

Instructor No



The image is a presentation slide for Capgemini. At the top left is the Capgemini logo, which consists of a blue spade icon followed by the word "Capgemini" in a blue serif font, with the tagline "CONSULTING. TECHNOLOGY. OUTSOURCING" in a smaller, blue, all-caps sans-serif font below it. The main part of the slide features a photograph of three people (two men and one woman) in a professional setting, looking at a whiteboard. One man is pointing at the whiteboard with a white marker. The text "Angular JS" is written in a large, dark blue, sans-serif font on the left side of the photo. Below it, in a smaller, grey, sans-serif font, is the text "Angular JS routing". At the bottom right of the photo, the tagline "People matter, results count." is written in a blue, sans-serif font.

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Angular JS

Angular JS routing

People matter, results count.

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Lesson Objectives

- AngularJS Routing Basics
- Understanding Routing Modes
- Working with \$routeParams Service
- Working with \$route Service
- Working with \$location Service
- Working with Routing Events



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5.1: AngularJS Routing

Routing

- It is very important to navigate from one page view to another in single page application.
- We can achieve this by including multiple templates in the view using ng-include directive, but this will be unmanageable and also make it difficult to allow other developers to join in the development.
- We can break out the view into a layout and template views and only show the view which we want to show based upon the URL the user is accessing. Routing means loading sub-templates depending upon the URL of the page.
- Routes are a way for multiple views to be used within a single HTML page. This enables you page to look more "app-like" because users are not seeing page reloads happen within the browser.

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5.1: AngularJS Routing

AngularJS Routes

- **AngularJS routes enable us to create different URLs for different content in our application. Having different URLs for different content enables the user to bookmark URLs to specific content. In AngularJS each such bookmarkable URL is called a route.**
- **AngularJS routes enables us to show different content depending on what route is chosen. A route is specified in the URL after the # sign**
 - `http://igate.com/index.html#/training`

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5.1: AngularJS Routing

Setting up page for routing

- To setup a page for routing we need to follow the 4 steps given below
- AngularJS requires the route service, which is not part of the default Angular library. We need to load angular-route.js, as part of your script loading.
 - `<script type="text/javascript" src="Scripts/angular-route.js"></script>`
- We need to inject the route service in our app module
 - `var app = angular.module('routeApp',['ngRoute']);`
- Use ngView directive in the HTML tag(use div tag) to display the given route.
 - `<div ng-view />`
- Configure \$routeProvider in the module's config() function via calls to the when() and otherwise() functions.

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5.1: AngularJS Routing

Setting up page for routing

```
var app = angular.module('routeApp', ['ngRoute']);
app.config(function($routeProvider){
  $routeProvider
    .when('/',
      {
        template: '<h1>Home Page</h1>'
      })
    .when('/company',
      {
        template: '<h1>IGATE</h1>'
      })
    .otherwise({
      redirectTo: '/'
    })
});
```

- When the browser loads the Angular app, it will default to the URL set as the default route. Unless we load the browser with a different URL, the default is the **'/'** route.

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If the `redirectTo` property is set with a string, then the value will change the path and trigger a route change to the new path.

If the `redirectTo` property is set with a function, the result of the function will be set as the value of the new path, triggering a route-change request.

If the `redirectTo` property is a function, Angular will call it with one of the following parameters:

- 1: The route parameters extracted from the current path
- 2: The current path
- 3: The current search

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Demo

➤ **RouteBasics**



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5.1: AngularJS Routing

Routing Modes

- **Routing mode refers specifically to the format of the URL in the browser address bar. It determines the look of the URL. AngularJS has 2 routing modes**
- **Hashbang Mode**
 - The default behavior of the \$location service is to route using the hashbang mode. It provides deep-linking capabilities to Angular apps. URL paths take a prepended '#' character. We can configure hashbang mode in the config function on an app module. We can also configure the hashPrefix, which is part of the fallback mechanism that Angular uses for older browsers.

```
var app = angular.module('routeApp',['ngRoute']);
app.config(function($routeProvider,$locationProvider){
    $locationProvider.html5Mode(false);
    $locationProvider.hashPrefix('!');
});
```

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5.1: AngularJS Routing

Routing Modes

➤ HTML5 Mode

- This mode makes URLs look like regular URLs (except that in older browsers they will look like the hashbang URL).
- \$location service automatically falls back to using hashbang URLs if the browser doesn't support the HTML5 history API and also rewrites the URL.
- For example, with the tag: `Employee`, a legacy browser's URL will be rewritten to the hashbang URL equivalent:
`/index.html#!/employee/36?show=true`

```
var app = angular.module('routeApp', ['ngRoute']);
app.config(function($routeProvider, $locationProvider){
    $locationProvider.html5Mode(true);
});
```

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The back-end server will have to support URL rewriting on the server side. To support HTML5 mode, the server will have to make sure to deliver the index.html page for all apps. That ensures that our Angular app will handle the route.

When writing links inside of our Angular app in html5mode, we'll never want to use relative links. If you are serving your app using the root, it won't be a problem; however, if you are serving in any other base route, our Angular app won't be able to handle it.

