Visual Studio 2019 Launch - Recap

Charlin Agramonte | Luis Pujols | Rendy Del Rosario | Angel Garcia | José Ruiz

Microsoft

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Agenda

- What’s New - Overview
- DevOps and .NET Core
- VS For Mac & Xamarin
- Machine Learning & VS Subscriptions
- Azure Services & App Center

Visual Studio 2019 Launch - Recap

- What's New - Overview
  - New UI
  - Liveshare
  - Debugging & Tooling
  - .NET Refactoring & Fixes

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What’s New - Overview

Luis Pujols

Main Focuses for VS2019

- Performance
- Big Industry Trends
- Collaboration
- Delighter Features

Visual Studio Intellicode

- Contextual IntelliSense recommendations
  - Leverage the wisdom of the community
  - Words with C#, XAML, C++
- Custom models
  - Get recommendations from your private codebases
  - Distribute models to your team to enhance everyone's productivity
  - Available for C#

Live share

GuestbookGrid.js
import { signatures } from "./signatures";
const COLUMNS = 30;
const ROWS = 20;
const matrix = [];
for (let x = 0; x < COLUMNS; x++) {
for (let y = 0; y < ROWS; y++) {
const cellNumber = y + (x * ROWS) + 1;
const isBonus = isBonusCell(cellNumber);
const isSpecial = isSpecialCell(cellNumber);
const signature = signatures.shift();
matrix.push({ isBonus, isSpecial, signature });
}
}
export default matrix;
Locals
signatureMatrix.js
COMMENTS PROBLEMS OUTPUT DEBUG CONSOLE TERMINAL
Jens-MacBook-Pro-2:vsls-guestbook jonchu$

New user interface

Multiple install manager

Tooling improvements

- New classification **colors**
- **IntelliCode** (soon to be on by default!)
- Project file editing
- Find all references can now filter by Read/Write
- Search local/watch windows during debugging
- Export code style in Tools > Options to .editorconfig
- Code cleanup

.NET refactoring and Code fixes

- Foreach to LINQ (and back!)
- Add missing reference for unimported types
- Invert conditional expressions
- Extract Interface to same file
- Pull members up
- Wrap/indent/align parameters/arguments
- Regex language support

Demo

Live Share

Visual Studio 2019 Launch - Recap

- GitHub with Azure DevOps
- Build amazing web apps with .NET Core
- What's Coming with .NET Core 3.0
- What's New for Python

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Microsoft

Taking DevOps to the Next Level with GitHub and Azure DevOps

Visual Studio 2019 launch

Deliver with Azure DevOps

Azure Boards

Azure Repos

Azure Pipelines

Azure Artifacts

Azure Test Plans

Deliver

Azure Boards

Azure Repos

Azure Pipelines

Azure Artifacts

Azure Test Plans

Connecting ideas to releases

Scrum ready to help your teams run sprints, stand-ups, and plan work

Integrated with GitHub commits and pull requests

Insights into project status and health

Deliver

Azure Boards

Azure Repos

Azure Pipelines

Azure Artifacts

Azure Test Plans

Private Git and TFVC repos for your teams

Code review via branch pull requests

Branch policies and build validation

Easy migration path to / from GitHub

Deliver

Azure Boards

Azure Repos

Azure Pipelines

Azure Artifacts

Azure Test Plans

Cloud-hosted pipelines for Linux, macOS and Windows

Any language, any platform, any cloud

Native support for containers and Kubernetes

Best-in-class for open source

Deliver

Azure Boards

Azure Repos

Azure Pipelines

Azure Artifacts

Azure Test Plans

Deploy to on-premises, ANY cloud or a hybrid of cloud and on-prem

Staged environment releases

Pre and post deployment approvals with gates to automate approval based on conditions

Deliver

Azure Boards

Azure Repos

Azure Pipelines

Azure Artifacts

Azure Test Plans

Manage all package types

Add packages to any pipeline

Share code efficiently

Deliver

Azure Boards

Azure Repos

Azure Pipelines

Azure Artifacts

Azure Test Plans

Run tests and log defects from your browser

Track and asses quality throughout your lifecycle

Capture rich data for reproducibility

Create tests directly from exploratory sessions

Deliver with

Azure Boards

Azure Repos

Azure Pipelines

Azure Artifacts

Azure Test Plans

GitHub

GitHub brings the premier social coding workflows to your team, breaking down silos and enabling Inner Source through:

- Expertise sharing
- Cross-team collaboration
- Improved code reuse
- Increased velocity

