

State of .NET Online

Microsoft Web Development

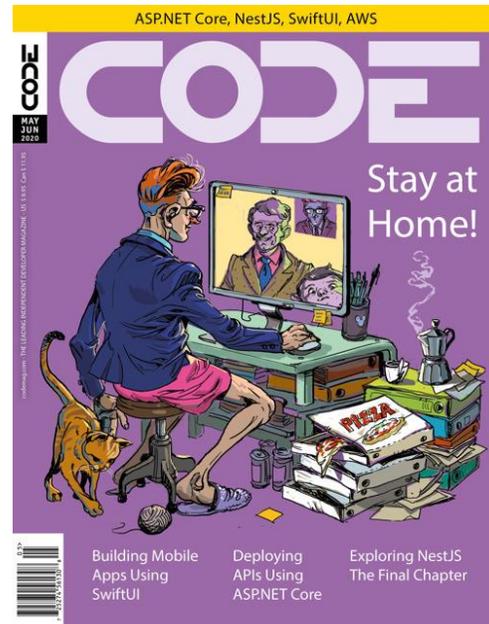
Markus Egger

President and Chief Software Architect

CODE Magazine & Consulting

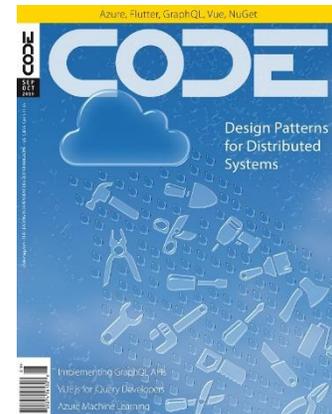
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About the Presenter

- **Markus Egger**
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THIS SLIDE WILL BE REPEATED AT THE END OF THE WEBINAR!

Agenda

- So many options for web development! Which one to choose for the right project?
- ASP.NET (MVC, Core, ...)
- Blazor (Server and Client)
- Various client-side JavaScript frameworks
- Various cloud hosting options (Azure and AWS)

Overview

Web Scenarios

- Web Site (public sites, such as Amazon.com)
- Web Apps (like Microsoft's Office suite)
- Headless sites (APIs)

.NET 4.x

- ASP.NET MVC is still a viable scenarios
- V4.8 will continue to be distributed with future versions of Windows and therefore continue to be supported
- However: For new projects, we advise to go with a newer technology

.NET Core

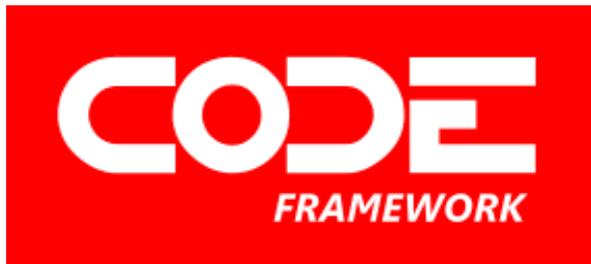
- ASP.NET Core is a great technology for anything that needs to be processed server-side
- Web Apps, Web Sites, APIs
- .NET Core MVC
- .NET Core Razor Pages
- .NET Core services

.NET Core MVC vs. Razor Pages

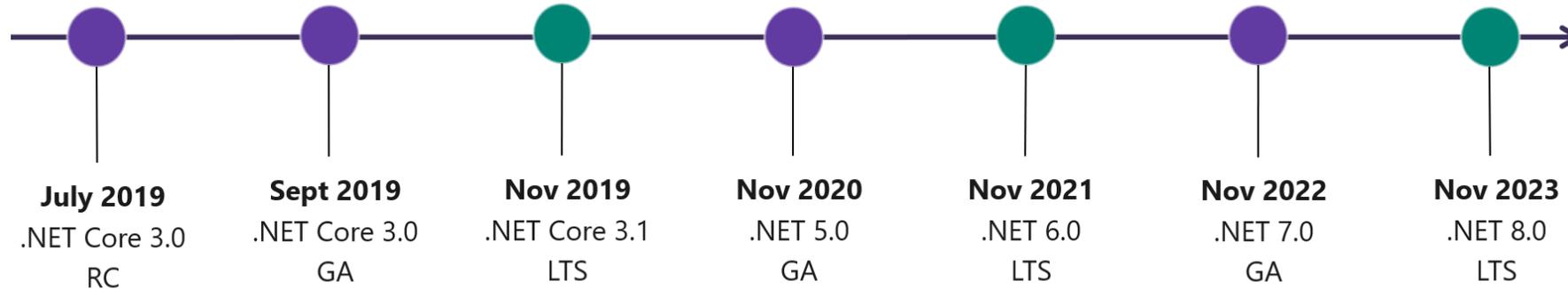
- Razor Pages are great for “template pages”, which is a model many web sites follow
- Razor pages follow an MVVM model, rather than an MVC model
- MVC is great for “non-templated HTML”
- MVC is great for APIs/Services
- For “typical” web sites, Microsoft now considers Razor Pages the default approach to building ASP.NET web apps

