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Angular JS

Day 3

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Course Information

Course Code	: LA1211
Course Name	: AngularJS
Version Number	: 1.2

Day 3 Objectives

- Dependency injection
- Services

References

- Brad Green, Shyam Seshadri, AngularJS , O'Reilly Media, 2013.
- http://docs.Angularjs.org/guide/
- https://github.com/Angular

Services and Dependency Injection

Dependency injection

- AngularJS comes with an in-built dependency injection subsystem.
- DI makes the application development and testing much easier.
- DI allows the developer to ask for the dependencies from Angular. There is no need for the developer to explicitly create/instantiate them.
- Creation of dependent modules and providing the same to the developer is automatically taken care of via DI.

Dependency Injection

- Dependency injection defines how objects can get hold of their dependencies.
- We can do this in three ways:
  - Creating dependency using new operator.
  - Referring to a global variable to look up a dependency.
  - Passing the dependency in to where it is needed.
- For the first two options, we need to hardcode the dependencies and hence are not considered optimal.
- The third option is the most viable as we need not bother about locating the dependency from the component. The dependency is simply handed over to the component.
- Dependency injection is available by default in Angular.
- It is used mostly in controllers and factory methods.

Services

- Services in Angular are singleton objects or functions
- Services carry out specific tasks common to web apps.
- Angular services are a mechanism of abstracting shared code and functionality throughout the application
- Angular Services come as objects which are wired together using dependency injection.
- Angular provides few inbuilt services.
- We can also create custom services.
- To gain access to core AngularJS services, we just need to mention the required service as a parameter. Angular will automatically detect the required service and instantiate and provide the same.

```
function Ctrl($scope, $location, $routeParams) {
// Something code here...
}
```

Services

- $compile
  - This service will help in compiling an HTML string or DOM into a template
  - produces a template function, which can be used to link scope and the template together.
- $controller
  - This service takes care of instantiating controllers.
- $document
  - A jQuery or jqLite wrapper for the browser's window.document object.
- $exceptionHandler
  - Responsible for handling any uncaught exception in Angular expressions. The default implementation simply delegates to $log.error which logs it into the browser console.

Services

- $http service- Ajaxifying Angular
  - $http service helps in making asynchronous calls to server through $xhr.
  - The data retrieved from backend can thus be rendered in Angular view by partial rendering using Ajax.
  - Angular being a popular framework for SPA, has implicit support for Ajax and doesn't require any other JavaScript Ajax library support.

Services

- $http service
  - Helps in communication with the remote HTTP servers via the browser's XMLHttpRequest object or via JSONP.

```
$http.get(<url>)
        .success(function(data, status, headers, config){ // do something with data })
        .error(function(data, status, headers, config){ // some bad happened });
```

  There are similar methods for post, put, delete & head.

- Generic method:

```
$http({ url: <url>, method <method>, headers:{ <headerName>: <headerValue>},  cache: true/false, timeout: <time in millis>, params: <url parameters>)
```

- Setting cache as true sets up caching for all GET requests.
- Once response from a url is obtained it will not be requested again

Services

- $http or $http.<method>() functions return a promise
- This promise object provides following 3 functions:
  - then(successCallback, failureCallback)
  - success (data, status, headers, config, statusText)
  - error(data, status, headers, config, statusText)
- Headers can also be set for all the http requests:

```
$httpProvider.defaults.headers.common = { ‘header' : 'value' }
//headers for all calls

$httpProvider.defaults.headers.post = { ‘header' : 'value' }
            //headers for only POST calls
```

Ajaxifying Checklist Case study

- Lets create *CheckListItems.json* file inside a folder called *data*. The json file has the below content.

```
[
    {"text":"Wheat Flour", "done":true},
    {"text":"Tooth Paste", "done":false},
    {"text":"Rice Flour", "done":true},
    {"text":"Talcum Powder", "done":false},
    {"text":"Ragi", "done":true},
    {"text":"Maida", "done":false}
]
```

