

VS 2017 – News for C# Devs

VS2017

C# Dev News



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time cockpit
Saves the day.



Installation and Configuration

Need for Speed

Visual Studio Installer

Products

Installed

Visual Studio Enterprise 2017 Preview (prev...

15.9.0 Preview 2.0

Microsoft DevOps solution for productivity and coordination across teams of any size

[Release notes](#)

Modify

Launch

More ▾

Visual Studio Enterprise 2017

15.8.4

Microsoft DevOps solution for productivity and coordination across teams of any size

[Release notes](#)

Modify

Launch

More ▾

Welcome!

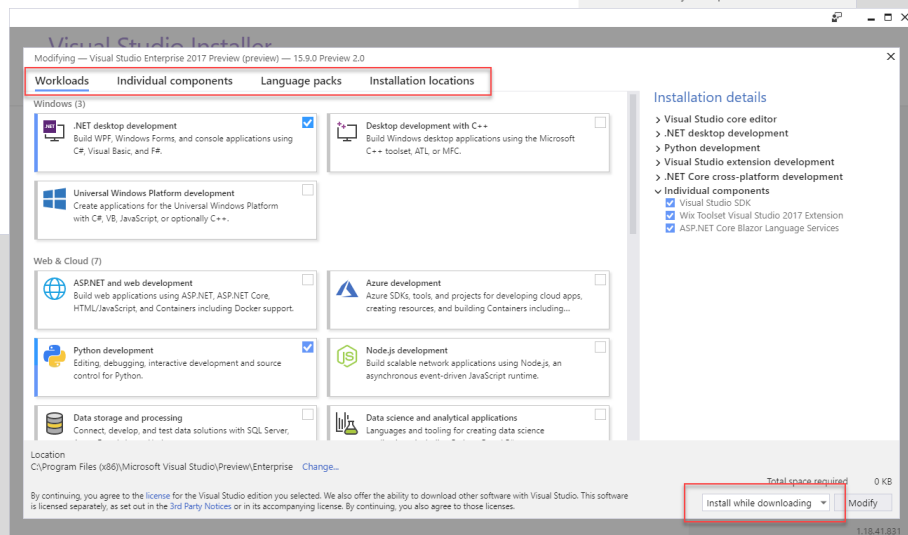
We invite you to go online to hone your skills and find additional tools to support your development workflow.

Learn

Whether you're new to development or an experienced developer, we have you covered with our tutorials, videos, and sample code.

Marketplace

Use Visual Studio extensions to add support for new technologies, integrate with other products and services, and fine-tune your experience.



VS Installer

VS 2017

Side by side install of
preview and prod

Install performance

Install while downloading

Tips

Language packs independent of
OS language

Change install location (15.7)



Visual Studio Enterprise 2017 Preview (prev...

15.9.0 Preview 2.0

Microsoft DevOps solution for productivity and coordination across teams of any size

[Release notes](#)

Modify

Launch

More ▼

Repair

Uninstall

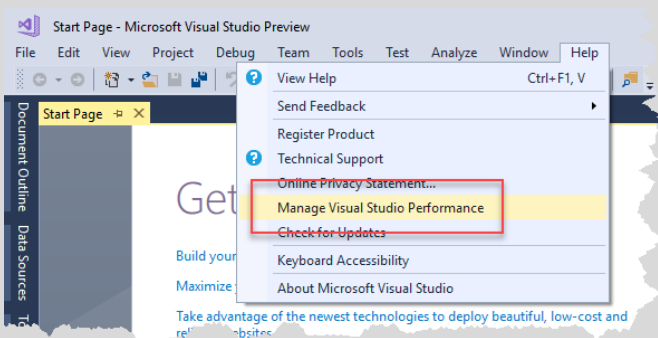
Import configuration

Export configuration

Config Import/Export

VS 2017 15.9 Preview 2

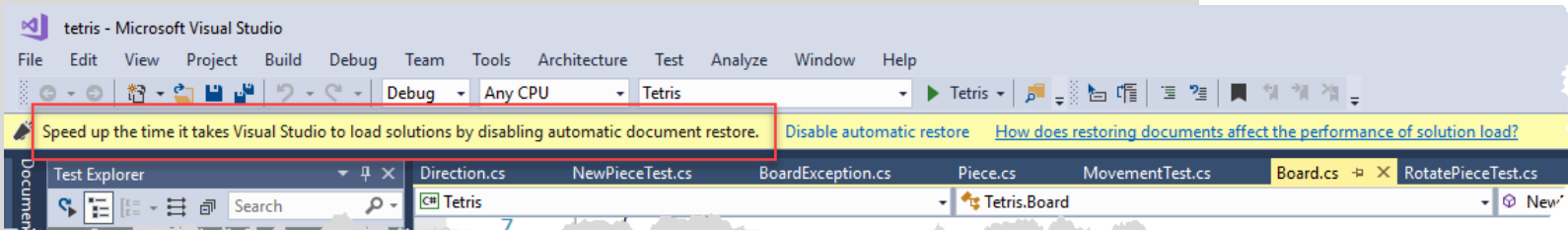
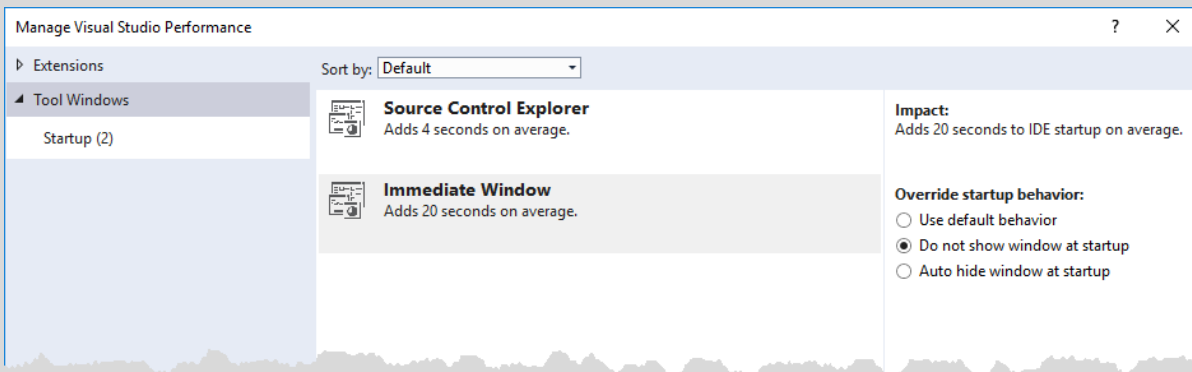
Move VS config between installations



