

BLAZOR

(WEBASSEMBLY & .NET)

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Content

Web Assembly

Blazor

Demo

Future?

Web development today

Web today

JavaScript (browser wars & PTSD)

React, Angular, Vue = medicines

Performances

Reinvent it again if you can

Client side web – only one language

JavaScript monopoly (typescript, babel... but it is not anything else really)

We today cannot:

Games, Video apps, CAD...

Web Assembly

Open Web Standard

Assembly for browser

„Run binary in browser”

Wasm bytecode

„AnyLanguage” => WASM

Sandbox environment

20 times faster (as promise)

Run in JavaScript VM

It's now JavaScript replacement :P



JS compile

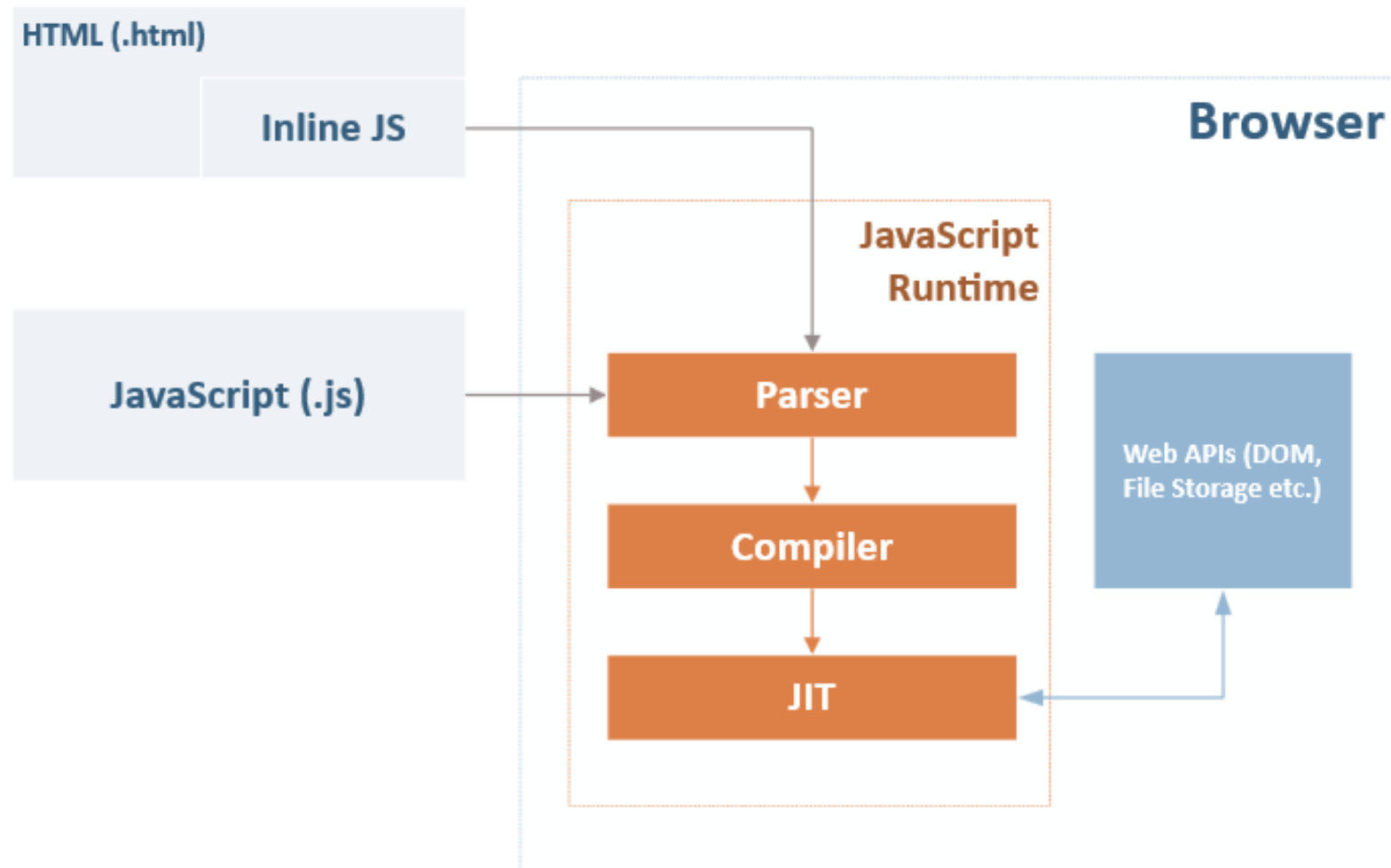


