Create Applications with WinUI – Everywhere!

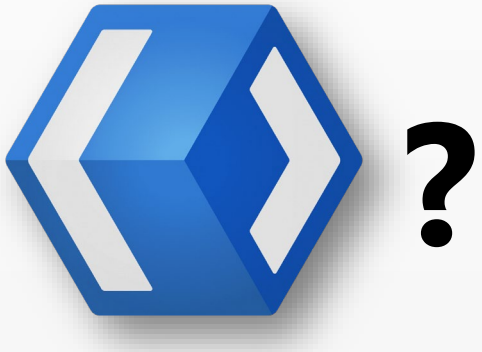
Steve Bilogan | Senior Developer @ Uno Platform

@BiloganSteve | @UnoPlatform

kazo0

.NET Frontend Day

What is WinUI?



Following slides courtesy of Ryan Demopoulos from UnoConf 2020

Windows Desktop (Win32) Apps

Windows UWP Apps

Challenges with UWP XAML:

1. Can't be used by all types of apps (UWP only)
2. Difficult to deliver new features into mass market
3. Inconsistent behavior across OS versions

Native C++

.NET

C++ & .NET

Windows Desktop (Win32) Apps

MFC 1992

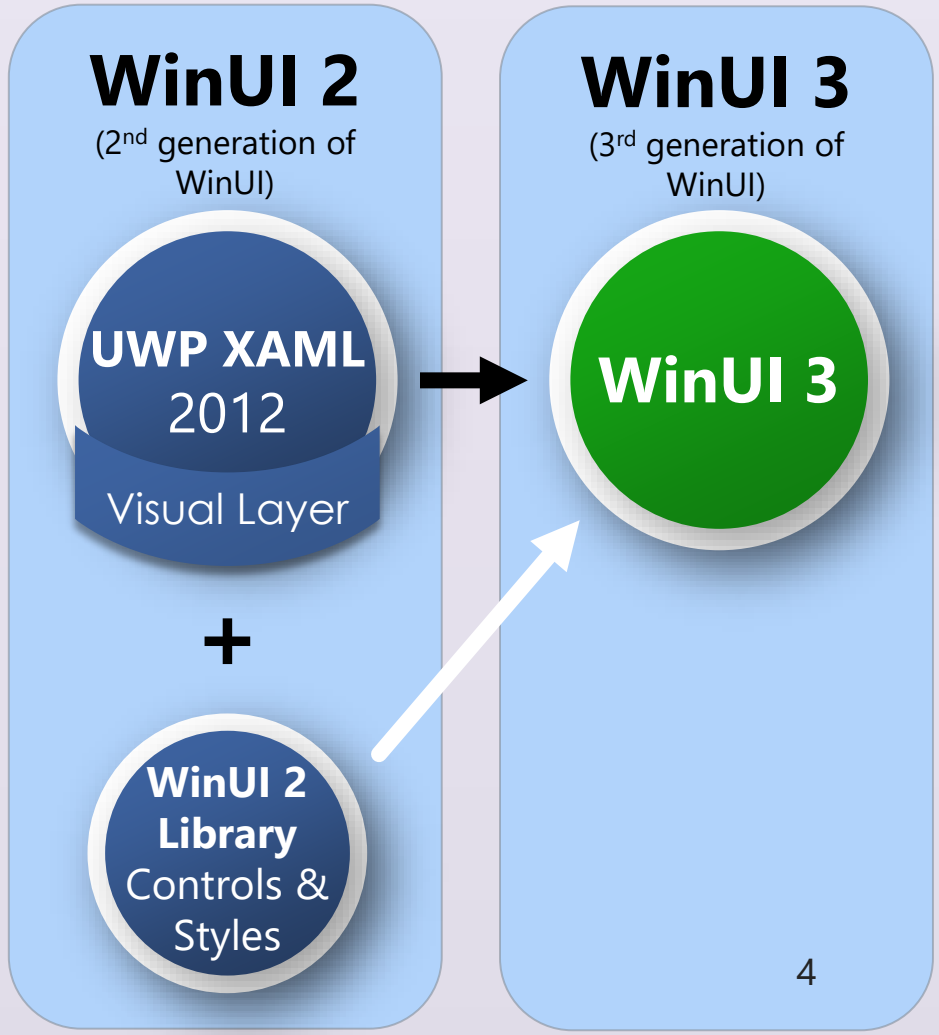
WinForms 2002

WPF 2006

Benefits of decoupled library:

