uno PLATFORM

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Uno Platform

tombola

Introduction

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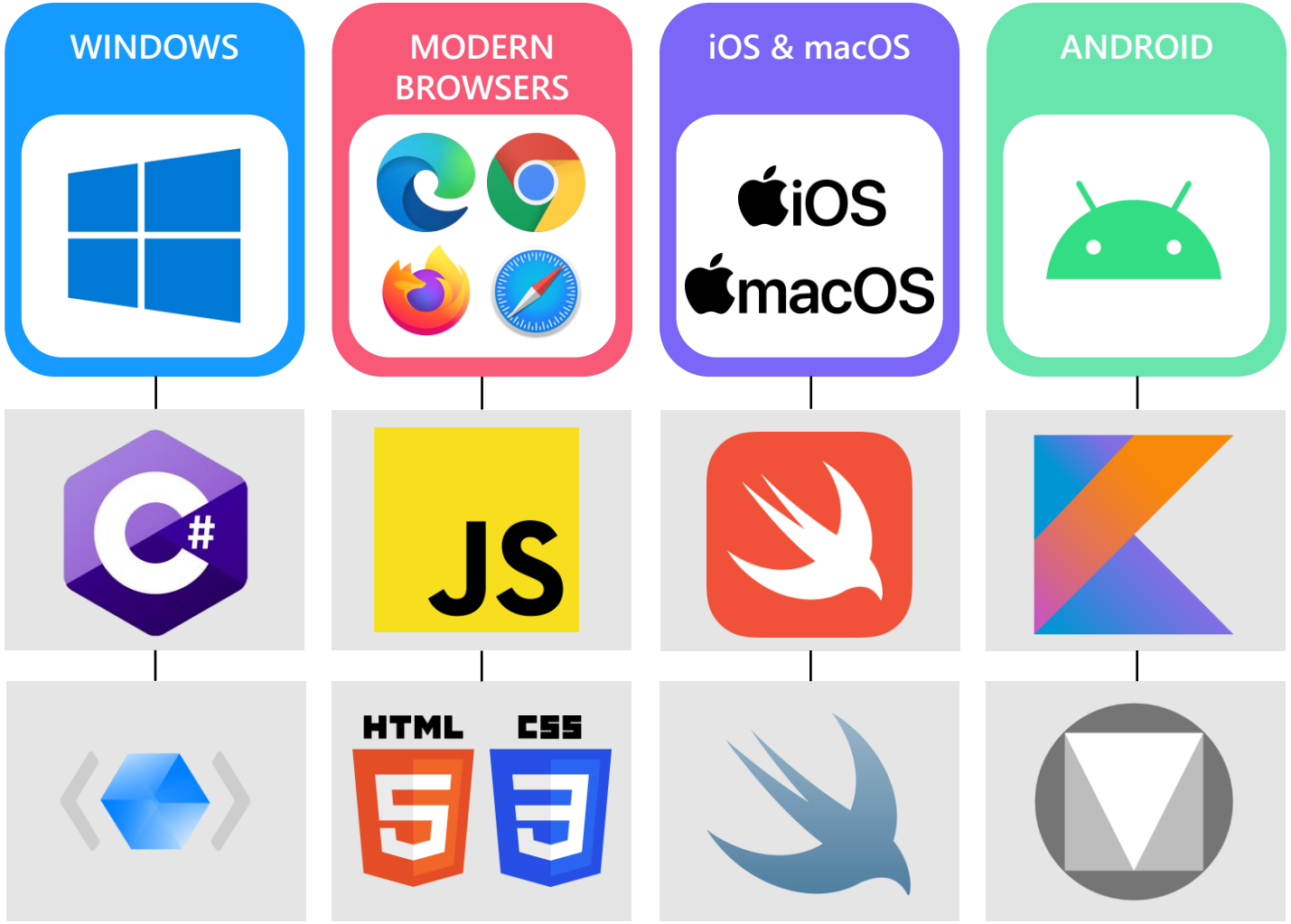
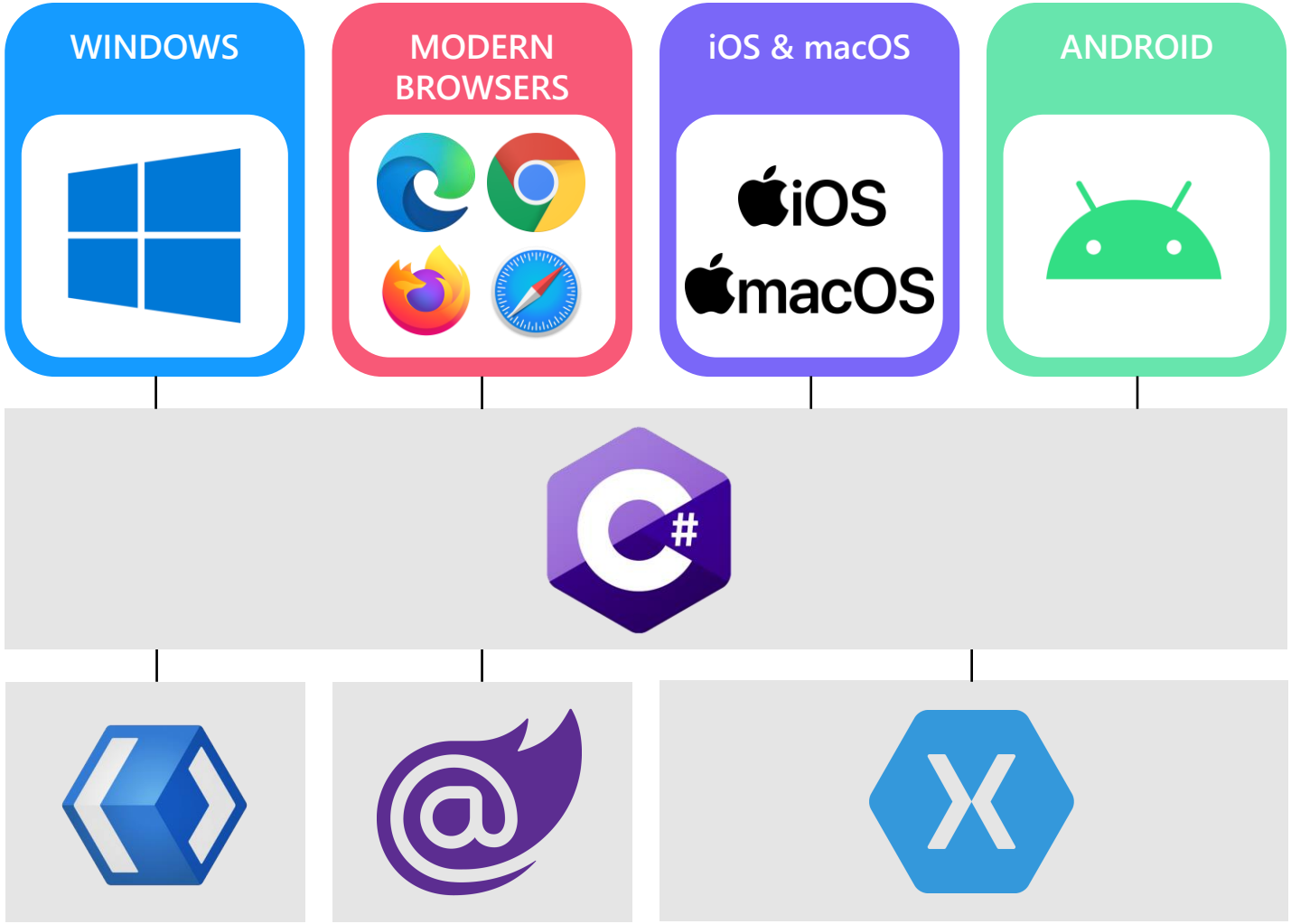


Introduction

UNO PLATFORM



Introduction

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UWP / WinUI

Universal Windows Platform is the modern native application platform for Windows

WinUI is an open-source project providing modern controls and styles for building Windows apps

Target variety of Windows 10 based devices such as Desktops, Tablets, Xbox One, HoloLens and more

Introduction

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Blazor

Open-source platform to build client web applications

Enables developers to build interactive web UI using C#, HTML and CSS without JavaScript