Azure DevOps Integrated with GitHub

Rich integration with Azure Pipelines and Azure Boards

Microsoft

Build amazing web apps with .NET Core

Visual Studio 2019 launch

.NET Core 2.2 included with Visual Studio 2019

Simplified ASP.NET Core templates: Bootstrap 4, Angular 6
Web API improvements: API analyzer & conventions
HTTP/2
IIS in-process hosting
Health checks
Endpoint routing

Visual Studio 2019: Razor tooling improvements

Find All References
Modern completions
LiveShare

Client-side web apps with .NET Core 3.0 & Blazor

Build client-side web UI with .NET instead of JavaScript

Write reusable web UI components with C# and Razor

Share .NET code with both the client and the server

Call into JavaScript libraries & browser APIs as needed

Handle client UI interactions on the server over SignalR
or directly in the browser via WebAssembly (future)

Blazor

https://blazor.net

Blazor on client or server

Client-side

Future

Server-side

.NET Core 3.0

Microsoft

What's Coming with .NET Core 3.0

Visual Studio 2019 launch

Your platform for building **anything**

.NET
open source

Windows Forms
Windows Presentation Foundation
Windows UI XAML Library

.NET Core 3

.NET Core 3 expands supported workloads to include Windows Desktop, IoT & AI

.NET Core 3.0 Themes

Desktop Workloads & UI Interop

Artificial Intelligence & Machine Learning

Web App Development Productivity

Desktop Improvements

- UI Framework Enhancements
  - XAML Islands - WinForms & WPF can host UWP
  - XAML Controls – WinForms & WPF browser and media UWP controls
  - High DPI fixes for WinForms
- Access to all the Windows 10 APIs
- Also available in .NET Framework 4.8

Why Windows Desktop on .NET Core?

- Deployment Flexibility
  - Side-by-side support
  - Machine global or app local framework
  - Self-contained EXEs
- Core runtime and API improvements
- Performance

C# 8.0

- Ranges
- Nullable reference types
- Async streams
- Switch expressions
- Recursive patterns
- Default implementations
- And more…

```
static async Task Main(string[] args)
{
    IAsyncEnumerable<Customer?> customers
                                = GetCustomersAsync(args[2..]);
    await foreach (Customer? customer in customers)
    {
        string? name = customer switch
        {
            null                    => null,
            (null, string ln)       => $"Ms/Mr {ln}",
            (string fn, string ln) => $"{fn[0]}. {ln}",
        };
        if (name != null) Console.WriteLine(name);
    }
}
```

.NET Standard 2.1

- Index & Range, IAsyncEnumerable<T>
- Span<T> and friends
- Reflection emit & capability APIs
- SIMD
- DbProviderFactories
- General Goodness

- Won’t be supported by .NET Framework

+3K

More APIs than .NET Standard 2.0

ASP.NET Core 3.0 Razor Components

- Build client-side Web UI in .NET
  - You don’t need to know AngularJS, React, Vue, etc.
  - Take advantage of stability and consistency of .NET
- Runs in all browsers
  - Strongly typed on client and server
  - Share C# code with the client and the server
- Web Assembly (Optional and in Preview)
  - Native performance
  - Requires no plugin or code transpilation

Microsoft

What's New for Python

Visual Studio 2019 launch

What's New for Python in Visual Studio 2019?

- Open Folder Support
- Python Toolbar

- Miniconda included with VS Installer
- Live Share Support for Python

Embedded Python Project

Live Share Support for Python

- Share Editors
- Intellisense Support
- Collaboratively Code and Debug

Get started with GitHub, .NET Core, Python & Visual Studio 2019 today!

Visual Studio 2019: https://visualstudio.com

GitHub Extension for VS: https://visualstudio.github.com/

.NET Core: https://dot.net

Blazor: https://blazor.net

Visual Studio 2019 Launch - Recap

- Visual Studio for Mac
- Xamarin

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Visual Studio For Mac

Meet Visual Studio for Mac

.NET IDE for the Mac

Native experience

Develop apps and games for iOS, Android and web

New in 2019

A new c# editor

Start window

Running multiple instances

Xamarin tools

Performance, reliability and accessibility improvements

Demo

Summary

Start windows

Run multiple Instance

New c# editor (Preview)

- Use the Mac OS API
  - Mac Theme color
  - Add emoticons (Control + Command + Space)
- Right to left text support
- WordWrap
- Better performance

Intellicode Improvements

Find/replace improvements

Xamarin Tools improvements

Available today!

