

How to build an Angular SPA module

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This is not! where I come from!

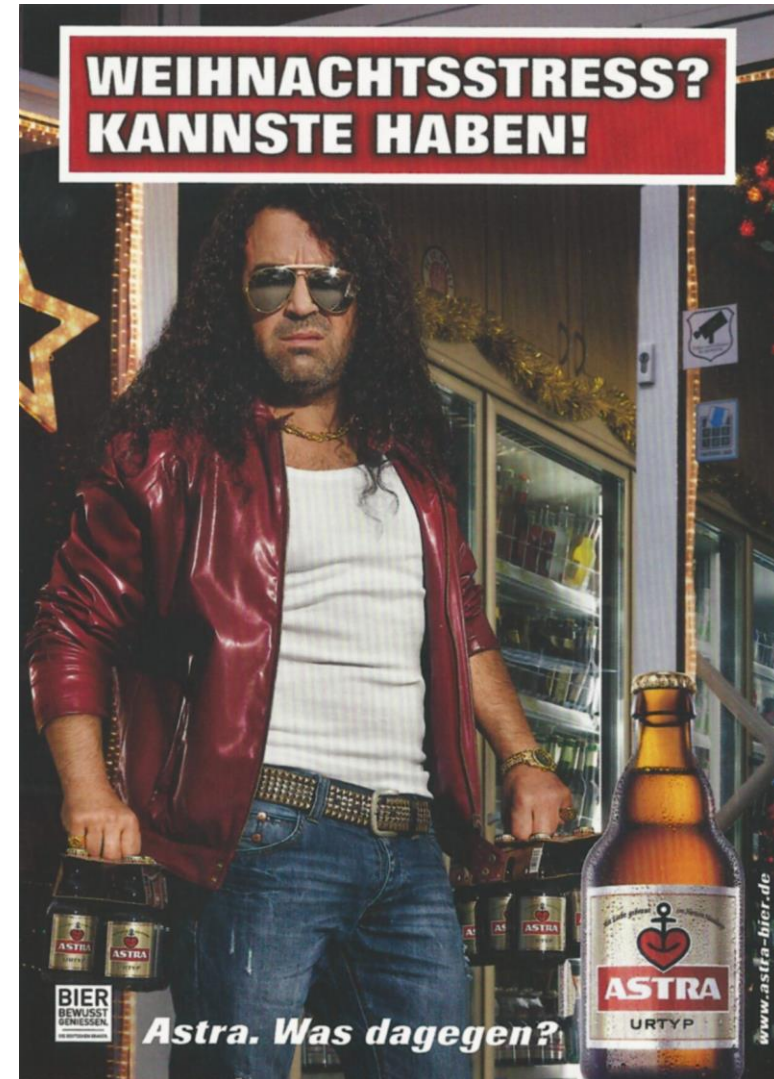
Coming from Hamburg in Northern Germany!



We are more the rough guys ...

