

.NET Core

Waarom en hoe?

Introductie

- **Richard de Zwart**
- **Engineer sinds 1990 (1975?)**
- **Werkzaam bij Get There, Leek**

get→there

Programma

Waarom komt Microsoft met .NET Core?

Waarom moet jij mee doen?

Hoe ziet dat eruit?

Wat wordt er beter (of slechter)?

Geen vragen aan het eind

Wat is .NET Core?

Een volledige rewrite van het
.NET framework,
cross-platform

.NET Core

It is very easy to get started with .NET Core on your platform of choice.

You just need a shell, a text editor and 10 minutes of your time.

[Windows](#)[Linux](#)[Mac](#)[Docker](#)[Other downloads](#)

Install for Mac OS X 10.11

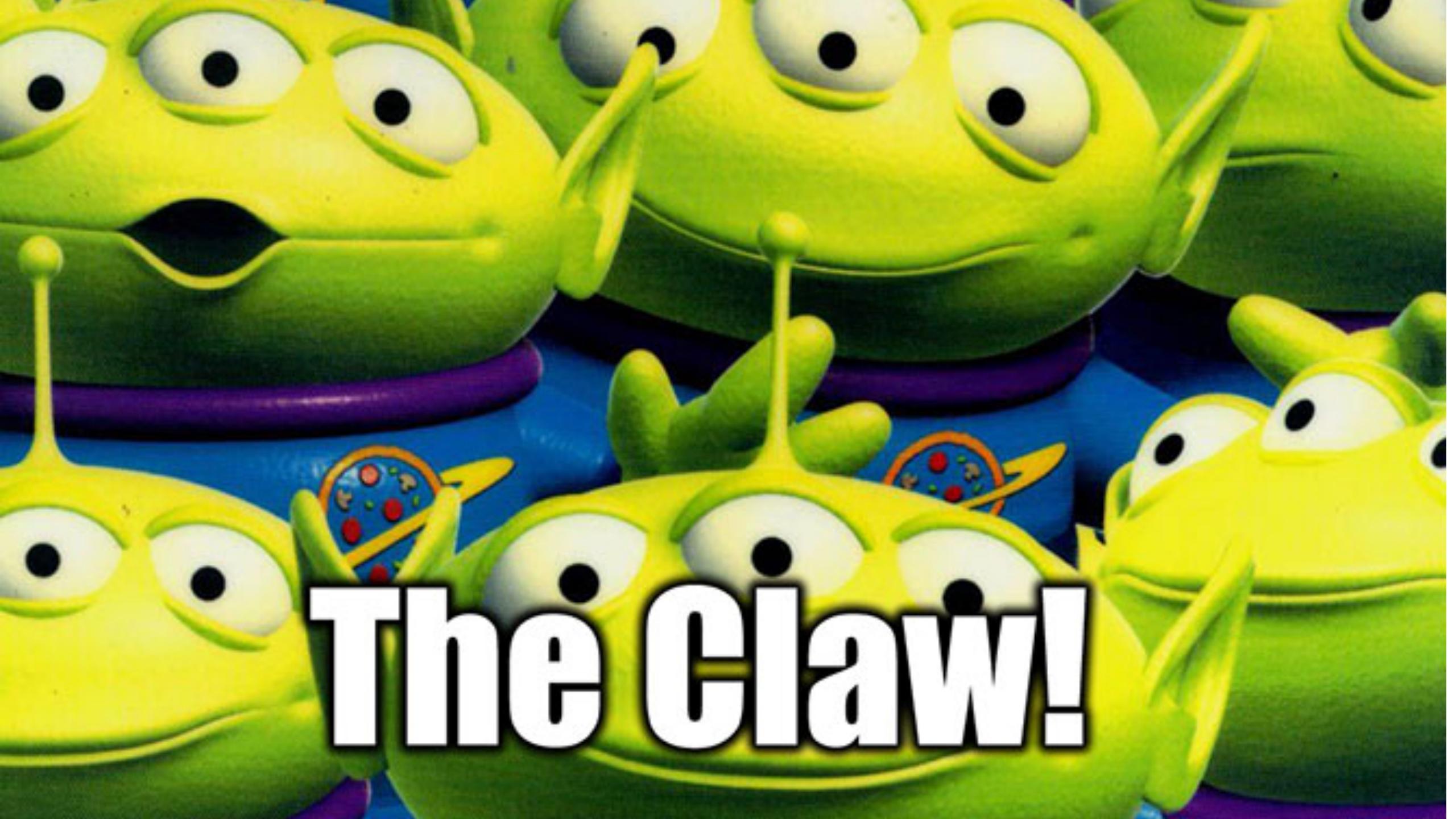
Een volledige
rewrite

Waarom?



