Visual Studio Code

Course Introduction

John Papa

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The Problem

Difficult to find a fast and powerful tool that we can use on both Mac and Windows

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Visual Studio Code

Fast, Lightweight, Cross Platform Editor

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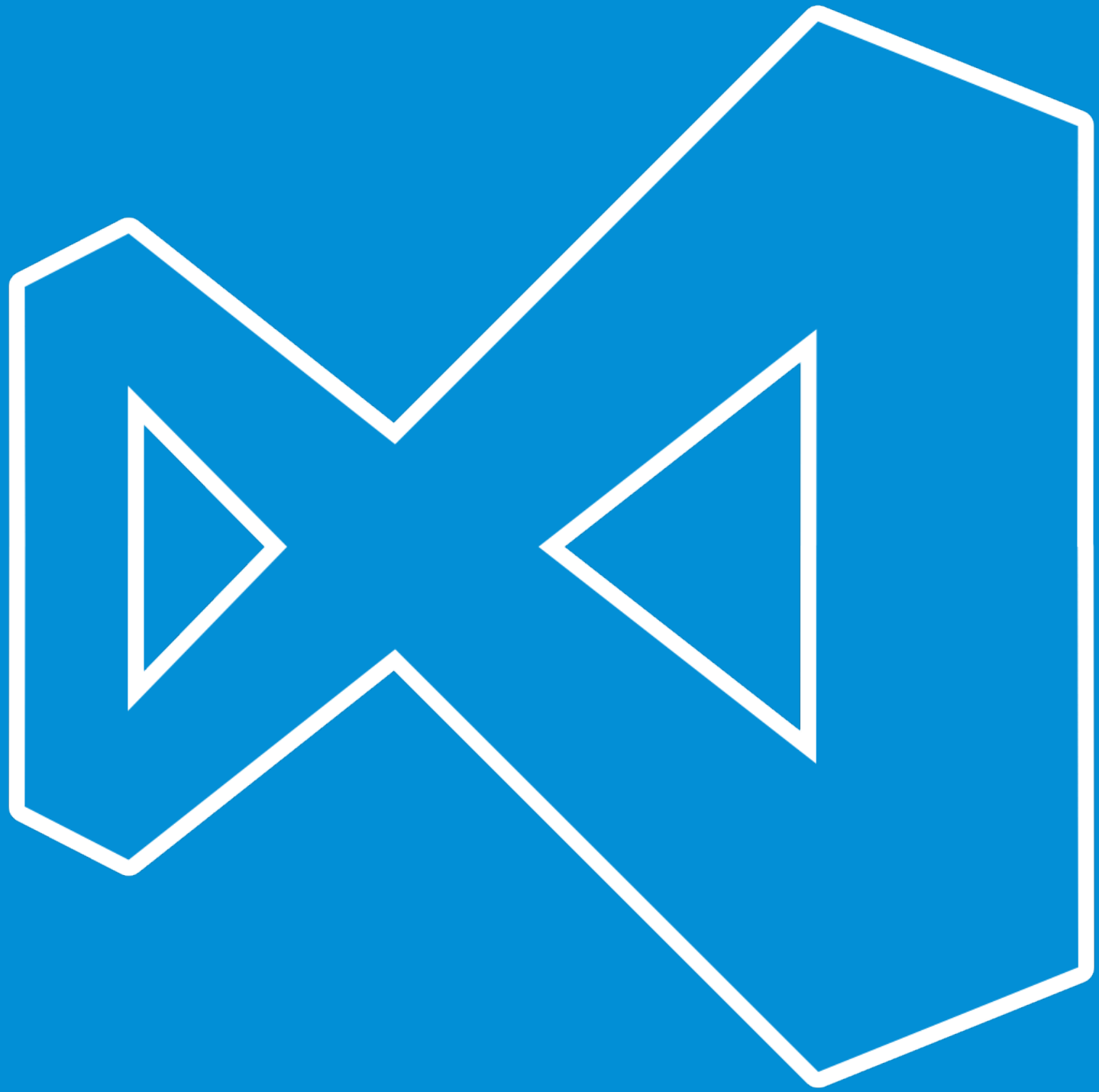