Startup Performance

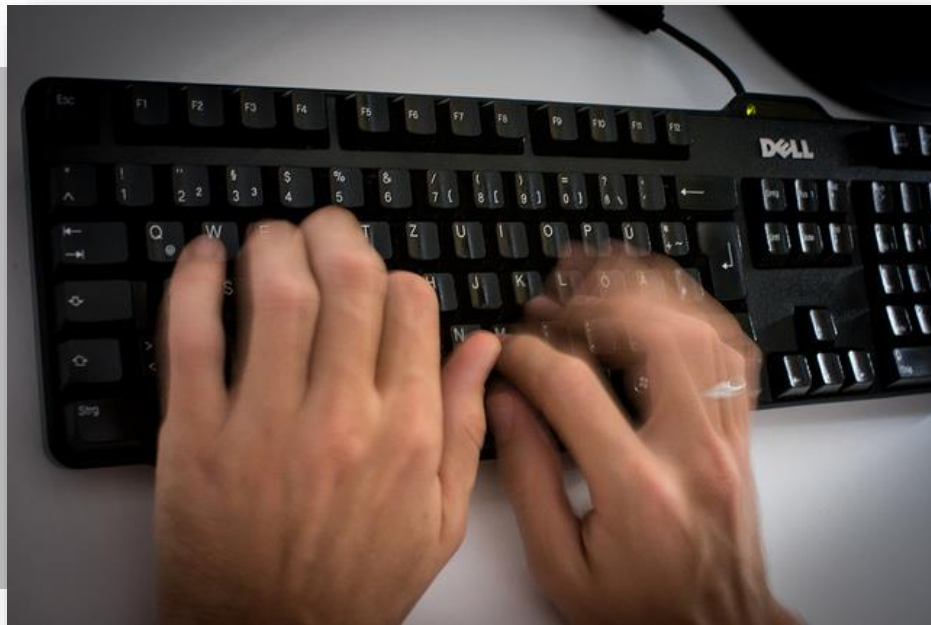
Manage VS Performance

Performance warnings



Editor Improvements

Navigation, writing code



Multi-Caret Edit

VS 2017 15.8

Ctrl + Alt + Click

Tips

Shift + Alt + .

→ Add additional selections that match current selection

Ctrl + Shift + Alt + .

→ Skip over match

Ctrl + Shift + Alt + ,

→ All matching selection in document

0 references

```
static int Add(int x, int y) => x + y;
```

0 references

```
static int Sub(int x, int y) => x - y;
```

0 references

```
static int Div(int x, int y) => x / y;
```

0 references

```
static int Mult(int x, int y) => x * y;
```

Expand/Contract

VS 2017 15.5

Shift + Alt + +

→ Expand to next logical block

Shift + Alt + -

→ Contract

```
0 references
class Program
{
    0 references
    static async Task Main(string[] args)
    {
        using (var conn = new SqlConnection("Server=(localdb)\\dev;Database=master"))
        {
            await conn.OpenAsync();
            using (var cmd = conn.CreateCommand())
            {
                cmd.CommandType = CommandType.Text;
                cmd.CommandText = "SELECT 1 AS X";
                var reader = await cmd.ExecuteReaderAsync();
                while (await reader.ReadAsync())
                {
                    Console.WriteLine(reader[0]);
                }
            }
        }
    }
}
```



```

using System;
using System.Data;
using System.Data.SqlClient;
using System.Threading.Tasks;

namespace IntelliCode_Hello_World
{
    class Program
    {
        static async Task Main(string[] args)
        {
            using (var conn = new SqlConnection("Server=(localdb)\\dev;Database=master"))
            {
                await conn.OpenAsync();
                const string query = "SELECT 1 AS x";
                using (var cmd = conn.CreateCommand())
                {
                    cmd.CommandType = CommandType.Text;
                    cmd.CommandText = query;
                    var reader = await cmd.ExecuteReaderAsync();
                    while (await reader.ReadAsync())
                    {
                        Console.WriteLine(reader[0]);
                    }
                }
            }
        }
    }
}

```

Go to Last Edit

VS 2017 15.8

Demo

Cursor on *reader[0]*

Shift + *Alt* + + until *using*

Ctrl + . to generate method

Rename to *ExecuteQueryAsync*

F12 (*Ctrl* + *Click*) on

ExecuteReaderAsync

Discover *DbDataReader*

Ctrl + *Shift* + *Backspace*

Go to last edit

Extract loop with *Ctrl* + .

Functional programming...

```

using System;
using System.Data;
using System.Data.Common;
using System.Data.SqlClient;
using System.Threading.Tasks;

namespace IntelliCode_Hello_World
{
    class Program
    {
        static async Task Main(string[] args)
        {
            using (var conn = new SqlConnection("Server=(localdb)\\dev;Database=master"))
            {
                await conn.OpenAsync();

                const string query = "SELECT 1 AS x";
                await ExecuteQueryAsync(conn, query, ProcessReaderAsync);
            }
        }

        private static async Task ExecuteQueryAsync(SqlConnection conn, string query,
            Func<DbDataReader, Task> processor)
        {
            using (var cmd = conn.CreateCommand())
            {
                cmd.CommandType = CommandType.Text;
                cmd.CommandText = query;
                var reader = await cmd.ExecuteReaderAsync();
                await processor(reader);
            }
        }

        private static async Task ProcessReaderAsync(DbDataReader reader)
        {
            while (await reader.ReadAsync())
            {
                Console.WriteLine(reader[0]);
            }
        }
    }
}