Liefdadigheid?

Arme Linux
gebruikers?

A group of green, three-eyed aliens with purple antennae are gathered around two small yellow spaceships. The spaceships have blue and red patterns on their sides. The aliens have wide, black pupils and are looking towards the right side of the frame.

The Claw!

A large, white, cumulus-like cloud is centered against a clear, bright blue sky. The cloud has a soft, rounded shape with some darker shading at the base and edges.

The Cloud!



Microsoft Azure



Virtual Machines

Rechthoekig knipsel

Create Linux and Windows virtual machines in minutes

Start free >



Explore Virtual Machines: [Pricing details](#) [Documentation](#) [Images](#) [Security](#)

Choose your language, workload, operating system

With support for Linux, Windows Server, SQL Server, Oracle, IBM, and SAP, Azure Virtual Machines gives you the flexibility of virtualization for a wide range of computing solutions—development and testing, running applications, and extending your datacenter. It's the freedom of open-source software configured the way you need it. It's as if it was another rack in your datacenter, giving you the power to deploy an application in minutes instead of weeks.



• Rechthoekig knipsel

Virtual Machines

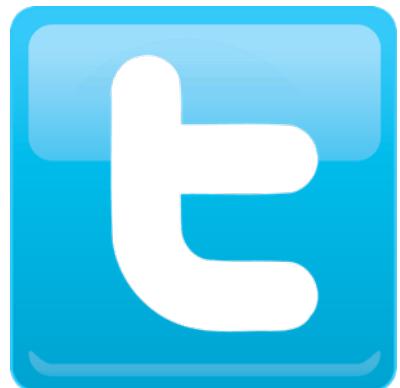
Create Linux and Windows virtual machines in minutes

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Explore Virtual Machines: [Pricing details](#) [Documentation](#) [Images](#) [Security](#)

Choose your language, workload, operating system, and more.

Fortune 500



Panasonic

CISCOTM

The Cisco logo, which includes a series of dark teal vertical bars of varying heights followed by the word "CISCO" in large, bold, red capital letters with a registered trademark symbol.

Open Source

The screenshot shows the GitHub repository page for `dotnet / corefx`. The top navigation bar includes links for Personal, Open source, Business, Explore, Pricing, Blog, Support, and options to Watch (1,457), Star (10,474), Fork (2,588), Sign in, and Sign up. Below the header, there are tabs for Code, Issues (1,384), Pull requests (61), Wiki, Pulse, and Graphs. A summary section displays 12,902 commits, 9 branches, 5 releases, and 299 contributors. The main content area lists recent commits from various authors, such as stephentoub, sjsinju, and others, with details about the changes made and the time of the commit.

This repo contains the .NET Core foundational libraries, called CoreFX. It includes classes for collections, file systems, console, XML, async and many others. <https://docs.microsoft.com/dotnet/>

Author	Commit Message	Time Ago
stephentoub	Merge pull request #11405 from dotnet-bot/master-UpdateDependencies	11 minutes ago
Documentation	Update POR for handling stable dependencies in our repo.	2 days ago
cross	Fix to ignore codename (arm-softfp)	2 months ago
layout	Use package reports to produce flat layouts of different targets	a month ago
pkg	Update CoreCLR, External to beta-24504-02, beta-24504-00, respectively	an hour ago
scripts	Merge pull request #10284 from sjsinju/not_unmount	16 days ago
src	Update CoreCLR, External to beta-24504-02, beta-24504-00, respectively	an hour ago
.editorconfig	Adding a clang-format file and a script to format every cpp and h fil...	a year ago
.gitattributes	Update .gitattributes	6 months ago
... (truncated)	Additional commits related to Platform GC and Thread Local Storage	Over a year ago