Image from <https://daveaglick.com/posts/blazor-razor-webassembly-and-mono>

WASM compile

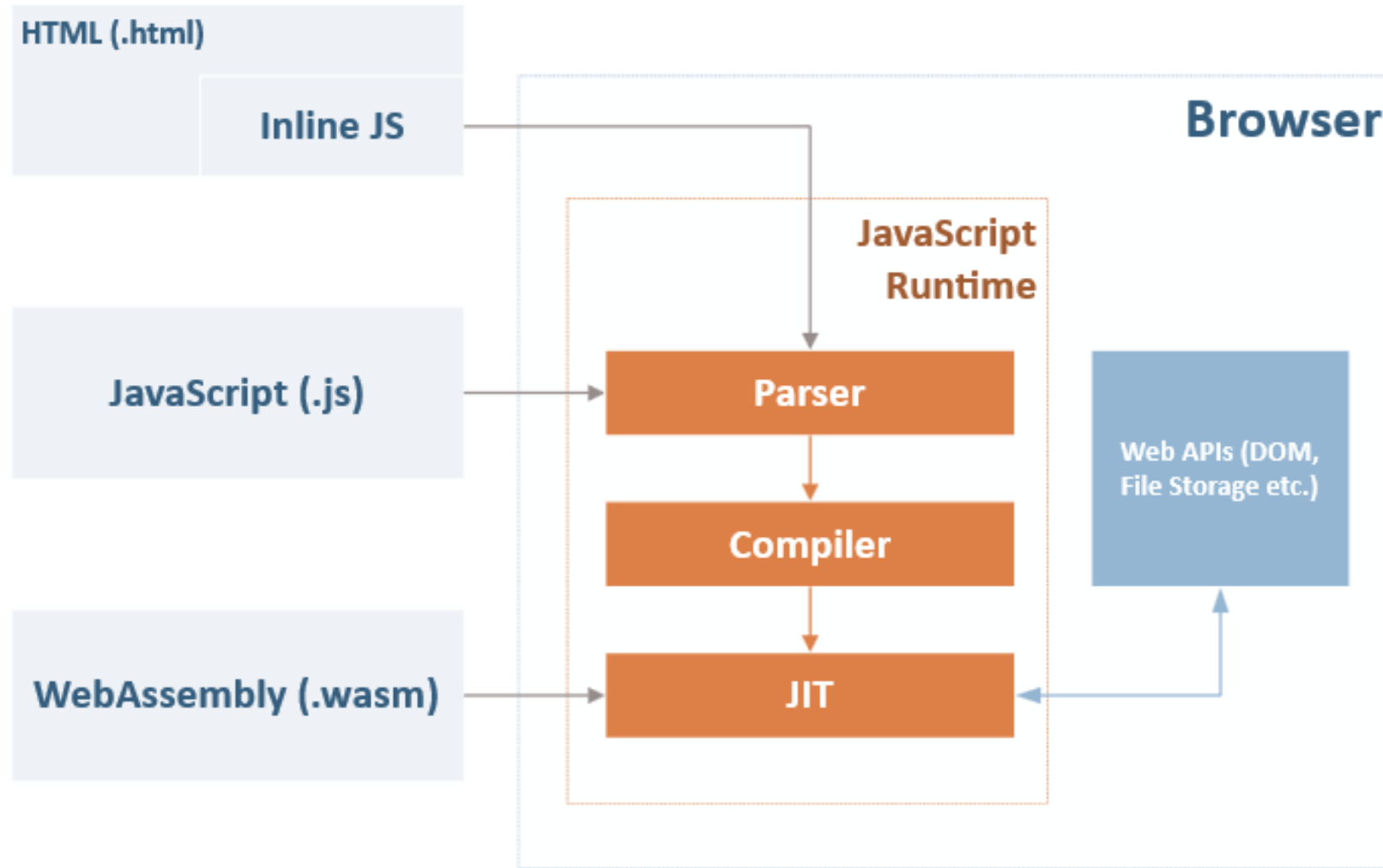


Image from <https://daveaglick.com/posts/blazor-razor-webassembly-and-mono>

Web Assembly danas



MVP ver 1.0

go go go

WA Consensus Members

Chrome, Edge, Firefox, and WebKit

It works!

Open Web Platform

<https://www.w3.org/TR/2018/WD-wasm-core-1-20180215/>



Examples

<https://www.funkykarts.rocks/demo.html>

<https://www.blend4web.com/en/community/article/358/>

<https://bellard.org/jslinux/vm.html?url=https://bellard.org/jslinux/win2k.cfg&mem=192&graphic=1&w=1024&h=768>

Unity – export to Wasm

Facebook – shrink image before upload

GoogleEarth in browser

...