Update via the updater

or

install from aka.ms/vsmac

Xamarin

An **open source** app platform
from Microsoft for
building **modern & performant**
iOS, Android, macOS,
watchOS, & tvOS apps with .NET.

Xamarin Traditional

Xamarin Forms

New in 2019

Faster install

Faster inner development loop

Previewer improvements

Intellisense improvements

2x Faster to install

Faster Inner Development Loop

Step	Visual Studio 2017	Visual Studio 2019	Delta
First build	01:04.20	00:50.13	-21.95%
Incremental Build (XAML Change)	00:10.62	00:07.47	-29.66%
Deploy (XAML Change)	00:09.03	00:04.44	-50.83%

Demo

Xamarin.Essentials

New property panel

What's new in Xamarin Android?

- AXML editor now provides IntelliSense for all Android resource files including strings, themes, manifest and so on
- Go to Definition support
- Inline Color preview
- Android designer with native Android Pie (9.0) support
- Start-up speed improvement to quickly access design mode

What's new in Xamarin iOS?

- Support for a new type: native dynamic libraries or frameworks.
- Use SkiaSharp in the iOS designer

Summary

- Previewer Improvements
- Property panel
- XAML Intellisense Improvements
- Design time data
- Xamarin Essentials pre-installed
- Xamarin Shell Template

Visual Studio 2019 Launch - Recap

- Visual Studio Subscriptions
- Machine Learning

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Software Developer

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Visual Studio Subscriptions

Best-in-class tools and services for any developer, any app

Microsoft Azure

Azure DevOps Services

Visual Studio App Center

+

Visual Studio

Visual Studio for Mac

Visual Studio Code

Visual Studio Subscription Benefits

One-stop for all developer needs

Developer Tools & Services

Latest and all previous Visual Studio IDE versions, Windows and Mac

Access to Azure DevOps Services, App Center and more

Dev Accounts for Office and Windows

Azure Access

Up to $150 monthly Azure credit

Eligible for dev/test pricing on Azure for teams

Azure Advisory Chat, your personalized cloud consultant

Enterprise Mobility + Security (EMS)

Training & Support

Access to Pluralsight, LinkedIn Learning, DataCamp, and more

MSDN Magazine subscription

Concierge Chat

Technical Support Incidents

Dev/Test Software

Windows, Office, and other Microsoft apps *

Servers including Windows,
Exchange, SharePoint, SQL, R *

Azure Dev Test Offer Types

Only available to Visual Studio Subscribers

Individual developer

Monthly Azure Credits

- ✓ For individual learning and experimentation on Azure
- ✓ Available to all Visual Studio(VS) subscribers:
  - VS Enterprise: $150,
  - VS Professional : $50
- ✓ Spending limit prevents you from being charged
- ✓ Activate your credit via the Visual Studio portal

Team development

Enterprise Dev/Test

- ✓ For team development in large enterprises
- ✓ Enterprise wide billing – no separate payments
- ✓ Create an Enterprise dev/ test offer subscription through the Azure enterprise portal

Pay-As-You-Go(PAYG) Dev/

- ✓ For team development in smaller organizations
- ✓ Credit card billing
- ✓ Create a PAYG Dev Test offer subscription via the Azure portal.

- ✓ No Microsoft software charges on Virtual Machines
- ✓ Exclusive access to Dev/Test images in the Gallery including Windows 8.1 and Windows 10 Virtual Machines
- ✓ Lower rates on virtual machines, Cloud Services, HDInsight, App Service, and many other Azure services.
- ✓ No financially backed SLA

https://aka.ms/azuredevtestpricing

Demo

The Visual Studio Subscriptions

Visual Studio Professional Subscription

Professional Developer Tools and Services for Small Teams

Highlights

- Development of modern applications and services for Android, iOS, Windows, web, cloud and desktop.
- Fully extensible.
- Includes training, support and cloud credits as part of subscription benefits.
- No usage restrictions.

Visual Studio Enterprise Subscription

Microsoft Developer Solution for Productivity and Coordination Across Teams of Any Size

Highlights

- Advanced productivity features with real-time insights and feedback on code and quality.
- Full support across the DevOps lifecycle.
- Plan, execute and monitor your entire testing effort.
- Includes enhanced subscription benefits with access to most Microsoft software, cloud credits and advanced training options.

Visual Studio MSDN Platforms Subscription

Cloud services, software, support, and training

Highlights

- Access to a huge library of current and past Microsoft software
- Credits to use in Azure dev/test services, plus collaboration tools
- World-class technical training and priority support

Visual Studio Test Professional Subscription

Specialized toolset for testers to plan, execute and track your testing efforts

Highlights

- Optimized tools for testers that facilitate collaboration between test, development and operations.
- Streamline your release processes without sacrificing quality.
- Includes training, support and cloud credits as part of subscription benefits.