ORMs

ORM Lite

PetaPoco

Dapper

NHibernate

Massive

Simple.Data

Entity
Framework

Test Frameworks

NUnit

xUnit

MSTest

MbUnit

SpecFlow

csUnit

Pex

```
application1
└ Using System;
  using System.Collections.Generic;
  using System.Linq;
  using System.web;
  using System.Web.Mvc;

└ namespace WebApplication1.Controllers
  {
    0 references
    public class HomeController : Controller
    {
      0 references
      public ActionResult Index()
      {
        return View();
      }

      0 references
      public ActionResult About()
      {
        return View();
      }
    }
  }
}
```

```
1 // Copyright (c) .NET Foundation. All rights reserved.  
2 // Licensed under the Apache License, Version 2.0. See License.txt in the project root for license information.  
3  
4 namespace Microsoft.AspNetCore.Mvc.Controllers  
5 {  
6     /// <summary>  
7     /// Provides methods for creation and disposal of controllers.  
8     /// </summary>  
9     public interface IControllerFactory  
10    {  
11        /// <summary>  
12        /// Creates a new controller for the specified <paramref name="context"/>.  
13        /// </summary>  
14        /// <param name="context"><see cref="ControllerContext"/> for the action to execute.</param>  
15        /// <returns>The controller.</returns>  
16        object CreateController(ControllerContext context);  
17  
18        /// <summary>  
19        /// Releases a controller instance.  
20        /// </summary>  
21        /// <param name="context"><see cref="ControllerContext"/> for the executing action.</param>  
22        /// <param name="controller">The controller.</param>  
23        void ReleaseController(ControllerContext context, object controller);  
24    }  
25 }
```



Install

```
PM> Install-Package Nancy
```

Write

```
public class SampleModule : Nancy.NancyModule
{
    public SampleModule()
    {
        Get["/] = _ => "Hello World!";
    }
}
```

Go!

Version 1.5 is now available! Read about the new features and fixes in August.

Code editing. Redefined.

Free. Open source. Runs everywhere.

Download for OS X

Available on other platforms and insiders build

By using VS Code, you agree to its
license and privacy statement.

The screenshot shows the Visual Studio Code interface. On the left, there's a sidebar titled 'EXTENSIONS' with a list of popular extensions: C#, Python, Debugger for Chrome, C/C++, Go, ESLint, and PowerShell. The 'C#' extension is currently selected, with an 'Install' button highlighted. The main area is a code editor with tabs for 'app.ts', 'www.ts', 'package.json', and 'README.md'. The 'app.ts' tab is active, displaying TypeScript code for a Node.js application. A tooltip is visible over the word 'port' in line 9, showing completion suggestions like 'CSSImportRule', 'CSSSupportsRule', 'export', 'exports', 'import', 'importScripts', 'MessagePort', and 'normalizePort'. The bottom status bar shows the file path 'www.ts - node-express-ts', the current branch 'master', line and column counts (Ln 9, Col 21), and file encoding ('UTF-8').

```
1 import app from './app';
2 import debugModule = require('debug');
3 import http = require('http');
4
5 const debug = debugModule('node-express-typescript:server');
6
7 // Get port from environment and store in Express.
8 const port = normalizePort(process.env.PORT || '3000');
9 app.set('port', port);
10
11 // create
12 const server = app.listen(port);
13
14 server.on('listening', () => {
15   console.log(`Server listening on port ${port}`);
16 });
17
18 /**
19 * Normalize port so that port is converted
20 * to a number and string with no trailing
21 */
22 function normalizePort(val: any): number|string|boolean {
23   let port = parseInt(val, 10);
24
25   if (isNaN(port)) {
26     // named pipe
27     return val;
28   }
29
30   return port;
31 }
```



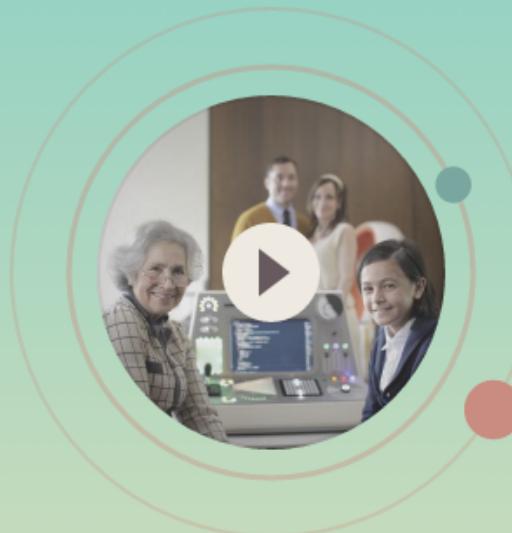
Build cross platform desktop apps
with JavaScript, HTML, and CSS



