

Develop a mobile web site with Angular Material MVC4 in VS 2013

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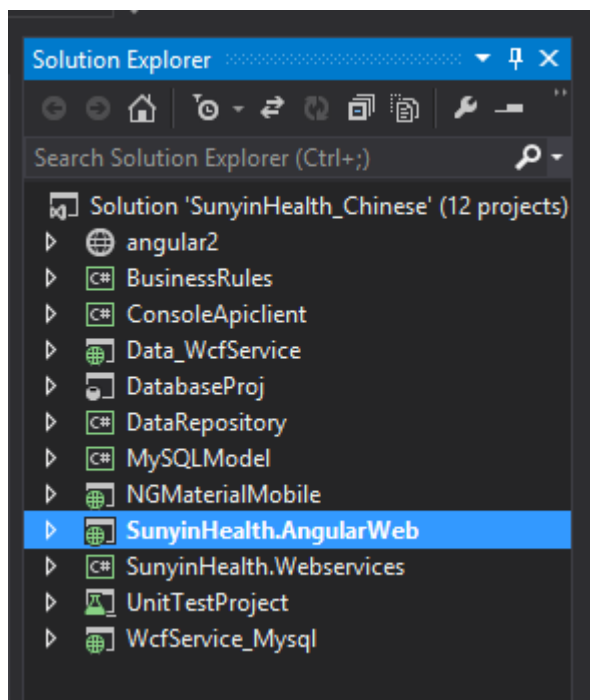
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Introduction

Angular Material ([link](#)) gives us an excellent front end framework that can be used to develop modern mobile web application in various platforms. I used Angular Material MVC 4 in VS 2013 to develop a mobile application recently and would like to share with you some of them cool features in this documentation.

Get started

Use VS 2013 to create a new MVC web application that uses various layers to access to MySQL and MSSQL database via Entity Framework 6. The project directory is as below



Unity Dependency Injection is used to inject data into MVC controller to create a loose couple web application. I have basically completed the backend and middle tier WCF web services development. So the code to inject data in controller would be like as below

```
public class NgMobileController : Controller
{
```

```

    Imysqltomodel db;
    public NgMobileController(Imysqltomodel _db)
    {
        db = _db;
    }
    public ActionResult Index()
    {
        return View();
    }
    public ActionResult Chip() {
        return View();
    }
    public JsonResult Filmlists()
    {
        var all = db.clientGetAllFilms();
        return Json(all, JsonRequestBehavior.AllowGet);
    }
}

```

Here Imysqltomodel is the interface of WCF web service client in MVC. Using Unity DI I can easily inject this data service into MVC controller. So I can concentrate the front end development with Angular JS and Material.

Inject Angular Material

MVC front end default is Razor. Now I want to use Angular Material to develop mobile web front end based on this backend. Based on the documentation of angular material, we can simply add CDN link in view page as below

```

<script
src="https://ajax.googleapis.com/ajax/libs/angularjs/1.3.15/angular.js"></script>
<script src="http://cdn.rawgit.com/angular/bower-material/v0.10.0/angular-
material.js"></script>

```

Of course, we still can use bootstrap 3 however angular material has its own bootstrap we can use for layout such as example layout below

```

<div layout="row" layout-sm="column"> <div flex> I'm above on mobile,
and to the left on larger devices. </div> <div flex> I'm below on
mobile, and to the right on larger devices. </div> </div>

```

Here we use layout row or column to create layout for mobile. We not need to add col-md-... class for row or column.

Angular Material JS

Angular Material still use its ver 1...angular module and controller...syntax to organize the hoop between JS and HTML (Angular 2 which will come at the end of this year). Therefore, it is easy for use to write angular js code to implement front end data publishing as one example I developed as below



My WCF web service will send me over 1000 records to front end. We can use paging to display whole data as pages. We can also simply display all of data in Grid List in Angular Material as this example shown.