Side-Note: CODE Framework Services

- CODE Framework is our free & open-source business application development framework
- It includes various feature areas, such as UI, services,...
- It features an alternate way of building services that are technology and protocol agnostic
- And it works with .NET Core



.NET Core Roadmap



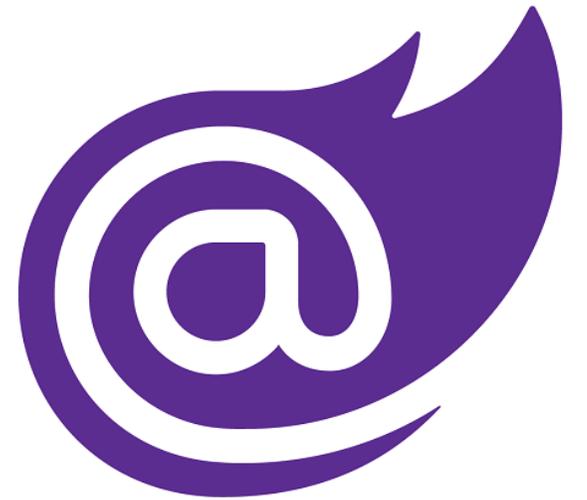
- .NET Core 3.0 release in September
- .NET Core 3.1 = Long Term Support (LTS)
- .NET 5.0 release in November 2020
- Major releases every year, LTS for even numbered releases
- Predictable schedule, minor releases if needed

SODN: .NET 5 in October/November

- We are planning with .NET 5 as our topic for State of .NET Online in October or November
- We are also working on tons of .NET 5 magazine content, including a special issue coinciding with the release
- Also: www.dotnetconf.net (November 10-12)

Blazor

- Blazor has been released both as server-side and client-side frameworks
- It's an alternative to the MVC and Razor Page approaches



What is Blazor and why do we need it?

- Blazor is a new web development framework from Microsoft
- Based on the .NET Platform...
- ...both on the Client and the Server
- It is fundamentally different from other client-side frameworks that are based on JavaScript, since it is based on Web Assembly

WebAssembly is changing the Web

- In simple terms: binary code for web browsers
- Native performance for the web
 - Think of it as executing native compiled code in a browser
- Cross platform compilation target for any language
- Available in all major browsers
- Provides a “compilation target” for all kinds of languages
- Originally, this was mostly used by C++ game developers

Blazor Advantages

- C# Language (yes, even in the browser!)
- Great Tooling/IDE
- Stability
- Ecosystem
- Based on standards (HTML, CSS, Web Assembly,...)
- Code reuse and share
- Component based
- Skill reuse.

A Tale of Two Blazors

- **Blazor WebAssembly** – Client Side
- **Blazor Server** – Server Side
- Identical code bases
 - With the exception of some down-line differences, such as being able to access data more directly on the server

Blazor Release Versions

- Blazor Server released with .NET Core 3
- Blazor Web Assembly released with .NET Core SDK 3.1.300
- Supported in Visual Studio and VS Code (and other .NET editors and IDEs) on all platforms
- blazor.net

Can You Use It?