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Top 5 Reasons I Like Code

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1 Code is Fast

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1b | I'm Faster with Code

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2

Code is Cross-Platform

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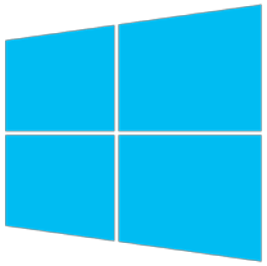
Cross Platform

OSX

Windows



Linux

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3 Code has Debugging

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4

Code has Rich Intellisense

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5 Code has Rich Refactorings

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Many Choices, and Growing

ASP.NET 5

C#

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Code sits perfectly
in the sweet spot between editor and IDE
for 95% of my development workflow

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Popular Editors and IDEs

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styles.less - hottowel-angular-typescript - Visual Studio Code

File Edit View Goto Help

EXPLORE

WORKING FILES

styles.less src\client\styles

HOTTOWEL-ANGULAR-TYPESCRIPT

- .settings
- src
  - client
    - app
      - admin
      - blocks
      - core
      - dashboard
      - layout
      - widgets
      - app.module.js
      - app.module.ts
      - app.module.js.map
    - images
    - styles
      - styles.less
    - test-helpers
    - config.js
    - index.html
    - specs.html
    - tsconfig.json
    - tsd.d.ts
  - server
- typings
- bowerrc

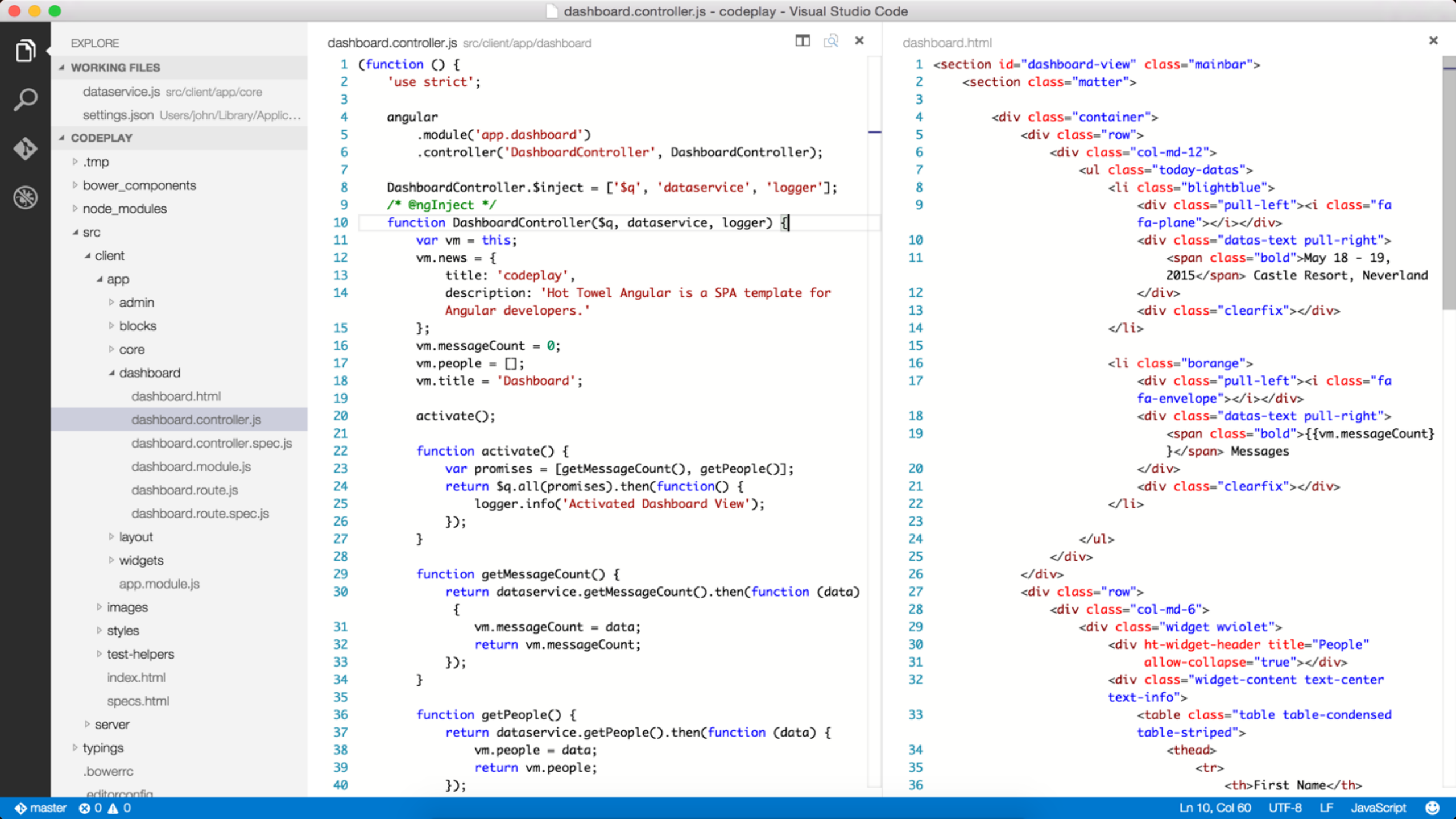
dashboard.controller.ts

```ts
namespace app.dashboard {
    'use strict';

    interface IDashboardVm {
        news: { title: string, description: string };
        messageCount: number;
        people: Array<any>;
        title: string;
        getMessageCount: () => ng.IPromise<number>;
        getPeople: () => ng.IPromise<Array<any>>;
    }

    export class DashboardController implements IDashboardVm {
        static $inject: Array<string> = ['$q', 'dataservice', 'logg
        constructor(private $q: ng.IQService,
            private dataservice: app.core.IDataService,
            private logger: blocks.logger.Logger) {
            var promises = [this.getMessageCount(), this.getPeople(
            this.$q.all(promises).then(function () {
                logger.info('Activated Dashboard View');
            });
        }

        news = {
            title: 'helloworld',
            description: 'Hot Towel Angular is a SPA template for A
        };
        messageCount: number = 0;
        people: Array<any> = [];
        title: string = 'Dashboard';

        getMessageCount() {
            return this.dataservice.getMessageCount().then((data) =
                this.messageCount = data;
                return this.messageCount;
```