```

Go to Last Edit

VS 2017 15.8

Final solution

Navigation

Ctrl+click for Go To Definition

VS 2017 15.4

Ctrl+F12 for Go To Implementation

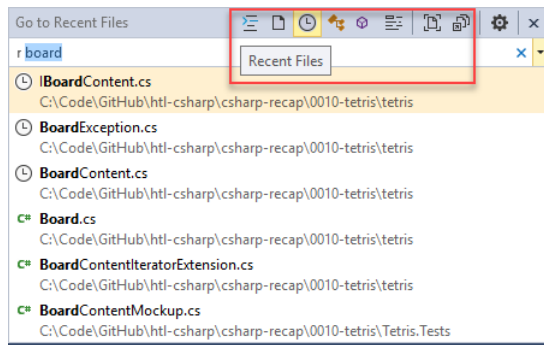
Example: *IBoardContent* in [Tetris sample](#)

Filter Go To All (Ctrl+,)

Shortcut syntax

Recent files, current document

Example: *Board* in [Tetris sample](#)

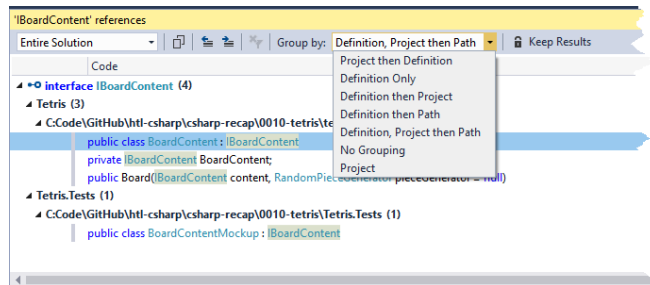


New features in Find All References (Shift+F12)