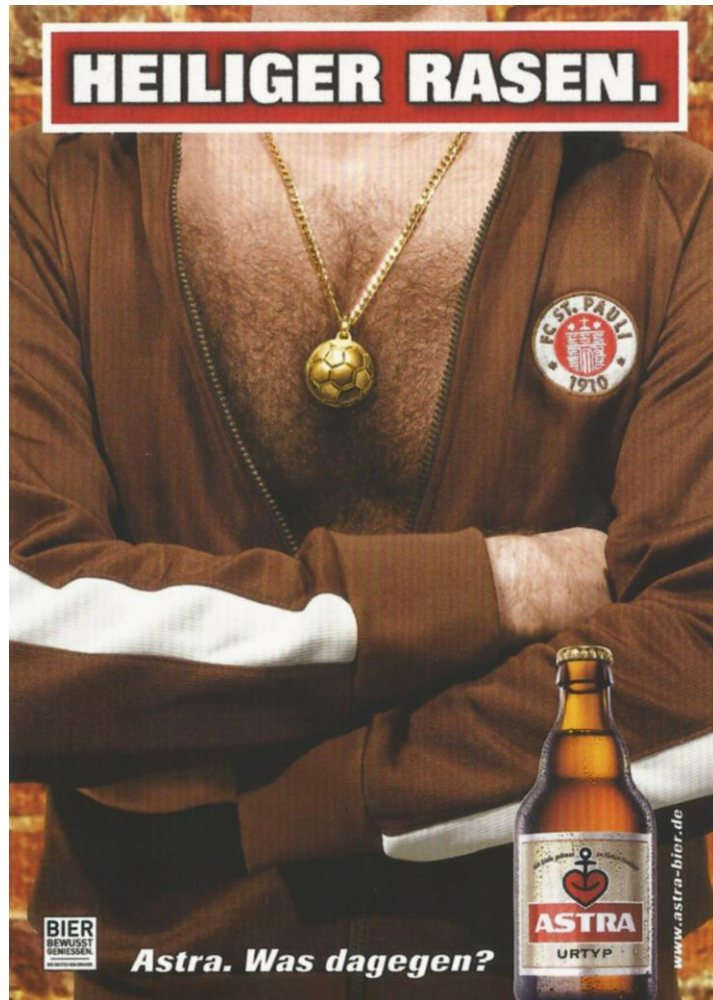


Between liver and spleen

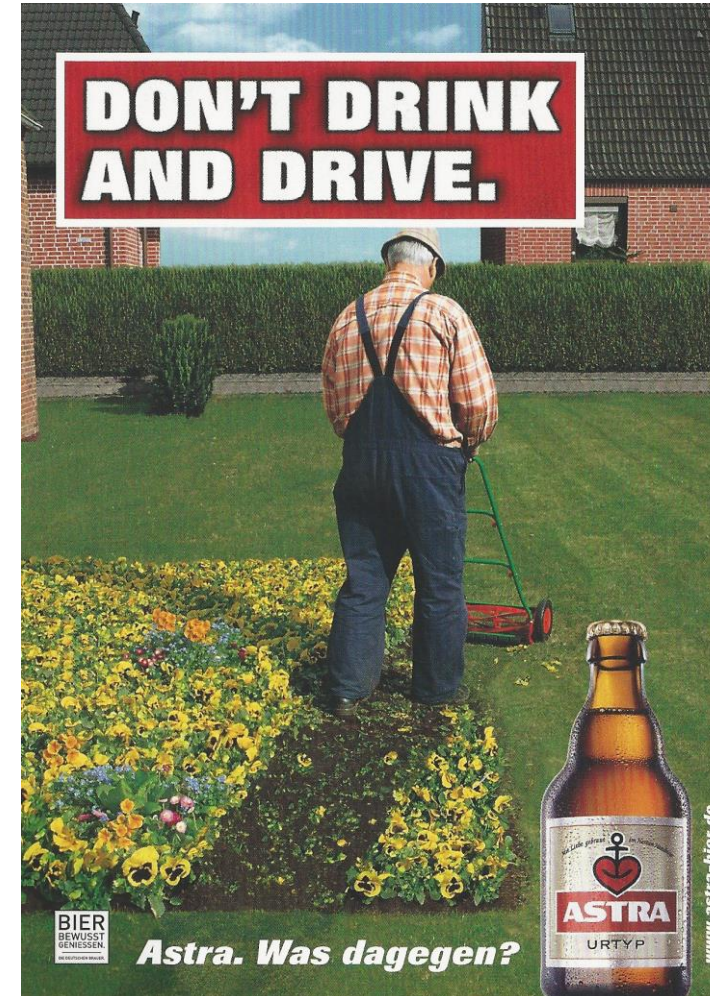


Christmas stress ? You can have this!

And we love our lawns !



Holy lawn. (St. Pauli soccer club)



Now lets start!

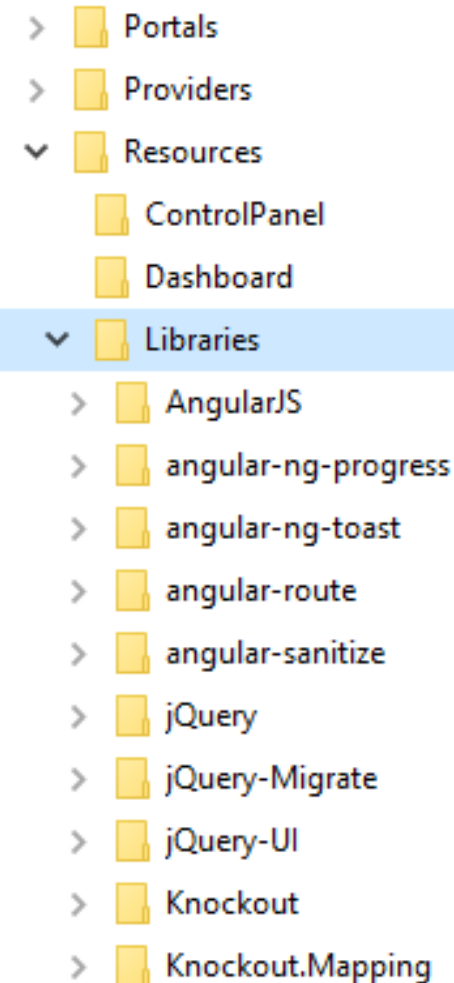
Agenda

- Get in touch with Angular JS
- Standard SPA app vs. DNN SPA module
- Using JS libraries
- A look at the different layers of a DNN SPA module
 - Injecting information (Settings, Localization etc)
 - Angular modules, directives, controller
 - Bootstrapping Angular
 - Routing
- Samples