Alternatively, you can set the base URL of your app using the `<base>` tag in the HEAD section of the HTML document: `<base href="/base/url" />`

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5.1: AngularJS Routing

Route Parameters

- **AngularJS will parse a route param with a colon (:) and pass it to \$routeParams.**

```
var app = angular.module('routeApp', ['ngRoute']);
app.config(function($routeProvider){
  $routeProvider
    .when('/Employees/:id',
    {
      templateUrl: 'partials/employees.html',
      controller: 'EmployeeController'
    });
});
```

- **Angular will populate the \$routeParams with the key of :id, and the value of key will be populated with the value of the loaded URL. If the browser loads the URL /Employees/714709, then the \$routeParams object will look like:**
{id:714709}

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5.1: AngularJS Routing

Route Parameters

➤ Parameter samples

- '/igate' : Matches exactly **igate**
- '/employee/:id' : Matches employee /714709, employee /desigan

➤ We can also specify parameters as query parameters following a '?'

- '/employee/:id' : Matches employee /714709?department=training&company=IGATE

```
var app = angular.module('routeApp',['ngRoute']);
app.config(function($routeProvider){
    $routeProvider.when('/employee/:id',
    {
        redirectTo:function(routeParams,path,search){
            console.log(routeParams); // Object {id: "714709"}
            console.log(path);        // /employee/714709
            console.log(search);      // Object {department: "training", company: "IGATE"}
            return "/";
        }
    })
});
```

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5.1: AngularJS Routing

\$routeParams

- The **\$routeParams** service allows you to retrieve the current set of route parameters. Controller functions can get access to route parameters via the

AngularJS \$routeParams service

```
var app = angular.module('routeApp',['ngRoute']);
app.config(function($routeProvider){
    $routeProvider
        .when('/:company',
            {
                templateUrl:'partials/map.html',
                controller:'RouteController'
            })
});
app.controller("RouteController",function($scope,$routeParams){
    $scope.model = $routeParams.company;
});
```

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➤ **RouteParams**



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5.1: AngularJS Routing

`$route`

- **`$route` service is used for deep-linking URLs to controllers and views (HTML partials).**
- **It watches `$location.url()` and tries to map the path to an existing route definition.**
- **Using route service in the controller, we can access**
 - custom property defined in routing (`$route.current.propertyName`)
 - URL of the template(`$route.current.templateUrl`)
 - contents of the template(`$route.current.locals.$template`)
 - route parameters(`$route.current.pathParams`)
 - query string passed in URL (`$route.current.params`)
- **We can reload the partial page using `$route.reload()`**

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➤ **RouteService**



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5.1: AngularJS Routing

\$location service

- **\$location service** parses the URL in the browser address bar and makes the URL available to the application. The route parameters are a combination of \$location's search() and path()
- **Route service** watches \$location.url() and tries to map the path to an existing route definition.
- **\$location service** is used when application needs to react to a change in the current URL or there is a need to change the current URL in the browser.

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The \$location service:

1. Exposes the current URL in the browser address bar, so you can
 - Watch and observe the URL.
 - Change the URL.
2. Synchronizes the URL with the browser when the user
 - Changes the address bar.
 - Clicks the back or forward button (or clicks a History link).
 - Clicks on a link.
3. Represents the URL object as a set of methods (protocol, host, port, path, search, hash).

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Demo

➤ `Route-UsingLocationService`



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5.1: AngularJS Routing

Route Events

- **\$route service fires events at different stages of the routing flow. We can set up event listeners for these different routing events and react.**
- **It is useful when we want to manipulate events based upon routes and is particularly useful for detecting when users are logged in and authenticated.**
- **Using \$rootScope, we can set up an event listener to listen for routing events.**
- **\$routeChangeStart**
 - Angular broadcasts \$routeChangeStart before the route changes. This step is where the route services begin to resolve all of the dependencies necessary for the route change to happen and where templates and the resolve keys are resolved.
 - The \$routeChangeStart event fires with two parameters:
 - The next URL to which we are attempting to navigate
 - The URL that we are on before the route change

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5.1: AngularJS Routing

Route Events

➤ **\$routeChangeSuccess**

- Angular broadcasts the \$routeChangeSuccess event after the route dependencies have been resolved.
- The \$routeChangeSuccess event fires with three parameters:
 - The raw Angular evt object
 - The route where the user currently is
 - The previous route (or undefined if the current route is the first route)

➤ **\$routeChangeError**

- Angular broadcasts the \$routeChangeError event if any of the promises are rejected or fail.
- The \$routeChangeError event fires with three parameters:
 - The current route information
 - The previous route information
 - The rejection promise error

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5.1: AngularJS Routing

Route Events

➤ \$routeUpdate

- Angular broadcasts the \$routeUpdate event if the reloadOnSearch property has been set to false and we're reusing the same instance of a controller.

```
angular.module('myApp', [])
.run(['$rootScope', '$location', function($rootScope, $location) {
  $rootScope.$on('$routeChangeStart', function(evt, next, current) {
  })
}])

angular.module('myApp', [])
.run(['$rootScope', '$location', function($rootScope, $location) {
  $rootScope.$on('$routeChangeSuccess', function(evt, next, previous) {
  })
}])

angular.module('myApp', [])
.run(['$rootScope', '$location', function($rootScope, $location) {
  $rootScope.$on('$routeChangeError', function(current, previous, rejection) {
  })
}])
```

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Demo

➤ **Route-RouteEvents**



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Summary

- `$routeProvider` service use to create routes.
- otherwise `$routeProvider` function allows us to set a default route.
- Using `$routeParams` service we can access the parameters passed on a route.
- `$route.reload()` allows us to refresh a view without refreshing the entire app.
- We can enable HTML5 routing using `$locationProvider` service `$locationProvider.html5Mode(true)`, but it requires server-side configuration.
- `resolve` route property allows us to delay loading a view until the data which needs to get render is loaded.



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Summary

- We can navigate to a new view from the code using `$location.url('newUrl')`.
- `$location.search()` gives us the access to the query string parameters on the URL.



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