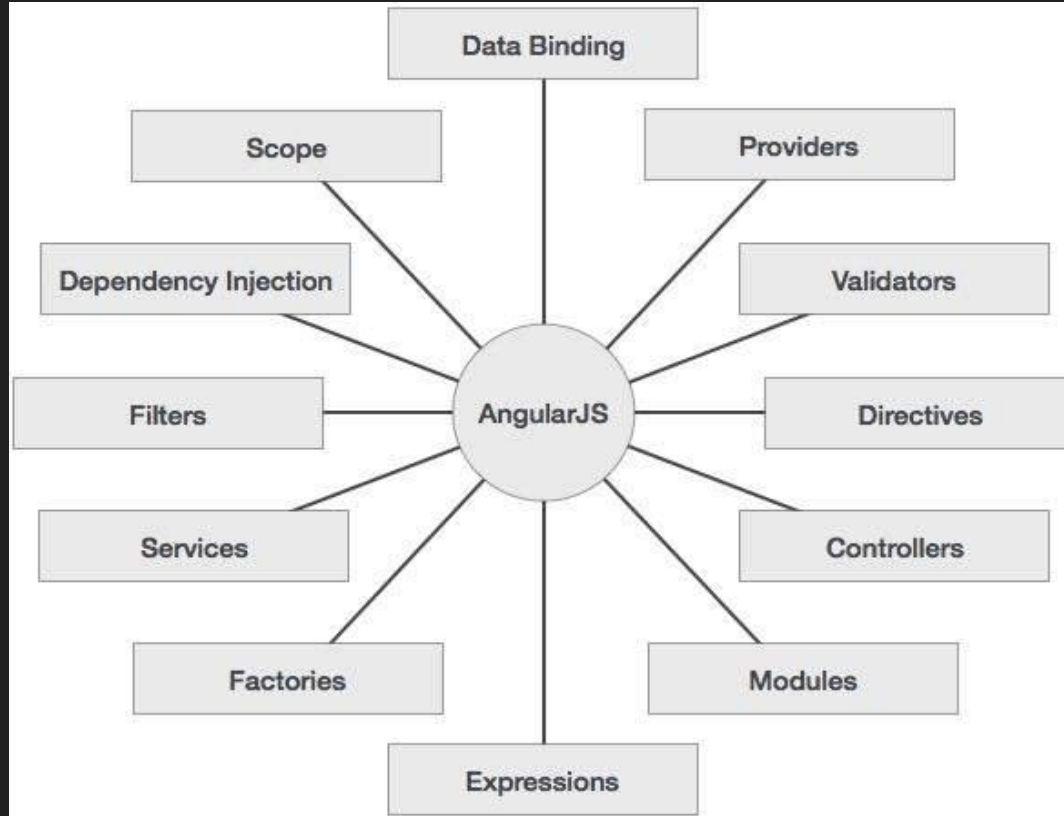
Road Map (core features)

1) AngularJs Overview
2) Advantages and disadvantages.
3) How to install and configure AngularJs
4) Angular Directives
5) Angular Data binding
6) Angular Controller
7) Angular Filter
8) Angular Tables
9) Angular Forms
10) Angular Include
11) Angular Services

What Is AngularJs ?

1. AngularJs is an open source javascript MVC framework.
2. To build large scale and high performance web applications.
3. It was originally developed in 2009 by Misko hevery and Adam abrons,
4. Google has created or build properly architectured and maintained web applications.
5. Its latest version is 1.5.7
6. It is used in Single Page Application (SPA) projects.

AngularJs Features:

Advantages of AngularJs

1) Capability to create single page applications.
2) Maintainability is easy.
3) Provide data binding capability to html.
4) AngularJs code is unit testable.
5) Provide reusable components.
6) Write less code and get more functionality.

Disadvantages of AngularJs

1) **Not Secure** - Being javascript only framework, application written in angularJs are not safe. Server side authentication and authorization is must to keep an application secure.

2) If your application user disable javascript then user will just see the basic page and nothing more.