- Can backport new features on day 1
- Consistent behavior across OS versions
- ~~Faster updates for controls (~3x yearly)~~
- Faster updates for *all* UX features (~3x yearly)

Windows UWP Apps



Windows Desktop (Win32) Apps

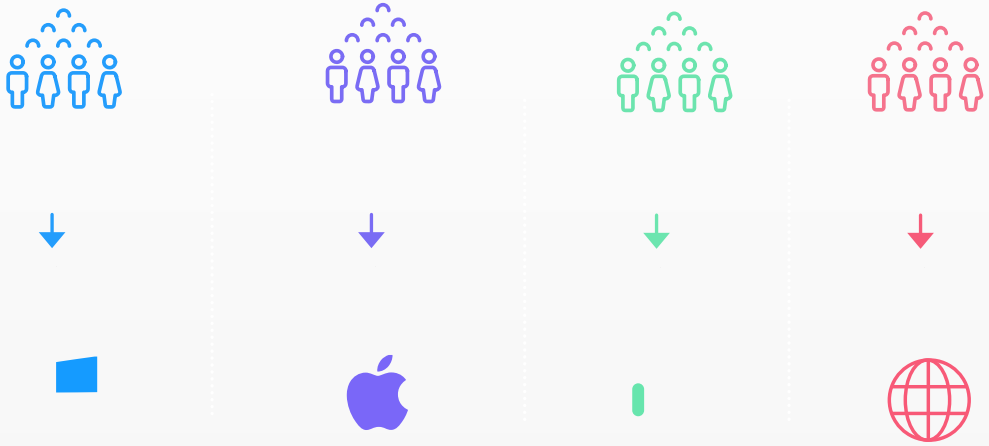
Windows UWP Apps

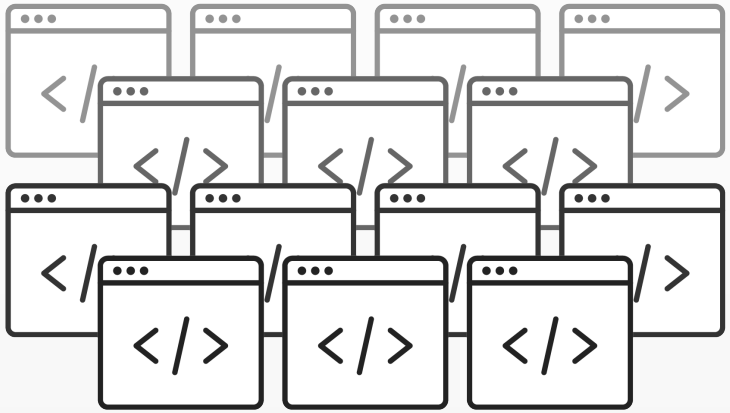
Benefits of decoupled library:

- Can backport new features on day 1
- Consistent behavior across OS versions
- Faster updates for controls (~3x yearly)
- Faster updates for *all* UX features (~3x yearly)
- Can be used by UWP and/or Win32 apps

What is Uno Platform?

The Problem





1.

- Cross-platform development
- Effort duplication

2.