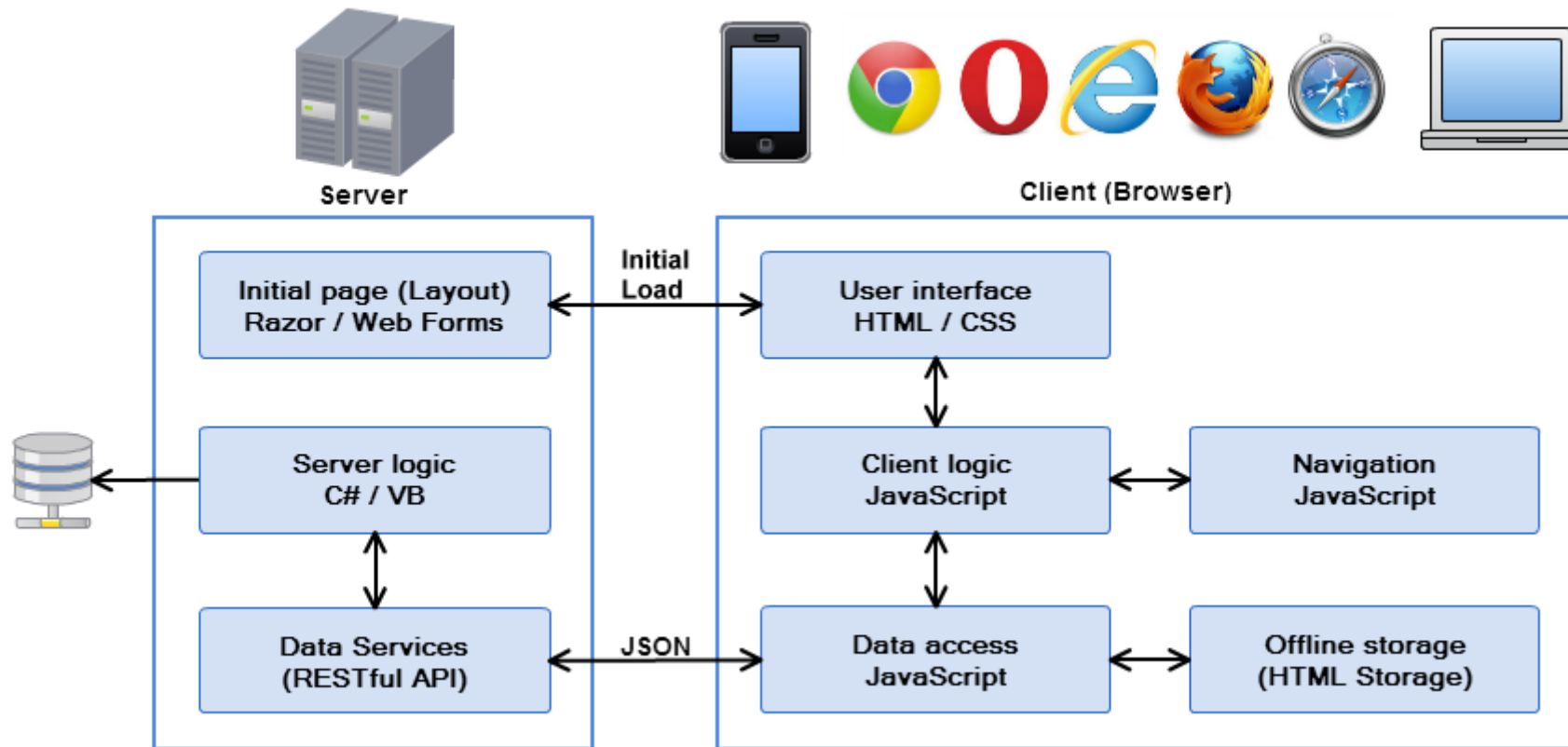


- Javascript Framework by Google (<http://angularjs.org>)
- Used on 0.5 % of ALL Websites (<https://w3techs.com/technologies/details/js-angularjs/all/all>)
- Lots of code samples, modules, extensions (eg. <http://ngmodules.org/> , GitHub)
- New version 2 (RC) using Typescript
- Great course to start: (<https://www.codeschool.com/courses/shaping-up-with-angular-js>)
- John Papa is the style guru (<https://github.com/johnpapa/angular-styleguide>)

- Use DNN Javascript libraries !
- Create a package for every Angular component you use!
- Reusage in different modules
- No multiple loading of libs (DNN controls injection of scripts)
- See <https://github.com/EngageSoftware/DNN-JavaScript-Libraries>
- Demo