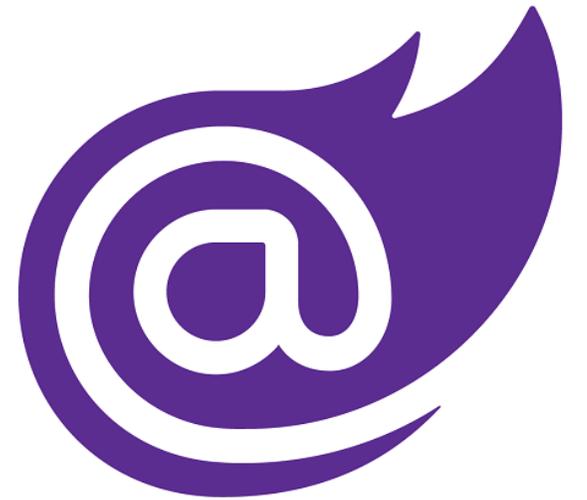
- Yes!
- All major browsers and platform support WebAssembly



Note: Our Recent Blazor SODN

- Our recent Blazor State of .NET recording is available as a free recording on www.codemag.com/stateofdotnet
- Due to the popularity of Blazor, we are planning more Blazor content in the future
 - Possibly more State of .NET content, but possibly also other formats, such as Blazor training
 - Provide feedback on what you would like to see! 😊

Demo: Blazor

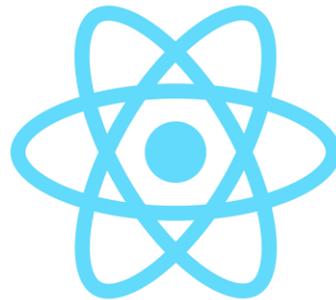


Choosing between Blazor and MVC/Razor

- The verdict is still out on how much the market will take to Blazor
 - However: We are seeing a LOT of interest in Blazor
- We are starting to use Blazor as a serious alternative to JavaScript-based client-side frameworks such as Vue.js or Angular
- For our web-sites, like codemag.com, we are very happy with the MVC/Razor approach

JavaScript Client-Side Frameworks

- Angular
- Vue.js
- REACT

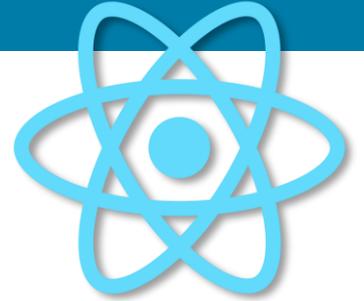


Angular



- Angular is the most mature of the frameworks, has good backing in terms of contributors and is a complete package.
- However, the learning curve is steep and concepts of development in Angular may put off new developers.
- Angular is a good choice for companies with large teams and developers who already use TypeScript.