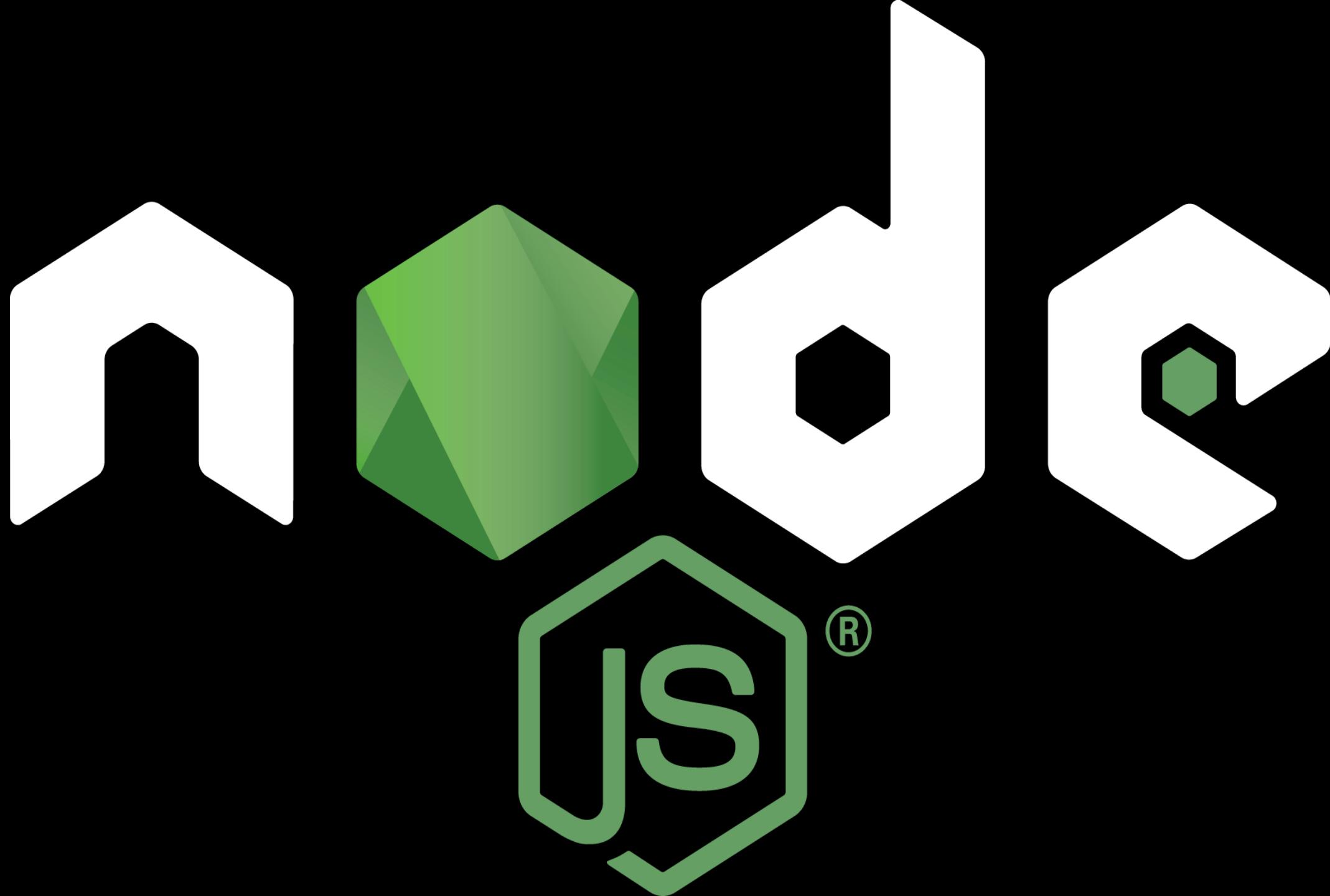
A hackable text editor
for the 21st Century

