

# Visual Studio Code e ASP.NET 5 su Windows, Linux e MacOSX

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Visual Studio 2015 Live  
**30 GIUGNO**



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# Agenda

- Cos'è Visual Studio Code
- Come è stato costruito
- Linguaggi supportati
- Caratteristiche
- Integrazione con ASP.NET 5

# .NET 2015

## .NET Framework 4.6



ASP.NET 5  
ASP.NET 4.6  
WPF  
Windows Forms

## .NET Core 5



ASP.NET 5  
.NET Native (for Windows 10)  
Windows desktop  
Windows mobile devices  
Windows embedded devices



ASP.NET 5 for Mac and Linux

## Common



### Runtime

Next gen JIT ("RyuJIT")  
SIMD (Data Parallelization)



### Compilers

.NET Compiler Platform ("Roslyn")  
Languages innovation



### NuGet packages

.NET Core 5 Libraries  
.NET Framework 4.6 Libraries

# editor

Veloce e leggero  
File/folder  
Linguaggi multipli  
Tanti workflow  
Keyboard centered



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Veloce e leggero  
file/folder e con progetto  
Linguaggi multipli  
Keyboard centered  
Gestione avanzata del codice  
Debug  
Esecuzione task

# IDE

Basato sui progetti  
Gestione avanzata del  
codice  
debug  
Build integrata  
File>New, wizard  
designer  
ALM  
Tool per diverse  
piattaforme

...

# Visual Studio Code

- Visual Studio Code è un nuovo editor gratuito
- Combina la semplicità di un editor con la gestione del ciclo code-edit-debug
- Per Windows, MacOSX, Linux
- Download gratuito da <http://code.visualstudio.com>

# Visual Studio Code

\* In preview

runtime	node.js, ASP.NET 5
linguaggi - basic* coloring, brackets, indent	CoffeeScript, Python, Ruby, Jade, Clojure, Java, C++, R, Go, makefile, shell, powershell, bat, XML, Markdown, ...
linguaggi - better + IntelliSense, linting, outline	JavaScript, HTML, CSS, LESS, SASS, JSON
linguaggi - best + find all refs, refactoring	C#, TypeScript
source control	git
task	gulp, <i>grunt</i> ...

# Demo

Visual Studio Code

# Come funziona?

- Basato su **Electron**
  - Noto in precedenza come Atom Shell (di GitHub)
  - Usa Chromium+Node.js per il build delle app
  - Cross Platform (Windows, Linux, MacOSX)
- **Squirrel** per gli aggiornamenti dell'app
- **FirstMate** per il supporto alla sintassi TextMate
- Evoluzione di **Visual Studio Online “Monaco”**



