

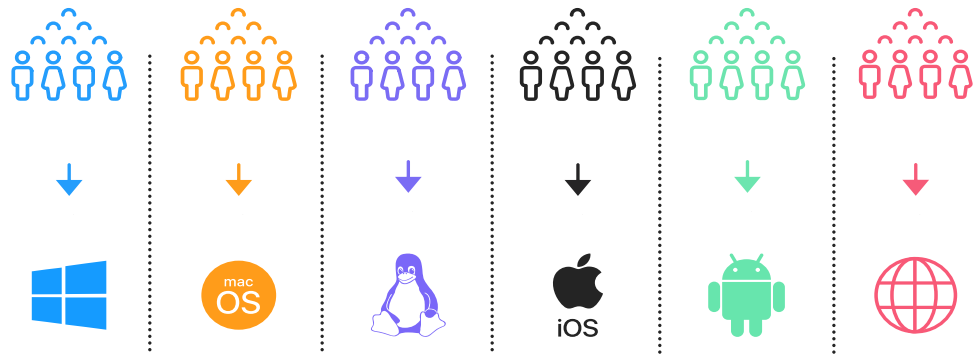


Introduction to the Open Source Uno Platform

Jérôme Laban | CTO, Uno Platform

 @jlaban | @UnoPlatform

The Problem



1.

- Cross-platform development
- Effort duplication

2.

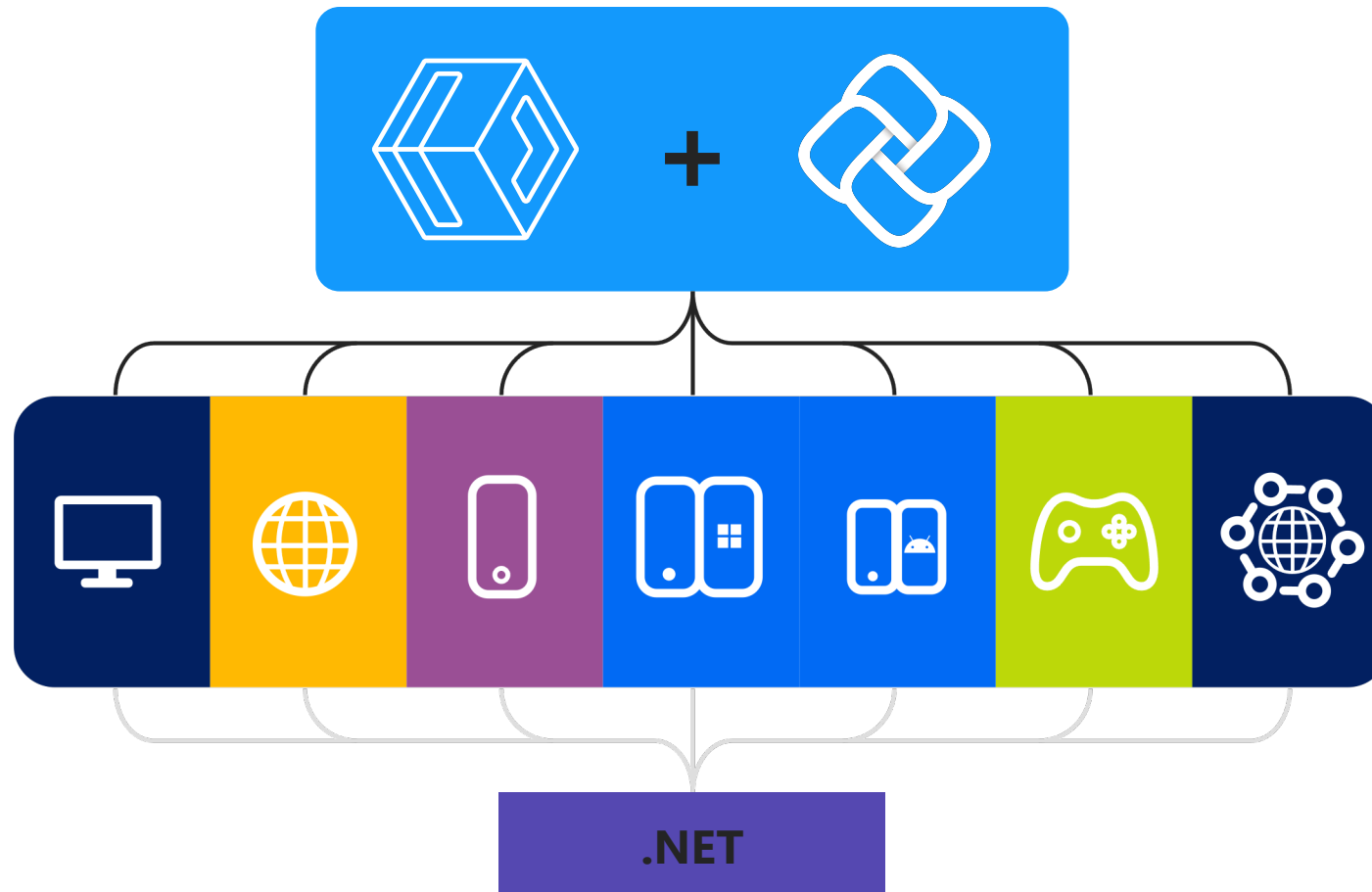
- Legacy business applications migration to web
- High rewrite cost