Download Windows Installer

For Windows 7 or later. Other platforms - Beta releases



```
atom.coffee • Settings
18
19 # Essential: Atom global for dealing with packages, themes, menus, and the window system.
20 #
21 # An instance of this class is always available as the `atom` global.
22 module.exports =
23   class Atom extends Model
24     @version: 1 # Increment this when the serialization format changes
25
26     # Load or create the Atom environment in the given mode.
27     #
28     # Returns an Atom instance, fully initialized.
29     @loadOrCreate: (mode) =>
30       startTime = Date.now()
31       atom = @deserialize(@loadState(mode)) ? new this({mode, @version})
32       atom.deserializeTimings.atom = Date.now() - startTime
33
src/atom.coffee* 31,17
UTF-8  CoffeeScript  ↻ master
```

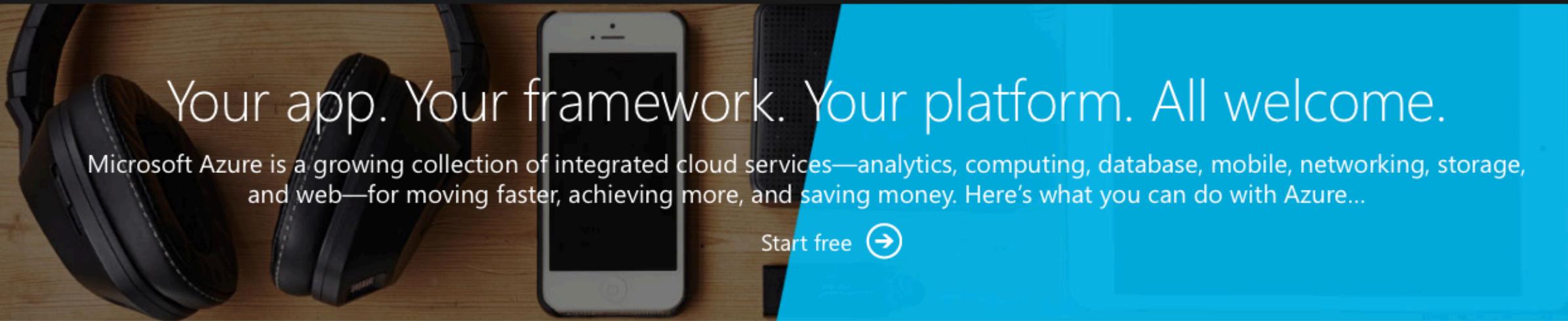




chrome



**SHOW
ME THE
MONEY!**



Your app. Your framework. Your platform. All welcome.

Microsoft Azure is a growing collection of integrated cloud services—analytics, computing, database, mobile, networking, storage, and web—for moving faster, achieving more, and saving money. Here's what you can do with Azure...

[Start free](#)

Get more done

Any developer or IT professional can be productive with Azure. The integrated [tools](#), pre-built templates and managed services make it easier to build and manage enterprise, mobile, Web and Internet of Things (IoT) apps faster, using skills you already have and technologies you already know. Microsoft is also the only vendor positioned as a Leader across Gartner's Magic Quadrants for Cloud Infrastructure as a Service, Application Platform as a Service, and Cloud Storage Services for the second consecutive year.

[View the Gartner Magic Quadrant reports.](#)





CLOUD TOOLS FOR VISUAL STUDIO BETA

Deploy Visual Studio applications to Google Cloud Platform

[DOWNLOAD EXTENSION](#)[VIEW DOCUMENTATION](#)

Visual Studio as your Cloud Platform IDE

Cloud Tools for Visual Studio is a powerful environment to build Windows and .NET applications and deploy them to Cloud Platform directly from your favorite IDE. Tap Google APIs, manage cloud resources, and deploy .NET applications to high-performance Windows VMs running on [Google Compute Engine](#). Run and test your application locally and deploy to the cloud seamlessly right from Visual Studio.



En jij dan?

MacBook Pro

with Retina display

Now with the Force Touch trackpad,
longer battery life, and faster flash storage.

13-inch from \$1299 | 15-inch from \$1999



MacBook Pro

with Retina display

Now with the Force Touch trackpad,
longer battery life, and faster flash storage.