Structure results

Lock results

Syntax coloring

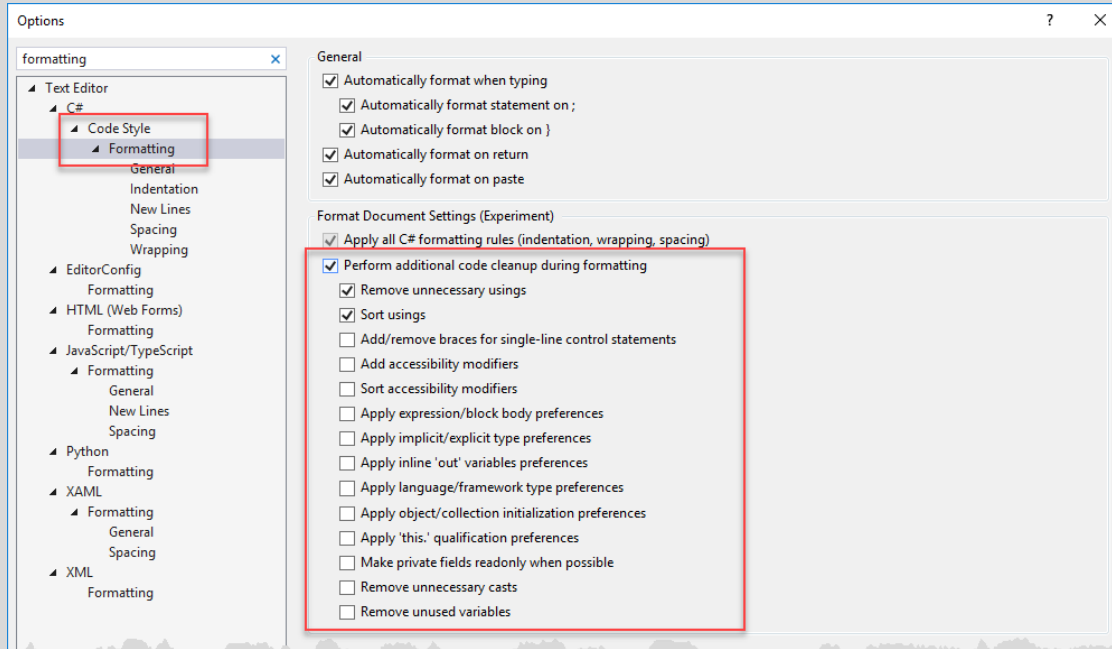


Code Cleanup

VS 2017 15.8

Respects *.editorconfig*

Details follow later

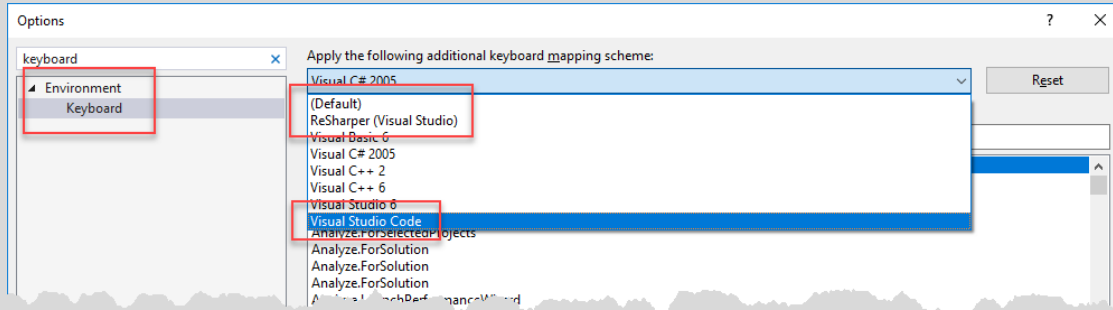


Keyboard Schema

VS 2017 15.8

Visual Studio Code

ReSharper



IntelliCode

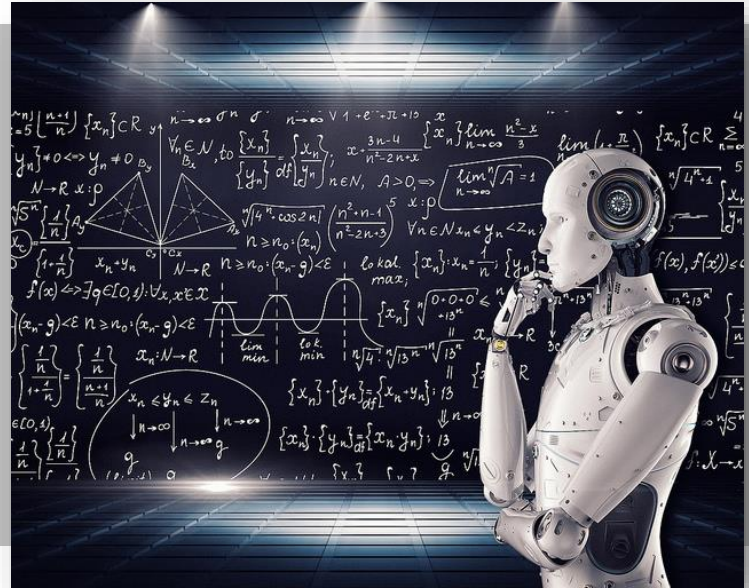


Image source: <https://www.flickr.com/photos/mikemacmarketing/30212411048>

Image via www.vpnusrus.com

AI-Assisted Coding

Experimental preview extension for VS2017

Currently available for C# and Python

Replace static rules with AI

Trained with high-profile OSS projects from GitHub

No user-defined code is sent to Microsoft for analysis

Assisted IntelliSense

Sort completion lists

Inferred code styling and formatting

Creates *.editorconfig* from codebase

Just the beginning...

```

using System;
using System.Data;
using System.Data.SqlClient;
using System.Threading.Tasks;

namespace IntelliCode_Hello_World
{
    class Program
    {
        static async Task Main(string[] args)
        {
            using (var conn = new SqlConnection("Server=(localdb)\\dev;Database=master"))
            {
                await conn.OpenAsync();
                const string query = "SELECT 1 AS x";
                using (var cmd = conn.CreateCommand())
                {
                    cmd.CommandType = CommandType.Text;
                    cmd.CommandText = query;
                    var reader = await cmd.ExecuteReaderAsync();
                    while (await reader.ReadAsync())
                    {
                        Console.WriteLine(reader[0]);
                    }
                }
            }
        }
    }
}

```

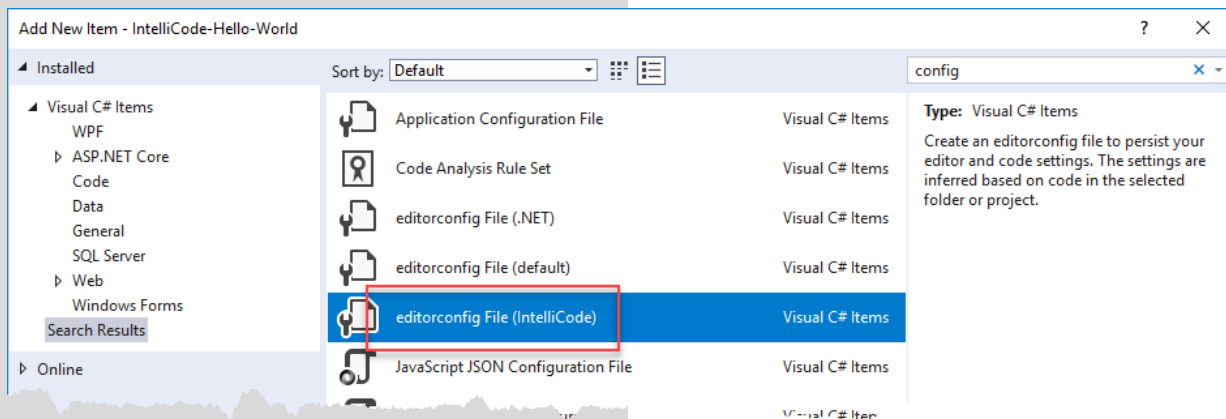
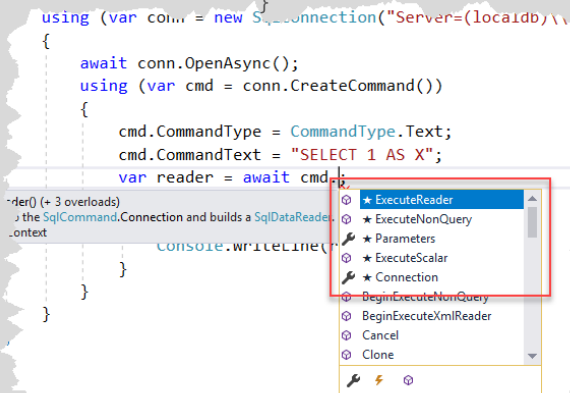
Demo