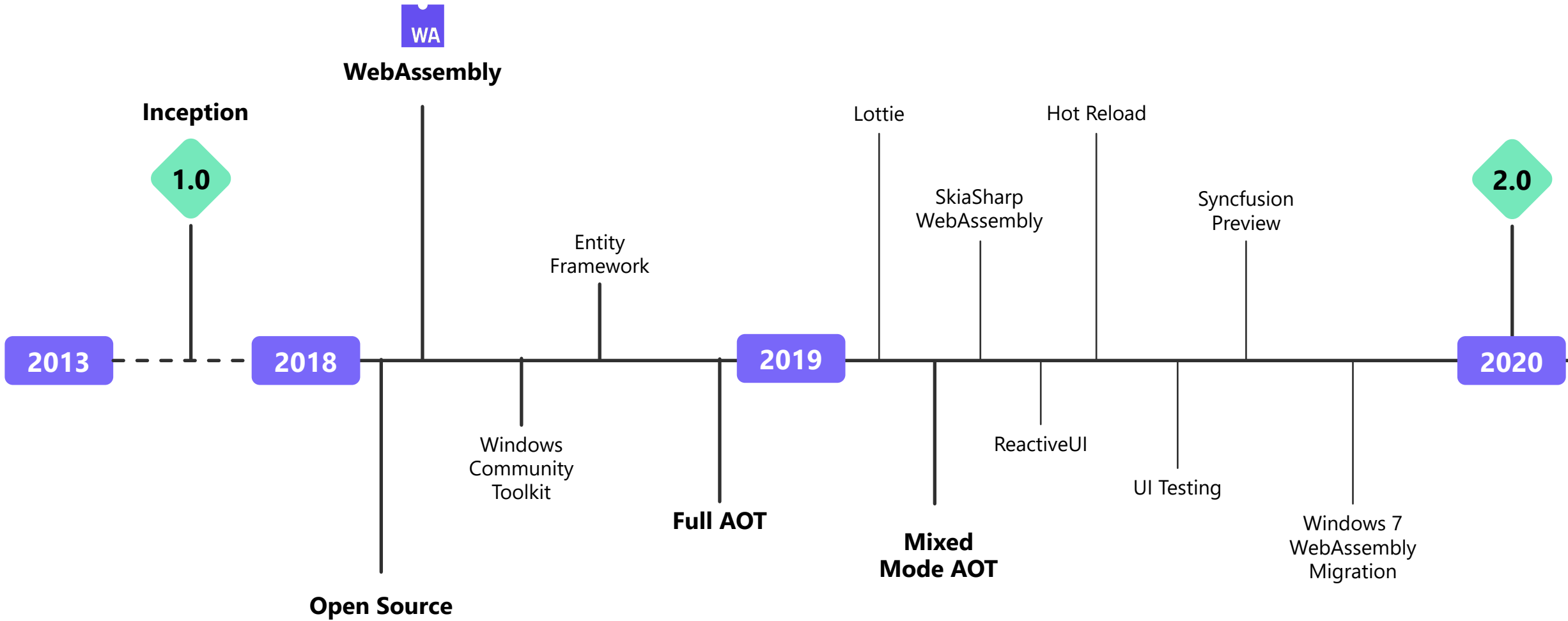
3.