13-inch from \$1299 | 15-inch from \$1999



Who owns this PC?

This choice is important, and it isn't easy to switch later. If this PC belongs to your organization, signing in with that ID will give you access to their resources.

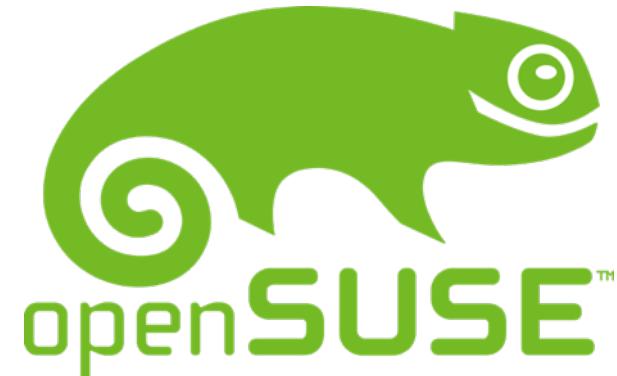


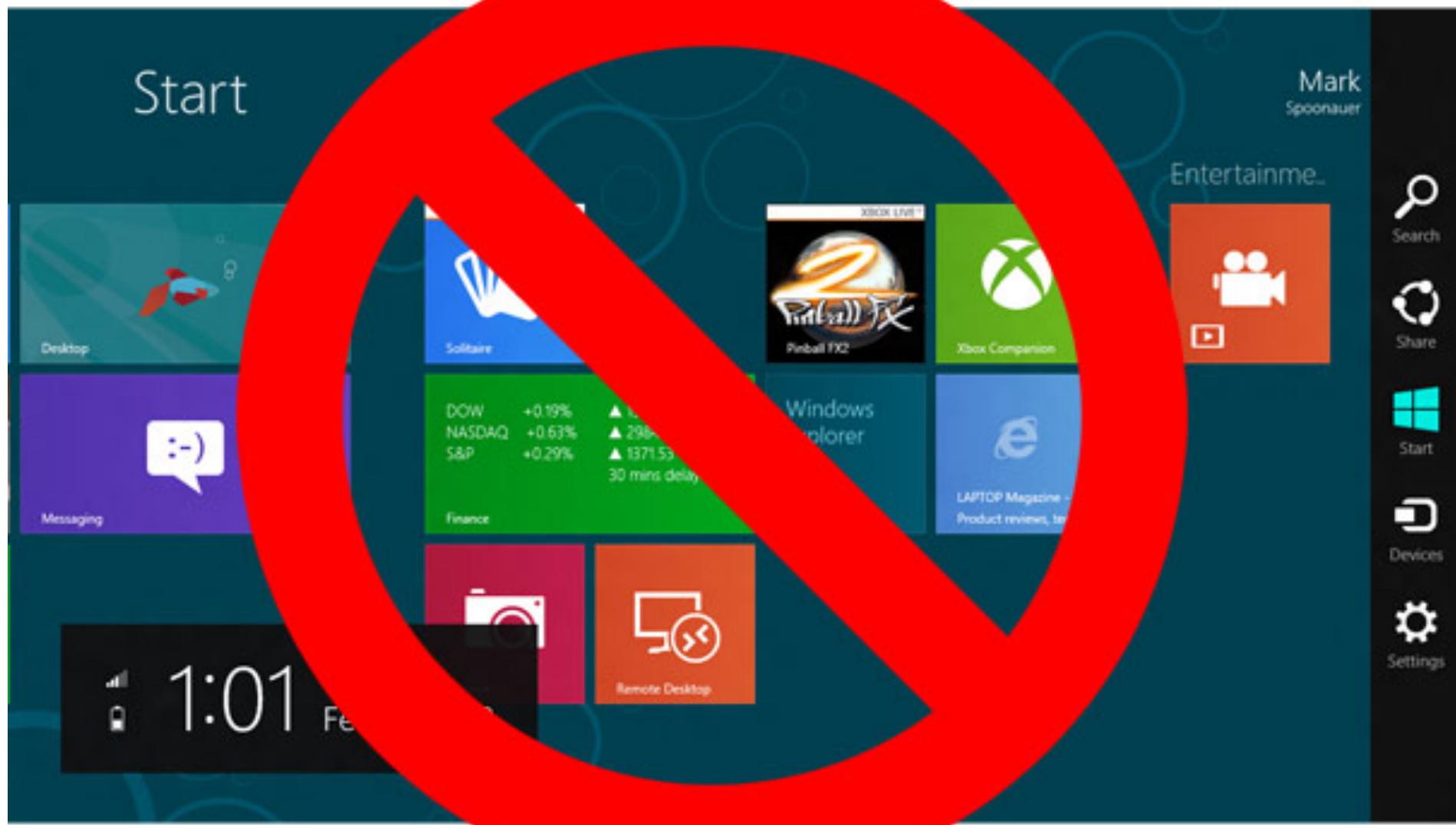
My organization



I own it







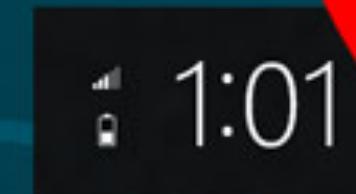
Start



Desktop



Messaging



1:01

Feb

2012



Solitaire

DOW +0.19%
NASDAQ +0.63%
S&P +0.29%
▲ 1.11
▲ 296
▲ 1371.53
30 mins delay

Finance



Camera



Remote Desktop

Windows

Explorer

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Pinball FX2 tile icon

Pinball FX2

Windows

8

Pinball FX2

Windows



.NET

LEARN

DOCUMENTATION

COMMUNITY

SUPPORT

.NET Core



It is very easy to get started with .NET Core on your platform of choice.

You just need a shell, a text editor and 10 minutes of your time.

Windows

Linux

Mac

Docker

Other downloads

```
[Richards-Mac:DotNetCore mountain$ ls -l
total 8
drwxr-xr-x  8 mountain  staff  272 Apr 27 12:27 DiverzioDashboard
drwxr-xr-x 11 mountain  staff  374 Apr  5 11:07 FindInt
drwxr-xr-x  9 mountain  staff  306 Apr  8 22:34 FizzBuzz
drwxr-xr-x 12 mountain  staff  408 Jun 13 2015 Gebaar
drwxr-xr-x  5 mountain  staff  170 Jul  3 16:09 Katas
drwxr-xr-x 10 mountain  staff  340 Apr  9 10:28 Parenth
drwxr-xr-x@ 21 mountain  staff  714 Jul  8 22:19 dotnet-watch-dev
-rw-r--r--x  1 mountain  staff  1083 Jun  2 21:13 remove.sh
drwxr-xr-x 13 mountain  staff  442 Jun  1 20:50 test
```

```
[Richards-Mac:DotNetCore mountain$ cd FizzBuzz/
[Richards-Mac:FizzBuzz mountain$ dotnet
```

Microsoft .NET Core Shared Framework Host

Version : 1.0.1
Build : cee57bf6c981d80aa163... 29f12

Usage: dotnet [common-options] [[options] path-to-application]