IntelliCode

Assisted IntelliSense

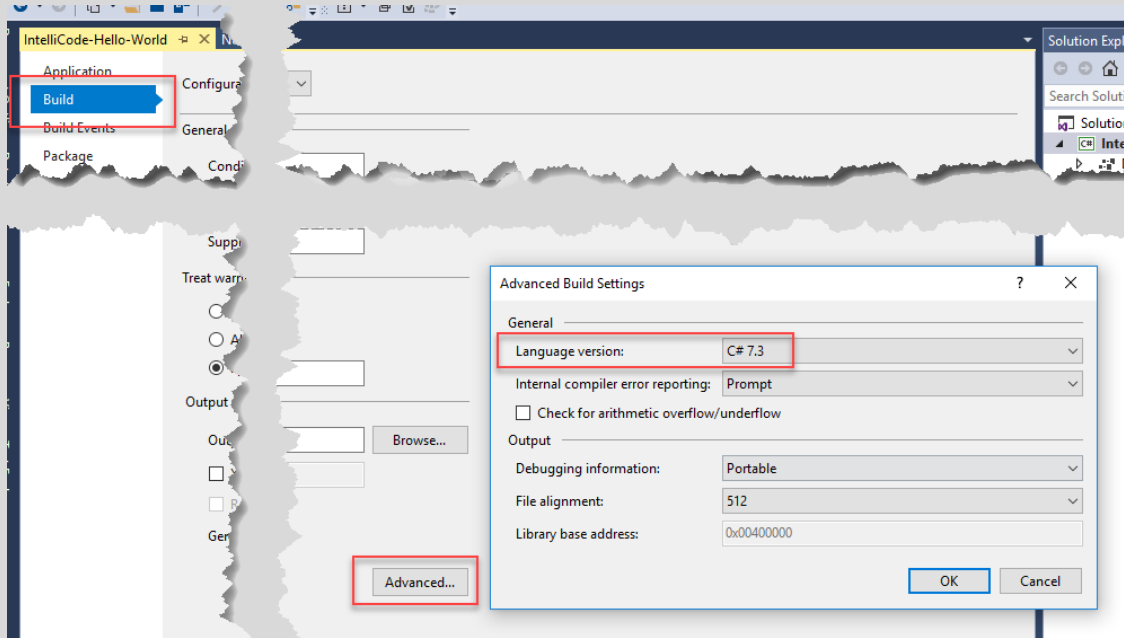
Infer *.editorconfig*

BTW: *async main*

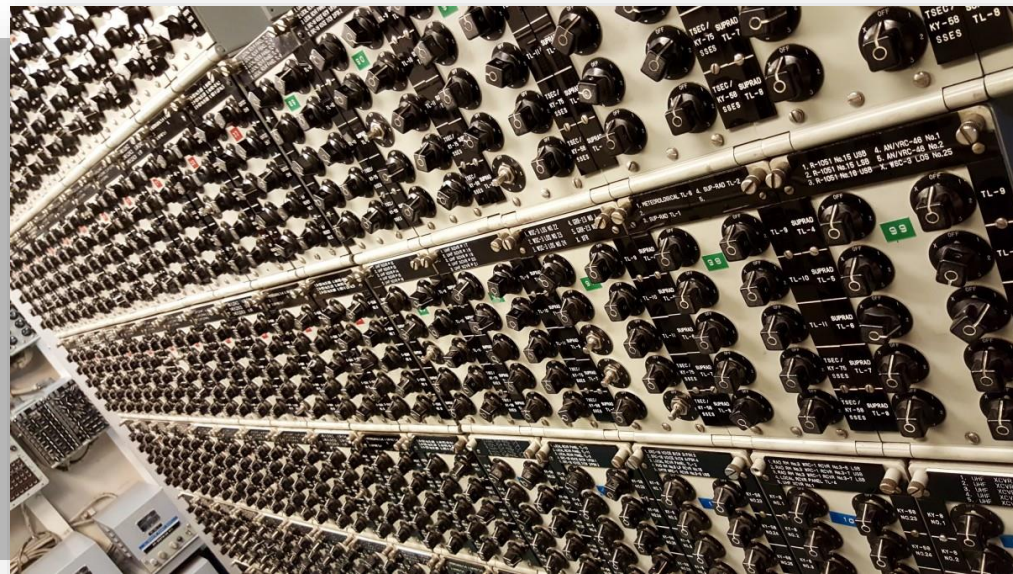


Async Main

C# 7.1



Settings

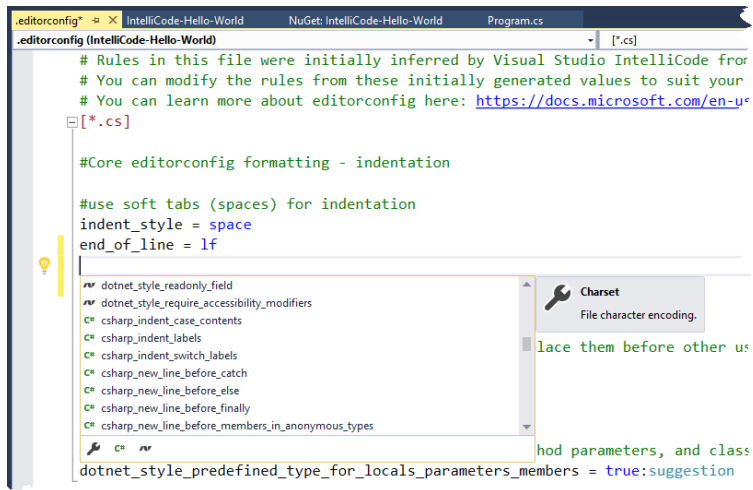


EditorConfig

Consistent coding styles between editors and IDEs

<https://editorconfig.org/>

Tip: [EditorConfig Language Services](#)



```
.editorconfig (IntelliCode-Hello-World)
# Rules in this file were initially inferred by Visual Studio IntelliCode from
# You can modify the rules from these initially generated values to suit your
# You can learn more about editorconfig here: https://docs.microsoft.com/en-us/...

[*.*.cs]

#Core editorconfig formatting - indentation

#use soft tabs (spaces) for indentation
indent_style = space
end_of_line = lf

# dotnet_style_readonly_field
# dotnet_style_require_accessibility_modifiers
# csharp_indent_case_contents
# csharp_indent_labels
# csharp_indent_switch_labels
# csharp_new_line_before_catch
# csharp_new_line_before_else
# csharp_new_line_before_finally
# csharp_new_line_before_members_in_anonymous_types
# dotnet_style_predefined_type_for_locals_parameters_members = true:suggestion
```

Charset
File character encoding.

Place them before other us

Method parameters, and class

Identity

VS 2017


Roam settings

Roaming extension manager

Fewer sign-in prompts

Server-side fix

Personalization Account




Rainer Stropek
rainer@software-architects.at

[Manage Visual Studio profile](#)
[Sign out](#)


Your personalization account is used to roam settings across devices, and to provide other personalized services.

All Accounts



Microsoft account
rainer@software-architects.at

[Remove](#)
[Apply filter...](#)



Microsoft account
rainer@timecockpit.com

[Remove](#)
[Apply filter...](#)

[Add an account...](#)

Visual Studio

Enterprise 2017

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Extensions and Updates

Installed


Online

Updates


Roaming Extension Manager

All


Sort by: Not installed



Azure Data Lake and Stream Analytics Tools
An integrated development environment for Azure Data Lake and Stream Analytics application development.




Azure Data Lake Tools for Visual Studio
An integrated development environment for Azure Data Lake application development.



Azure Functions and Web Jobs Tools
Tools for creating and publishing Azure Functions and Web Jobs

Stop Roaming


Download



Command Task Runner
Adds support for command line batch files in Visual Studio 2015's Task Runner Explorer. Supports .cmd, .bat, .ps1 and .psm1 files.