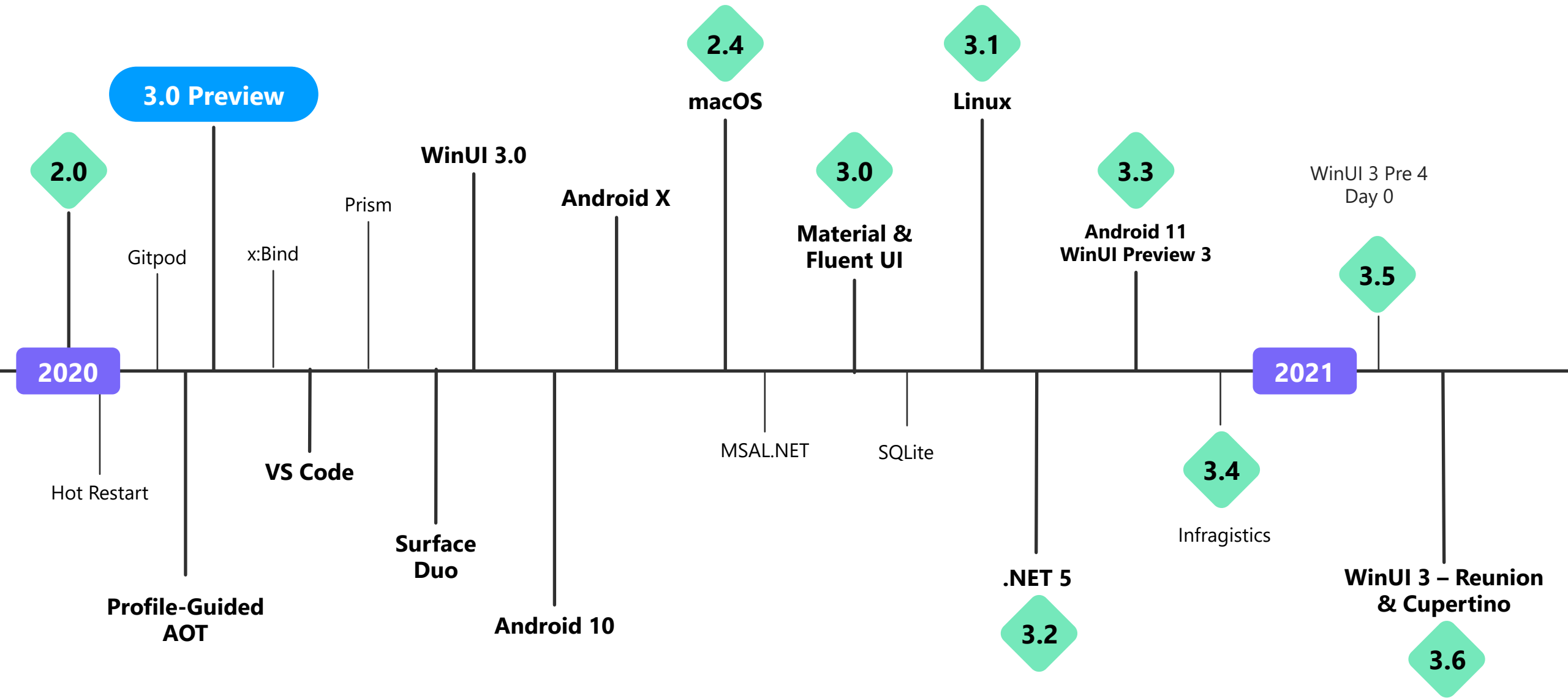
- Skill
- Training
- Dev Availability

The Solution

Write your application once, in XAML and C#, and
deploy it to every platform





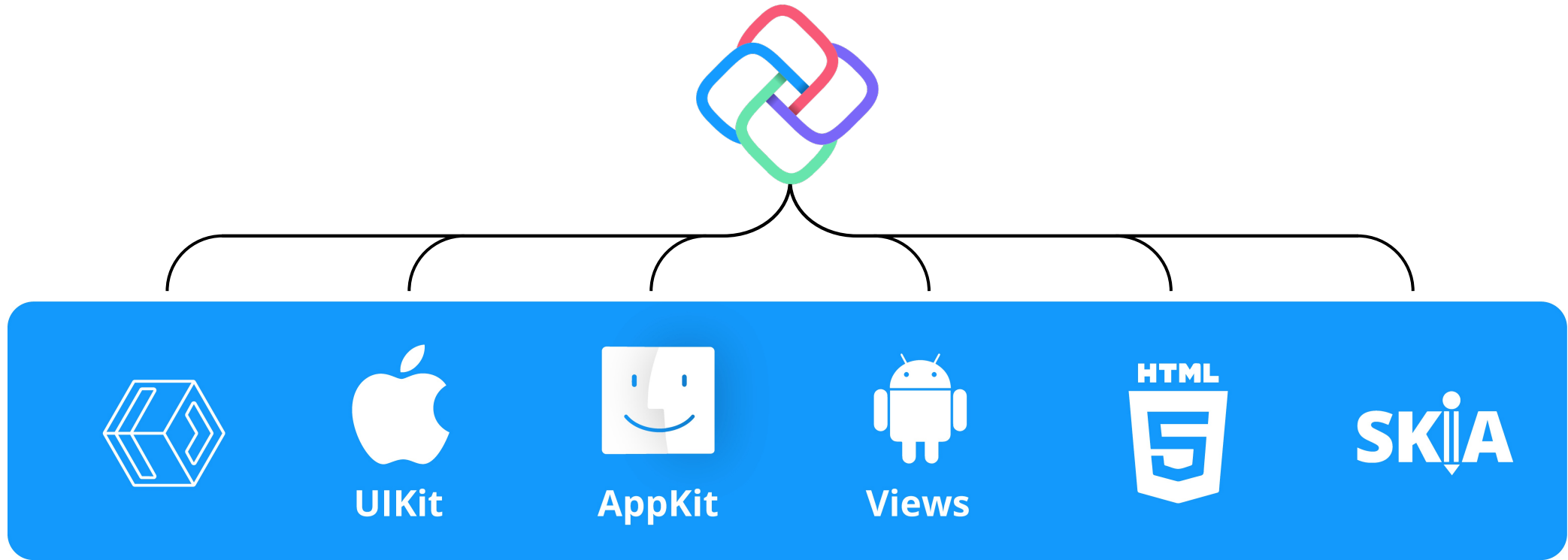


#WinUIEverywhere



- WinUI **XAML** + C#
- **Pixel-Perfect**
- Single **Codebase**
- Everywhere **.NET** runs
- **3rd** party Ecosystem
- **Free** and **Open-Source**

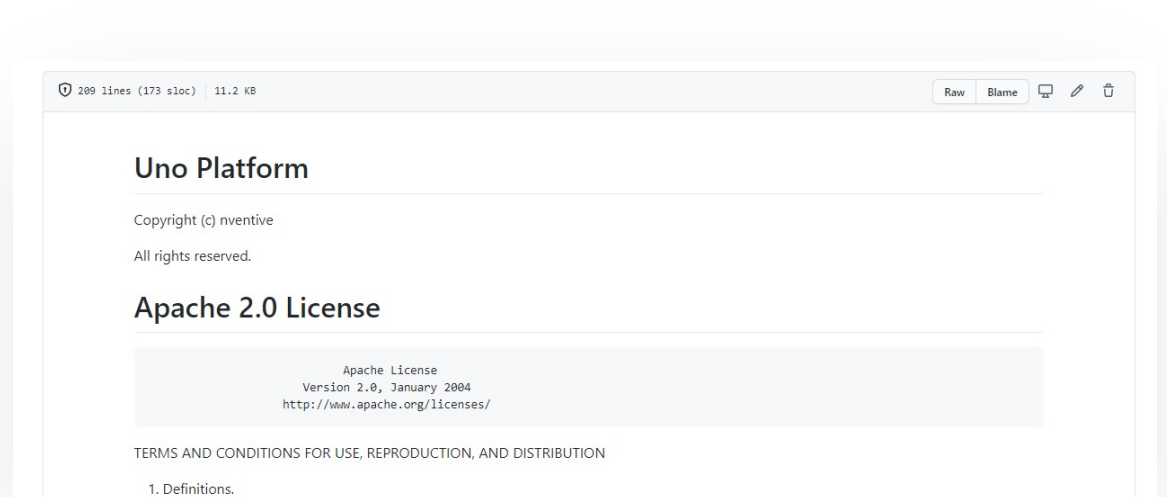
Truly Native



Licensing & Sustainability

Uno Platform is Free
Open-Source Software (FOSS)

Sustained through the 'Red Hat'
model (paid enterprise support)



The screenshot shows a code editor window with the following content:

```
289 lines (173 sloc) | 11.2 KB
```

Raw Blame

Uno Platform

Copyright (c) nventive
All rights reserved.