REACT



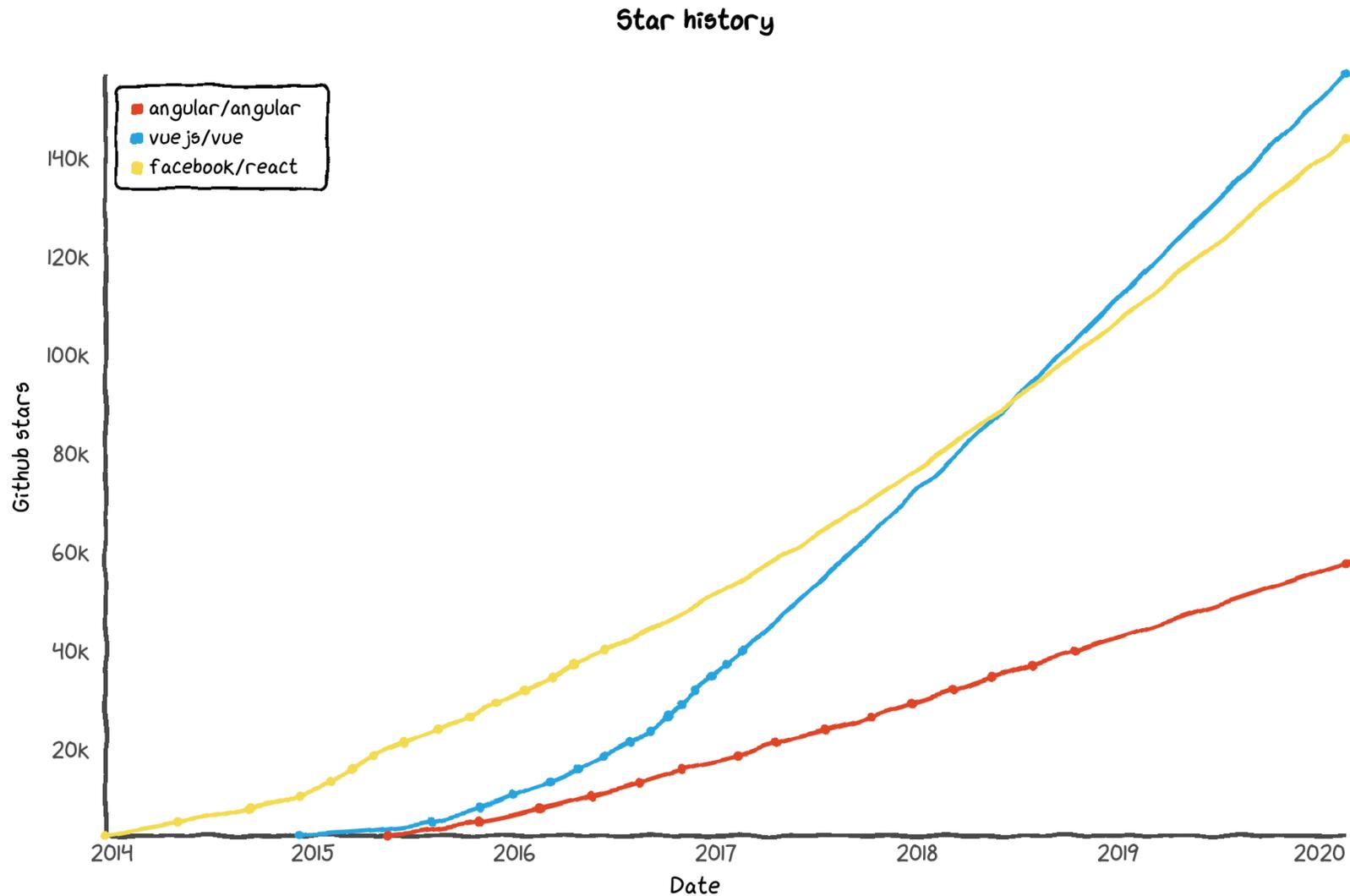
- React is just old enough to be mature and has a huge number of contributions from the community. It has gained widespread acceptance. The job market for React is really good, and the future for this framework looks bright.
- React looks like a good choice for someone getting started with front-end JavaScript frameworks, startups and developers who like some flexibility. The ability to integrate with other frameworks seamlessly gives it a great advantage for those who would like some flexibility in their code.

Vue.js



- Vue is newest to the arena, without the backing of a major company.
- However, it has done really well in the last few years to come out as a strong competitor for Angular and React. This is perhaps playing a role with a lot of Chinese giants like Alibaba and Baidu picking Vue as their primary front-end JavaScript framework.
- However, it remains to be seen how it does in the future and one is justified to be cautious with it. Vue should be your choice if you prefer simplicity, but also like flexibility.

Relative Popularity: GitHub Stars



Deployment Choices

Containers

- Containers are a great way to package up your app for deployment
 - Not just for web apps
- Docker support is built-in in for .NET Core Web Apps
- Kubernetes has become the de-facto standard for managing containerized deployments

On-Premise

- It is of course still possible to deploy your web apps on your own servers like you always have been
- This is mentioned for completeness, since we sometimes get questions from people who are under the impression that new technologies force cloud deployments (which is not the case)

Azure App Services

- Azure's standard way of running web applications
- Simple integrated way to deploy your ASP.NET web apps to Azure
- Lots of options for DevOps
- Note: Take a look at the recording of the Azure State of .NET at www.codemag.com/stateofdotnet

Amazon Elastic Beanstalk

- Amazon's equivalent of Azure App Services
- Check out our AWS State of .NET recording at www.codemag.com/stateofdotnet

Azure Static Web Apps

- Now available as a preview
- Many web apps do not require server-side processing
 - Think of client-side JavaScript frameworks or Blazor
 - Services may be driven by Azure Functions or something similar
- Efficient and scalable way to host web content
- Integrated into GitHub

Azure Functions

- Serverless option of hosting apps that respond to various events
- There are many different types of events, such as timers, database events, messages, ...
- HTTP requests are a supported event type...
- ...which means that one can serve up HTML as a response
- However, there is no advanced way to create ASP.NET web apps with Azure Functions
- Not a bad option to host APIs
- Also: Be aware of the "cold start penalty"