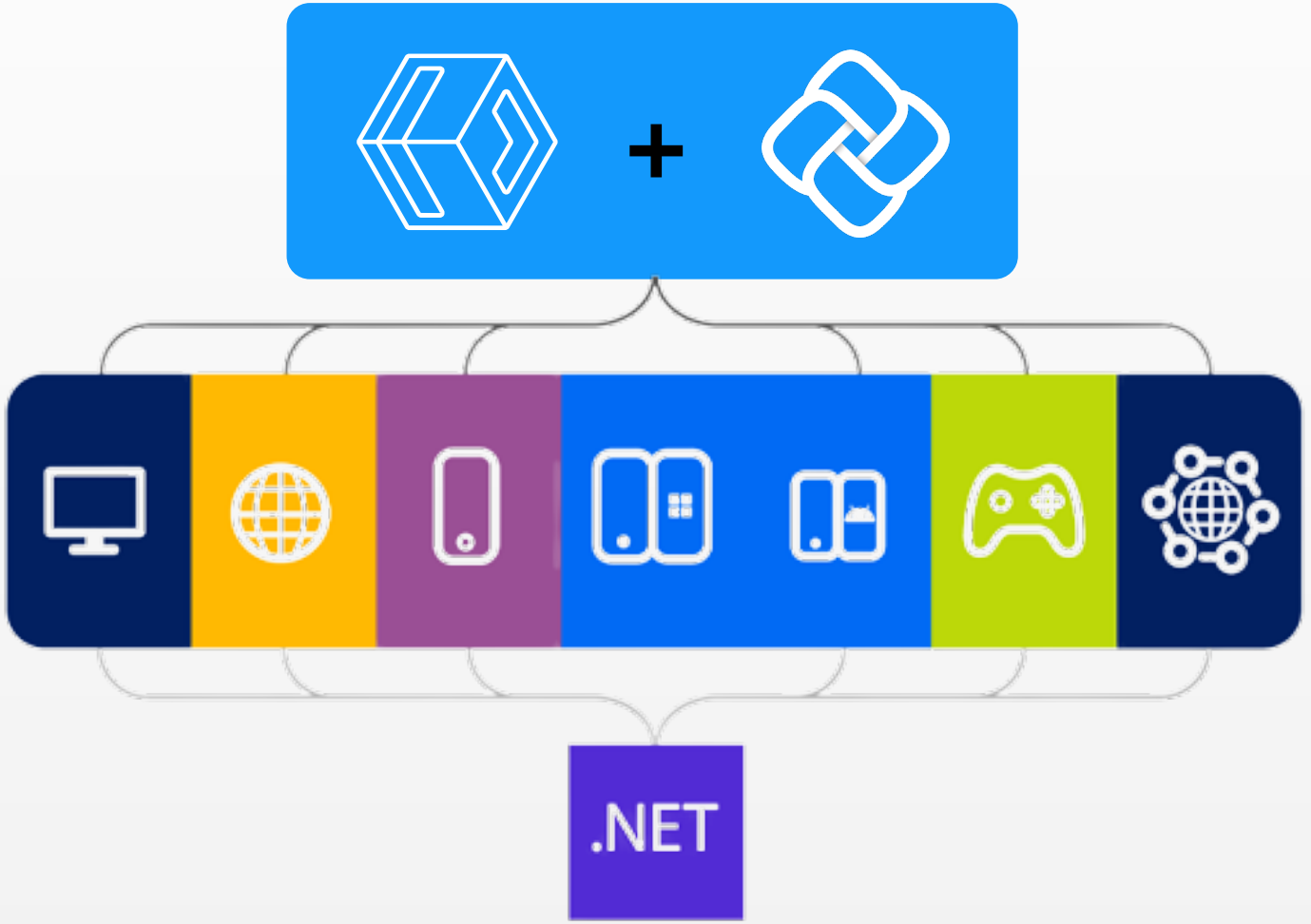
- Legacy business applications migration to web
- High rewrite cost

3.