Apache 2.0 License

```
Apache License  
Version 2.0, January 2004  
http://www.apache.org/licenses/
```

TERMS AND CONDITIONS FOR USE, REPRODUCTION, AND DISTRIBUTION

1. Definitions.

Every Pixel



XAML

```
<Grid Background="White" Padding="50">  
  <TextBlock Text="{Binding Value, ElementName=slider}"  
    << Margin="20"  
    << FontSize="30" -/>  
  <Slider x:Name="slider" -/>  
</Grid>
```

Linux

macOS

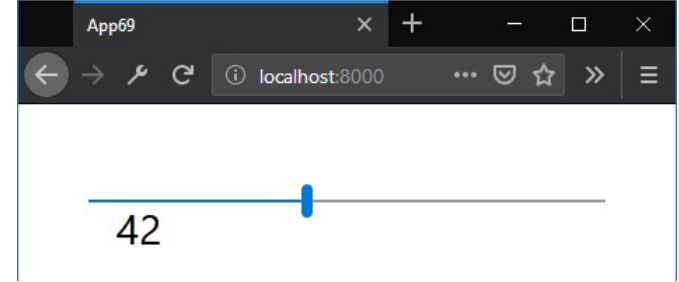
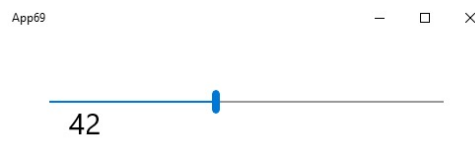
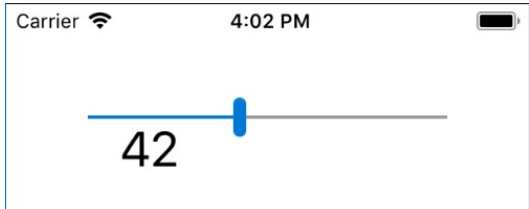


iOS

WINDOWS

ANDROID

WEBASSEMBLY



XAML Support

Control Templating / Data Templating

Styling / Theming

Conditional XAML

Native Controls integration



























































Animations (VisualStates, StateTriggers)

DataBinding / Property Inheritance / x:Bind functions

Shapes and Brushes

Check out these and more at <http://gallery.platform.uno>

Coverage

 Button Updated A control that responds to user input and raises a Click event.	 CheckBox A control that a user can select or clear.	 ComboBox A drop-down list of items a user can select from.	 DropDownButton A button that displays a flyout of choices when clicked.	 HyperlinkButton A button that appears as hyperlink text, and can navigate to a URI or handle a Click event.	 RadioButton Updated A control that allows a user to select a single option from a group of options.	 RepeatButton Updated A button that raises its Click event repeatedly from the time it's pressed until it's released.	 Slider A control that lets the user select from a range of values by moving a Thumb control along a track.
 ToggleSplitButton A version of the SplitButton where the activation target toggles on/off.	 ToggleSwitch A switch that can be toggled between 2 states.	 ColorPicker A control that displays a selectable color spectrum.	 RatingControl Rate something 1 to 5 stars.	 ToggleSplitButton A version of the SplitButton where the activation target toggles on/off.	 GridView Updated A control that presents a collection of items in rows and columns.	 DataGrid The DataGrid control presents data in a customizable table of rows and columns.	 TreeView The TreeView control is a hierarchical list pattern with expanding and collapsing nodes that contain nested items.
 ContentDialog A dialog box that can be customized to contain any XAML content.	 Flyout Shows contextual information and enables user interaction.	 Border A container control that draws a boundary line, background, or both, around another object.	 Canvas A layout panel that supports absolute positioning of child elements relative to the top left corner of the canvas.	 Grid A layout panel that supports arranging child elements in rows and columns.	 RelativePanel A panel that uses relationships between elements to define layout.	 SplitView A container that has 2 content areas, with multiple display options for the pane.	
 RadioButtons New A control that displays a group of mutually exclusive options with keyboarding and accessibility support.	 StackPanel A layout panel that arranges child elements into a single line that can be oriented horizontally or vertically.	 ViewBox A container control that scales its content to a specified size.	 Image A control to display image content.	 PersonPicture Displays the picture of a person/contact.	 WebView A control that hosts HTML content in an app.	 AppBarButton Updated A button that's styled for use in a CommandBar.	
 AppBarSeparator A vertical line that's used to visually separate groups of commands in an app bar.	 AppBarToggleButton Updated A button that can be on, off, or indeterminate like a CheckBox, and is styled for use in an app bar or other specialized UI.	 CommandBar A toolbar for displaying application-specific commands that handles layout and resizing of its contents.	 MenuFlyout Shows a contextual list of simple commands or options.	 Connected Animation Connected animations continue elements during page navigation and help the user maintain their context between views.	 Easing Functions Easing is a way to manipulate the velocity of an object as it animates.	 Implicit Transitions Use Implicit Transitions to automatically animate changes to properties.	
 Page Transitions Page transitions provide visual feedback about the relationship between pages.	 Theme Transitions Theme transitions are pre-packaged, easy-to-apply animations.	 NavigationView Updated Common vertical layout for top-level areas of your app via a collapsible navigation menu.	 Pivot Presents information from different sources in a tabbed view.	 TabView New A control that displays a collection of tabs that can be used to display several documents.	 ScrollViewer A container control that lets the user pan and zoom its content.	 SemanticZoom Lets the user zoom between two different views of a collection, making it easier to navigate through large collections of items.	
 AutomationProperties New Attributes that help with writing accessible XAML.	 ToolTip Updated Displays information for an element in a pop-up window.	 ProgressBar New Shows the apps progress on a task, or that the app is performing ongoing work that doesn't block user interaction.	 Acrylic Updated A translucent material recommended for panel backgrounds.	 ColorPaletteResources A type of resource that allows you to apply custom colors to your controls.	 Compact Sizing How to use a Resource Dictionary to enable compact sizing.	 Reveal A material that changes color near the mouse.	
 Reveal Focus Customize the style of your focus rectangles.	 AutoSuggestBox A control to provide suggestions as a user is typing.	 NumberBox New A text control used for numeric input and evaluation of algebraic equations.	 PasswordBox A control for entering passwords.	 TextBlock A lightweight control for displaying small amounts of text.	 TextBox A single-line or multi-line plain text field.	 RichTextBlock A control that displays formatted text, hyperlinks, inline images, and other rich content.	