Common Options:

- help
- version

Options:

--fx-version <version>	Version of the installed Shared Framework
--additionalprobingpath <path>	Path containing probing policy

Path to Application:

The path to a .NET Core managed application, dll or exe file

If you are debugging the Shared Framework Host, set 'COREHOST_

To get started on developing applications for .NET Core, install <http://go.microsoft.com/fwlink/?LinkId=798306&clcid=0x409>

Richards-Mac:FizzBuzz mountain\$ █

AccountController.cs - src

```
return View();  
}  
// [AllowAnonymous]  
[ValidateAntiForgeryToken]  
public async Task<IActionResult> Login(LoginViewModel model, string returnUrl = null)  
  
if (!ModelState.IsValid)  
{  
    return View(model);  
}  
  
var user = await _userManager.FindByNameAsync(model.UserName);  
if (user != null && await _userManager.IsEmailConfirmedAsync(user))  
  
var result = await _signInManager.PasswordSignInAsync(model.UserName, model.Password, false, false);  
if (result.Succeeded)  
{  
    await _signInManager.SignInToLocal(returnUrl);  
}  
  
ModelState.AddModelError("", "Invalid login attempt.");  
return View(model);  
}  
// [AllowAnonymous]  
// public ActionResult LoggedInUserInfo()  
// {  
//     LoginViewModel model = null;  
//     if (Request.IsAuthenticated)  
//     {  
//         var loggedInUser = _userManager.FindByName(this.Username);  
//         model = new LoginViewModel { VolledigeNaam = loggedInUser.Voornaam + " " + loggedInUser.Achternaam };  
//     }  
//     return PartialView("_LoginPartial", model);  
// }  
// GET: /Account/Register  
[AllowAnonymous]  
public ActionResult Register()  
{  
    var model = new RegisterViewModel();  
    return View(model);  
}
```

Ln 50, Col 1 Spaces: 4 UTF-8 with BOM CRLF C# Running

Wat is er beter?