Visual Studio Online "Monaco" | 30b9cct-0ee0-4-231-b9ee

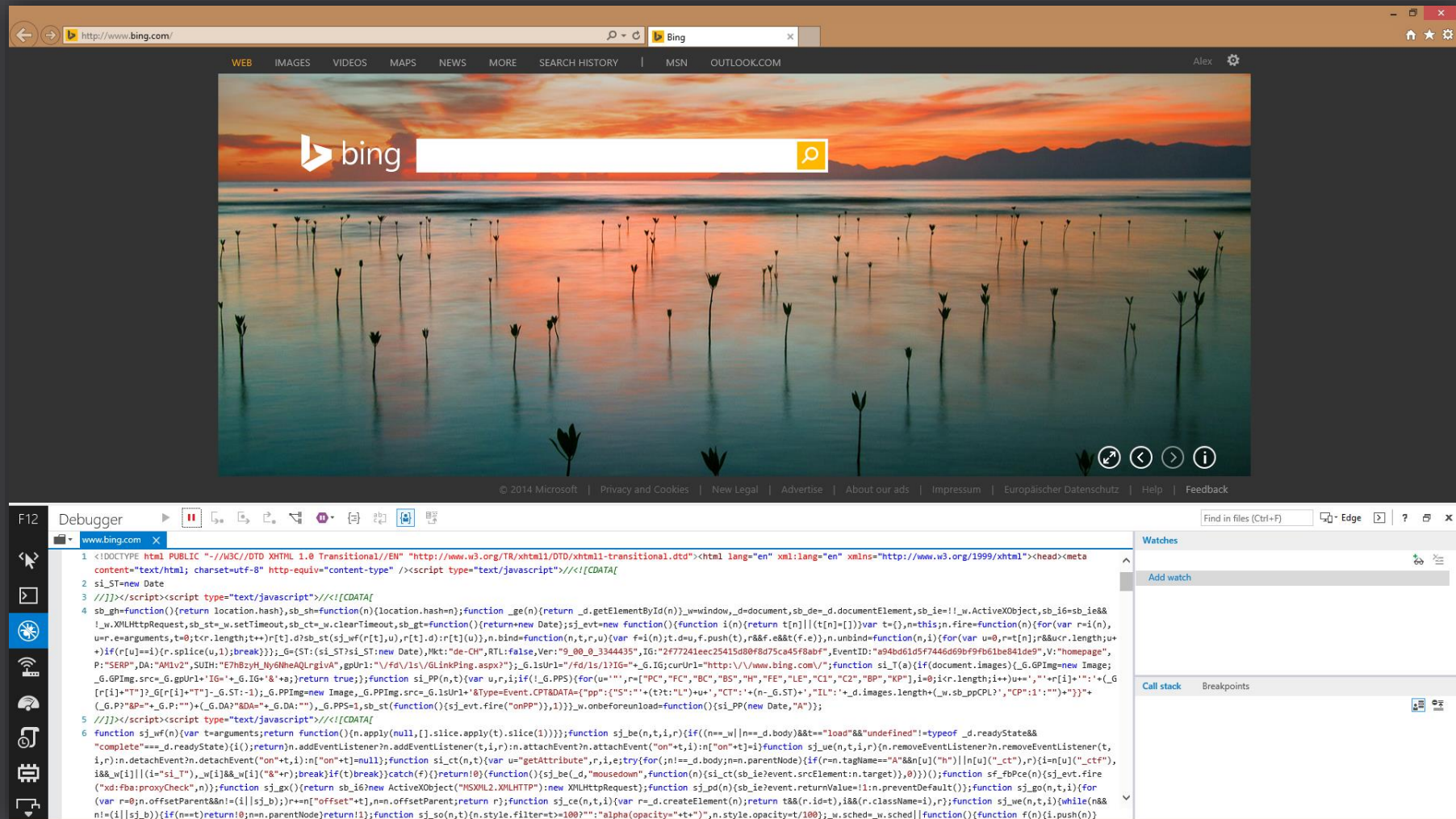
Your free site will expire in: 58m04s | alexdima@microsoft.com

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
1  /*!
2  * jQuery JavaScript Library v1.7.1
3  * http://jquery.com/
4  *
5  * Copyright 2011, John Resig
6  * Dual licensed under the MIT or GPL Version 2 licenses.
7  * http://jquery.org/license
8  *
9  * Includes Sizzle.js
10 * http://sizzlejs.com/
11 * Copyright 2011, The Dojo Foundation
12 * Released under the MIT, BSD, and GPL Licenses.
13 *
14 * Date: Mon Nov 21 21:11:03 2011 -0500
15 */
16 (function( window, undefined ) {
17
18 // Use the correct document accordingly with window argument (sandbox)
19 var document = window.document,
20     navigator = window.navigator,
21     location = window.location;
22 var jQuery = (function() {
23
24 // Define a local copy of jQuery
25 var jQuery = function( selector, context ) {
26     // The jQuery object is actually just the init constructor 'enhanced'
27     return new jQuery.fn.init( selector, context, rootjQuery );
28 },
29
30 // Map over jQuery in case of overwrite
31 _jQuery = window.jQuery,
32
33 // Map over the $ in case of overwrite
34 _$ = window.$,
35
36 // A central reference to the root jQuery(document)
37 rootjQuery,
38
39 // A simple way to check for HTML strings or ID strings
40 // Prioritize #id over <tag> to avoid XSS via location.hash (#9521)
41 quickExpr = /^(?:[#<]*(<[\w\W]+>)[^>]*$|#[\w\-\s]*$)/,
42
43 // Check if a string has a non-whitespace character in it
44 rnotwhite = /\S/,
45
46 // Used for trimming whitespace
47 trimLeft = /^\s+/,
48 trimRight = /\s+$/,
49
50 // Match a standalone tag
51 rsingleTag = /^<(\w+)[^>\/?>?(?:<\/\w+>)?$/,
52
53 // JSON RegExp
54 // ...
55 }
```





OneDrive

RenameDownloadShareManage

greetersAlex's OneDrive > greeter.tsSave