Localization and Images

Assets added only once

Add assets as in WinUI/UWP
(with `.scale-` suffix)

Don't bother with iOS `@2x`, `@3x` or android densities (`mdpi`, `hdpi`, `xhdpi`)

Supports for localized assets
(`.lang-` suffix)

Localize strings only once

Use WinUI's `.resw` files

Don't bother with iOS plist files or Android `strings.xml`

Themes

Fluent UI

Button Checked

Text Button Unchecked

← Indeterminate

TextBox Checked

Disabled Unchecked

ToggleSwitch Disabled

Material

CONTAINED Checked

OUTLINED Unchecked

TEXT Indeterminate

Outlined Text Checked

Outlined with icon Unchecked

ToggleSwitch Disabled

Cupertino

DEFAULT Checked

CONTAINED Unchecked

Placeholder Text Indeterminate

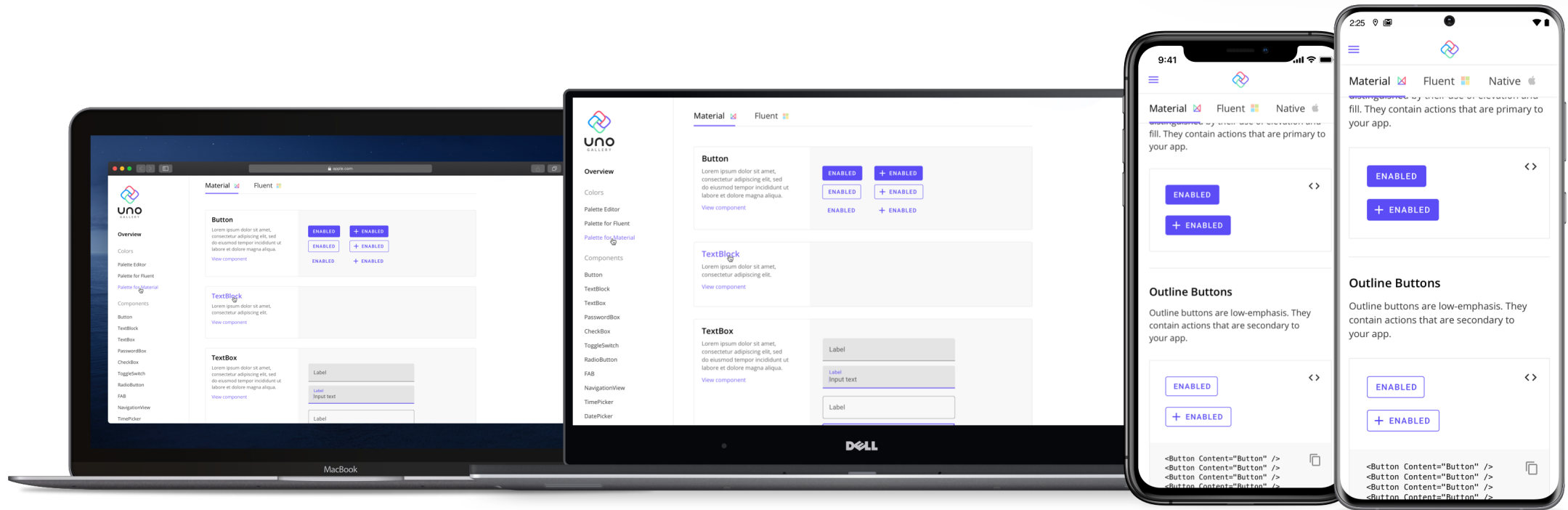
Multine TextBox. Lorem ipsum dolor sit amet, consectetur adipiscing elit. Praesent pretium augue ut lectus consequat lobortis. Orci varius natoque penatibus et magnis dis parturient congue augue ipsum et nulla. Checked