Environment Setup:

1) Go to the link https://angularjs.org
2) You will see two option to download angular library
3) Download angularjs 1.
4) Show as example environment-setup.html
5) Show another example myfirstexample.html

Include AngularJs

1) We included the angularJs javascript file in the html page.
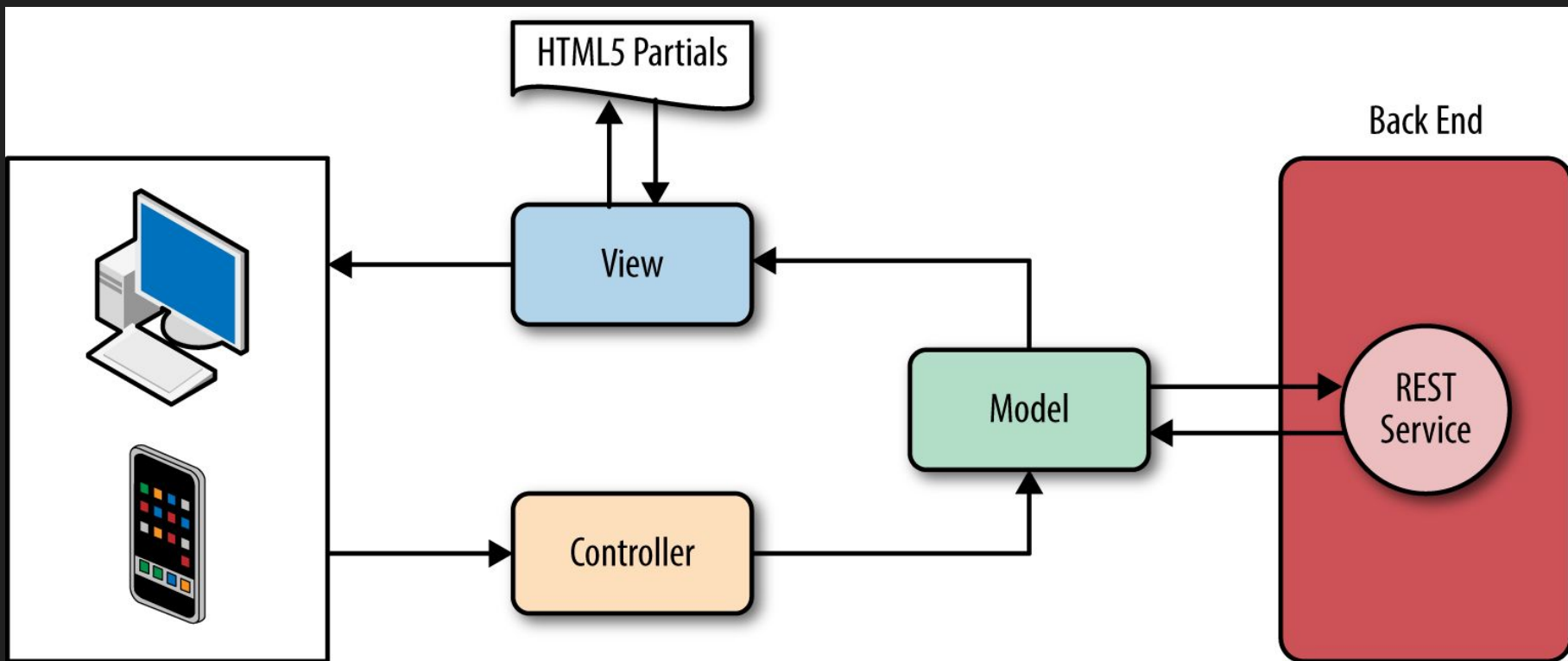
```
<head>
    <script src = "http://ajax.googleapis.com/ajax/libs/angularjs/1.5.2/angular.min.js"></script>
</head>
```

2) ng-controller tells angularjs what controller to use with that particular view.

3) helloTo.title tells angularjs to write the value to the html.

4) The $scope parameter passed to the controller function is the model.

5) the controller function adds helloTo javascript object, and in that object it adds a title field.

AngularJs boot process

When angular page loaded into the browser, following things happen -

1) Html document loaded into the browser.
2) Angular javascript loaded into the browser.
3) Angular global object is created.
4) Functions of the registers controller will get executed.
5) Angular render the views with data from the model populated by the controller.
6) The page is now ready.

Angular seed project

1) Go to the link https://github.com/angular/angular-seed
2) Clone angular seed project
3) Install angular and their dependencies via bower.
4) Angular-animate.js, angular-cookies.js, angular-resource.js, angular-route.js, angular-touch.js
5) Ref : https://docs.angularjs.org/misc/downloading

AngularJs Directives

1. AngularJs directives are used to extend html.
2. Directives are markup of dom elements like (attribute or element name).
3. These are special attributes starting with ng-prefix
4. AngularJs also enables the programmer to write new html tags (Angular directives).