AutoCAD+WA



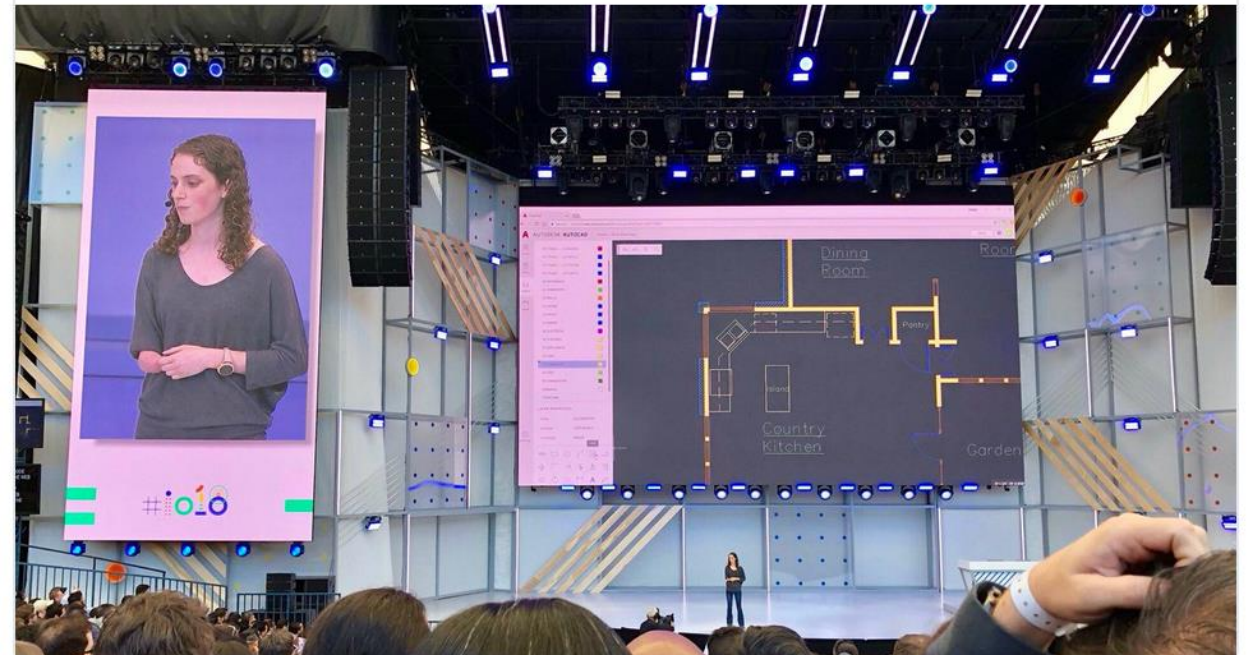
Robert King
@KingWebString



As a child, during school holidays, I'd create AutoCAD drawings for my Dad at his surveying business. Great to see @AutoCAD going from strength to strength!

AutoCAD  @AutoCAD

"The AutoCAD team took a 35 year old code base...and got it to compile directly in a browser using WebAssembly.... So now the power of AutoCAD is just a link away." #io18 #io2018keynote



♡ 1 10:43 PM - May 10, 2018



Experiments & more

C, C++

<https://wasdk.github.io/WasmFiddle/>

<https://mbebenita.github.io/WasmExplorer/>

Node.js – wasm npm packages

Xamarin.Forms to Wasm <https://github.com/praeclarum/Ooui>

AssemblyScript (TypeScript 2 WebAssembly)

<https://github.com/AssemblyScript/assemblyscript>

.NET => Blazor

Blazor



.NET + WebAssembly = Blazor

Full-stack web development with .NET via WebAssembly

Browser + Razor = Blazor

.NET in browser yeahhh!

Experimental phase 0.7.0

Mono runtime

- => compiled to WASM

- => run .NET libraries

Demo

File new project, what we get?