ToggleSwitch Disabled Unchecked

Uno Gallery



See more at
platform.uno/gallery



Reuse existing libraries

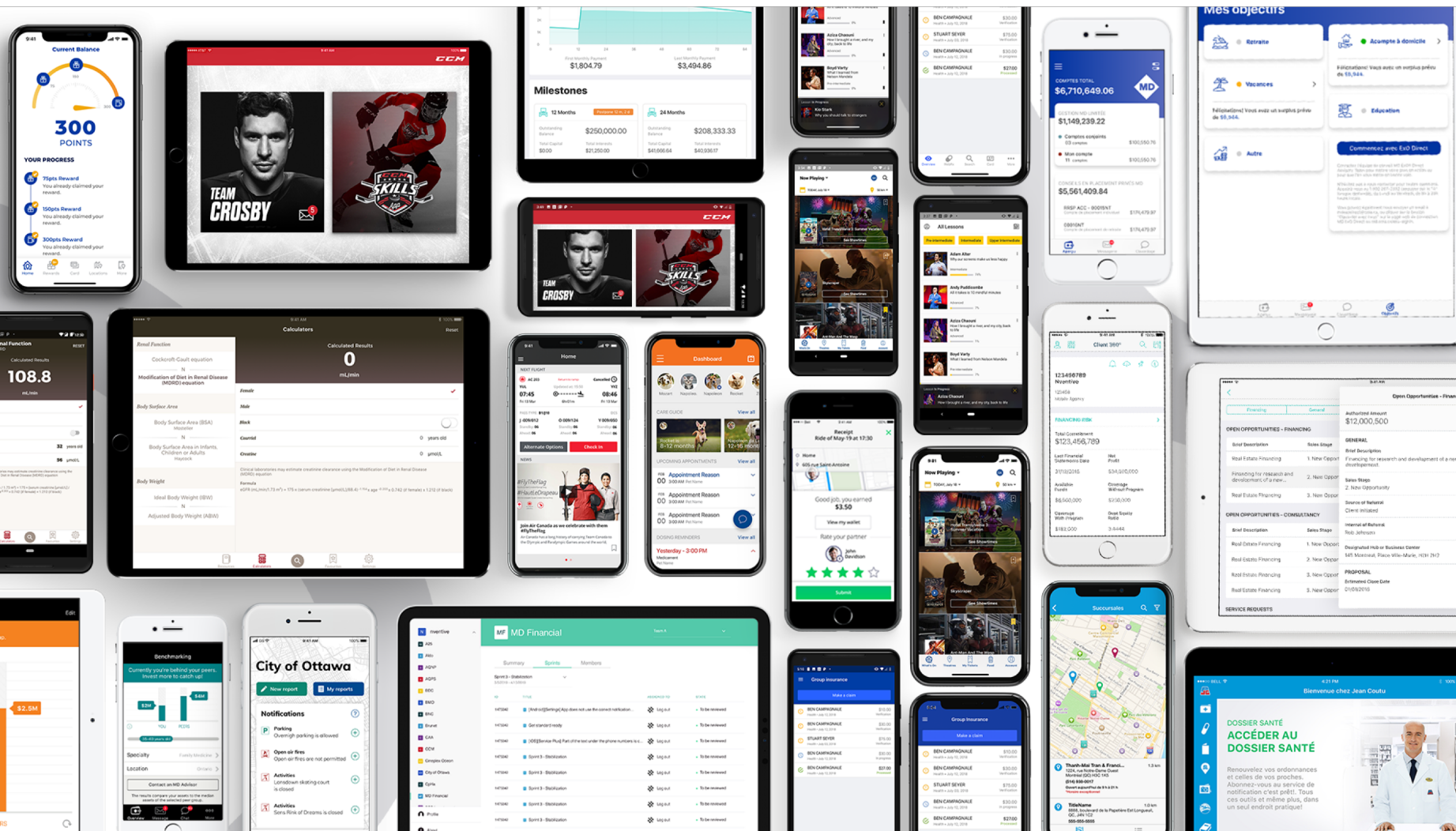
Any .NET Standard 2.0 library

3rd party controls from Syncfusion, Infragistics. Others coming.