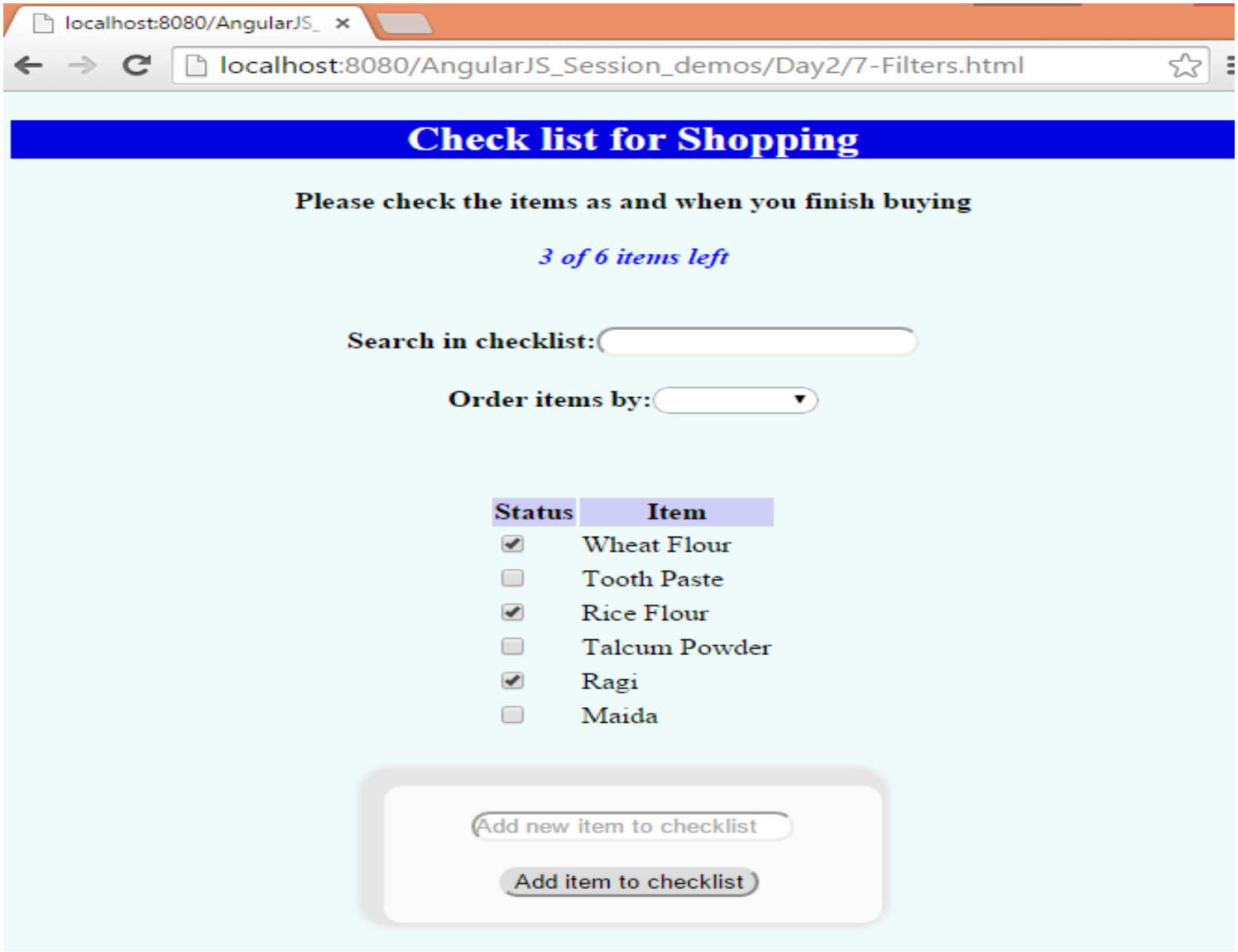
Ajaxifying Checklist Case study

- Lets modify the controllers_checklist.js to make an Ajax call to the *CheckListItems.json* file stored inside *data* folder.

```
function ItemCtrl($scope, $http) {
  $http.get('data/CheckListItems.json').success(function(data) {
  $scope.items = data;
  });
$scope.remaining = function() {
    var count = 0;
                angular.forEach($scope.items, function(item) {
               if(item.done==false)
                          count=count+1;
               });   return count;
  };
$scope.addItem = function() {
    $scope.items.push({text:$scope.itemText, done:false});
    $scope.itemText = '';    };   }
```

Making an Ajax call to CheckListItems.json and storing the output to *items* model

Ajaxifying Checklist Case study



$location service

- $location service provides access to window.location
  - **absUrl()** returns the complete url of the page
  - **protocol()** returns the protocol used http or https
  - **host()** returns the host
  - **port()** returns the port
  - **search()** returns the url parameters as an object
  - **search(param, [value])*** set/get a url parameter
  - **path([newPath])** set/get part of url after # without query params
  - **url([newUrl])** set/get part of url after # including query params
- Currently Angular does not provide two way binding for $location methods
- Changing path or url does not cause page reload
- To reload page use $window.location.href

Services

- $location service
  - This service helps in parsing the URL present in the browser's address bar
  - The mentioned URL is then made available to the application.
  - Whenever the URL in the address bar changes, the same is reflected onto the $location services and vice-versa.
- $location service broadcasts following two events on $rootScope:
  - $locationChangeStart
  - $locationChangeSuccess
- Any component interested in listening to url changes can set up a listener to these broadcasts.

$rootScope Service

- $rootScope is the top level scope of an Angular app
- Only 1 $rootScope exists in an app
- $rootScope is created automatically by Angular
- Any component can request for $rootScope via dependency injection

```
myApp.controller("myController", function($scope,
$rootScope){ //code }
```

- $rootScope can be used for making application level broadcasts
- Certain events are fired by Angular API on the $rootScope
  - E.g. $locationChangeSuccess fired by $location

Summary

- Dependency injection
- Services

Thank You

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