AngualrJS Estimation.

/** **Day - 1****/	/** **Day - 2****/
1. Overview 2. Environment setup 3. MVC Architechture 4. Directives 5. Expressions 6. ng-repeat 7. Modules 8. Controllers 9. Filters 10. Includes	1. ng-routing 2. HTTP service 3. $watch 4. $digest 5. Services 6. Factories 7. Providers 8. ngshow 9. Custom directives

Note: After completion candidate is ready to take E0, E1

Overview

A framework for building client applications in HTML, CSS, and JavaScript/ TypeScript.

Why do we need angular?

- Gives our applications a clean structure
- Includes a lot of re-usable code
- make our applications more testable

Angular makes your life easier.

Architecture of angular apps

Font end, Back end

Front-end > User Interface (HTML CSS, Typescript, Angular)

Back-end > Data and Processing

API - > Application Programming Interface

HTTP Services / APIs

Endpoints that are accessible via the HTTP protocol.

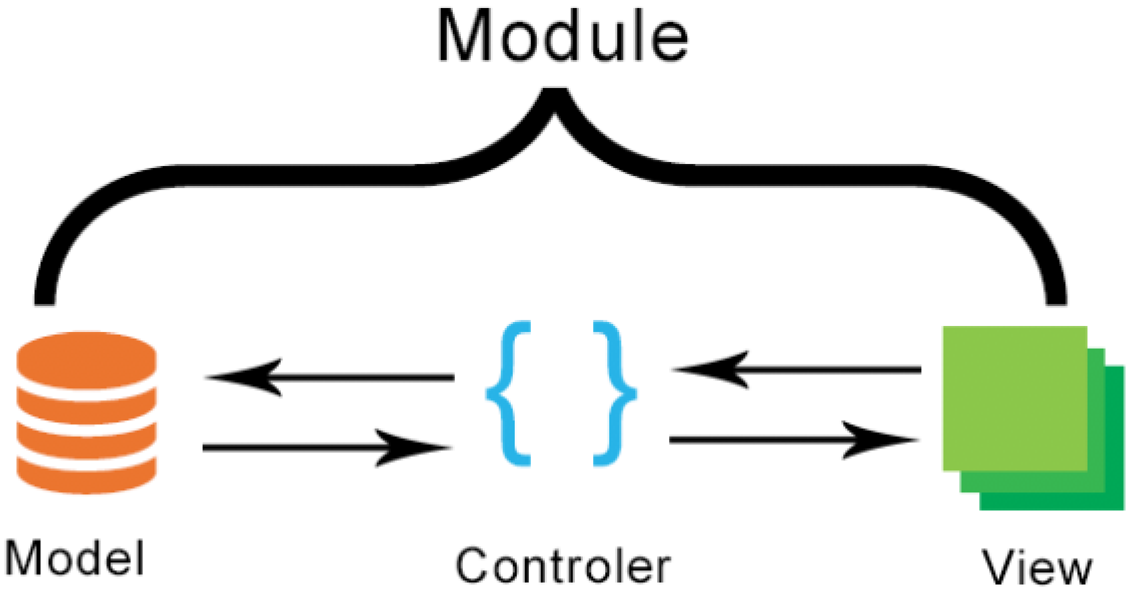
```
……………………..                                     ……………………..
.                  .                                     .                  .
.                  .                                     .                  .
.    Front-end     . ——————————————————> .    Back-end      .
.                  .                                    .                   .
.                  .                                    .                   .
……………………..                                    ..……………………..

 HTML Templates                                      Data+ APIs
Presentation Logic                                  Business Logic
```

Front-end > User Interface (HTML CSS, Typescript, Angular)

Back-end > Data and Processing

MVC Architektur

AngularJS uses MVC architecture in its approach to create Web apps.



Model :- How the application behaves with data like JSON, database date etc

View :- Used to display content & data to user in a browser.

Controller:- The coding which would act between model and view

We can create serenade of module and made them to handle specific part of your application.

Reference link:-

https://www.youtube.com/watch?v=CQE1cBsJ_Gk&index=2&list=PL4cUxeGkcC9gsJS5QgFT2IvWIX78dV3_v

Your First Angular App

Setting up the Developer Environment

First install nodejs

NodeJs.org

Installing angular is pretty simple

CDN or download minified version

Directives

At high level, directives are markers on a DOM element that tell Angular js HTML compiler to attach a specified behaviour to that DOM element to event transform the DOM element and its Children.

data-ng:model

x-ng-model

ng-model

Same result only writhing method is different.