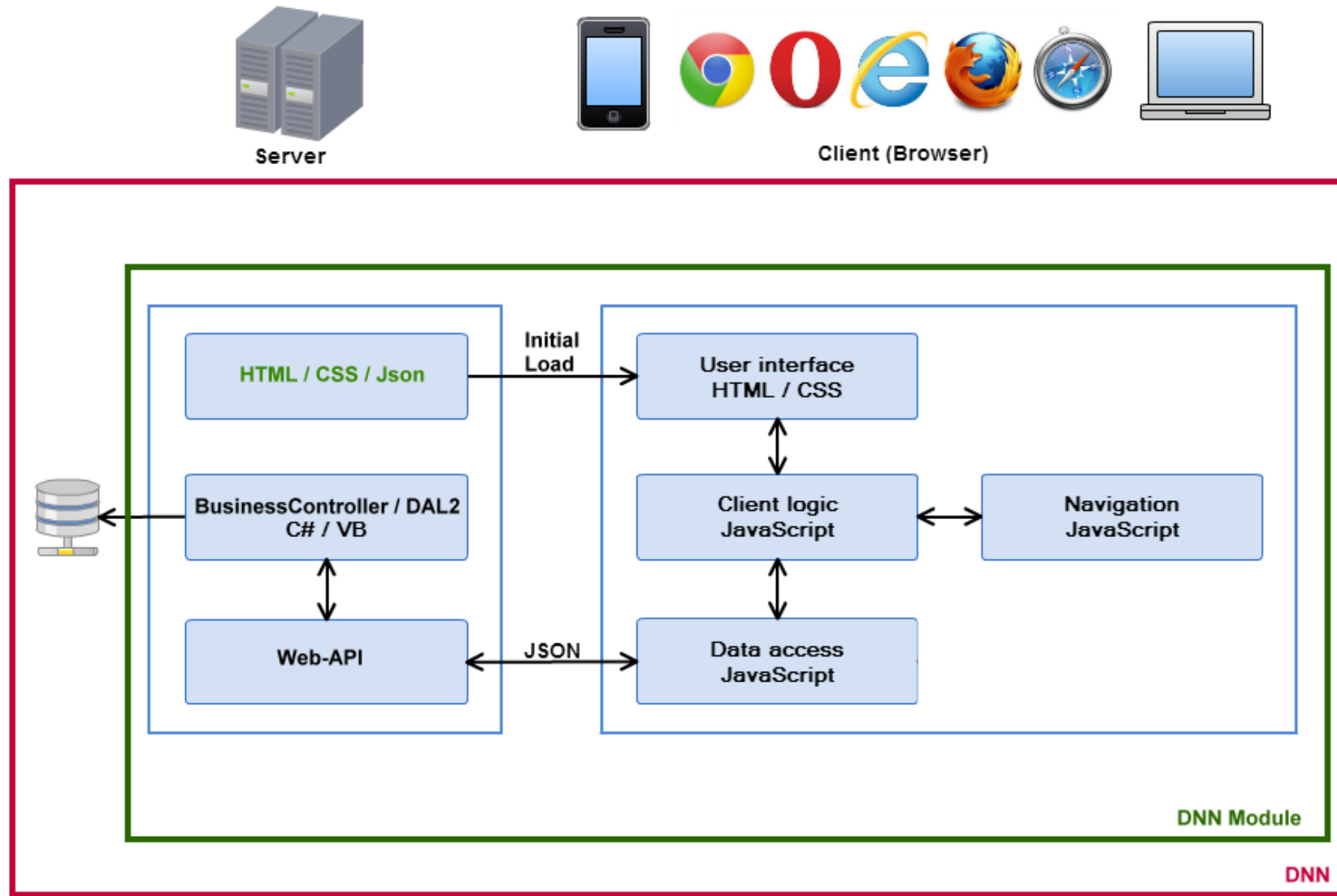
SPA Architecture - Classic



ASP.NET MVC / Node.js

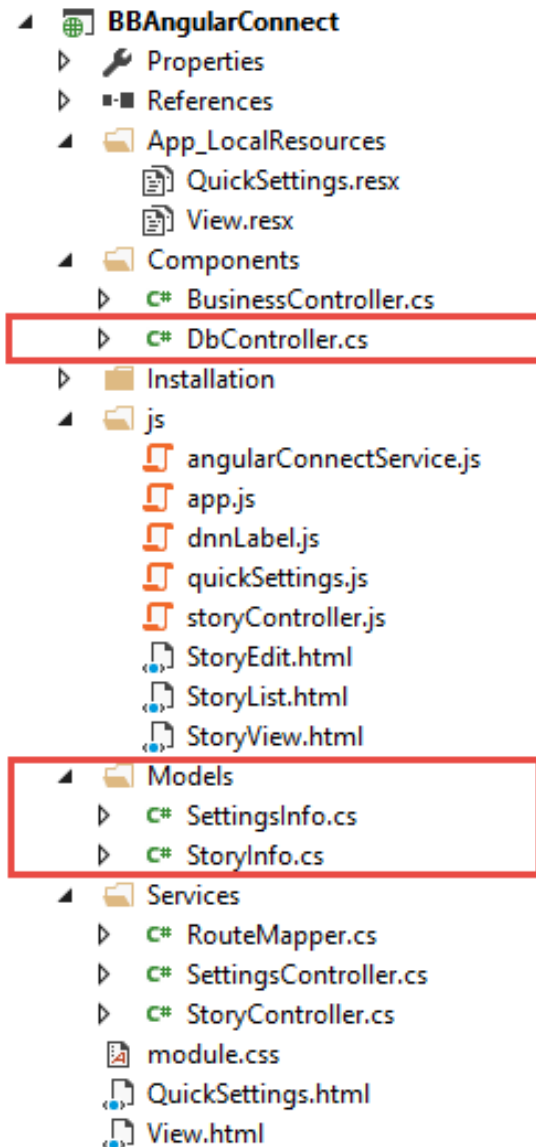
HTML5 / AngularJS / more JS Libs

SPA Architecture - DNN



Have a look at the BBAngularConnect module

Demo: Sample Module BBAngularConnect



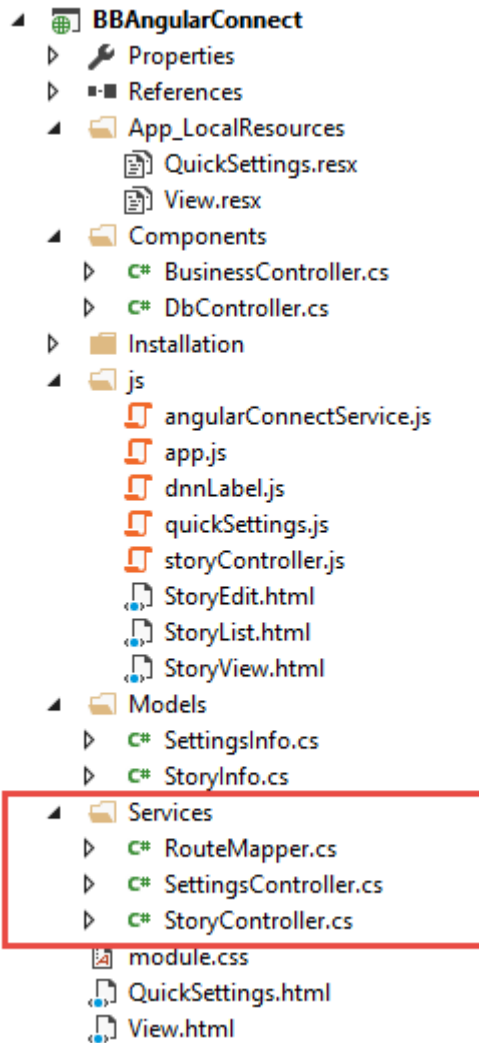
Data Access Layer (DAL 2, with PetaPoco)