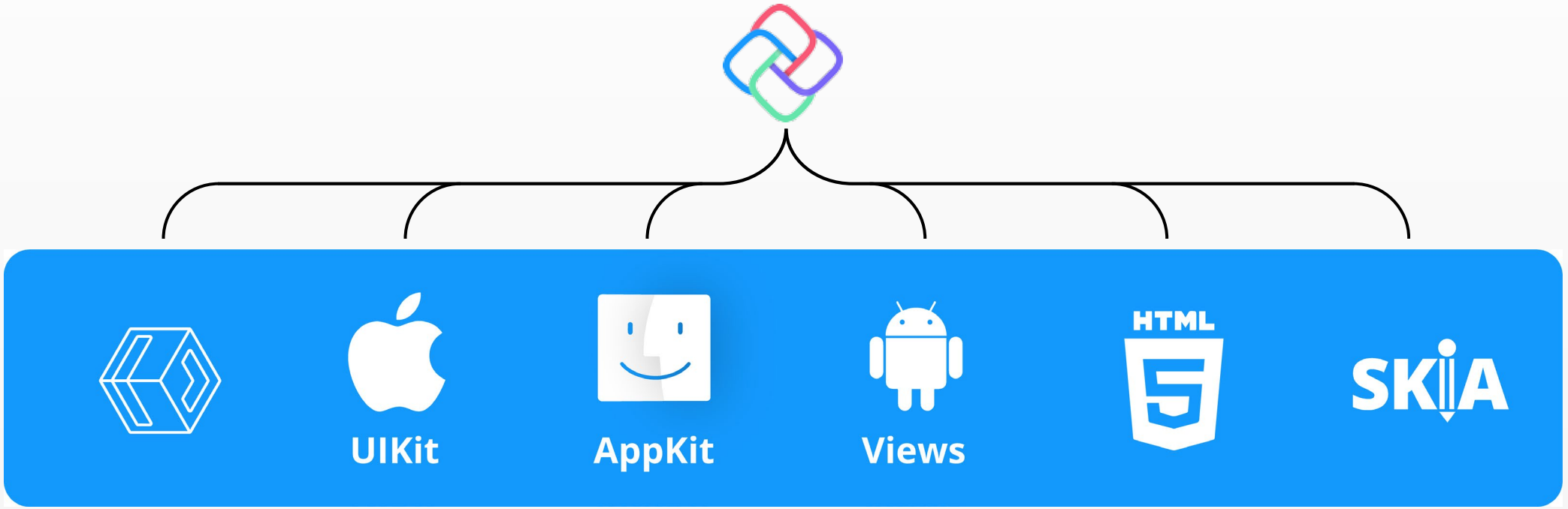
- Skill
- Training
- Dev Availability

The Solution

Truly universal, pixel-perfect, open standards platform built on decades of investment in Windows ecosystem enabled by recent, not yet fully utilized, technology advancements