styles.less src\client\styles

```less
@color_lightblue: #52b9e9;
@color_blue: #1171a3;
@color_success: #43c83c;
@color_warning: #f88529;
@color_important: #fa3031;
@color_violet: #932ab6;

* {
    font-family: "Segoe UI", Arial, Helvetica, sans-serif;
    -webkit-font-smoothing: antialiased;
}

.btn, .badge, .modal, .modal-dialog, .modal-content,
input, select {
    -ms-border-radius: 0 !important;
    border-radius: 0 !important;
}

input, select {
    padding: 4px !important;
    display: inline-block !important;
}

.navbar * {
    background-image: none !important;
    -webkit-text-shadow: none !important;
    -ms-text-shadow: none !important;
    text-shadow: none !important;
}

form * {
    font-family: "Segoe UI", Arial, Helvetica, sans-serif;
}

input, textarea {
```

master* 0 1 Ln 1, Col 1 UTF-8 CRLF Less


dashboard.controller.js - codeplay - Visual Studio Code
EXPLORE
WORKING FILES
dataservice.js src/client/app/core
settings.json Users/john/Library/Applic...
CODEPLAY
.tmp
bower_components
node_modules
src
client
app
admin
blocks
core
dashboard
dashboard.html
dashboard.controller.js
dashboard.controller.spec.js
dashboard.module.js
dashboard.route.js
dashboard.route.spec.js
layout
widgets
app.module.js
images
styles
test-helpers
index.html
specs.html
server
typings
.bowerrc
editorconfig
dashboard.controller.js src/client/app/dashboard
(function () {
'use strict';
angular
.module('app.dashboard')
.controller('DashboardController', DashboardController);
DashboardController.$inject = ['$q', 'dataservice', 'logger'];
/* @ngInject */
function DashboardController($q, dataservice, logger) {
var vm = this;
vm.news = {
title: 'codeplay',
description: 'Hot Towel Angular is a SPA template for Angular developers.'
};
vm.messageCount = 0;
vm.people = [];
vm.title = 'Dashboard';
activate();
function activate() {
var promises = [getMessageCount(), getPeople()];
return $q.all(promises).then(function() {
logger.info('Activated Dashboard View');
});
}
function getMessageCount() {
return dataservice.getMessageCount().then(function (data) {
vm.messageCount = data;
return vm.messageCount;
});
}
function getPeople() {
return dataservice.getPeople().then(function (data) {
vm.people = data;
return vm.people;
});
dashboard.html
<section id="dashboard-view" class="mainbar">
<section class="matter">