- methods for CRUD Operations to the Database

```
1 reference
public int InsertStory(StoryInfo story, int moduleId)
{
    using (IDataContext ctx = DataContext.Instance())
    {
        var rep = ctx.GetRepository<StoryInfo>();
        rep.Insert(story);
        return story.StoryId;
    }
}
```

- Definition of Entity POCOs

```
[TableName("BBAngularConnect_Story")]
[PrimaryKey("StoryId")]
[Cacheable("BBAngularConnect_Story", CacheItemPriority.Normal, 20)]
14 references
public class StoryInfo
{
    3 references
    public int StoryId { get; set; }
    0 references
    public int? ModuleId { get; set; }
    0 references
    public string Title { get; set; }
    0 references
    public string Story { get; set; }
    0 references
    public int Stars { get; set; }
    0 references
    public int? CreatedBulletinID { get; set; }
}
```



Webservice Layer (WebAPI)

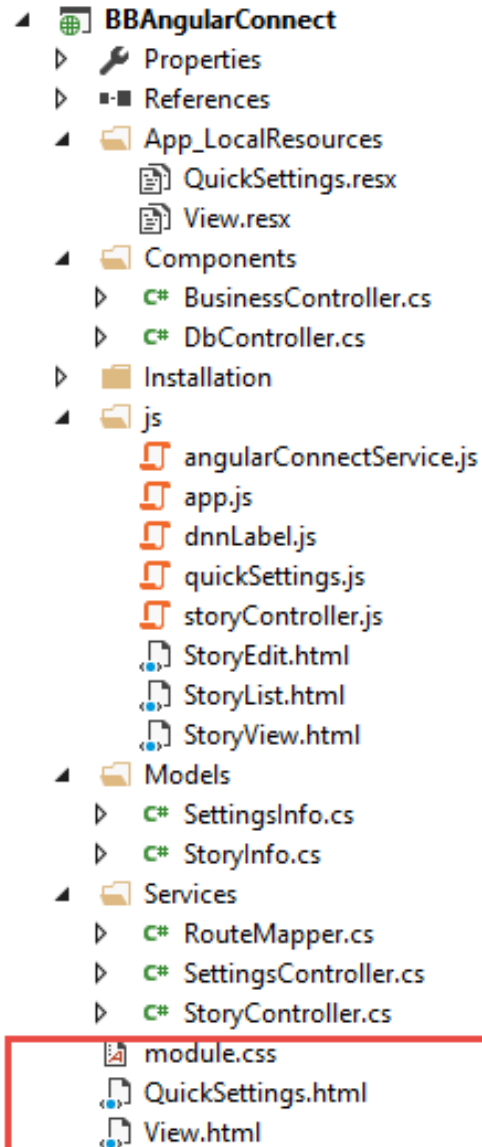
- RouteMapper.cs – defining the standard route

```
public void RegisterRoutes(IMapRoute routeManager)
{
    routeManager.MapHttpRoute("BBAngularConnect_Module", "default", "{controller}/{action}",
        new[] { "Bitboxx.DNNModules.BBAngularConnect.Services" });
}
```

- StoryController.cs – WebAPI methods

```
[HttpPost]
[ValidateAntiForgeryToken]
[ActionName("new")]
[DnnModuleAuthorize(AccessLevel = SecurityAccessLevel.Edit)]
public HttpResponseMessage NewStory(StoryInfo story)
{
    try
    {
        int storyId = DbController.Instance.InsertStory(story, ActiveModule.ModuleID);
        return Request.CreateResponse(HttpStatusCode.OK, storyId);
    }
    catch (Exception ex)
    {
        return Request.CreateResponse(HttpStatusCode.InternalServerError, ex);
    }
}
```

> <http://dnn8.local/desktopmodules/bbangularconnect/API/story/new>



View Control (SPA->Plain Html)