Dependency Injection
alles is los testbaar

Wat is er beter?

Small footprint
beter schaalbaar

Wat is er beter?

Self-contained
onafhankelijk van
geïnstalleerd framework

Wat is er beter?

.NET Native

snellere startup

snellere code

Wat is er beter?

Tag Helpers!

want @Html is zóóóóóóó 2010

```
1 <!DOCTYPE html>
2 <html>
3 <head>
4     <meta charset="utf-8" />
5     <meta name="viewport" content="width=device-width, initial-scale=1.0">
6     <title>@ViewBag.Title - My ASP.NET Application</title>
7     @Styles.Render("~/Content/css")
8     @Scripts.Render("~/bundles/modernizr")
9
10 </head>
11 <body>
12     <div class="navbar navbar-inverse navbar-fixed-top">
13         <div class="container">
14             <div class="navbar-header">
15                 <button type="button" class="navbar-toggle" data-toggle="collapse" data-target=".navbar-collapse">
16                     <span class="icon-bar"></span>
17                     <span class="icon-bar"></span>
18                     <span class="icon-bar"></span>
19                 </button>
20                 @Html.ActionLink("Application name", "Index", "Home", new { area = "" }, new { @class = "navbar-brand" })
21             </div>
22             <div class="navbar-collapse collapse">
23                 <ul class="nav navbar-nav">
24                     <li>@Html.ActionLink("Home", "Index", "Home")</li>
25                     <li>@Html.ActionLink("About", "About", "Home")</li>
26                     <li>@Html.ActionLink("Contact", "Contact", "Home")</li>
27                 </ul>
28                 @Html.Partial("_LoginPartial")
29             </div>
30         </div>
31     </div>
32     <div class="container body-content">
33         @RenderBody()
34         <hr />
```

En wat doen we
met de database?

(micro) ORMs

Peta Poco, onduidelijk

Dapper, werkt

NHibernate, onduidelijk

En natuurlijk Entity Framework, beperkt

Features not in EF Core

- **Querying Data**

- **Improved translation** to enable more queries to successfully execute, with more logic being evaluated in the database (rather than in-memory).
- **GroupBy translation** in particular will move translation of the LINQ GroupBy operator to the database, rather than in-memory.
- **Lazy loading** enables navigation properties to be automatically populated from the database when they are accessed.
- **Explicit Loading** allows you to trigger population of a navigation property on an entity that was previously loaded from the database.
- **Raw SQL queries for non-model types** allows a raw SQL query to be used to populate types that are not part of the model (typically for denormalized view-model data).

- **Saving Data**

- **Simple command interception** provides an easy way to read/write commands before/after they are sent to the database.
- **Missing EntityEntry APIs from EF6.x** such as `Reload`, `GetModifiedProperties`, `GetDatabaseValues` etc.
- **Stored procedure mapping** allows EF to use stored procedures to persist changes to the database (`FromSql` already provides good support for using a stored procedure to query, see [Raw SQL Queries](#) for details).
- **Connection resiliency** automatically retries failed database commands. This is especially useful when connection to SQL Azure, where transient failures are common.

<https://docs.efproject.net/en/latest/>

EF providers voor

SQL Server

MySQL

PostgreSQL

SQLite

InMemory

IBM Data Servers

Devart

Oracle (soon)

STAAT
NIET
OP DE
KAART



App Domains
Remoting
Binary Serialization
DataSets (yeah!)
XSL/XSD
EventLog

KOMT
NOG



Reflection
Workflow
XAML
Windows Identity
Websockets

Morgen beginnen?

Jee...

AND THAT'S ALL I HAVE



TO SAY ABOUT THAT.