Run logic server-side or client-side using WebAssembly

Introduction

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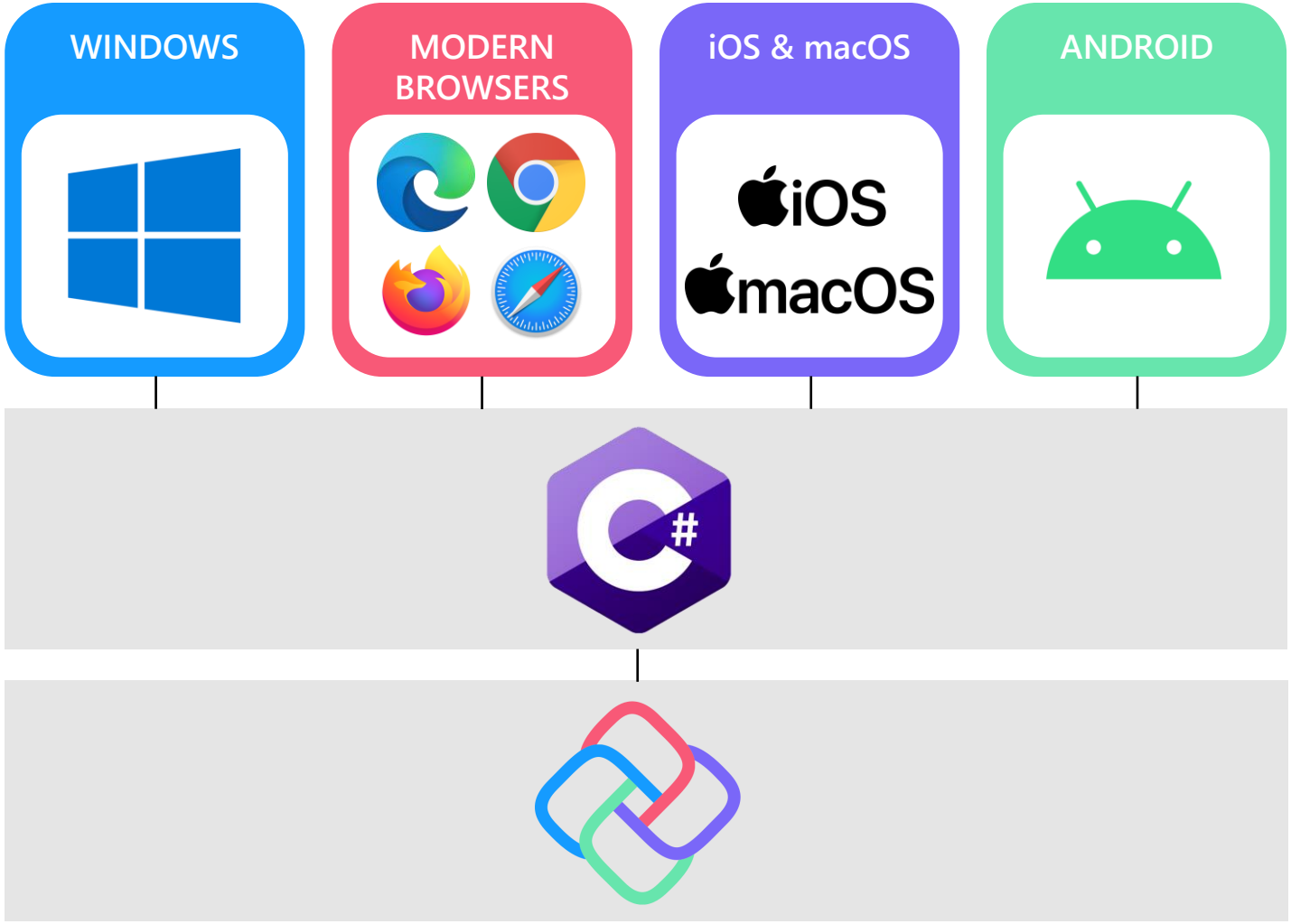
Xamarin

Open-source application platform to build iOS and Android apps with XAML and C#

Build native Android, iOS, tvOS, watchOS, macOS and Windows apps using Xamarin.Forms

Cross-platform apps with native API access and performance with a shared native user interface



Introduction

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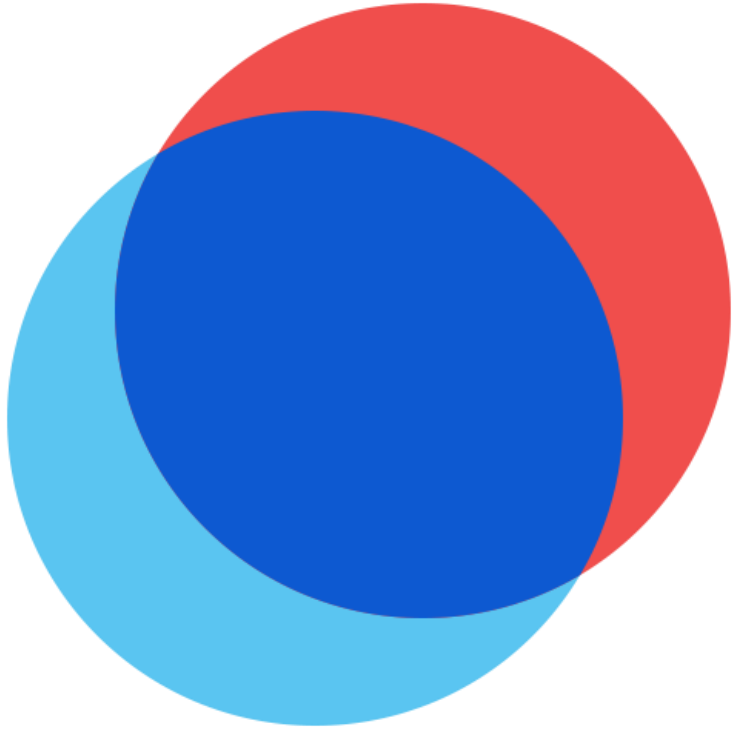
nventive

nventive in Montreal, Canada developed the Uno Platform as an open-source project

Uno Platform enables modern .NET developers to build applications in C# and XAML

Target Windows, WebAssembly (WASM), iOS, MacOS and Android



Introduction

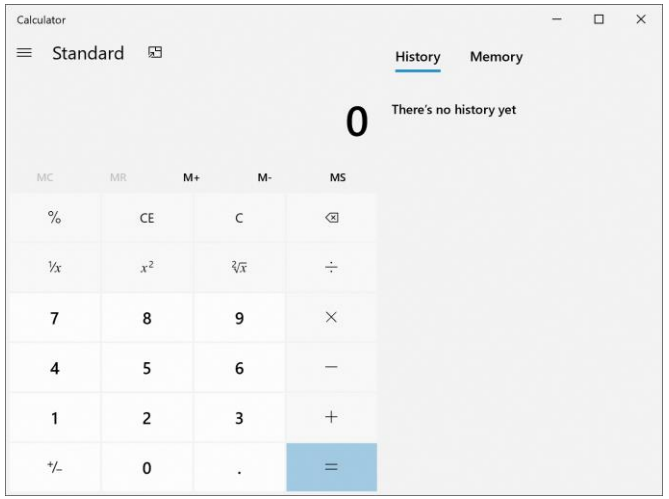
Calculator

Microsoft open-sourced Windows Calculator which is a C++ and XAML-based app

Uno Platform ported C++ based Calculation Engine, partly dating back to 1995, to C#

XAML User Interface used almost entirely as-is with only a few minor changes

Uno Platform allowed it to run on iOS, MacOS, Android and the web at calculator.platform.uno



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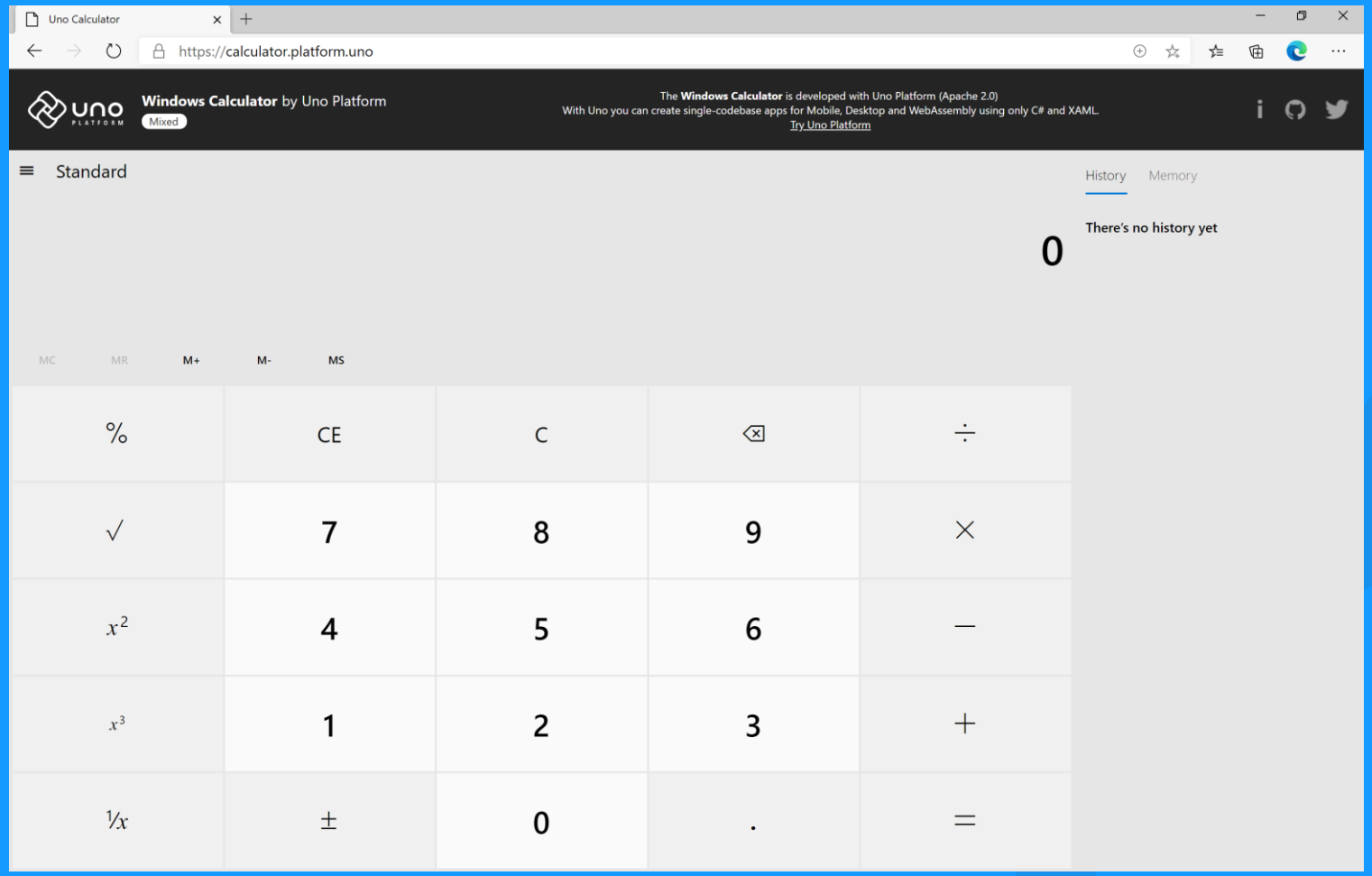
Calculator