<ul class="today-datas">
<li class="blightblue">

May 18 - 19, 2015 Castle Resort, Neverland

</li>
<li class="borange">

{{vm.messageCount}} Messages

</li>
</ul>

<div ht-widget-header title="People" allow-collapse="true">

<table class="table table-condensed table-striped">
<thead>
<tr>
<th>First Name</th>
master 0 0
Ln 10, Col 60
UTF-8
LF
JavaScript

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editor IDE

lightweight/fast
file/folders
many languages
many workflows
keyboard centered

pluralsight

editor ⟷ IDE

lightweight/fast
file/folders
many languages
many workflows
keyboard centered

project systems
code understanding
debug
integrated build
File>New, wizards
designers
ALM integration
platform tools
...

pluralsight

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editor ⟷ IDE

lightweight/fast
file/folders
many languages
many workflows
keyboard centered

project systems
code understanding
debug
integrated build
File>New, wizards
designers
ALM integration
platform tools
...

pluralsight

editor ⟷ IDE

lightweight/fast
file/folders
many languages
many workflows
keyboard centered

project systems
code understanding
debug
integrated build
File>New, wizards
designers
ALM integration
platform tools
...

lightweight/fast
file/folders with project context
many languages
keyboard centered
code understanding (some languages)
debug
task running

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IntelliSense

Find All References

Parameter Hints

Goto Any Symbol

Errors/Warnings

Rename Symbol

Gutter Hints

Goto Symbol in File

Code Actions / Quick Fix

Goto Definition

Preview

Peek Definition

Customize Keyboard

Git Integration

Tasks

Debugging

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Visual Studio Code a **new choice** of tool that combines the **simplicity of a code editor** with what developers need for their **code-edit-debug cycle.**

-- Erich Gamma

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Code's 3 Main Parts

UI Framework - Electron

Editor - Monaco

Brains – TypeScript & OmniSharp/Roslyn

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Cross Platform
UI Framework / Shell

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ELECTRON

Build cross platform desktop apps with web technologies

Formerly known as Atom Shell. Made with ♥ by GitHub.

+ **Squirrel** for application updates
+ **FirstMate** for TextMate syntax bundle support