Created by: Microsoft
Version: 15.10.2009.0
Rating: ★★☆☆ (10 Votes)
[Release Notes](#)
[More Information](#)
[Report Extension to Microsoft](#)

Profiling and Debugging

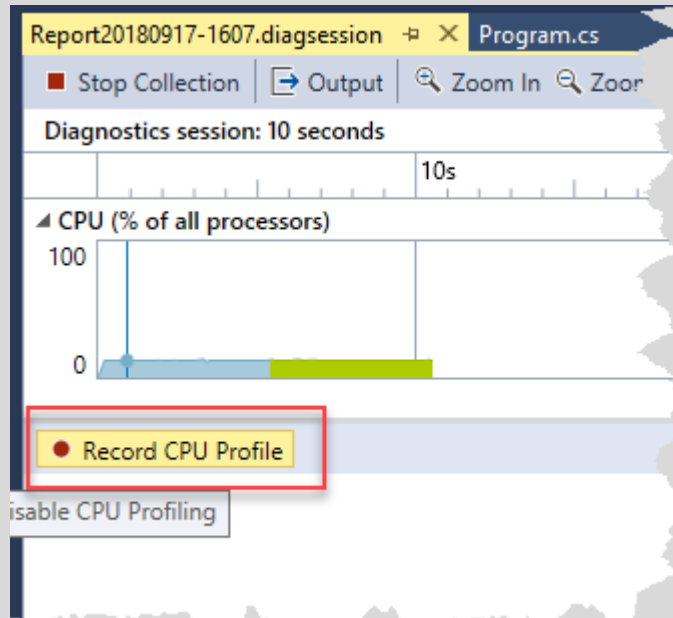


```
...WINDOWS\system32\comctl32.dll', Symbols loaded (source in
WINDOWS\system32\advapi32.dll', Symbols loaded (source in
WINDOWS\system32\rpcrt4.dll', Symbols loaded (source info
WINDOWS\system32\secur32.dll', Symbols loaded (source inf
WINDOWS\system32\comctl32.dll', Symbols loaded (source in
WINDOWS\system32\shell32.dll', Symbols loaded (source inf
WINDOWS\system32\msvcrt.dll', Symbols loaded (source info
WINDOWS\system32\shlwapi.dll', Symbols loaded (source inf
WINDOWS\system32\winpool.drv', Symbols loaded (source in
WINDOWS\system32\oledlg.dll', Symbols loaded (source info
WINDOWS\system32\ole32.dll', Symbols loaded (source infor
WINDOWS\system32\oleaut32.dll', Symbols loaded (source in
WINDOWS\WinSxS\x86_Microsoft.Windows.GdiPlus_6595b64144cc
WINDOWS\system32\imm32.dll', Symbols loaded (source infor
WINDOWS\system32\winmm.dll', Symbols loaded (source infor
WINDOWS\WinSxS\x86_Microsoft.Windows.Common-Controls_6595
WINDOWS\system32\uxtheme.dll', Symbols loaded (source inf
.exe: Native' has exited with code 2 (0x2).
```

CPU Usage

VS 2017 15.8

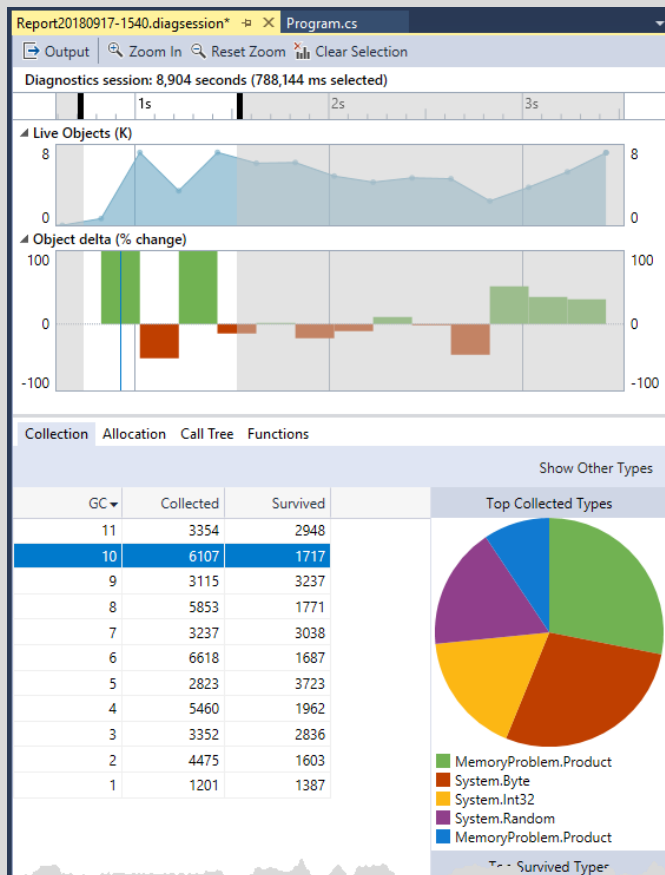
CPU Usage Tools can be enabled/disabled



Allocation Tracking

VS 2017 15.8

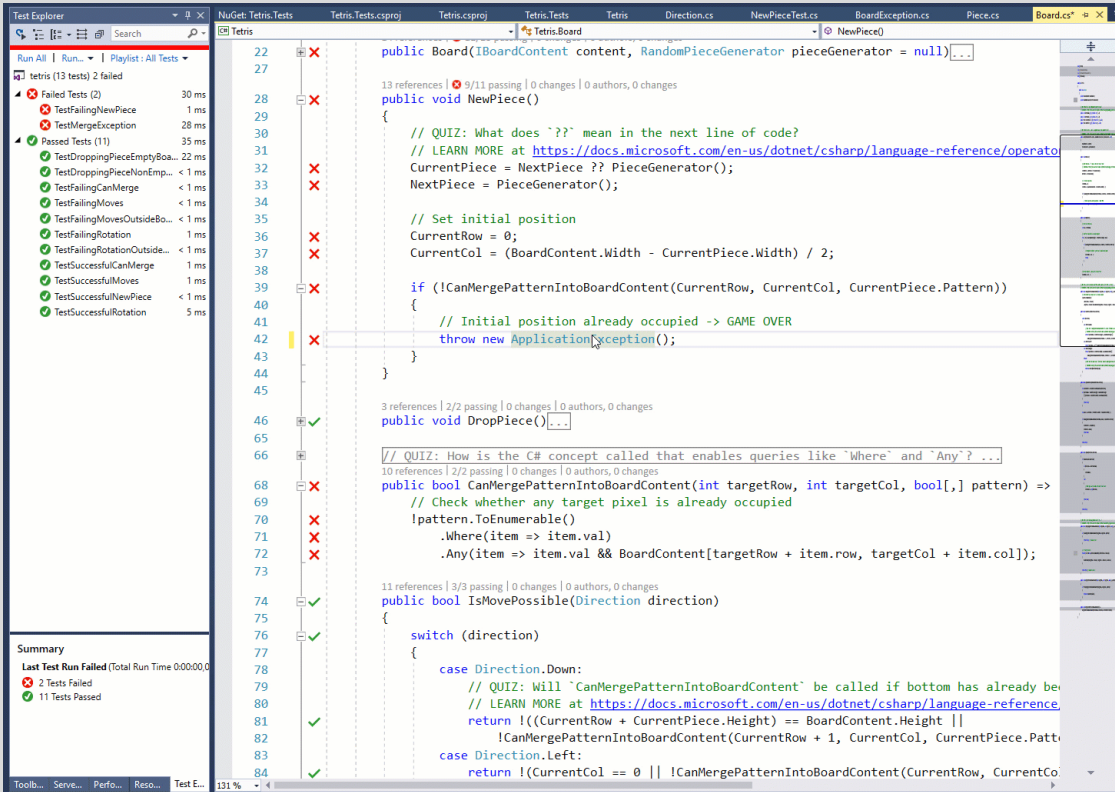
Collection of stack trace for
every object allocation