Demo



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Architecture

Uno Platform

Architecture

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WebAssembly

WebAssembly or Wasm for short is a binary instruction format for a stack-based virtual machine

Designed as a portable compilation target for programming languages and enables deployment on the web for client and server applications

Supported by Modern Browsers such as Microsoft Edge, Google Chrome, Firefox and Apple's Safari

Architecture

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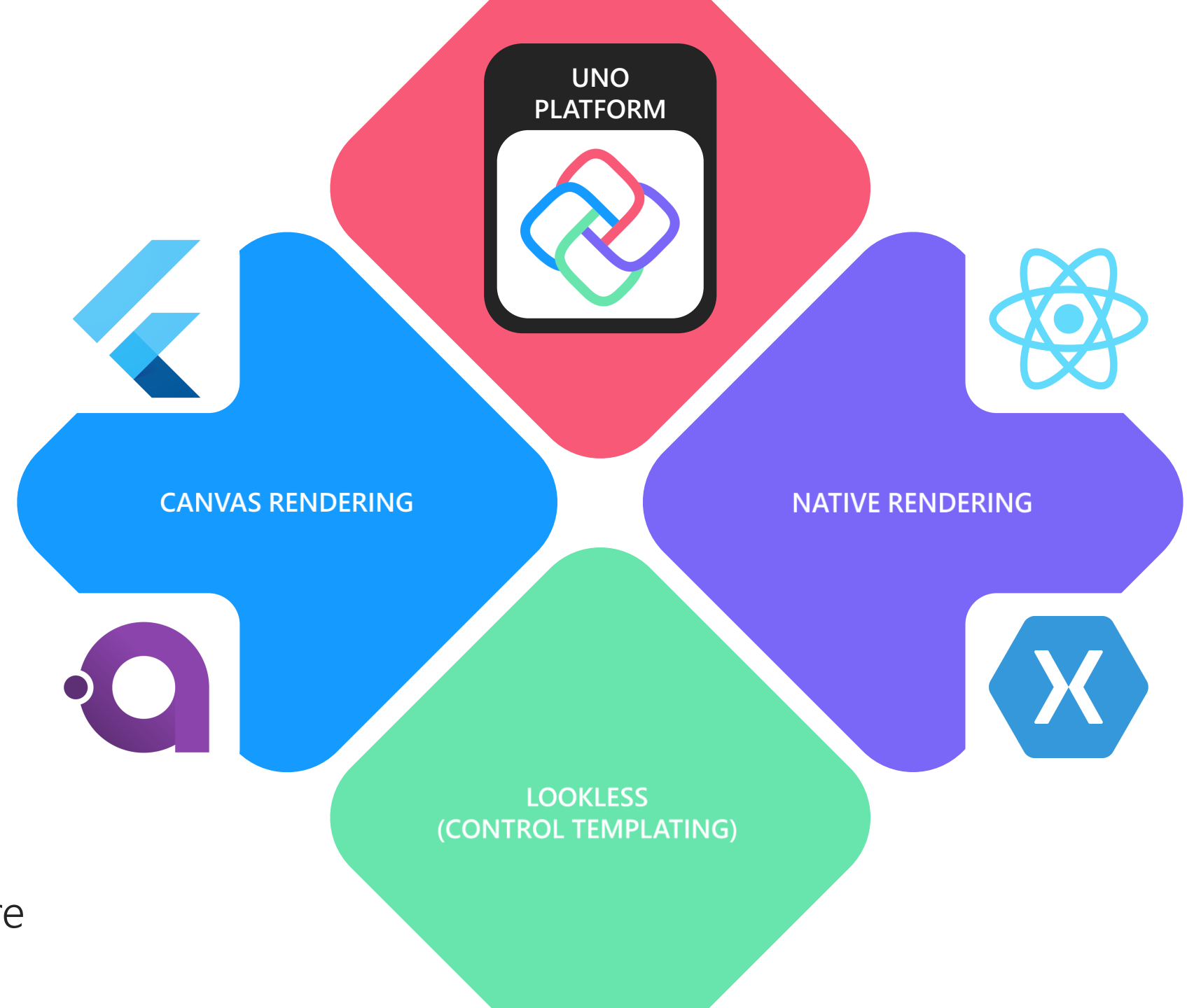

Architecture

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Flutter

Google's UI toolkit for building native apps for mobile, web, and desktop from a single codebase

Flutter applications are written using Dart, a client optimised language as Widgets

Supports Android and iOS with support for macOS coming in the future

Architecture

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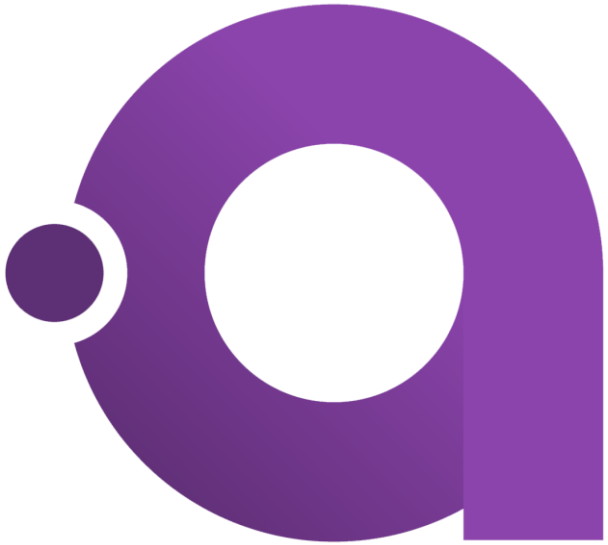
avalonia

A cross platform XAML Framework for .NET Framework, .NET Core and Mono

Uses a XAML dialect familiar to those using WPF, UWP and Xamarin.Forms supporting binding, MVVM, lookless controls and data templates

Supports Windows, Linux and OSX and working towards full Android and iOS support using Skia



Architecture

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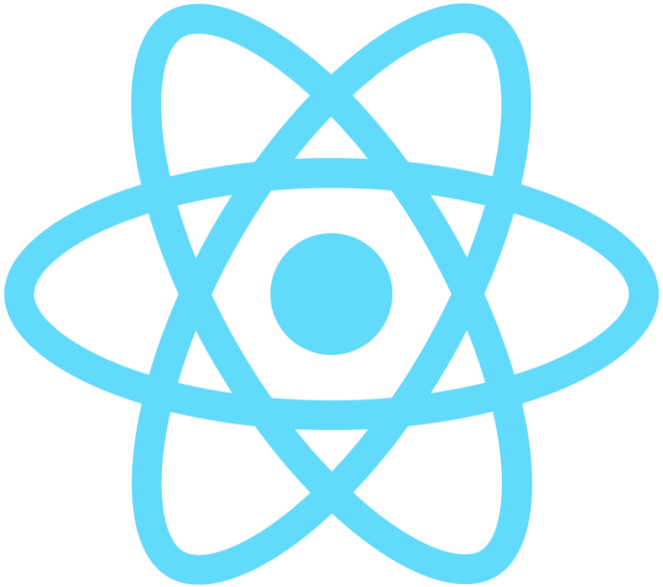
React Native

Combines native development with React JavaScript library for building user interfaces

Applications written in JavaScript and rendered to native platform user interface

First-party support for Android and iOS and third-party support for Windows and macOS



Architecture

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Xamarin

Platform for building Android and iOS applications using .NET and C#

Applications are built to use standard, native user interface controls to look and behave as expected

Applications have access to full-platform functionality and native performance

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Uno Platform

Build applications for WebAssembly, iOS, macOS, Android and Windows

Only platform for building native mobile, desktop and WebAssembly apps with C# and XAML using a single codebase