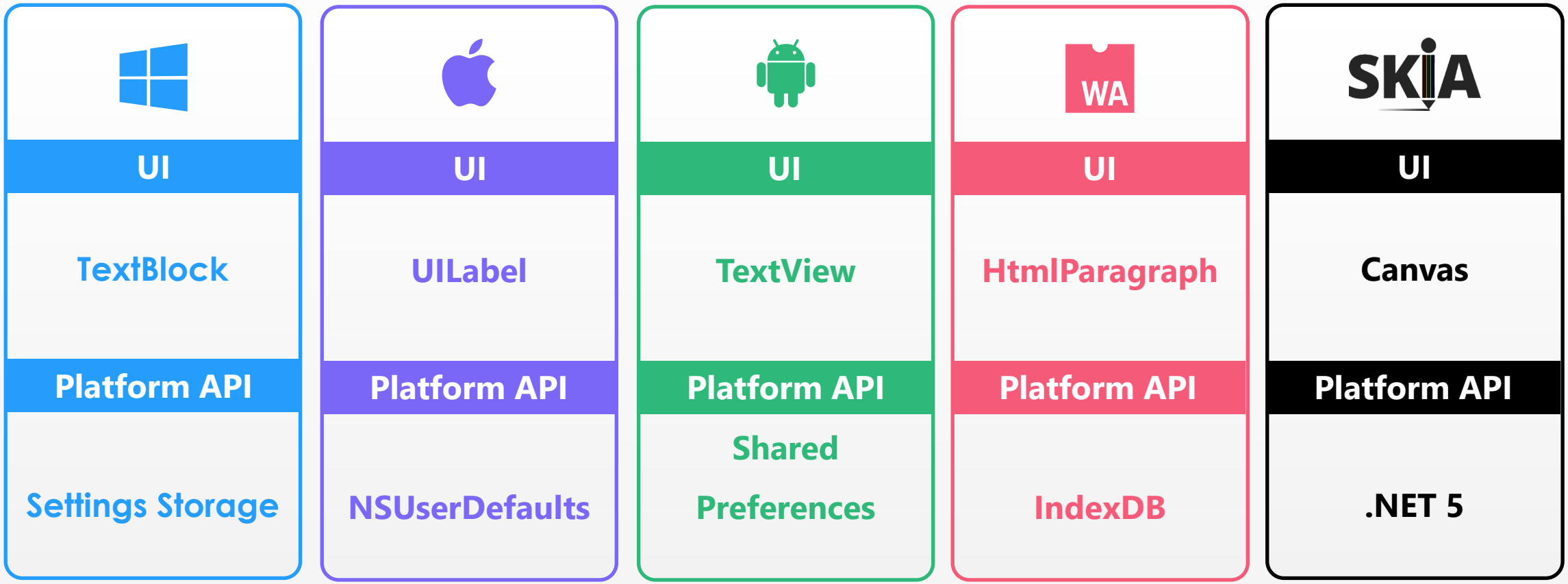


Truly Native

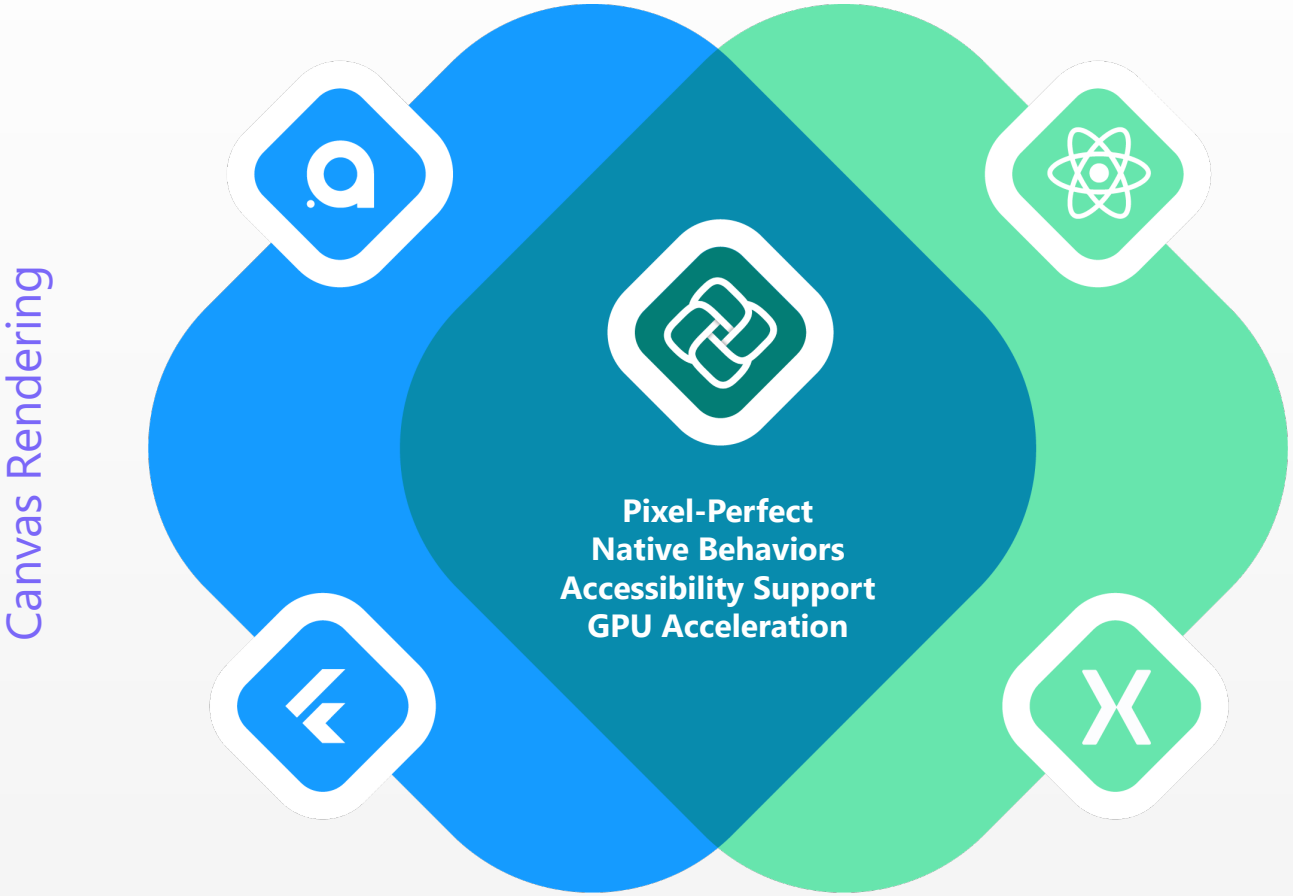


uno PLATFORM

Truly Native

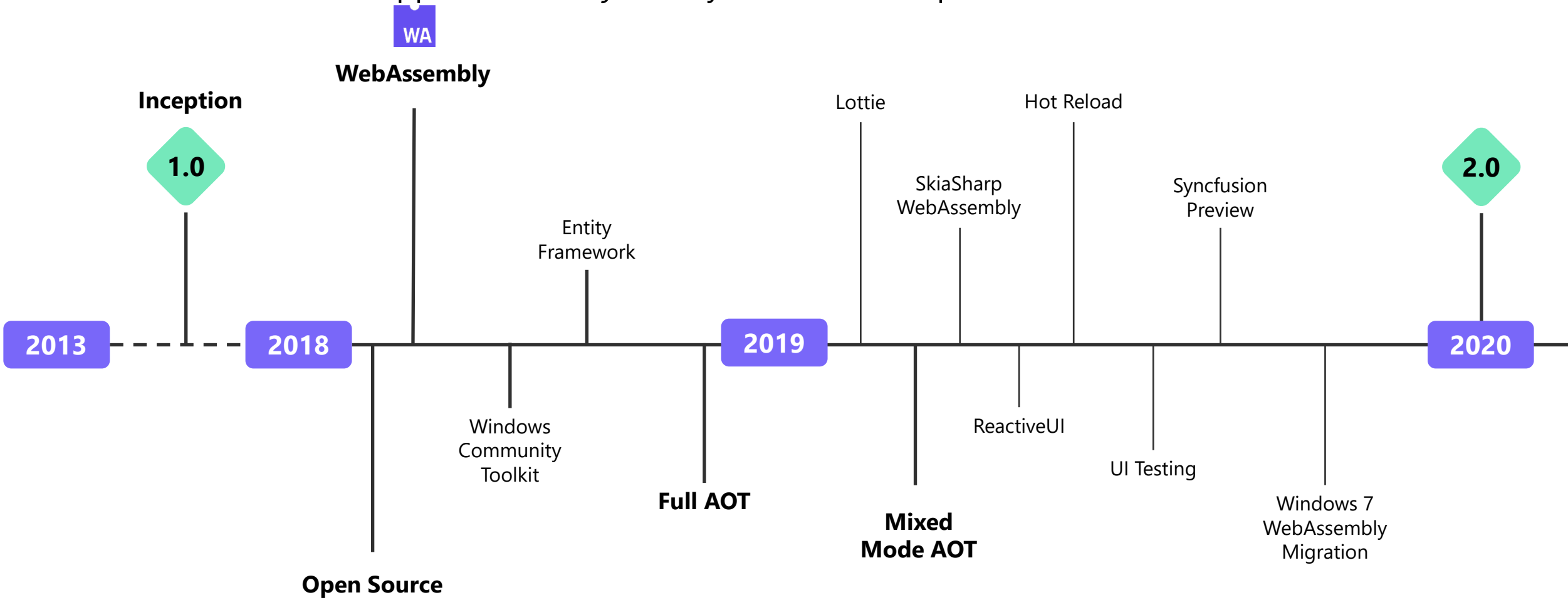


Every Pixel


Canvas Rendering
Native Rendering
Pixel-Perfect
Native Behaviors
Accessibility Support
GPU Acceleration
Lookless /
Control Templating