Reference :

https://www.youtube.com/watch?v=Wm1Zj_VLbpk&list=PL4cUxeGkcC9gsJS5QgFT2IvWIX78dV3_v&index=5

Expressions

Expressions are nothing but the curly braces {{ }} we use to output out ng-model. Inside the braces we can directly do aurthematic operations.

Reference :

https://www.youtube.com/watch?v=xB-OkaRilZo&index=6&list=PL4cUxeGkcC9gsJS5QgFT2IvWIX78dV3_v

ng-repeat

We can us this directive to loop through items.

Modules and controllers

In order to create better applications angularjs use something called modules and controllers

The module is container for different parts of your applications, and inside a module, we can have different controllers.

In order to a module to work we need to connect the module to html with the help ng-app directive.

Controllers are pieces of code that can handle some specific functionality within module.
In order to specify where a specific controller handles functionality, we can use the ng-controller directive.

One of the most common ways to initialise components is by using a special variable called scope.

scope is global object that we can use to communicate between our JavaScript and HTML.

Filters

Currency, number, date, lowercase, uppercase

Use the l and : Characters

Advance filters

limitTo:qty:start

filter:keyword
Filter the array to a subset of it based on provided criteria.

orderBy:key:reverse
Orders the array based on provided criteria.

ngInclude

We can embed HTML pages with a html page using ng-include directive.

```
<div ng-app = "" ng-controller = "studentController">
  <div ng-include = "'ex-1.htm'"></div>
  <div ng-include = "'ex-2.htm'"></div>
```

```
</div>
```

ngRoute

ngrouter module provides routing and deep linking services and directives for angularJS.

Directive

ngView is directive that complements the $route service by including the rendered template of the current route into the main layout file.

$watch

It is used to watch over a variable ourseleaver and get a hold of it in javascript.

For example the input field i want to know how many times it is modified to do that we can use watch.

HTML

```
<input type ="text" ng-model="myText"/>
{{myText}}
You update the text box {{counter}} times
```

```
var app = angular.module("app",[]);

app.controller("myCtrl", function ($scope){
$scope.counter=-1;
$scope.$watch('myText', function(newValue, oldValue){
console.log(newValue);
console.log(oldValue);
$scope.counter++;
})

})
```

$digest

Just like $watch it's vatches over the variable and $digest also create a life cycle of digest iterate over all the watches.

HTML

```
<span>{{myRandomnumber}}</span>
<br/>


var app = angular.module('app'.[]);
app.controller('myCtrl', function($scope){
$scope.myRandomnumber = Math.random();

document.querrySelector('input').addEventListner('click', function(){
$scope.myRandomnumber = math.random();
$scope.$digest();
}, false)

})
```

Services

A service in Angular is simply an object that provide some sort of service that can be reused with in an angular application.

Services encapsulate reusable logic that does not belong any where else.

Directives , Filters, Views, modules Controllers

What are the benefits of using Services

Reusability

Dependency injector

Testability

HTML

```
<button ng-click="genreateRandom()">Generate number</button>
<br>
{{rendomNumber}}
```

JS

```
var app = angualr.module('mainApp', []);



app.service('rendom', function(){


var num = Math.floor(Math.random()*10);
this.generate = function(){
return num;
};


})


app.controller('myCtrl', function($scope, random){
$scope.generateRandom = function(){
$scope.rendomNumber = rendom.generate();
}
})
```

Factories

The services and factories are pretty much smilier ones.

```
app.factory('random', function(){
    var rendomObject = {};


    var num = Math.floor(Math.random()*10);
randomObject.generater= function(){
  return num;


};
return randomObject;
})
```

Providers

There are basically head of services, factories can be done in providers.

```
{{greetMessage}}
```

```
app.provider('date', function(){
return{
    $get:function(){
        return{
            showDate:function(){
                var date = new Date();
                return date.getHourse();
                }
            }
        }
    }
});

app.controller('myCtrl', function($scope, date){


$scopr.greatMessage = date.showDate();


})
```

Booleans and loops

ng-show and ng-hide

ng-show will display an element if the value of the expression is true, where as ng-hide will hide that element.

ng-if

It will create an element only if the expression you give it is true.

The main difference is that the element will not exist at all unless the expression is true. So it down't just show or hide an item, it completely creates or destroys the element.

Custom directives

Custom directives are used in angularjs to extend the functionality of HTML.

Custom directive are defined using 'directive' function.