Per control-instance level control to have the same look-and-feel or platform-specific look-and-feel

Architecture

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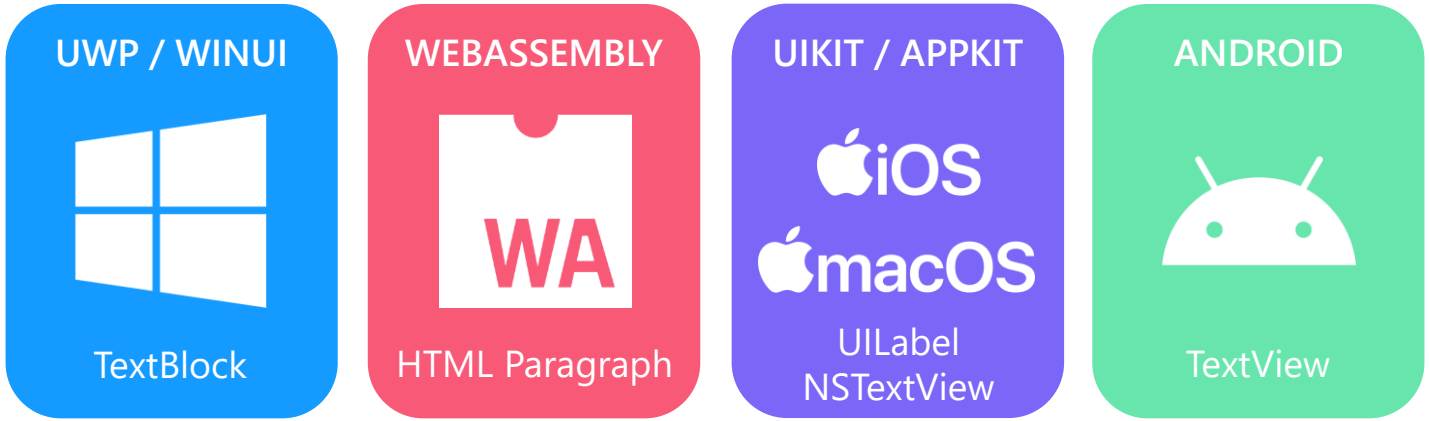
Native Mapping



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Libraries

ReactiveUI – composable, functional reactive model-view-viewmodel framework

ReactiveX – asynchronous programming with observable streams

Windows Community Toolkit – functions, custom controls, and services for building UWP apps

SkiaSharp – 2D graphics API based on Google's Skia Graphics Library

Architecture

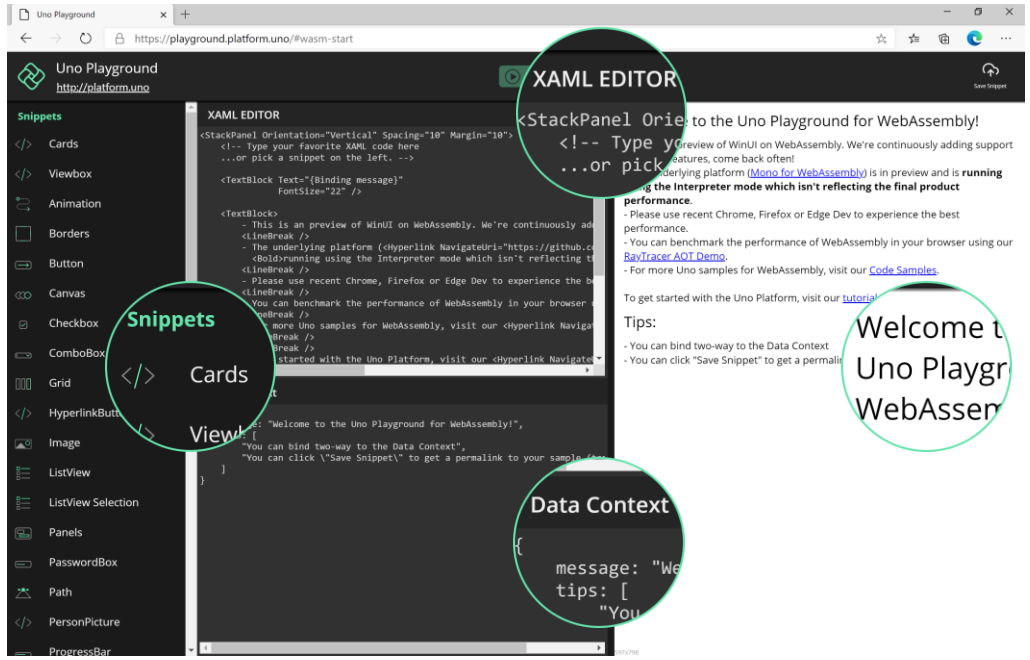
Playground

Snippets allow you to easily use various XAML-based controls in the Uno Playground

XAML Editor allows you to try out any new or existing XAML right from your browser

Data Context allows you to set any data context and try out any data binding with your XAML

XAML Visualiser allows you to see what any XAML you have entered will look like



Architecture

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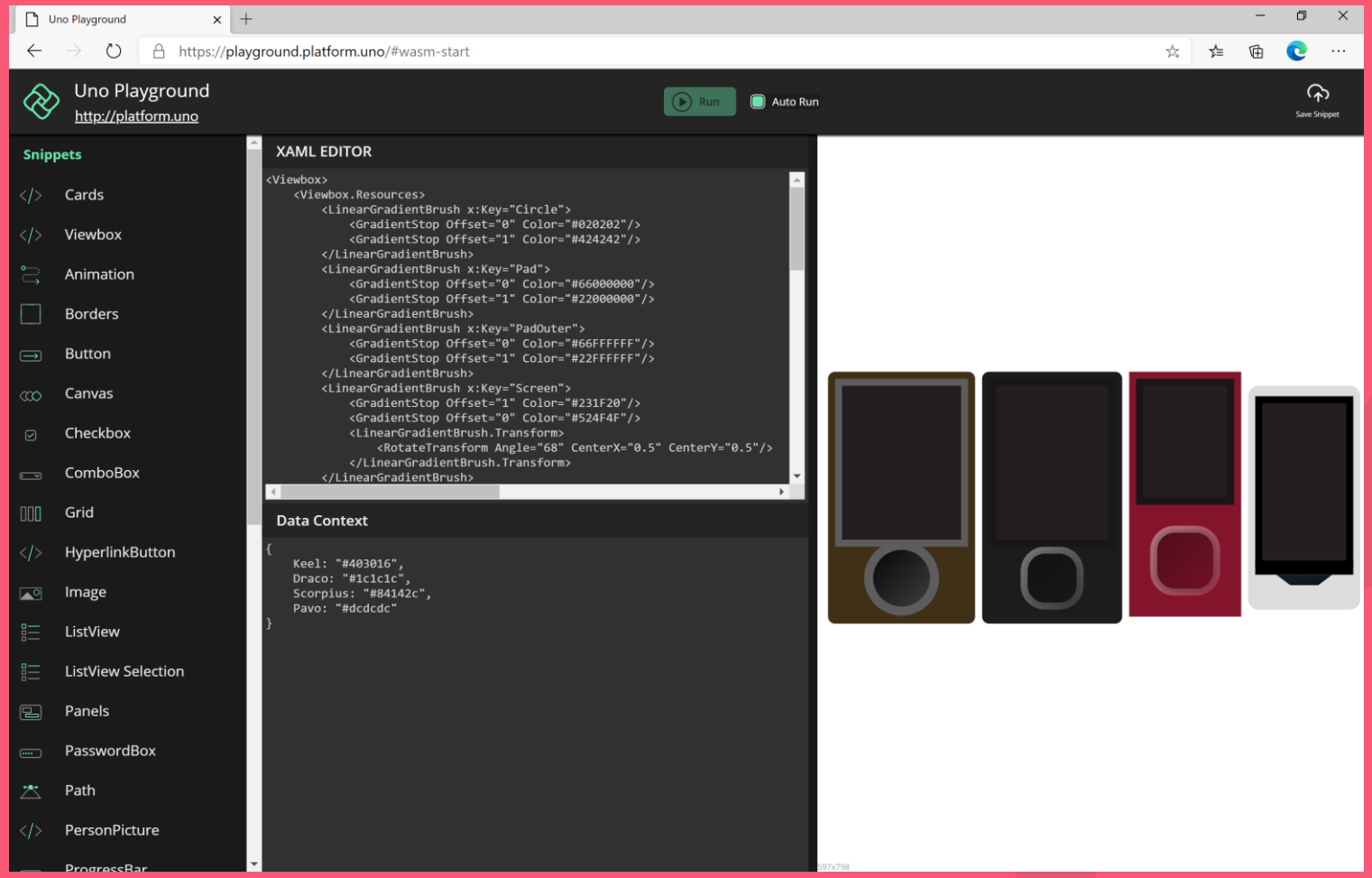
Playground