The angular js code is simple as below

```
angular.module('NgmApp', ['NgMobileApp']);
var Ngm = angular.module('NgmApp');

Ngm.controller('FilmeCtrl', FilmeCtrl);

function FilmeCtrl ($scope, $http) {

    $http.get('http://localhost/SunyinHealth.AngularWeb/NgMobile/Filmlists')
        .success(function (data, status, headers, config) { //menu level 1 data
            $scope.flist = data;
        })
        .error(function (data, status, headers, config) {
            console.log("not success");
        });
}

var COLORS = ['#ffebee', '#ffcd2', '#ef9a9a', '#e57373', '#ef5350', '#f44336',
'#e53935', '#d32f2f', '#c62828', '#b71c1c', '#ff8a80', '#ff5252', '#ff1744',
'#d50000', '#f8bbd0', '#f48fb1', '#f06292', '#ec407a', '#e91e63', '#d81b60',
'#c2185b', '#ad1457', '#880e4f', '#ff80ab', '#ff4081', '#f50057', '#c51162',
'#e1bee7', '#ce93d8', '#ba68c8', '#ab47bc', '#9c27b0', '#8e24aa', '#7b1fa2',
'#4a148c', '#ea80fc', '#e040fb', '#d500ff', '#aa00ff', '#ede7f6', '#d1c4e9',
'#b39ddb', '#9575cd', '#7e57c2', '#673ab7', '#5e35b1', '#4527a0', '#311b92',
'#b388ff', '#7c4dff', '#651fff', '#6200ea', '#c5cae9', '#9fa8da', '#7986cb',
'#5c6bc0', '#3f51b5', '#3949ab', '#303f9f', '#283593', '#1a237e', '#8c9eff',
'#536dfe', '#3d5afe', '#304ffe', '#e3f2fd', '#bbdefb', '#90caf9', '#64b5f6',
'#42a5f5', '#2196f3', '#1e88e5', '#1976d2', '#1565c0', '#0d47a1', '#82b1ff',
'#448aff', '#2979ff', '#2962ff', '#b3e5fc', '#81d4fa', '#4fc3f7', '#29b6f6',
'#03a9f4', '#039be5', '#0288d1', '#0277bd', '#01579b', '#80d8ff', '#40c4ff',
'#00b0ff', '#0091ea', '#e0f7fa', '#b2ebf2', '#80deea', '#4dd0e1', '#26c6da',
'#00bcd4', '#00acc1', '#0097a7', '#00838f', '#006064', '#84ffff', '#18ffff',
'#00e5ff', '#00b8d4', '#e0f2f1', '#b2dfdb', '#80cbc4', '#4db6ac', '#26a69a',
'#009688', '#00897b', '#00796b', '#00695c', '#a7ffe3', '#64ffda', '#1de9b6',
'#00bfa5', '#e8f5e9', '#c8e6c9', '#a5d6a7', '#81c784', '#66bb6a', '#4caf50',
'#43a047', '#388e3c', '#2e7d32', '#1b5e20', '#b9f6ca', '#69f0ae', '#00e676',
'#00c853', '#f1f8e9', '#dcedc8', '#c5e1a5', '#aed581', '#9ccc65', '#8bc34a',
```

```
'#7cb342', '#689f38', '#558b2f', '#33691e', '#ccff90', '#b2ff59', '#76ff03',
'#64dd17', '#f9fbe7', '#f0f4c3', '#e6ee9c', '#dce775', '#d4e157', '#cddc39',
'#c0ca33', '#afb42b', '#9e9d24', '#827717', '#f4ff81', '#eeff41', '#c6ff00',
'#aeea00', '#ffffde7', '#fff9c4', '#fff59d', '#fff176', '#ffee58', '#ffeb3b',
'#fdd835', '#fbc02d', '#f9a825', '#f57f17', '#ffff8d', '#ffff00', '#ffea00',
'#ffd600', '#fff8e1', '#ffecb3', '#ffe082', '#ffd54f', '#ffca28', '#ffc107',
'#ffb300', '#ffa000', '#ff8f00', '#ff6f00', '#ffe57f', '#ffd740', '#ffc400',
'#ffab00', '#fff3e0', '#ffe0b2', '#ffcc80', '#ffb74d', '#ffa726', '#ff9800',
'#fb8c00', '#f57c00', '#ef6c00', '#e65100', '#ffd180', '#ffab40', '#ff9100',
'#ff6d00', '#fbe9e7', '#ffccbc', '#ffab91', '#ff8a65', '#ff7043', '#ff5722',
'#f4511e', '#e64a19', '#d84315', '#bf360c', '#ff9e80', '#ff6e40', '#ff3d00',
'#dd2c00', '#d7ccc8', '#bcaaaa4', '#795548', '#d7ccc8', '#bcaaaa4', '#8d6e63',
'#eceff1', '#cfd8dc', '#b0bec5', '#90a4ae', '#78909c', '#607d8b', '#546e7a',
'#cfd8dc', '#b0bec5', '#78909c'];
```

```
$scope.color = function ()
{
    return COLORS[Math.floor(Math.random() * COLORS.length)];
};
```

```
$scope.colspan = function ()
{
    var r = Math.random();
    if (r < 0.8) {
        return 1;
    } else if (r < 0.9) {
        return 2;
    } else {
        return 3;
    }
};
```

```
$scope.rowspan = function ()
{
    var r = Math.random();
    if (r < 0.8) {
        return 1;
    } else if (r < 0.9) {
        return 2;
    } else {
        return 3;
    }
};
```

```
};
```