Subscriber benefits

		VS Enterprise --Standard & Annual	VS Professional – Standard & Annual	VS Test Professional	MSDN Platforms
Tools	Visual Studio IDE edition	Enterprise	Professional	Test Professional	
	Visual Studio for Mac edition	Enterprise	Professional		
	Visual Studio Team Foundation Server 2017 and one CAL	•••	•	•••	••
	Azure DevOps Services	•	•	•	•
	Microsoft Azure monthly credit	$150/month	$50/month	$50/month	$100/month
	Microsoft Azure pay-as-you-go dev/test subscriptions	•	•	•	•
	EMS / PowerBI	• / •			
	Microsoft developer account	•	•		
	Office 365 Developer Subscription	•			
Software	Windows, Windows Server, SQL Server	•	•	•	•

Machine Learning

ML.NET is a machine learning framework made for .NET developers

- Build your own
- Proven & Extensible
- Open Source & Cross platform
- Developer Focused

ML.NET is available @ dot.net/ml

Machine Learning scenarios with ML.NET

- Sentiment Analysis
- Forecasting
- Issue Classification
- Predictive maintenance
- Ranking news/topics
- Recommendations
- Image classification
- Customer segmentation

And many more examples
@ https://github.com/dotnet/machinelearning-samples

ML.NET is proven at scale, enterprise ready (aka. TLC: MSFT internal for years)

- **Bing** Ads **(Ad Predictions)**
- **Excel (Chart Recommendations)**
- **Power Point (Design Ideas)**
- **Windows 10 (Windows Defender)**
- **Azure Stream Analytics (Anomaly Detection)**
- **Power BI (Key Influencers)**

+ more

Sentiment Analysis

Sentiment Analysis

Comment	Toxic? (Sentiment)
==RUDE== Dude, you are rude …	1
== OK! == IM GOING TO VANDALIZE …	1
I also found use of the word "humanists" confusing …	0
Oooooh thank you Mr. DietLime …	0

Features (input)

Label (output)

Sentiment Analysis

Is this A or B?

Is this a toxic comment?

Yes or no

Machine Learning workflow

Deep Learning

Dog

Not a dog

Try ML.NET today!

Get started at
http://dot.net/ml

Try the samples at
http://aka.ms/mlnetsamples

Read the docs at
http://aka.ms/mlnetdocs

Request features or contribute at
http://aka.ms/mlnet

Get help for going into production
https://aka.ms/mlnetprod

Visual Studio 2019 Launch - Recap

- To the cloud with Visual Studio and Azure
- Mobile CI/CD with App Center

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Microsoft

To the cloud with Visual Studio and Azure

Visual Studio 2019 launch

Visual Studio makes it easy to get started

Visual Studio offers multiple project templates to start creating projects

ASP.NET Core for general purpose web and computing

Azure Functions

Docker Container Tools

Offline developer support for many common Azure tasks

Azure Functions runtime

Cosmos DB emulator

SQL Server Express

Azure Storage emulator

Azure Monitor

Built in monitoring and diagnostics

- **Failures**
- **Slow performance**

Collects metrics, logs, requests, dependencies, and correlation ids.

Distributed end to end tracing.

Snapshot debugging in production.

Profiler for performance issues.

Demo

Microsoft

CI/CD for your mobile apps and games with Visual Studio App Center

Visual Studio 2019 launch

There’s a lot to worry about

Dependencies

A wide array of integrations is necessary to complete most apps

Quality

Create quickly and resolve issues fast

Fragmentation

More types of devices than ever are in use

Tools for Any App, Any Developer, Any Platform

- **Visual Studio**
  Write less code with better tooling

- **Visual Studio App Center**
  Automate the development lifecycle, focus on features instead of process

- **Azure & PlayFab**
  Power your apps with cloud services to engage and respond to userbase.

Something for Everyone

The platforms you support

- Android
- iOS
- UWP
- macOS (preview)

iOS

The frameworks you love

- Java/Kotlin
- Objective C/ Swift
- Xamarin
- Unity
- React Native

Shipping Faster with DevOps

- Build the app on every commit
- Test automatically on real devices
- Distribute to beta testers & stores

Better Engagement Post Launch

- Monitor app health & crashes
- Learn from analytics your adoption and user behavior
- Send targeted messages to collect feedback

Demo

Thanks!

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