<https://github.com/rstropek/Samples/blob/master/ProfilingWorkshop/MemoryProblem/Program.cs>

Live Unit Testing

VS 2017 15.3 (Enterprise Edition)



<https://github.com/rstropek/htl-csharp/tree/master/csharp-recap/0010-tetris>

The screenshot displays the Visual Studio IDE with a C# project named 'Tetris'. The main window shows the source code for 'BoardContent.cs', which implements a Tetris game. The code includes methods for checking if a piece can be moved, rotated, and placed on the board. A red box highlights a breakpoint set at line 81 of 'BoardContent.cs'.

The 'Locals (Historical Debugging)' window shows the state of the program at the breakpoint. The 'this' variable is of type 'Tetris.Board'. The 'BoardContent' variable is of type 'Tetris.Tests.BoardContentMockup'. The 'CurrentCol' variable is of type 'int' and has a value of 1. The 'CurrentPiece' variable is of type 'Tetris.Piece' and has a value of 0. The 'NextPiece' variable is of type 'Tetris.Piece' and has a value of 0. The 'PieceGenerator' variable is of type 'Tetris.RandomPieceGenerator' and has a value of 0. The 'direction' variable is of type 'Down'.

The 'Options' dialog box is open, showing the 'IntelliTrace' settings. The 'Enable IntelliTrace' checkbox is checked. The 'IntelliTrace' section is expanded, showing the 'General' tab. The 'Collect snapshots' checkbox is checked, and the 'Maximum number of snapshots on exception events between break modes' is set to 5.

The 'Diagnostic Tools' window shows a timeline of events. A red box highlights a breakpoint event at 0.94s, 945ms, thread 16704, titled 'Breakpoint: IsMovePossible, Board.cs line 81'. Below it, another event is shown: 'Breakpoint: IsMovePossible, Board.cs line 84' at 0.94s, 2ms, thread 16704.

Snapshots

VS 2017 15.5

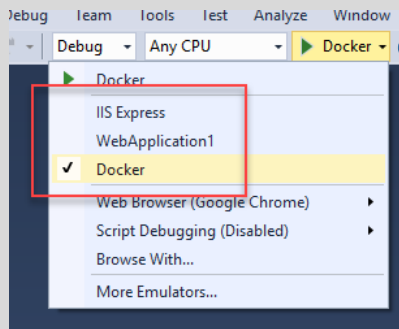
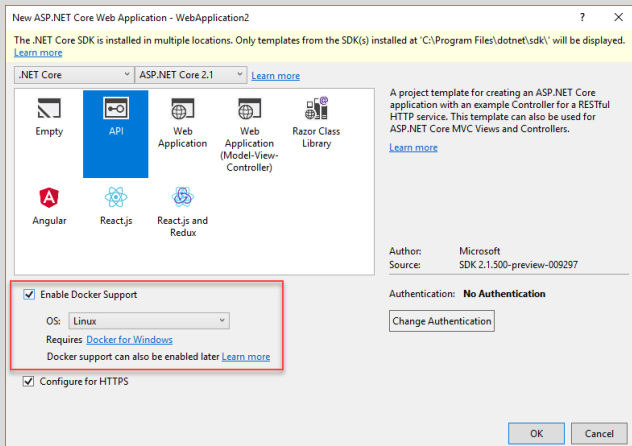
Complete snapshot on breakpoints and exceptions

Backwards and forward in time without restarting debugging session

<https://github.com/rstropek/htl-csharp/tree/master/csharp-recap/0010-tetris>

Docker





Docker Support

VS 2017 15.5

Updated Docker images

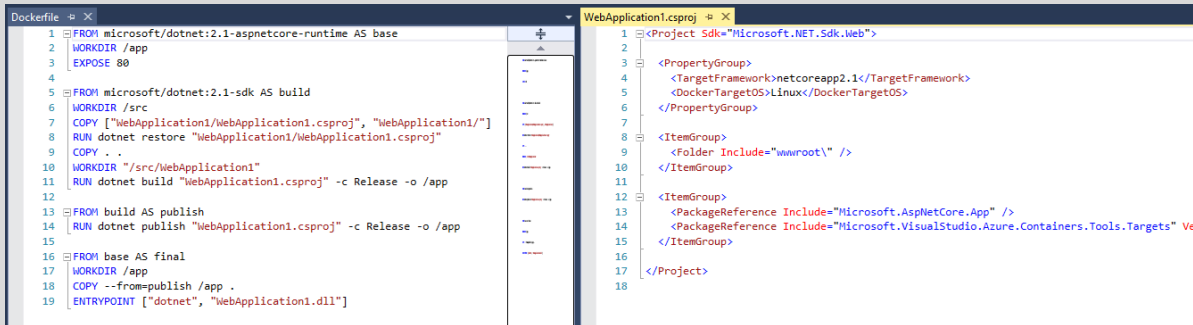
[Docker Hub](#)