Demo



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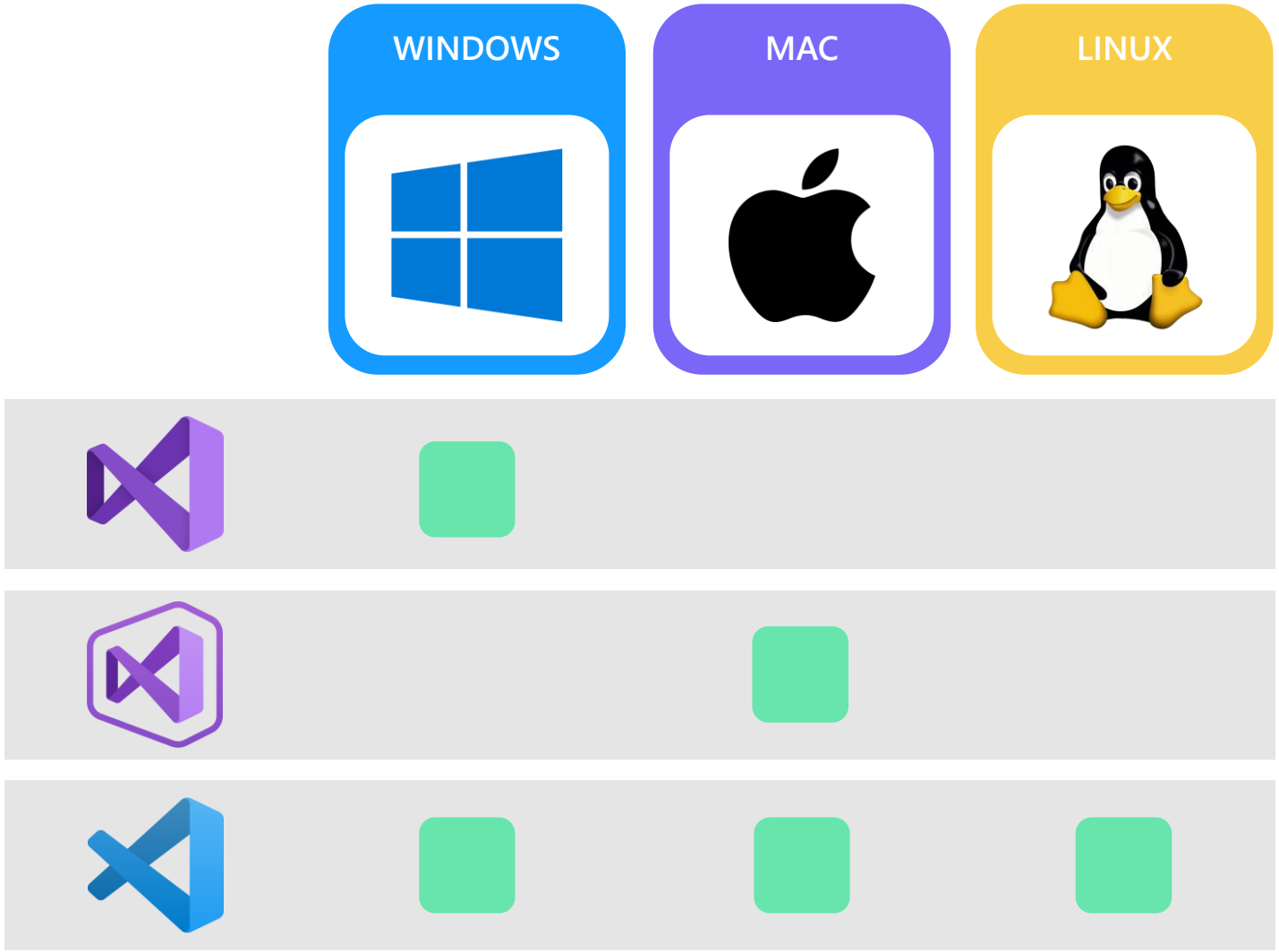
Getting Started

Uno Platform



Getting Started

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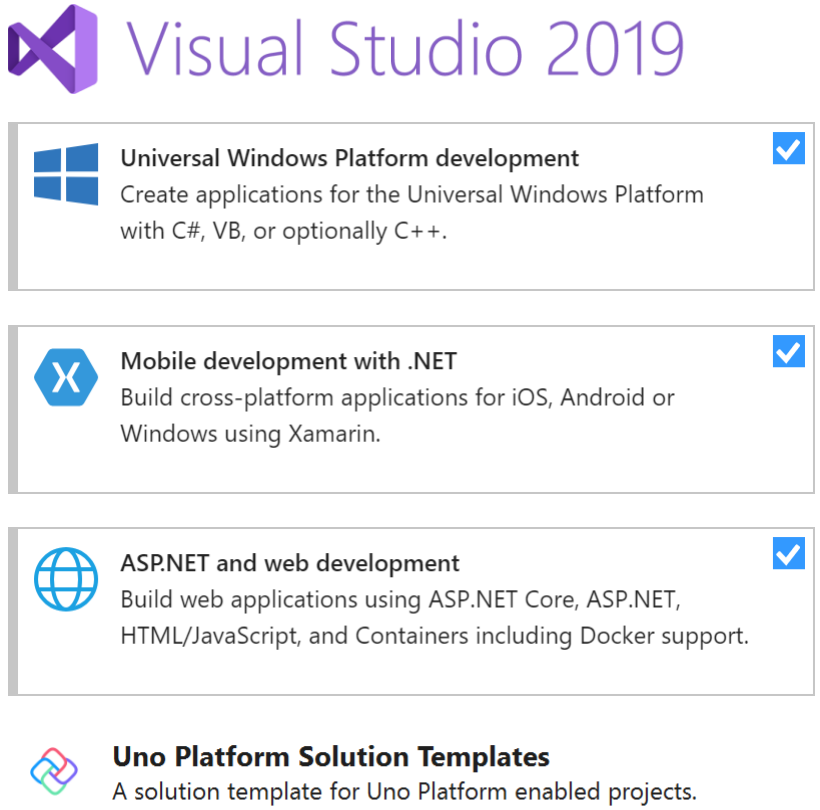
Setup

Visual Studio 2019 for Windows
Universal Windows Platform development
Mobile development with .NET
ASP.NET and web development
Uno Platform Solution Templates



Getting Started

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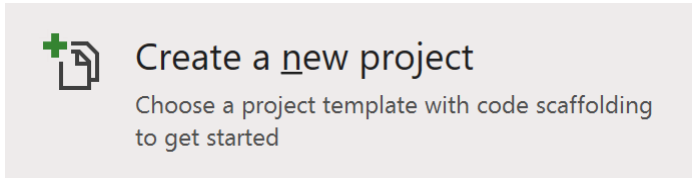
Start

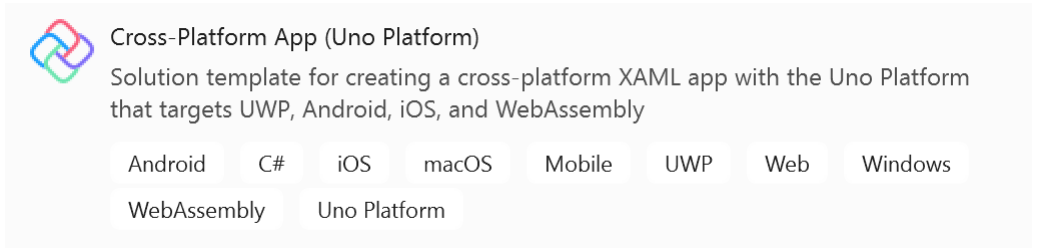
Launch Visual Studio 2019

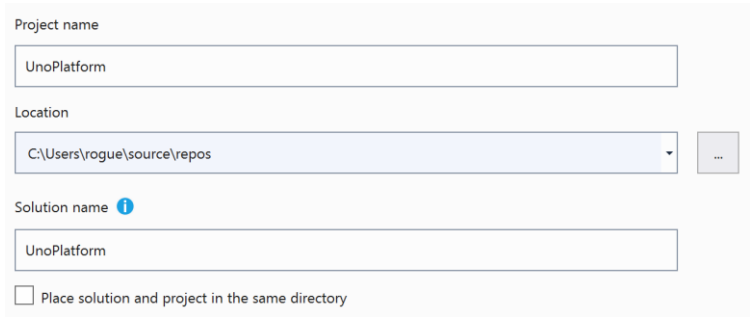
Select Create a new project

Choose Cross-Platform App (Uno Platform)