```
1 class Greeter {
2   greeting: string;
3   constructor(message: string) {
4     this.greeting = message;
5   }
6   greet() {
7     return "Hello, " + this.greeting;
8   }
9 }
10
11 var greeter = new Greeter("world");
12
13 var button = document.createElement('button');
14 button.textContent = "Say Hello";
15 button.onclick = function() {
16   alert(greeter.greet());
17 }
18
19 document.body.appendChild(button);
20
```

greeter.ts

Add a description

Sharing

ShareOnly 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

Visual Studio Online / Monaco

HOME CODE WORK BUILD TEST

Explorer Commits Branches Pull Requests

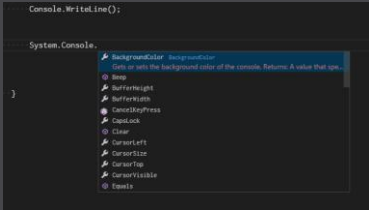
Commit 0e4a69

commit 0e4a69 / textModelWithTokens.ts [edit]

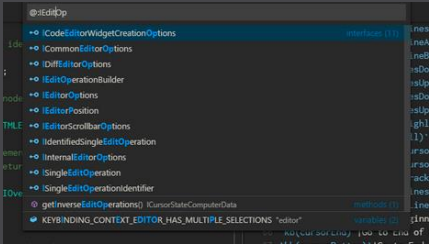
Contents History Compare

commit f7b200 ↔ commit 0e4a69

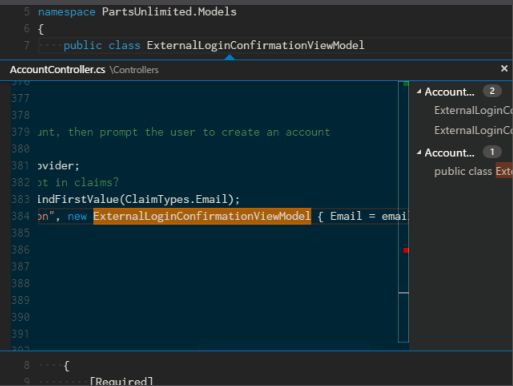
```
296 this._stopLineTokenizationAfter = stopLineTokenizationAfter;
297 }
298
299 public getLineTokens(lineNumber:number, inaccurateTokensAcceptable:boolean = false): Editor.ILineTokens {
300     if (this._isDisposed) {
301         throw new Error('TextModelWithTokens.getLineTokens: Model is disposed');
302     }
303     if (lineNumber < 1 || lineNumber > this.getLineCount()) {
304         throw new Error('Illegal value ' + lineNumber + ' for 'lineNumber');
305     }
306     if (!inaccurateTokensAcceptable) {
307         this._updateTokensUntillLine(lineNumber, true);
308     }
309     return this._lines[lineNumber - 1].lineTokens;
310 }
311
312 public getRawLineTokens(lineNumber:number): Modes.ILineTokens {
313     if (this._isDisposed) {
314         throw new Error('TextModelWithTokens.getRawLineTokens: Model is disposed');
315     }
316     if (lineNumber < 1 || lineNumber > this.getLineCount()) {
317         throw new Error('Illegal value ' + lineNumber + ' for 'lineNumber');
318     }
319     this._updateTokensUntillLine(lineNumber, true);
320     // Copy arrays
321     return {
322         tokens: this._lines[lineNumber - 1].lineTokens.getTokens().slice(0),
323         modeTransitions: this._lines[lineNumber - 1].modeTransitions.slice(0),