In controller we have a jsonresult action that can return a list of film data from MySQL database as code displayed below

```
public JsonResult Filmlists()
{
    var all = db.clientGetAllFilms();
    return Json(all, JsonRequestBehavior.AllowGet);
}
```

Angular Material Icon

I love this new feature in Angular Material. Because mobile needs SVG images not others, So Angular Material used W2C SVG standard to develop a mechanism of implement any icons of svg in angular js as one example below

```
NgMApp.config(function ($mdIconProvider) {
    $mdIconProvider
        .iconSet("social", 'img/icons/sets/social-icons.svg', 24)
        .icon('share-arrow', 'img/icons/share-arrow.svg', 24);
})
```

Those icons can be put in cache then will be called in angular js as simple as below

```
<md-button aria-label="menu" class="md-fab md-warn"> <md-icon md-svg-
src="img/icons/menu.svg"></md-icon> </md-button>
```

md-svg-src gets icon path from the cache so md-icon angular directive can display in HTML easily.

Chip also is another new interesting feature angular material provide for us to develop so interesting page such as todo list page to organize the to do job in one place. After you know angular material, you will love it.

Angular JS Shopping Example

The following snapshot gives you another example I developed for a shopping page with angular js in the same MVC 4 web application

Shopping Online

The screenshot displays a web application for online shopping. At the top, there are navigation tabs for 'AGED', 'CHILD', and 'FAMILY'. Below these, a 'Shopping List' table shows items with columns for 'Item', 'Quantity', and 'Price'. The table contains one item: '前列腺 Prostate' with a quantity of 1 and a price of \$12.00. A 'Total: 14' is displayed. Below the list, there are two product cards. The first card is for 'Swiss 50+ 65+ active' with a price of \$12.00. The second card is for 'BLACKMORES PROSTATE HEALTH' with a price of \$12.00. To the right, a 'Product Detail' section for '前列腺 Prostate' shows a description in Chinese. On the left, there are two promotional images: one of a bridge and another of a 'CLEARANCE' sign.

Item	Quantity	Price
前列腺 Prostate	1	\$12.00
Total:	1	\$12.00

Product Detail

前列腺 Prostate

Description: 特有草本植物中提取的成分，经实际表明可有效缓解被诊断为良性的前列腺肥大，增生有关的症状：如尿频、时断时续、排尿不畅以及遗尿等症。所含成分内富含脂肪酸，它可帮助平衡前列腺疾病的不正常的脂质（油脂）比率和一些良性前列腺肥大患者不正常的精液量。临床实验结果也证明其在缓解前列腺症状的显著效果：如可暂时缓解尿频，遗尿，尿不畅、排尿困难，尿滞留等临床症状。推荐品牌：Blackmore's Swiss Health Care

Summary

Angular Material can be used to develop very nice mobile cross platforms web applications in .net development. .Net supply excellent WCF web services back end for modern JS front end mobile

applications. We use .Net to develop .Net web services, we develop MVC front end web application together with Angular Material JS, MVC controllers will communicate with WCF web services to retrieve or update from/to database systems such as MySQL and MSSQL. Angular Material talks to MVC controllers to manipulate data from controllers in front end HTML or CSHTML pages. I just love Angular Material. It can be learned and used easily and quickly in .net development.