Set Project Name & Location then select Create







Getting Started

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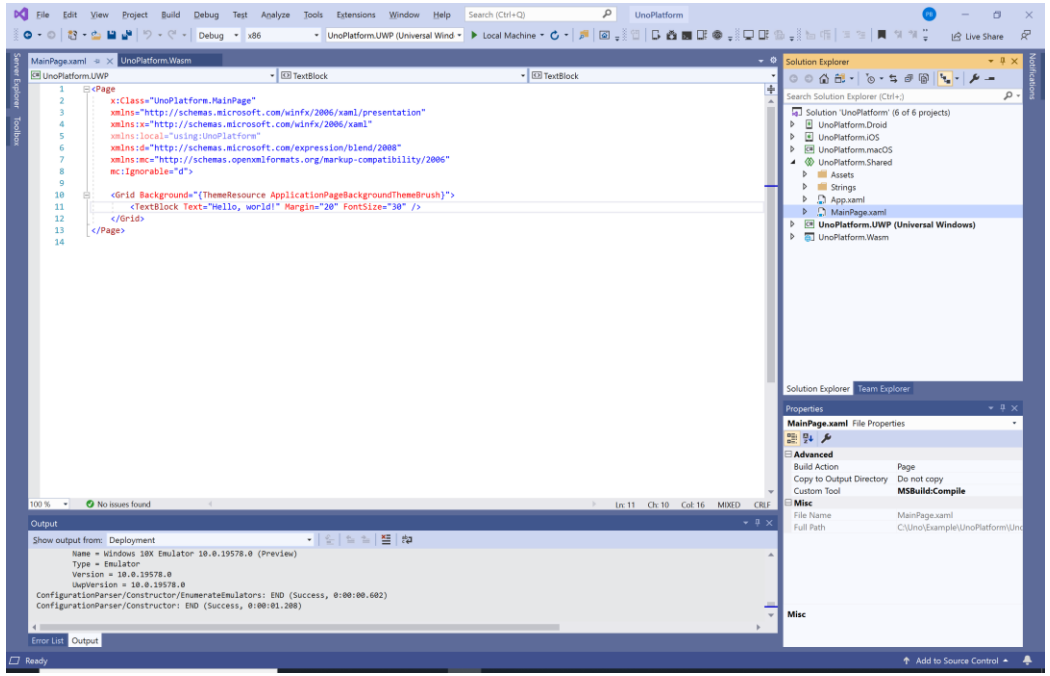
Solution

Solution contains projects for each target platform including Android, iOS, macOS, Windows (UWP) and WebAssembly (WASM)

Shared Project is where your XAML, C# and Assets are provided for each platform

Set as Startup Project the target platform to launch such as UWP (Universal Windows)



Getting Started

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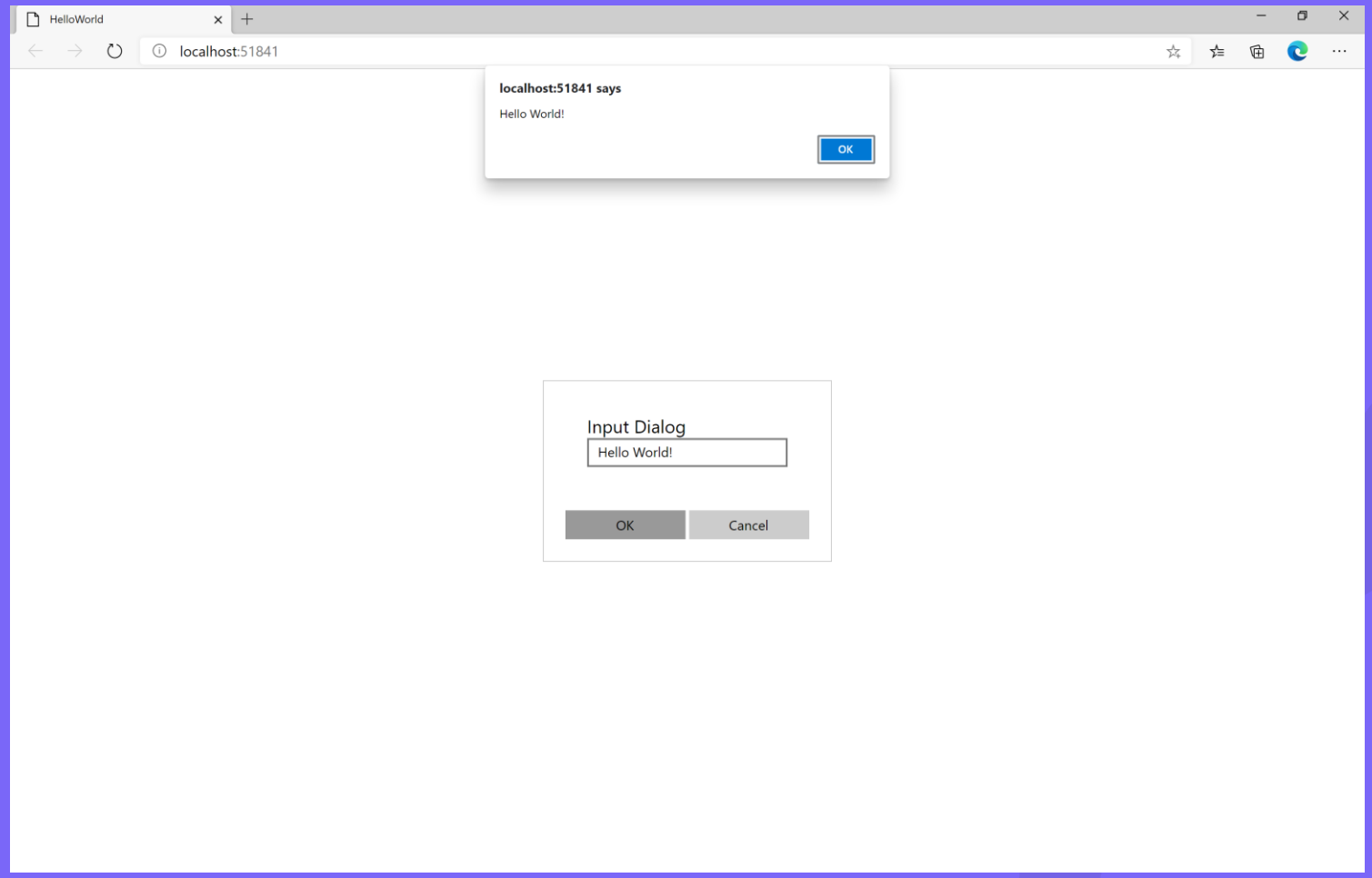
Input Dialog

Demo



Input Dialog

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Future

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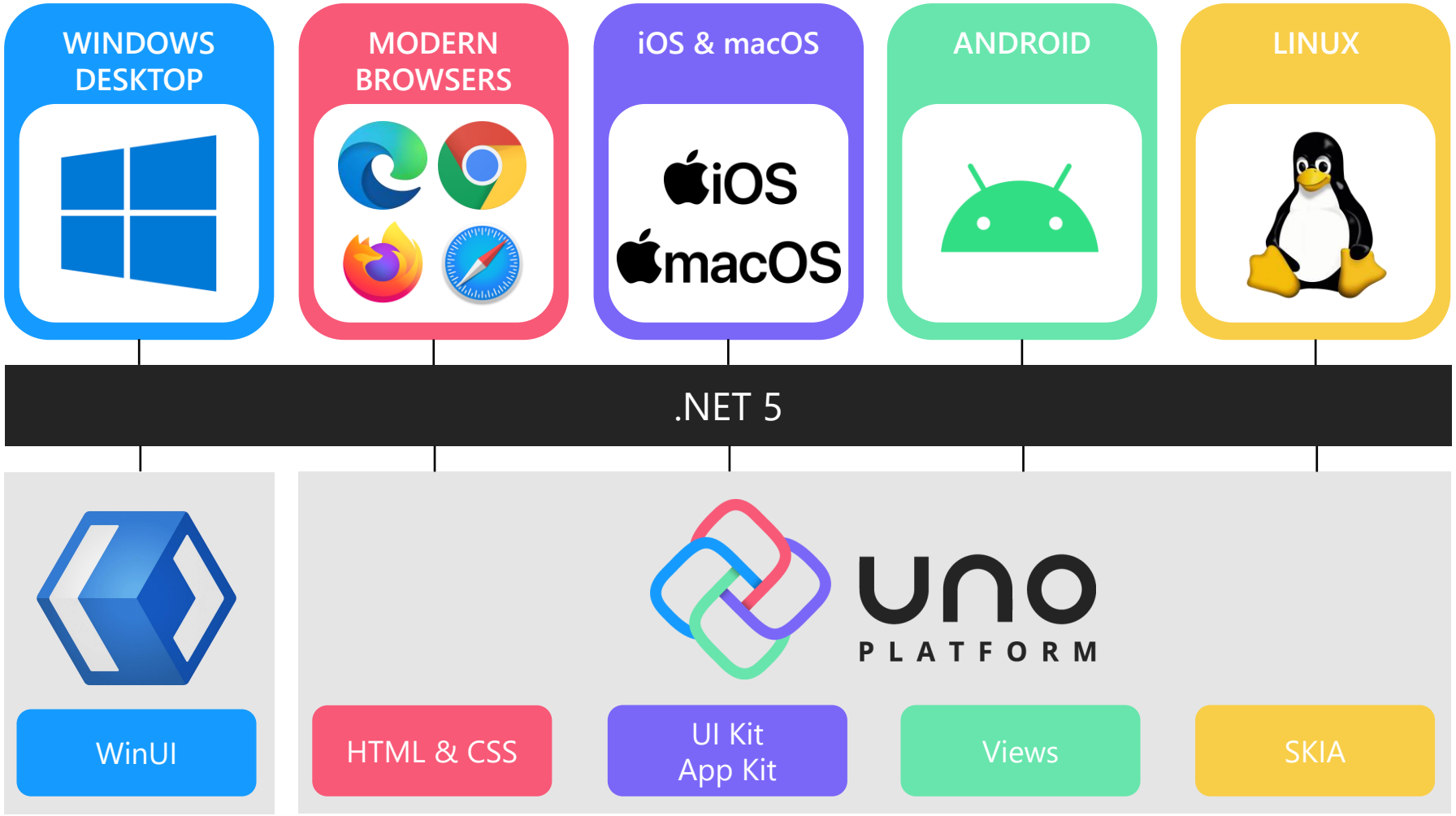