324         endState: (lineNumber < this._lines.length ? this._lines[lineNumber - 1].state : this._
325             // Garbage here
326             actualStopOffset: 0,
327             retokenize: null
328         };
329     }
330 }
331
332 _getInternalTokens(lineNumber:number): Modes.IToken[] {
333     this._updateTokensUntillLine(lineNumber, true);
334     // Copy tokens
335     return this._lines[lineNumber - 1].lineTokens.getTokens().slice(0);
336 }
337
338 public setValue(value:string, newMode?:Modes.IMode): void;
339 public setValue(value:string, newModePromise?:WinJS.TPromise<Modes.IMode>): void;
340 public setValue(value:string, newModeOrPromise:any=null): void {
341     if (this._isDisposed) {
342         throw new Error('TextModelWithTokens.setValue: Model is disposed');
343     }
344 }
345
346
361 this._stopLineTokenizationAfter = stopLineTokenizationAfter;
362 }
363
364 public getLineTokens(lineNumber:number, inaccurateTokensAcceptable:boolean = false): Editor.ILineTokens {
365     if (this._isDisposed) {
366         throw new Error('TextModelWithTokens.getLineTokens: Model is disposed');
367     }
368     if (lineNumber < 1 || lineNumber > this.getLineCount()) {
369         throw new Error('Illegal value ' + lineNumber + ' for 'lineNumber');
370     }
371     if (!inaccurateTokensAcceptable) {
372         this._updateTokensUntillLine(lineNumber, true);
373     }
374     return this._lines[lineNumber - 1].lineTokens;
375 }
376
377 public getLineContext(lineNumber:number): Modes.ILineContext {
378     if (this._isDisposed) {
379         throw new Error('TextModelWithTokens.getLineContext: Model is disposed');
380     }
381     if (lineNumber < 1 || lineNumber > this.getLineCount()) {
382         throw new Error('Illegal value ' + lineNumber + ' for 'lineNumber');
383     }
384     this._updateTokensUntillLine(lineNumber, true);
385     return new LineContext(this._lines[lineNumber - 1]);
386 }
387
388 _getInternalTokens(lineNumber:number): Editor.ILineTokens {
389     this._updateTokensUntillLine(lineNumber, true);
390     return this._lines[lineNumber - 1].lineTokens;