E.g :
Attribute dir : <div my-dir=""> ... </div>

Element dir: <my-dir> … </my-dir>

Directives example

For Example :

ng-app - This directive starts an angularJs application

ng-init - This directive initialize application data

ng-model - This directive defines the model that is variable to be used in angularjs.

ng-repeat - This directive repeats html elements foreach item in a collection.

AngularJs Expressions

1) Expressions are used to bind application data to html.
2) Expressions are written inside double braces like {{ Expression }}.
3) Show an example expression.html

AngularJs Filters

1) Filters are used to change or modify the data.
2) It can be embed in expressions and directives using pipe character.

Commonly used filters are :

Uppercase
Lowercase
Currency
filter
orderby

Angular Events

AngularJs provide multiple events which can be associated with the html controls

For example ng-click is normally associated with buttons

Following are the supported events in angularJs :

ng-click   ng-dbl-click   ng-mousedown   ng-mouseup

ng-keydown   ng-keyupp   ng-keypress   ng-change

Angular Routes

1) Routes are dependant on the ngRoute module.

```javascript
helloWorldApp.config(['$routeProvider', '$locationProvider',
function($routeProvider, $locationProvider){
 $routeProvider.
  when('/', {
    templateUrl: 'partials/main.html',
    controller: 'MainCtrl' }).
  when('/show', {
    templateUrl: 'partials/show.html',
    controller: 'ShowCtrl'
});
```

AngularJs Form validation

1) AngularJs is capable to do form filling and validation.
2) We can use $dirty and $invalid flags to do the validations.

Following can be used to track error.

- **$dirty** − states that value has been changed.

- **$valid / $invalid** − states that value entered is valid or invalid.

- **$error** − states the exact error.

AngularJs Includes

Using AngularJs, we can embedded html pages within a html page using ng-include directive.

```
<div ng-app = "" ng-controller = "studentController">
    <div ng-include = "'main.htm'"></div>
    <div ng-include = "'subjects.htm'"></div>
</div>
```

AngularJs Scopes

1) Scope is a special javascript object which plays the role of joining ccontroller with the views
2) Scope contains the model data
3) In controller, model data is accessible via $scope object
4) We can define functions as well in $scope

```html
<script>
    var mainApp = angular.module("mainApp", []);

    mainApp.controller("shapeController", function($scope) {
        $scope.message = "In shape controller";
        $scope.type = "Shape";
    });
</script>
```

Scope Inheritance

1) Scope are controllers specific.
2) If we defines nested controllers, then child controller will inherit the scope of its parent controller.

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<script>
   var mainApp = angular.module("mainApp", []);

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   mainApp.controller("circleController", function($scope) {
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Ref.

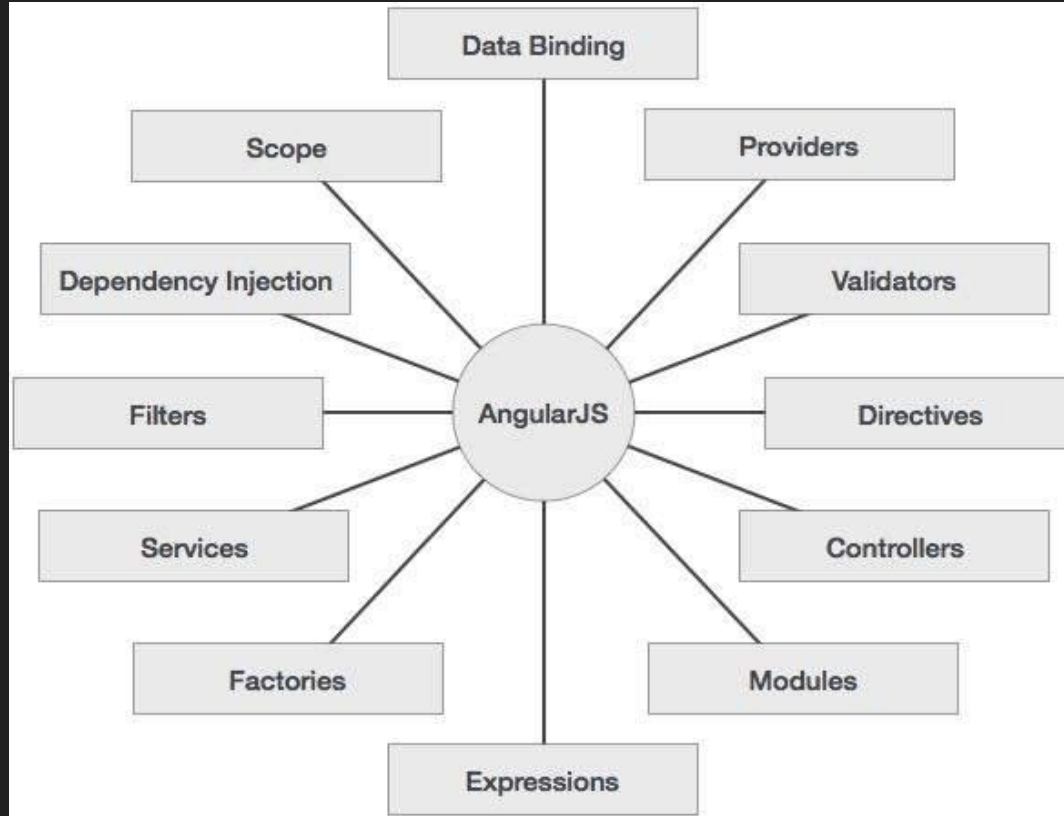1) http://www.tutorialspoint.com/angularjs/index.htm