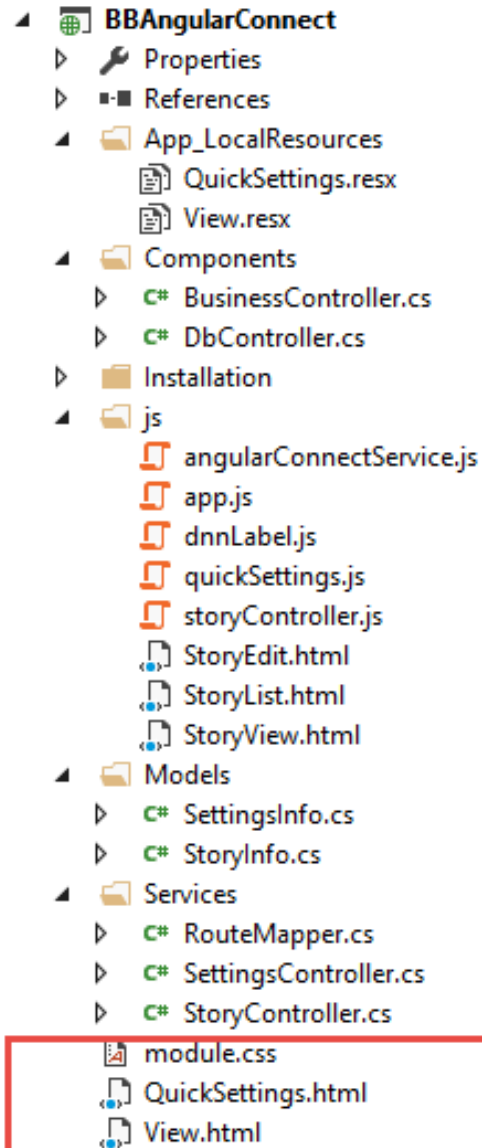
- Including CSS and JS files

```
[JavaScript:{ jsname:"AngularJS"}]
[JavaScript:{ jsname:"angular-route"}]
[JavaScript:{ jsname:"angular-sanitize"}]
[JavaScript:{ jsname:"angular-ng-toast"}]
[Css:{ path: "~/Resources/libraries/angular-ng-toast/01_05_06/ngToast.min.css"}]
[Css:{ path: "~/Resources/libraries/angular-ng-toast/01_05_06/ngToast-animations.min.css"}]
[JavaScript:{ jsname:"angular-ng-progress"}]
[Css:{ path: "~/Resources/libraries/angular-ng-progress/01_00_07/ngProgress.min.css"}]
[JavaScript: { path: "~/DesktopModules/BBAngularConnect/js/app.js", priority:40}]
[JavaScript: { path: "~/DesktopModules/BBAngularConnect/js/dnnLabel.js", priority:100}]
[JavaScript: { path: "~/DesktopModules/BBAngularConnect/js/angularConnectService.js", priority:100}]
[JavaScript: { path: "~/DesktopModules/BBAngularConnect/js/storyController.js", priority:100}]
```

- ng-view is where the content is rendered

```
<div id="angularConnectApp[ModuleContext:ModuleId]">
  <div ng-view></div>
  <toast></toast>
</div>
```

View Control (SPA->Plain Html)



```
<script>
    angular.element(document).ready(function () {

        function init(appName, moduleId, apiPath) {
            var sf = $.ServicesFramework(moduleId);
            var httpHeaders = { "ModuleId": sf.getModuleId(), "TabId": sf.getTabId(), "RequestVerificationToken": sf.getAntiForgeryValue() };
            var localAppName = appName + moduleId;
            var application = angular.module(localAppName, [appName])
                .constant("serviceRoot", sf.getServiceRoot(apiPath))
                .constant("moduleProperties", '[ModuleProperties:All]')
                .config(function($httpProvider,$routeProvider) {

                    // Extend $httpProvider with serviceFramework headers
                    angular.extend($httpProvider.defaults.headers.common, httpHeaders);

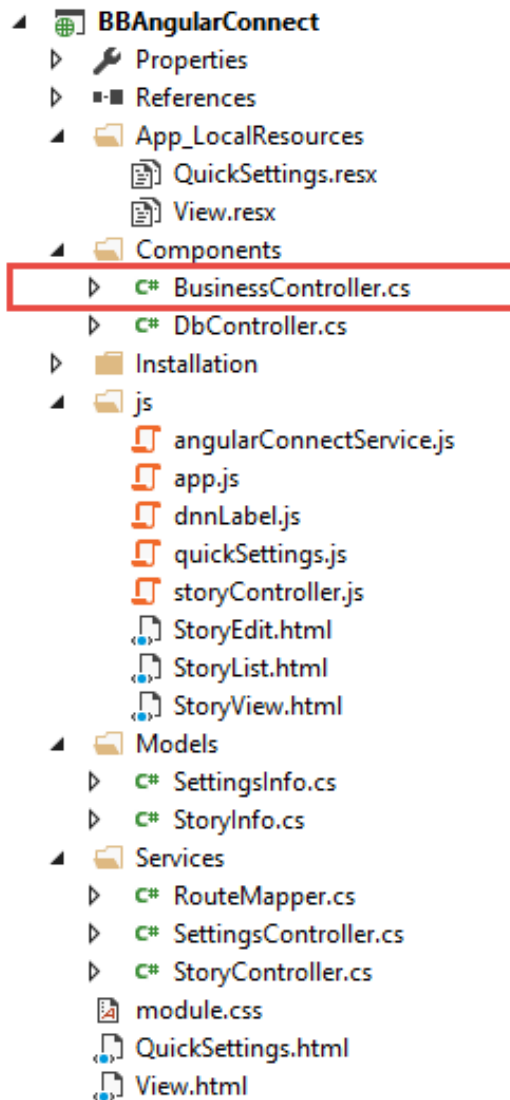
                    // get the location of your javascript file during run time
                    // using jQuery by parsing the DOM for the 'src' attribute that referred it
                    var jsFileLocation = $('script[src*="BBAngularConnect/js/app"]').attr('src'); // the js file path
                    jsFileLocation = jsFileLocation.replace('app.js', ''); // the js folder path
                    if (jsFileLocation.indexOf('?') > -1) {
                        jsFileLocation = jsFileLocation.substr(0, jsFileLocation.indexOf('?'));
                    }

                    $routeProvider
                        .when("/list", {templateUrl: jsFileLocation + "StoryList.html", controller: "storyController", controllerAs: "vm"})
                        .when("/view/:StoryId", {templateUrl: jsFileLocation + "StoryView.html",controller: "storyController",controllerAs: "vm"})
                        .when("/edit/:StoryId", {templateUrl: jsFileLocation + "StoryEdit.html",controller: "storyController",controllerAs: "vm"})
                        .otherwise({redirectTo: '/list'});

                });
            return application;
        };

        var app = init("angularConnectApp", [ModuleContext:ModuleId], "BBAngularConnect_Module");
        var moduleContainer = document.getElementById("angularConnectApp[ModuleContext:ModuleId]");
        angular.bootstrap(moduleContainer, [app.name]);

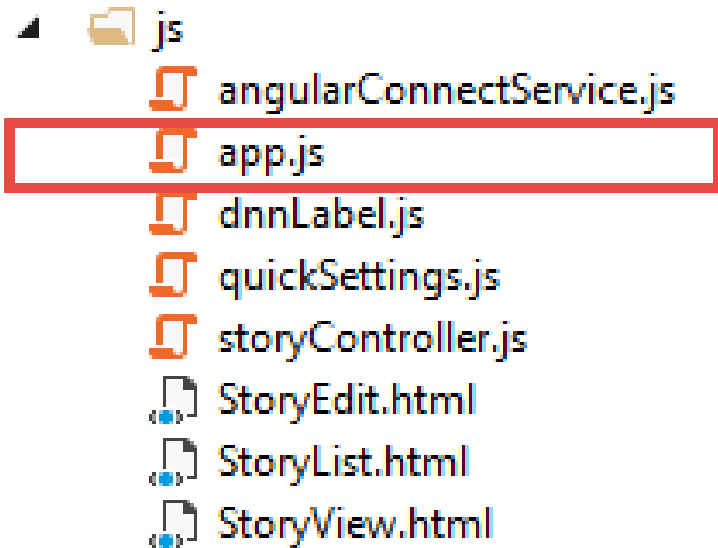
    });
</script>
```