Battle Tested Editor

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Experience

Erich Gamma

Distinguished Engineer

Gang of Four / Design Patterns

Monaco @ Microsoft

Eclipse @ IBM

Chris Dias

Principal Program Manager

Visual Studio Tooling

Monaco @ Microsoft

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EXPLORE

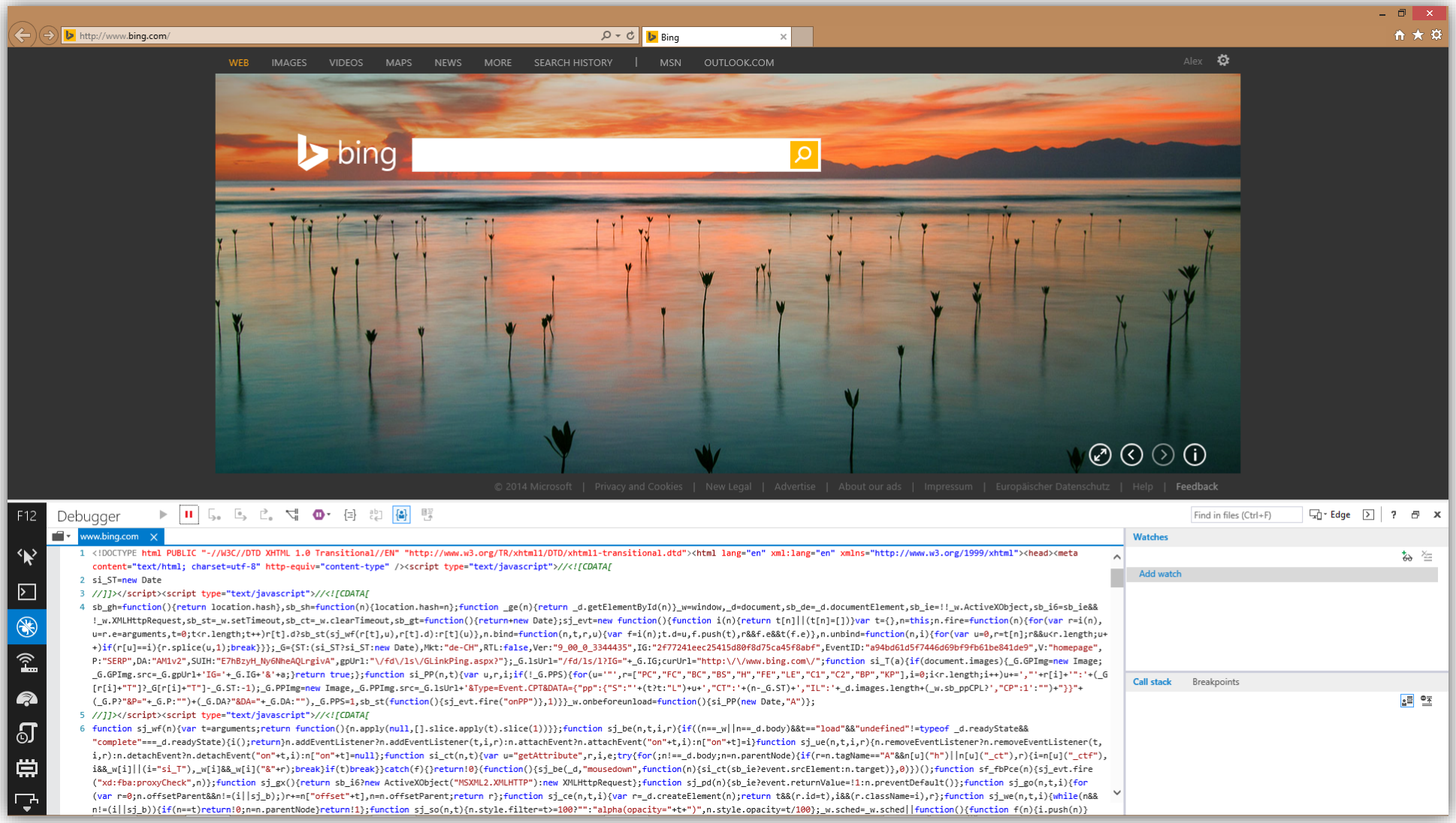
- css
- d.ts
- img
- js
  - libs
    - jquery-1.7.1.js
    - jquery-1.7.1.min.js
    - modernizr-2.5.3.min.js
  - plugins.js
  - script.js
- .gitattributes
- .gitignore
- .htaccess
- 404.html
- _references.js
- apple-touch-icon-114x114-precomposed.png
- apple-touch-icon-57x57-precomposed.png
- apple-touch-icon-72x72-precomposed.png
- apple-touch-icon-precomposed.png
- apple-touch-icon.png
- crossdomain.xml
- favicon.ico
- humans.txt
- index.html
- readme.md
- robots.txt
- template-html-boiler.ico