Name	Status	Initiator	Size	Tir
<input type="checkbox"/> one-way-data-binding	200	Other	729 B	
<input type="checkbox"/> site.css	200	<u>one-way-data-binding</u>	428 B	
<input type="checkbox"/> blazor.js	200	<u>one-way-data-binding</u>	50.2 KB	
<input type="checkbox"/> mono.js	200	<u>MonoPlatform.ts:160</u>	49.1 KB	
<input type="checkbox"/> mono.wasm	200	<u>mono.js:1</u>	797 KB	
<input type="checkbox"/> ng-validate.js	200	<u>content-script.js:5075</u>	(from d...	
<input type="checkbox"/> favicon.ico	200	Other	729 B	
<input type="checkbox"/> data:image/svg+xml;...	200	Other	(from ...	
<input checked="" type="radio"/> data:image/svg+xml;...	200	Other	(from ...	
<input type="checkbox"/> BlazorPages.dll	200	<u>MonoPlatform.ts:218</u>	8.3 KB	
<input type="checkbox"/> Microsoft.AspNetCore.Blazor.Browser.dll	200	<u>MonoPlatform.ts:218</u>	15.4 KB	
<input type="checkbox"/> Microsoft.AspNetCore.Blazor.dll	200	<u>MonoPlatform.ts:218</u>	44.4 KB	
<input type="checkbox"/> Microsoft.Extensions.DependencyInjection.Abstractions.dll	200	<u>MonoPlatform.ts:218</u>	17.9 KB	
<input type="checkbox"/> Microsoft.Extensions.DependencyInjection.dll	200	<u>MonoPlatform.ts:218</u>	22.9 KB	
<input type="checkbox"/> mscorlib.dll	200	<u>MonoPlatform.ts:218</u>	641 KB	
<input type="checkbox"/> netstandard.dll	200	<u>MonoPlatform.ts:218</u>	9.3 KB	
<input type="checkbox"/> System.Core.dll	200	<u>MonoPlatform.ts:218</u>	139 KB	
<input type="checkbox"/> System.Diagnostics.StackTrace.dll	200	<u>MonoPlatform.ts:218</u>	1.9 KB	
<input type="checkbox"/> System.dll	200	<u>MonoPlatform.ts:218</u>	39.5 KB	
<input type="checkbox"/> System.Globalization.Extensions.dll	200	<u>MonoPlatform.ts:218</u>	1.9 KB	
<input type="checkbox"/> System.Net.Http.dll	200	<u>MonoPlatform.ts:218</u>	30.7 KB	
<input type="checkbox"/> System.Runtime.Serialization.Primitives.dll	200	<u>MonoPlatform.ts:218</u>	2.0 KB	
<input type="checkbox"/> System.Security.Cryptography.Algorithms.dll	200	<u>MonoPlatform.ts:218</u>	1.9 KB	

JavaScript-part of Blazor and Mono

Mono Wasm Runtime

Sample app

Framework
DLLs (IL)

Blazor 1

Razor pages

all-in-one (HTML+CS)

Components

```
<SurveyPrompt Title="How is Blazor working for you?" />
```

Dependency injection

@inject

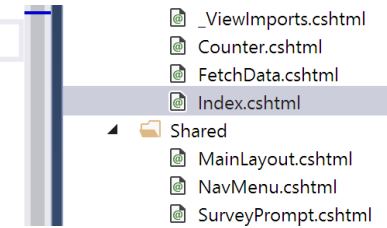
Routing

@page "/nekaruta"

Layouts => Master layout

Autobuild

Experimental debugging





.cs



.cshtml

Compile to .NET
assemblies

BROWSER

App.dll

.NET

(mscorlib.dll,
System.Core.dll,...)

WebAssembly

(mono.wasm)

Blazor 2

DataBinding – one-way, two-way

Dynamic Content – generated HTML

JavaScript interop

REST API support

Publishing (self hosted, ASP.NET Core hosted, Server-side Blazor)

App size trimming

Support for IntelliSense and other tooling...

Demo

Components, data-binding, routing...

Blazor models

Client-side – we just demo it

Server-side

- the same source, but executed on server
- SignalR communication
 - from client (events, params)
 - to client (DOM refresh)
- app.**UseServerSideBlazor()** instead of app.**UseBlazor** (and vice versa) !!!
- blazor.**server.js** instead of blazor.**webassembly.js**

ASP.NET Core 3 => **Razor components** => Blazor server side in MVC proj

Today

Early time... experiments...

... but ASP.NET 5 was also experiment... and look at us now 😊

Be ready for a change!

And that's why...

Try it... all you need is:

.NET Core 2.1+ SDK

Visual Studio 2017 (15.8+) or Preview verzija
side-by-side!

Blazor Language Services exstension

Starters: <https://learn-blazor.com/> <https://blazor.net/>
<https://github.com/aspnet/Blazor>

Aaaaa Silverlight dejavu

Silverlight

.NET source code

Some browsers

Some platforms

Plugin

XAML

Blazor

.NET source code

All „modern“ browsers

Any platform

Without plugin

HTML or XAML or

Personal (Baldrick's cunning) plan !!! 😊



Thanks!