TokenProvider – Generate JSON

- Problem: Providing Localization, Settings etc. needs extra AJAX call.
- Solution:
 - Sample all needed Data
 - convert to JSON
 - Inject in View.html via Token

See code !



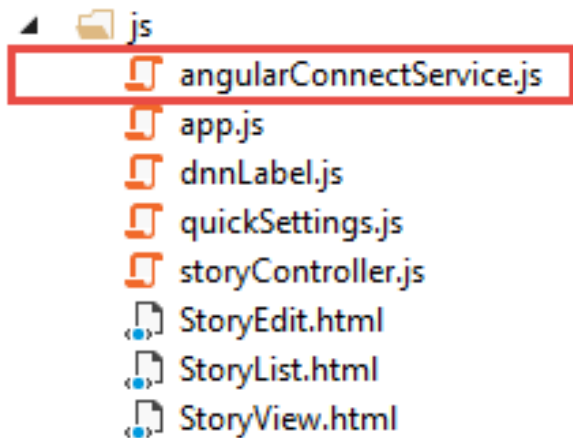
Angular app class

- Instantiating our module
- Registerung other module with DI

```
(function () {  
    "use strict";  
  
    angular.module("angularConnectApp", ["ngRoute", "ngSanitize", "ngProgress", "ngToast"])  
})();
```

Service class

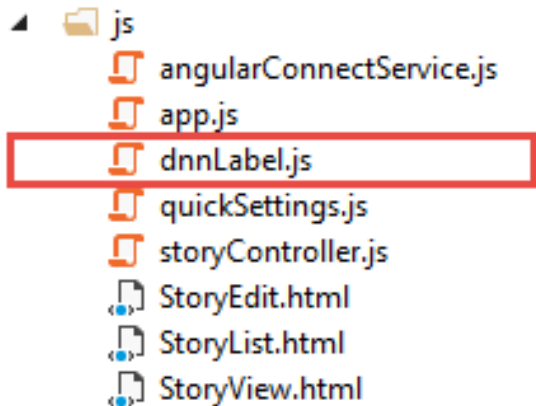
- Invoking Ajax calls
- Returning results as promises



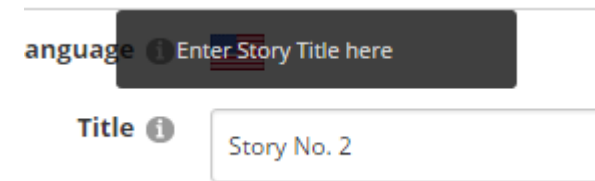
```
(function () {  
    "use strict";  
  
    angular  
        .module("angularConnectApp")  
        .factory("angularConnectService", angularConnectService);  
  
    angularConnectService.$inject = ["$http", "serviceRoot"];  
  
    function angularConnectService($http, serviceRoot) {  
  
        var service = {};  
        service.getStories = getStories;  
        service.getStory = getStory;  
        service.deleteStory = deleteStory;  
        service.newStory = newStory;  
        service.updateStory = updateStory;  
  
        function getStories(moduleId) {  
            return $http.get(serviceRoot + "story/list?moid=" + moduleId );  
        };  
  
        function getStory(storyId) {  
            return $http.get(serviceRoot + "story/get?stid=" + storyId);  
        };  
  
        function deleteStory(story) {  
            return $http.post(serviceRoot + "story/delete", story);  
        };  
        function newStory(story) {  
            return $http.post(serviceRoot + "story/new", story);  
        };  
        function updateStory(story) {  
            return $http.post(serviceRoot + "story/update", story);  
        };  
  
        return service;  
    }  
})();
```