Future

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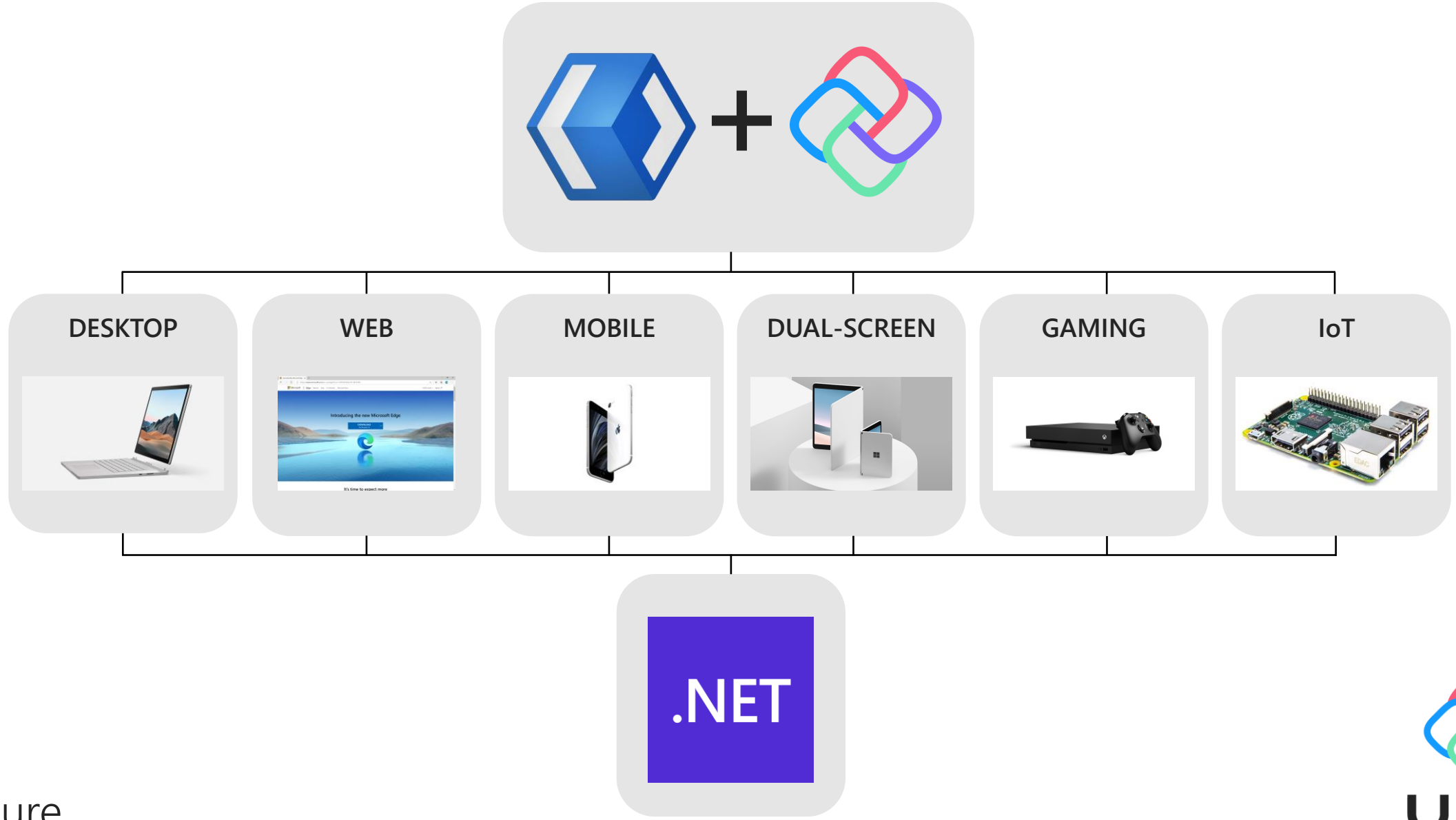

Future

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Dual-Screen

Opens up a new opportunity for developers to target a new class of device

Uno Platform supports dual-screen devices with controls such as TwoPaneView from WinUI

Uno Platform allows you to target dual-screen devices based on Windows 10X and Android

Future

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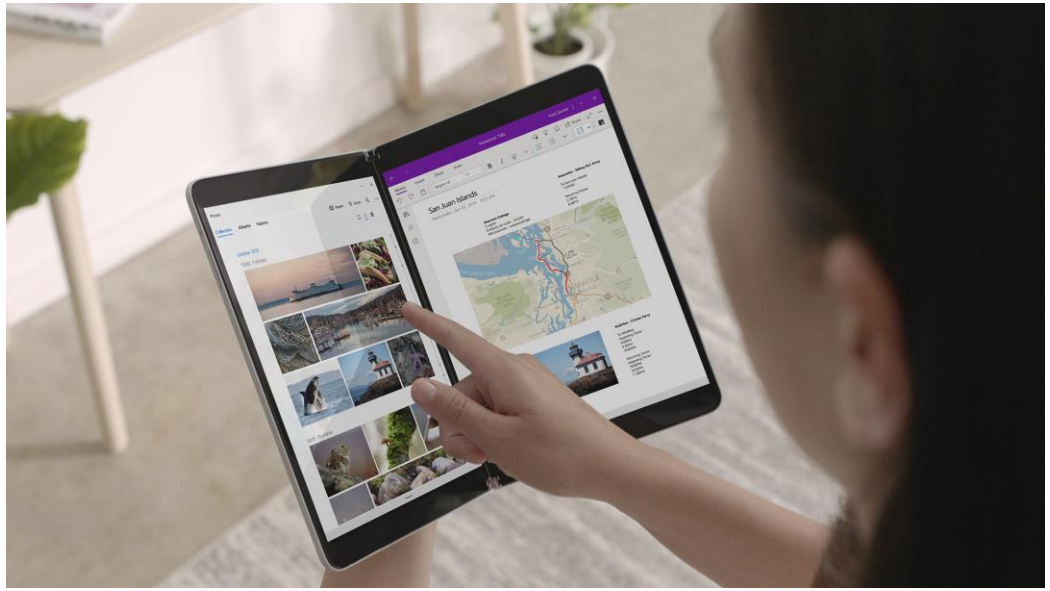
Surface Neo

Surface Neo is a dual-screen device with 360° hinge, touch, pen and keyboard

Built for productivity on Windows 10X designed for dual-screen PCs

Developers can write apps today using the developer tools and Windows 10X Emulator



Future

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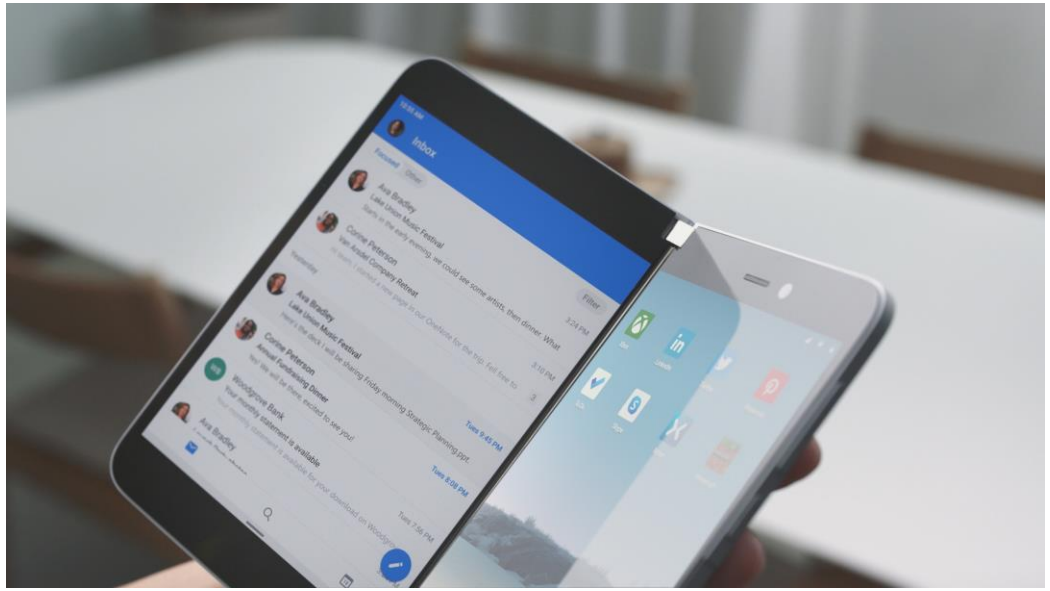
Surface Duo