391 }
392
393 public setValue(value:string, newMode?:Modes.IMode): void;
394 public setValue(value:string, newModePromise?:WinJS.TPromise<Modes.IMode>): void;
395 public setValue(value:string, newModeOrPromise:any=null): void {
396     if (this._isDisposed) {
397         throw new Error('TextModelWithTokens.setValue: Model is disposed');
398     }
399 }
```



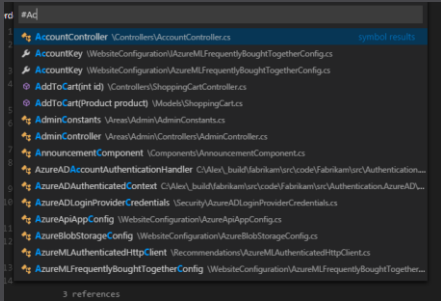
IntelliSense



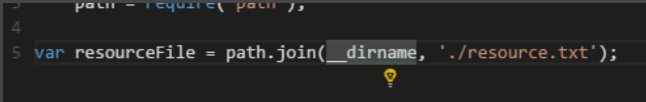
goto symbol in file



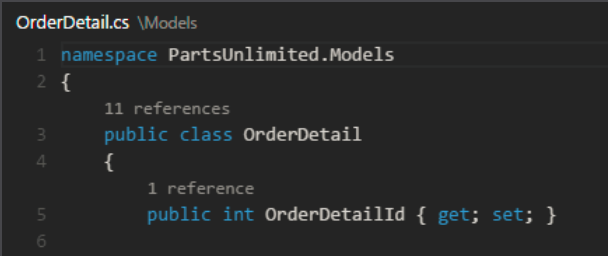
find all references



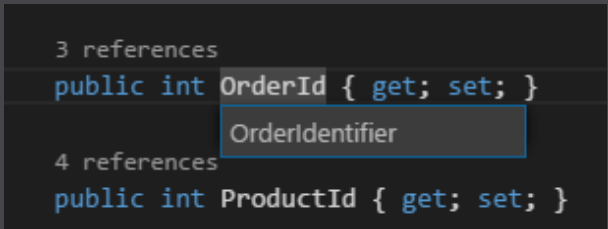
goto any symbol



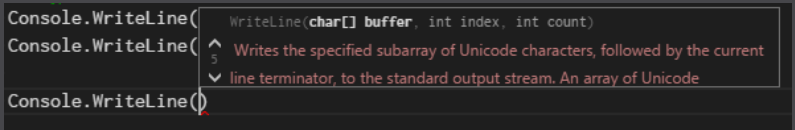
code actions



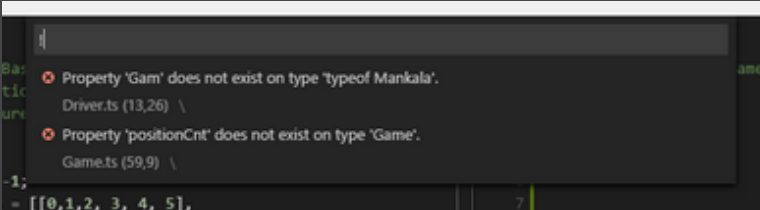
inline references



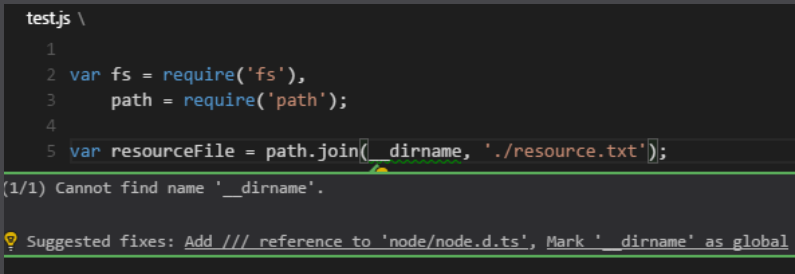
rename symbol



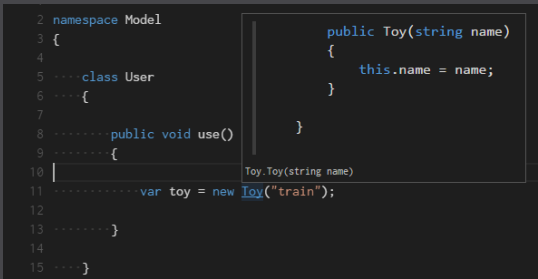
parameter hints



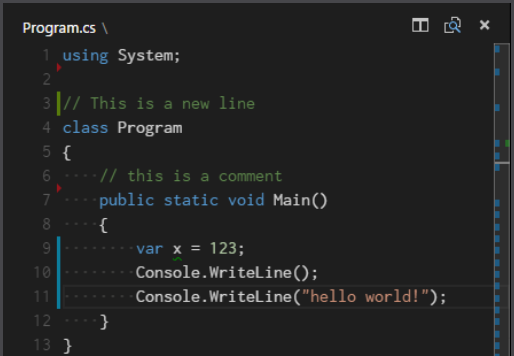
error/warnings



inline errors



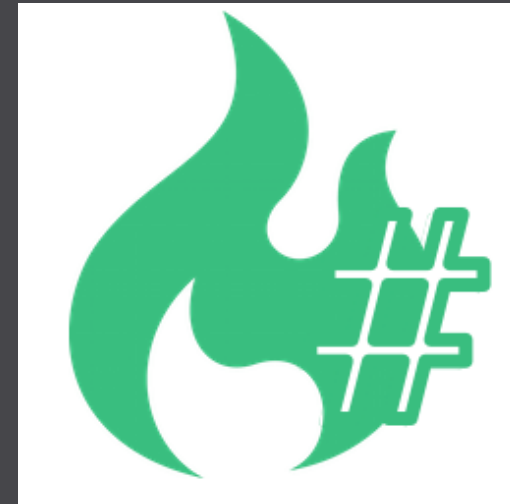
goto definition/preview



gutter



TypeScript  
Server



OmniSharp  
Roslyn

# Architettura a servizi

VS Code

OmniSharp Server

C#, ASP.NET 5

TypeScript Server

TS, Node.js

Node Dbg Adapter

JS, Node.js

Mono Dbg Adapter

C#, mono

JSON

# ASP.NET 5

- ASP.NET 5 è un cambio radicale rispetto al passato
- Full Framework o Cloud Optimized (CoreCLR)
- MVC, Web API e Web Pages integrati in una sola pipeline
- Tutto slegato dal .NET Framework
  - Package NuGet
  - Componentizzato: scegliamo noi cosa includere
- Nato per le performance
  - Compilazione al volo
  - Non necessita di Visual Studio
  - Versione del framework in deploy con l'app



# Demo

ASP.NET 5 con Visual Studio Code

# Cosa ci attende

- Modello di estendibilità
  - Plugin
- Supporto per CoreCLR
- Migliore integrazione con Roslyn (C# compiler as a service)
- Debugging con ASP.NET 5
- Debugging con TypeScript

# Recap

- Visual Studio Code è un editor per il web
  - Gratuito, Cross Platform, leggero
  - Sfrutta e supporta tecnologie Open Source
  - Ci rende più rapidi nelle modifiche
- 
- Il materiale è disponibile subito su <http://aspit.co/VS2015-live>