jquery-1.7.1.js /js/libs SAVED

```
/*!
 * jQuery JavaScript Library v1.7.1
 * http://jquery.com/
 *
 * Copyright 2011, John Resig
 * Dual licensed under the MIT or GPL Version 2 licenses.
 * http://jquery.org/license
 *
 * Includes Sizzle.js
 * http://sizzlejs.com/
 * Copyright 2011, The Dojo Foundation
 * Released under the MIT, BSD, and GPL Licenses.
 *
 * Date: Mon Nov 21 21:11:03 2011 -0500
 */
(function( window, undefined ) {

// Use the correct document accordingly with window argument (sandbox)
var document = window.document,
    navigator = window.navigator,
    location = window.location;
var jQuery = (function() {

// Define a local copy of jQuery
var jQuery = function( selector, context ) {
        // The jQuery object is actually just the init constructor 'enhanced'
        return new jQuery.fn.init( selector, context, rootjQuery );
    },

    // Map over jQuery in case of overwrite
    _jQuery = window.jQuery,

    // Map over the $ in case of overwrite
    _$ = window.$,

    // A central reference to the root jQuery(document)
    rootjQuery,

    // A simple way to check for HTML strings or ID strings
    // Prioritize #id over <tag> to avoid XSS via location.hash (#9521)
    quickExpr = /^(?:[^#<]*(<[\w\W]+>)[^>]*$|#([\w\-]*)$)/,

    // Check if a string has a non-whitespace character in it
    rnotwhite = /\S/,

    // Used for trimming whitespace
    trimLeft = /^\s+/,
    trimRight = /\s+$/,

    // Match a standalone tag
    rsingleTag = /^<(\w+)\s*\/?>(?:<\/\1>)?$/,

    // JSON RegExp
```

Visual Studio Online "Monaco"

Internet Explorer 11



greeter Alex's OneDrive › greeter.ts

Save

```typescript
class Greeter {
    greeting: string;
    constructor(message: string) {
        this.greeting = message;
    }
    greet() {
        return "Hello, " + this.greeting;
    }
}

var greeter = new Greeter("world");

var button = document.createElement('button');
button.textContent = "Say Hello";
button.onclick = function() {
    alert(greeter.greet());
}

document.body.appendChild(button);
```

greeter.ts

Add a description

Sharing

Share

Only me

Information

Type	Text Document
Modified	A moment ago Alex Dima
Added	A moment ago Alex Dima
Path	Alex's OneDrive › greeter.ts
Size	410 bytes

Commit 0e4a69

suggest.ts
editor/core
codeEditorWidget.js
codeEditorWidget.ts
editor/core/controller
oneCursor.js
oneCursor.ts
editor/core/model
consoleModel.js
consoleModel.ts
mirrorModel.js
mirrorModel.ts
modelLine.js
modelLine.ts
textModelWithDecorations.js
textModelWithDecorations.ts
textModelWithMarkers.js
textModelWithMarkers.ts
textModelWithTokens.js
textModelWithTokens.ts
textModelWithTokensHelpers.js
textModelWithTokensHelpers.ts
textModelWithTrackedRanges.js
textModelWithTrackedRanges.ts
tokenIterator.js
tokenIterator.ts
tokensBinaryEncoding.js [+]
tokensBinaryEncoding.ts [+]
editor/core/view
viewContext.ts
editor/core/view/lines
viewLineParts.ts

commit 0e4a69 / textModelWithTokens.ts [edit]