Amazon Lambdas

- Amazon's equivalent of Azure Functions
- The current issue of CODE Magazine features an article on Amazon Lambdas for .NET Core apps
 - Available on the web site also



Other Announcements

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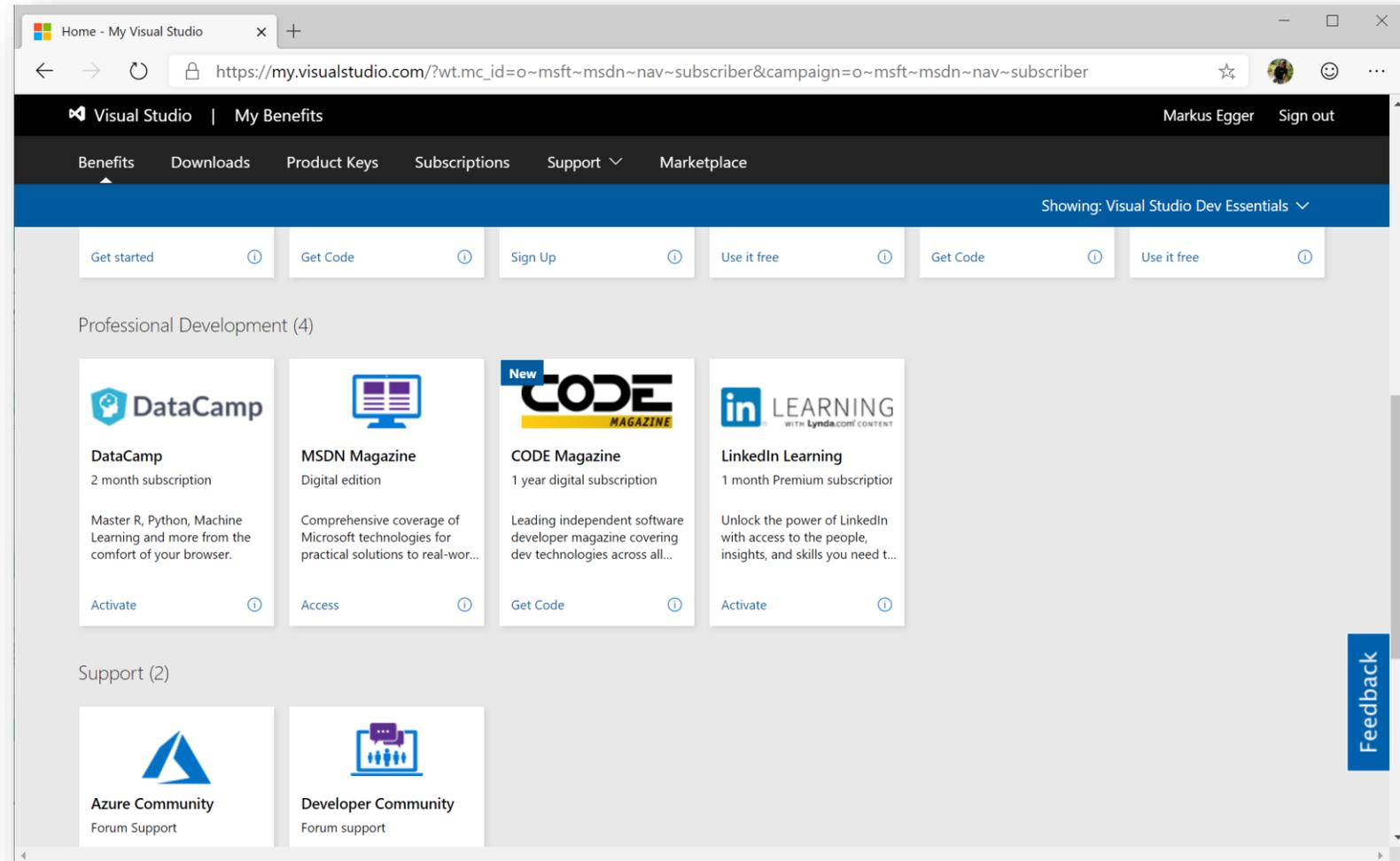
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Q&A

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