Q?A

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11) Angular view and templates

12) Angular Scope

13) Angular Routing

14) AngularJs Boot process

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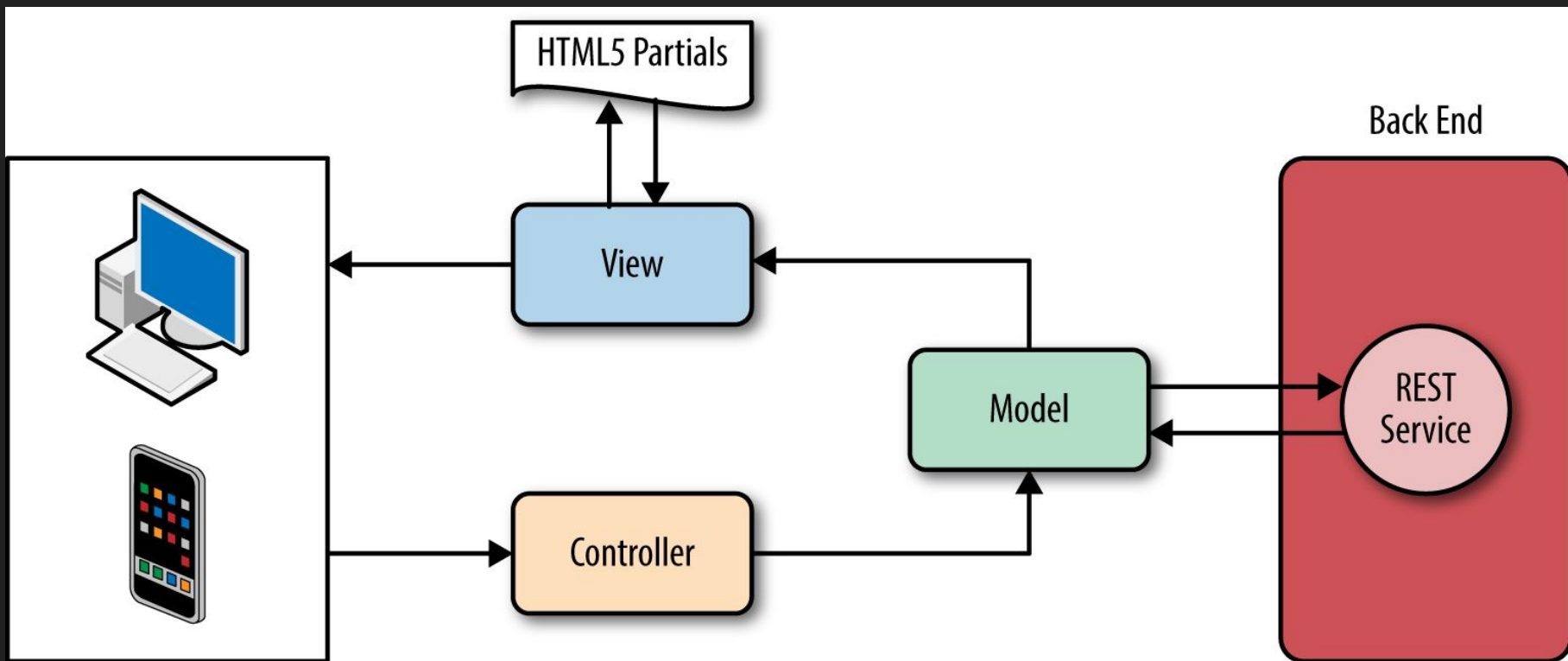
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