Surface Duo is a mobile dual-screen device with two screens connected by a 360° hinge

Built for compatibility using Android to reimagine productivity

Developers can write and test apps using the development tools and Surface Duo Emulator



Future

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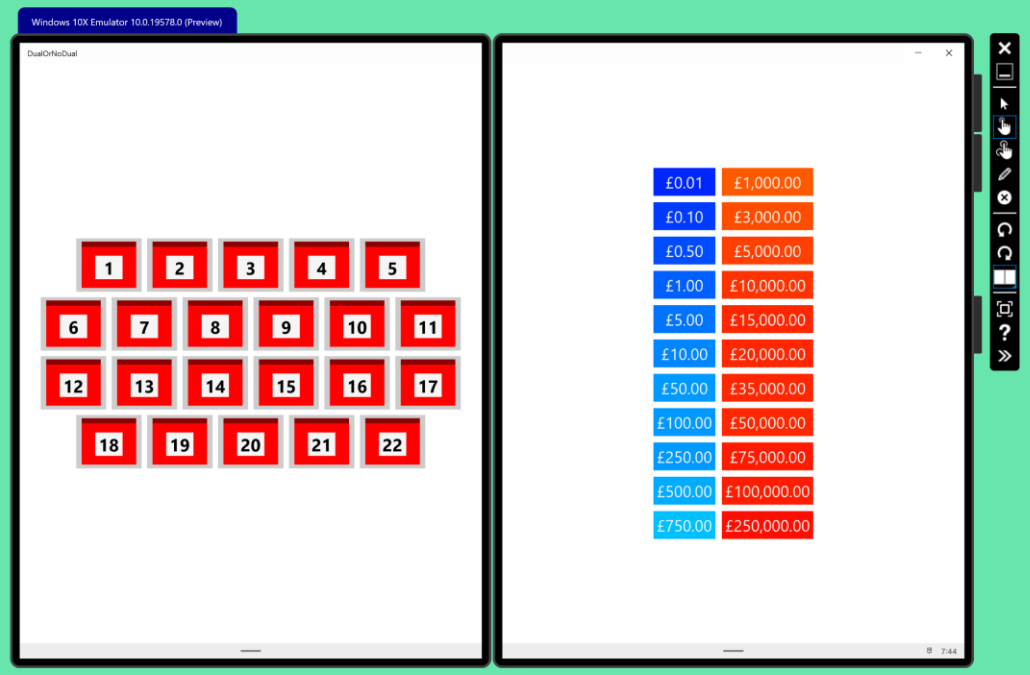
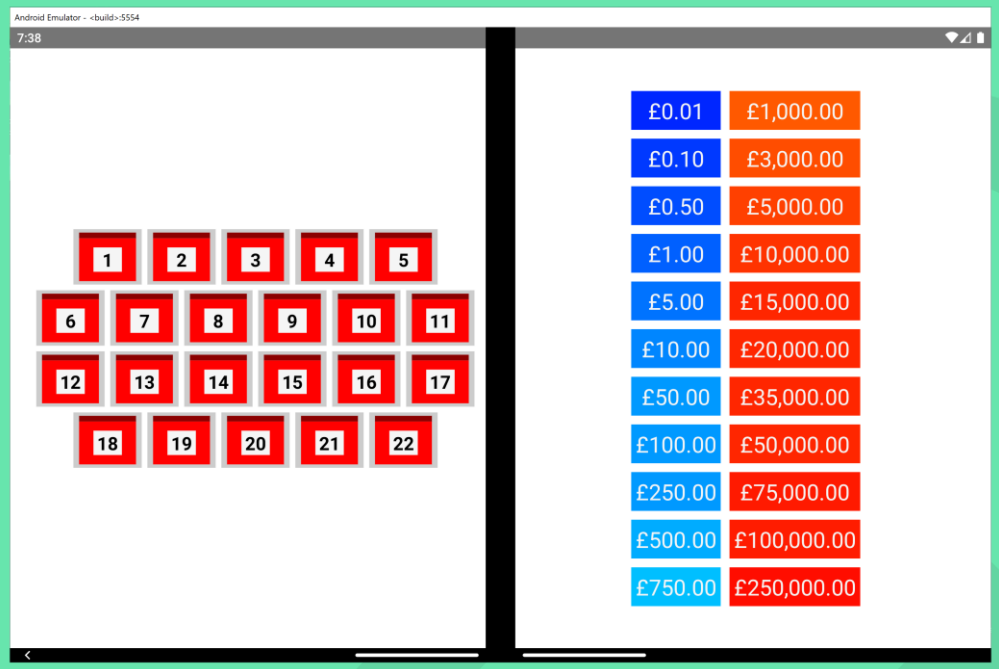
Dual or no Dual

Demo





Dual or no Dual

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Resources

Uno Platform

GitHub

Uno Platform is open source on GitHub at github.com/unoplatform where you can submit feedback or raise issues

Learn from workshops and study guides with the Uno Bootcamp

Find source code and other examples including the Windows Calculator and Uno Playground

github.com/unoplatform

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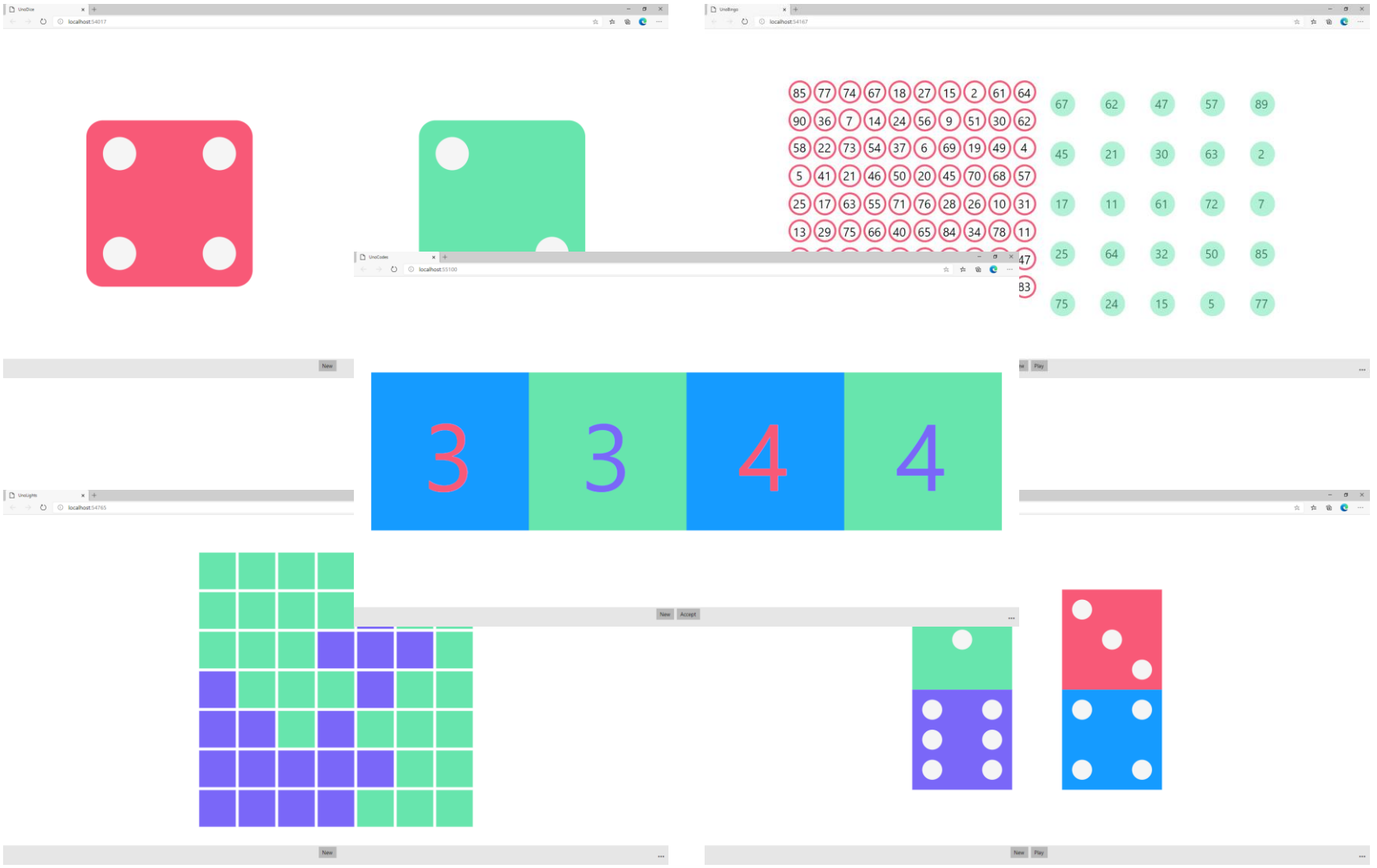

github.com/rogueplanetoid/unoplatform

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Credits

Uno Platform – Your apps, everywhere Presentation by Martin Zikmund

Building rich cross-platform applications with WebAssembly and Uno Platform Presentation by David Oliver

WinUI + Uno Platform Presentation from Uno Platform

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