Alpine images

.NET Core 2.2 Preview Images

ASP.NET Core Images

Multi-step Build Dockerfiles



Live Share

VS 2017 15.7



Live Share (Preview)

VSCode ≥ 1.22 and VS $\geq 2017.15.7$

MacOS and Linux support with VSCode

Collaborative editing and debugging

Not screen sharing

Via internet

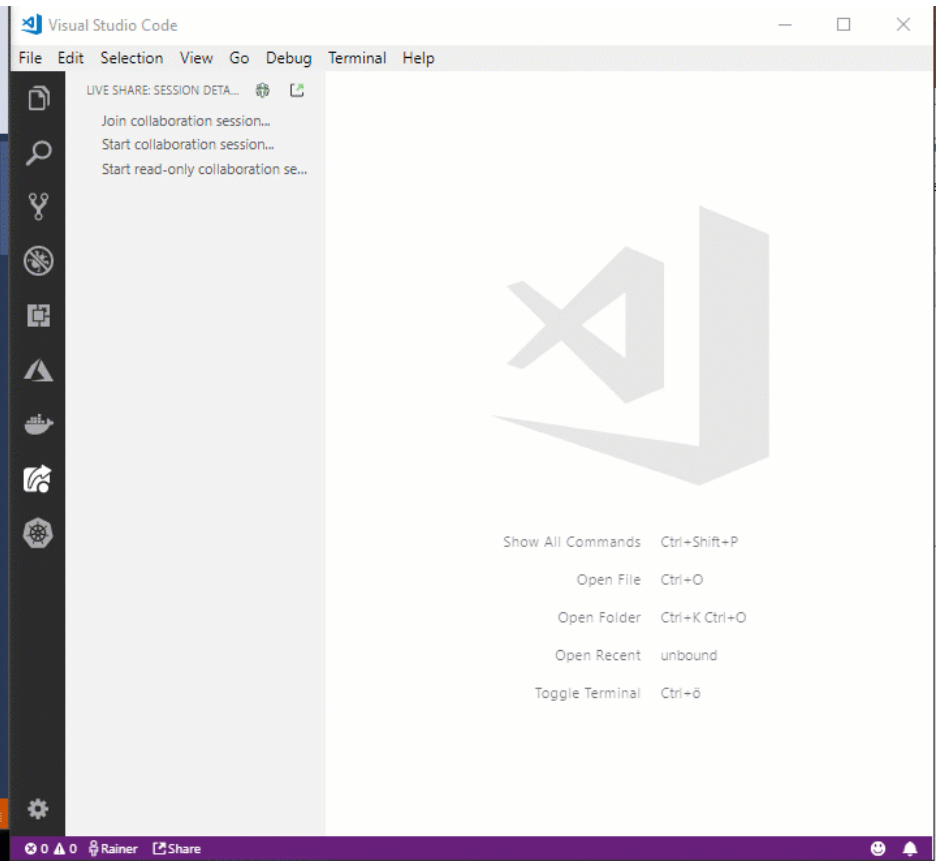
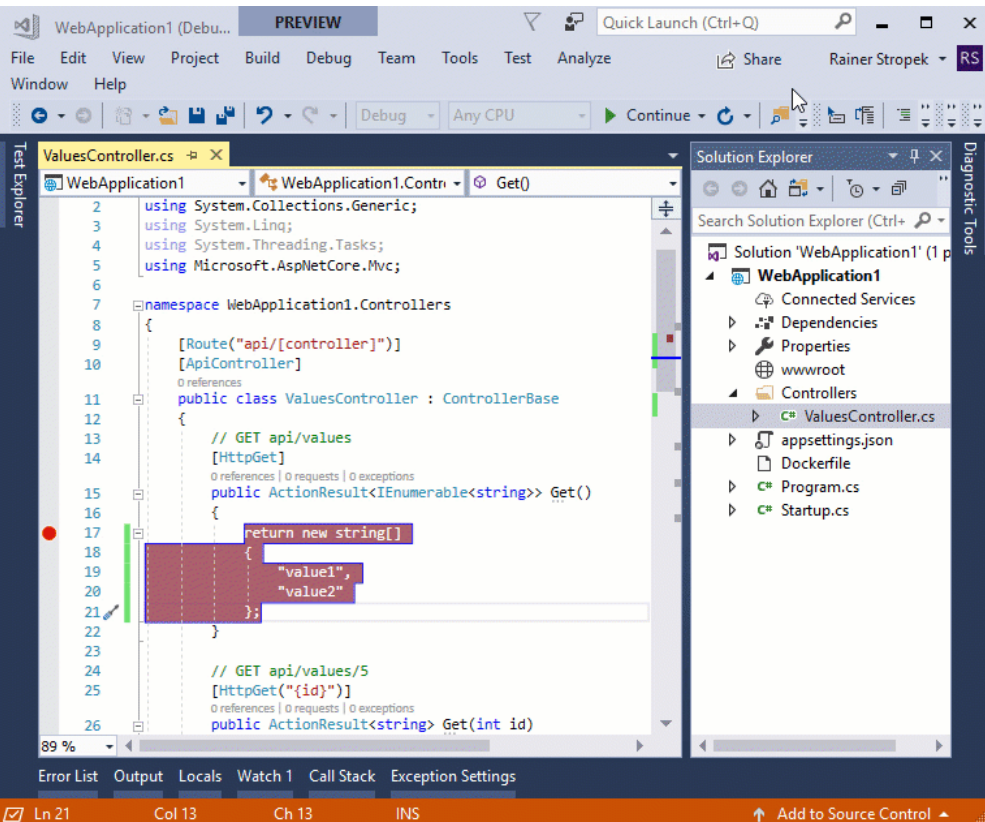
Secure

End-to-end encryption → no publishing of code

Read-only mode available

Supported languages and platforms...

Live Share VS → VSCode



Other Improvements



Other Improvements

Accessibility Improvements

In VS 2017 15.3

[More details...](#)

YAML Build

[Example...](#)

[More details...](#)

Many new refactorings

[More details...](#)



Visual Studio Roadmap...

VS 2017 – News for C# Devs

Q&A

Thank your for coming!



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<http://www.timecockpit.com>
@rstropek



time cockpit
Saves the day.