Presentation frameworks like RxUI, Prism, MvvmCross



Customers

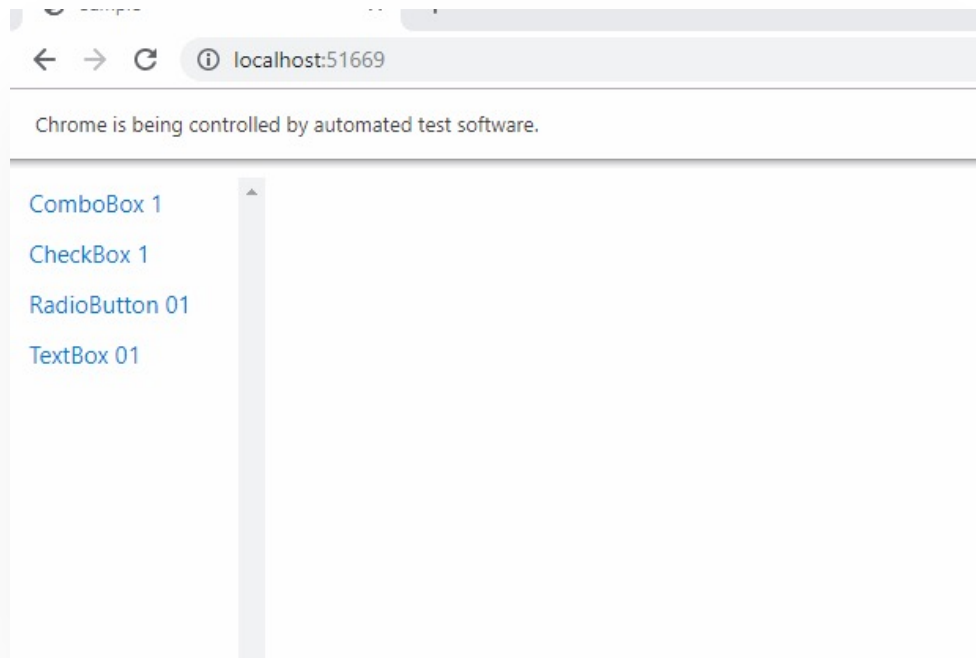


UI Testing with Uno.UI Test

Cross Platform UI Testing

Xamarin.UI Test for iOS/Android

Selenium for WebAssembly



```
[Test]
0 references | Jerome Laban, 11 days ago | 1 author, 1 change | 0 exceptions
public void TextBox01()
{
    Query testSelector = q => q.Text("TextBox 01");
    Query tb01 = q => q.Marked("tb01");
    StringQuery textSelector = q =>
        tb01(q).GetDependencyPropertyValue("Text").Value<string>();

    App.WaitForElement(testSelector);
    App.Tap(testSelector);

    App.WaitForElement(tb01);

    App.Screenshot("tb01 - Initial");

    App.WaitForDependencyPropertyValue(tb01, "Text", "");

    App.Tap(tb01);
    App.Screenshot("tb01 - Step 1");

    App.EnterText(tb01, "Hello Uno!");

    App.WaitForDependencyPropertyValue(tb01, "Text", "Hello Uno!");

    App.Screenshot("tb01 - with text");

    App.ClearText(tb01);

    App.WaitForDependencyPropertyValue(tb01, "Text", "");

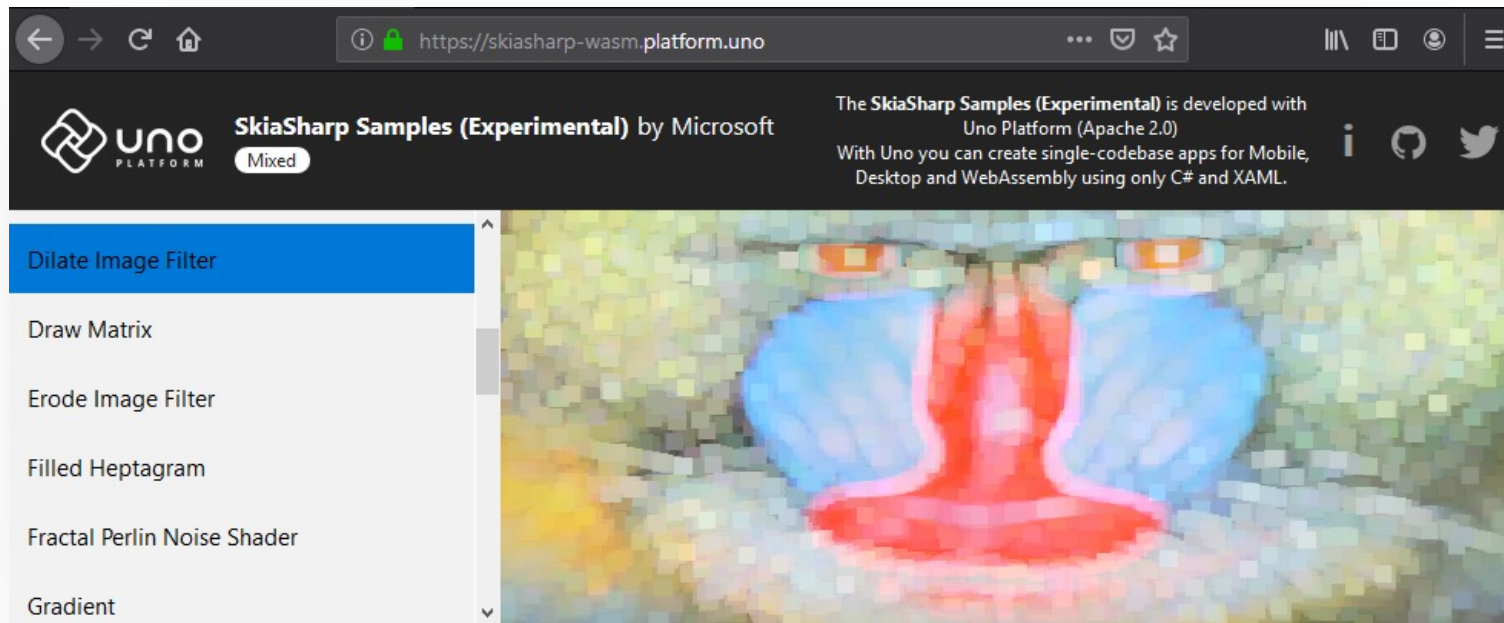
    App.Screenshot("tb01 - cleared");
}
```