Visual Studio Online

Contents History **Compare**

commit f7b200 ↔ commit 0e4a69

```
296
297         this._stopLineTokenizationAfter = stopLineTokenizationAfter;
298     }
299
300     public getLineTokens(lineNumber:number, inaccurateTokensAcceptable:boolean = false): Editor.ILi
301         if (this._isDisposed) {
302             throw new Error('TextModelWithTokens.getLineTokens: Model is disposed');
303         }
304         if (lineNumber < 1 || lineNumber > this.getLineCount()) {
305             throw new Error('Illegal value ' + lineNumber + ' for `lineNumber`');
306         }
307
308         if (!inaccurateTokensAcceptable) {
309             this._updateTokensUntilLine(lineNumber, true);
310         }
311         return this._lines[lineNumber - 1].lineTokens;
312     }
313
314     public getRawLineTokens(lineNumber:number): Modes.ILineTokens {
315         if (this._isDisposed) {
316             throw new Error('TextModelWithTokens.getRawLineTokens: Model is disposed');
317         }
318         if (lineNumber < 1 || lineNumber > this.getLineCount()) {
319             throw new Error('Illegal value ' + lineNumber + ' for `lineNumber`');
320         }
321
322         this._updateTokensUntilLine(lineNumber, true);
323         // Copy arrays
324         return {
325             tokens: this._lines[lineNumber - 1].lineTokens.getTokens().slice(0),
326             modeTransitions: this._lines[lineNumber - 1].modeTransitions.slice(0),
327             endState: (lineNumber < this._lines.length ? this._lines[lineNumber - 1].state : this._
328             // Garbage here
329             actualStopOffset: 0,
330             retokenize: null
331         };
332     }
333
334     _getInternalTokens(lineNumber:number): Modes.IToken[] {
335         this._updateTokensUntilLine(lineNumber, true);
336         // Copy tokens
337         return this._lines[lineNumber - 1].lineTokens.getTokens().slice(0);
338     }
339
340     public setValue(value:string, newMode?:Modes.IMode): void;
341     public setValue(value:string, newModePromise?:WinJS.TPromise<Modes.IMode>): void;
342     public setValue(value:string, newModeOrPromise:any=null): void {
343         if (this._isDisposed) {
344             throw new Error('TextModelWithTokens.setValue: Model is disposed');
345         }
346
```

```
361
362         this._stopLineTokenizationAfter = stopLineTokenizationAfter;
363     }
364
365     public getLineTokens(lineNumber:number, inaccurateTokensAcceptable:boolean = false): Editor.ILi
366         if (this._isDisposed) {
367             throw new Error('TextModelWithTokens.getLineTokens: Model is disposed');
368         }
369         if (lineNumber < 1 || lineNumber > this.getLineCount()) {
370             throw new Error('Illegal value ' + lineNumber + ' for `lineNumber`');
371         }
372
373         if (!inaccurateTokensAcceptable) {
374             this._updateTokensUntilLine(lineNumber, true);
375         }
376         return this._lines[lineNumber - 1].lineTokens;
377     }
378
379     public getLineContext(lineNumber:number): Modes.ILineContext {
380         if (this._isDisposed) {
381             throw new Error('TextModelWithTokens.getLineContext: Model is disposed');
382         }
383         if (lineNumber < 1 || lineNumber > this.getLineCount()) {
384             throw new Error('Illegal value ' + lineNumber + ' for `lineNumber`');
385         }
386
387         this._updateTokensUntilLine(lineNumber, true);
388
389         return new LineContext(this._lines[lineNumber - 1]);
390     }
391
392     _getInternalTokens(lineNumber:number): Editor.ILineTokens {
393         this._updateTokensUntilLine(lineNumber, true);
394         return this._lines[lineNumber - 1].lineTokens;
395     }
396
397     public setValue(value:string, newMode?:Modes.IMode): void;
398     public setValue(value:string, newModePromise?:WinJS.TPromise<Modes.IMode>): void;
399     public setValue(value:string, newModeOrPromise:any=null): void {
400         if (this._isDisposed) {
401             throw new Error('TextModelWithTokens.setValue: Model is disposed');
402         }
403
```

Brains:
Tooling, Intellisense and Debugging

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TypeScript Server

OmniSharp Roslyn

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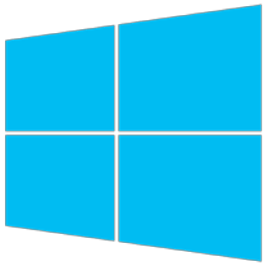
Download for the Right OS

OSX

Windows



Linux

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Key Symbols Used in This Course

⇧	Shift
⌘	Command
^	Control
⌥	Option / Alt

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Command Palette

Most Important Keybinding to Learn

⇧⌘ P	OSX
⇧^ P	Windows
⇧^ P	Linux

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This course comes with some sample applications

https://github.com/johnpapa/pluralsight-vscode-samples
or
http://jpapa.me/vscodeps

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Other Related Pluralsight Courses

TypeScript Fundamentals

Angular Patterns: Clean Code

JavaScript Build Automation with Gulp.js

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Get Involved

http://code.visualstudio.com

Twitter: @code

Connect at https://code.visualstudio.com/Home/Connect

Join the Insiders group

Send suggestions

Send bugs

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Resources

- Course Samples
  - http://jpapa.me/vscodeps
- OmniSharp
  - http://www.omnisharp.net
- TypeScript
  - http://www.typescriptlang.org
- JavaScript Yo generator
  - http://jpapa.me/yohottowel

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