Directive dnnLabel

- Encapsulating Html and functionality as own tag or attribute



```
(function () {  
    "use strict";  
  
    angular  
        .module("angularConnectApp")  
        .directive('dnnLabel', function() {  
            return {  
                restrict: 'A',  
                template: [  
                    '<div class="dnnLabel">',  
                    '<label for="{{lblfor}}">{{text}}</label>',  
                    '<a class="dnnFormHelp" href="javascript:void(0)"></a>',  
                    '<div class="dnnTooltip">',  
                    '<div class="dnnFormHelpContent dnnClear">{{help}}</div>',  
                    '</div>',  
                    '</div>',  
                ].join(""),  
                scope: {  
                    text: '@',  
                    help: '@',  
                    lblfor: '@'  
                }  
            };  
        });  
})();
```

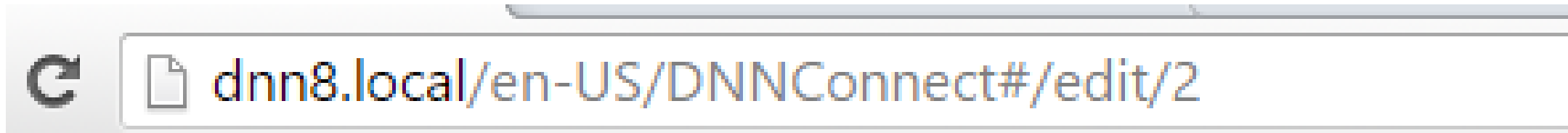


```
<div dnn-label lblfor="txtStory" text="{{vm.localize.lblStory_Text}}" help="{{vm.localize.lblStory_Help}}"></div>
```

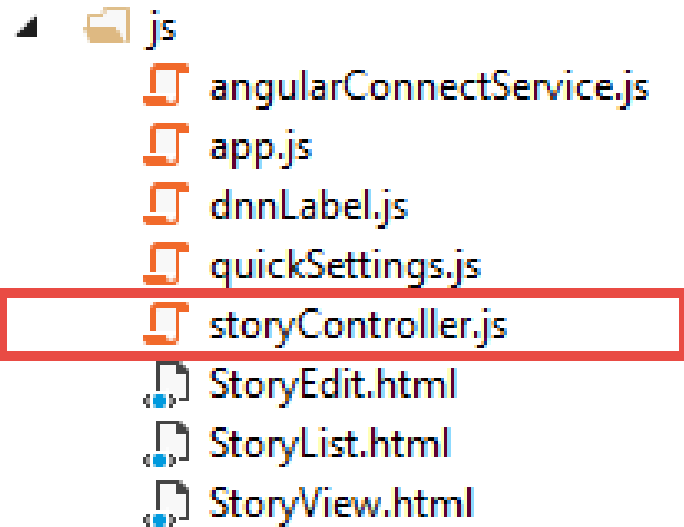
Angular Routing

- Defining the different „pages“ of the application
- Using # - Url (no page reload)
- Defining template + controller per page

```
$routeProvider
  .when("/list", {templateUrl: jsFileLocation + "StoryList.html", controller: "storyController", controllerAs: "vm"})
  .when("/view/:StoryId", {templateUrl: jsFileLocation + "StoryView.html",controller: "storyController",controllerAs: "vm"})
  .when("/edit/:StoryId", {templateUrl: jsFileLocation + "StoryEdit.html",controller: "storyController",controllerAs: "vm"})
  .otherwise({redirectTo: '/list'});
```



Angular Controller



- Business logic
- Defining viewmodel variables
- Querying and sending data via service
- Decorating the „scope“ with variables and functions

See code !

Dynamically loaded HTML templates

```
<article class="BBAngularConnect">
  <div class="dnnFormMessage dnnFormWarning" ng-show="!vm.bootstrap3 && vm.editMode">
    {{vm.localize.Bootstrap3_Text}}
  </div>
  <div ng-hide="vm.story == null">
    <a ng-href="#edit/{{vm.story.StoryId}}" class="btn btn-xs btn-primary" ng-show="vm.editable">
      <span class="glyphicon glyphicon-pencil"></span></a>
    <h2 ng-bind="vm.story.Title" style="display: inline"></h2>
    <div ng-bind-html="vm.safeHtml(vm.story.Story)"></div>
    <a href="#/list">{{vm.localize.MoreStories_Text}}</a>
  </div>
</article>
```

Your module is running in a skin that is not bootstrap 3 based! Some functionalities (especially in editmode) may not work!

Story No. 2

Lorem ipsum dolor sit amet, consetetur sadipscing elitr, sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat, sed diam voluptua. At vero eos et accusam et justo duo dolores et ea rebum. Stet clita kasd gubergren, no sea takimata sanctus est Lorem ipsum dolor sit amet. Lorem ipsum dolor sit amet, consetetur sadipscing elitr, sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat, sed diam voluptua. At vero eos et accusam et justo duo dolores et ea rebum. Stet clita kasd gubergren, no sea takimata sanctus est Lorem ipsum dolor sit amet.

[List](#)

Extending the Edit form with star rating



Demo !

Samples !

Thank you

Questions?

Please remember to evaluate the session online

Contact me if you have questions!



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