SkiaSharp Support for WebAssembly

Support of the Skia rendering engine on WebAssembly

Provided for .NET through SkiaSharp

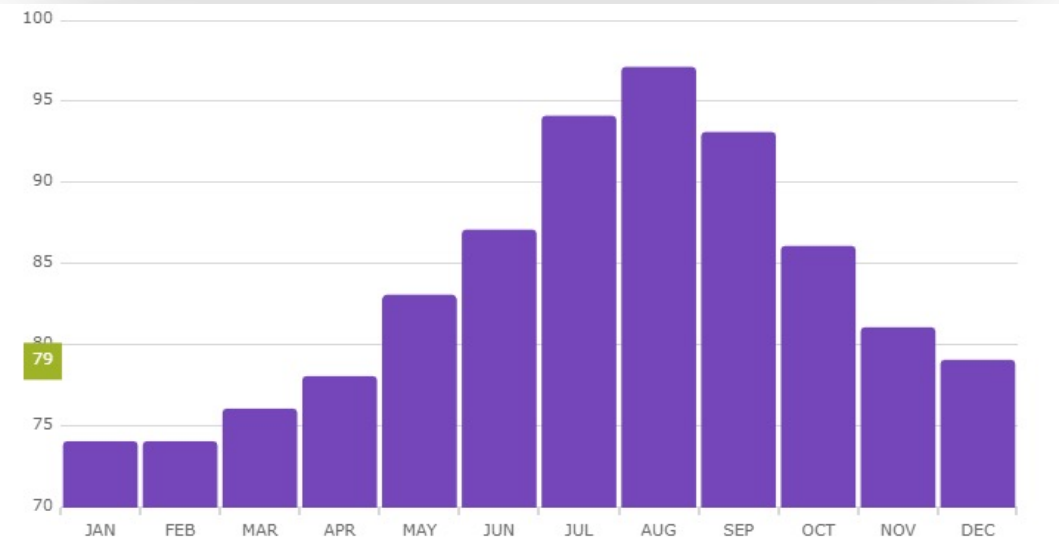
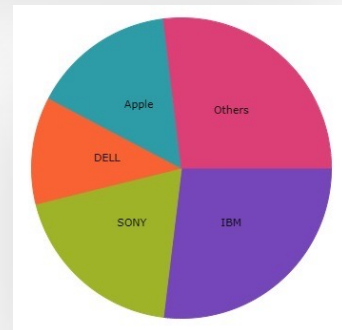
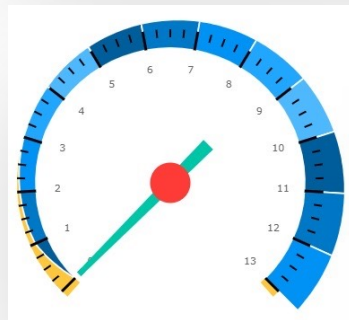
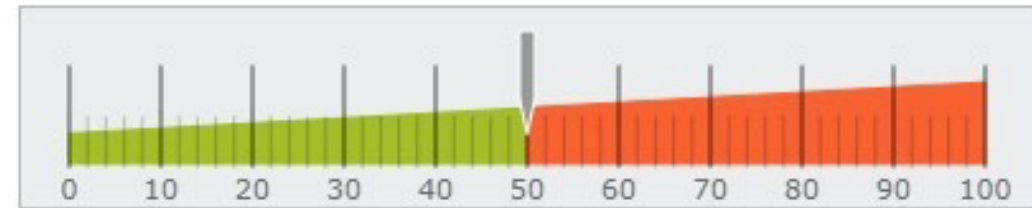
SKXamlCanvas for Uno Platform



Infragistics Controls for Uno Platform

<https://platform.uno/blog/infragistics-announces-uno-platform-specific-ui-controls/>

Order ID	Product Name	↑Price	Ord...	Order Va...	Order Da...	Country	Margin	Profit
Status: Delivered								
1032	Seagate SSD	\$118.40	15	\$1,776	3/23/2019		5%	\$89
1102	AMD GPU	\$120.16	14	\$1,682	2/20/2019		3%	\$50
1145	WD HDD	\$163.99	9	\$1,476	1/22/2019		5%	\$74
1099	Intel CPU	\$176.19	8	\$1,410	8/15/2019		3%	\$42
1096	Asus HDD	\$178.55	11	\$1,964	6/22/2019		5%	\$98
1161	AMD Motherbo...	\$187.70	8	\$1,502	8/15/2019		3%	\$45
1006	AMD GPU	\$209.21	16	\$3,347	9/27/2019		5%	\$167
1200	Seagate HDD	\$228.02	25	\$5,701	8/16/2019		3%	\$171



Uno Platform Playground

Built with Uno to demo Uno

Uno Gallery App



SAMPLES LIST

- Animation
- Borders
- Button
- Canvas
- CheckBox

The screenshot shows the Uno Platform Playground interface. On the left is a 'SAMPLES LIST' with categories like Animation, Borders, Button, Canvas, and CheckBox. The main area is divided into three sections: 'XAML EDITOR' at the top, 'Data Context' at the bottom, and 'XAML VISUALIZER' on the right. The XAML Editor contains code for a StackPanel and TextBlock. The Data Context section shows a JSON-like structure with a message and tips. The XAML Visualizer displays the rendered output, including a welcome message and a list of tips.

XAML EDITOR
`<StackPanel Orientation="Vertical" Spacing="10" Margin="10">
<!-- Type your favorite XAML code here
...or pick a snippet on the left. -->

<TextBlock Text="{Binding message}"
FontSize="22" />

<TextBlock>
- This is an experimental preview of UWP on #wasm. We're contin
<LineBreak />
- The underlying platform (wasm) is in preview and is
- The underlying platform (wasm) is in preview and is`

XAML EDITOR

XAML VISUALIZER

Data Context
{
 message: "Welcome to
 tips: [
 "You can bind two
 "You can click \"

Welcome to the we
Playground!

- This is an **experimental** preview
We're continuously adding support
come back often!
- The underlying platform (wasm)
running in a mode which isn't
product performance. More
stefan-schweiger/dotWasm
use Firefox o

DATACONTEXT EDITOR & VISUALIZER

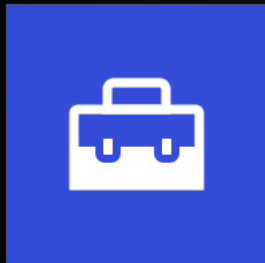
Demos



WinUI



INFRAGISTICS®



**Windows
Community
Toolkit**



SynCFusion®

Draw

3x

Fill out presentation feedback form for a chance to win

platform.uno/prize-draw



Thank You!

1

Try Uno Platform:
platform.uno

2

Talk to us on Discord:
platform.uno/discord
#uno-platform

3

Report any issues:
github.com/unoplatform

4

Microsoft AppConsult and Uno
Early Access POC
info@platform.uno