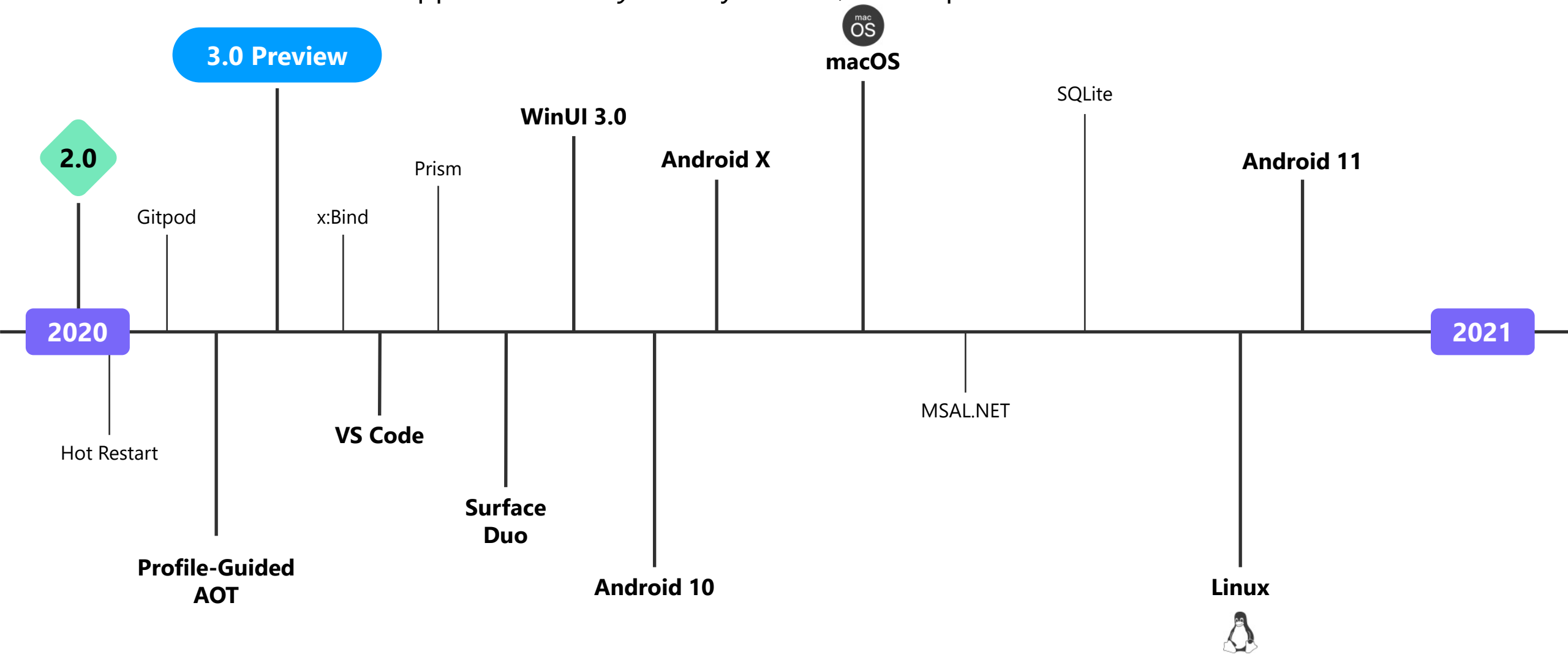
Uno Platform

Mission: Make WinUI-built apps run *natively* on any mobile, desktop or web where WinUI doesn't run on



Uno Platform

Mission: Make WinUI-built apps run *natively* on any mobile, desktop or web where WinUI doesn't run on



XAML

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               Margin="20"
               FontSize="30" />
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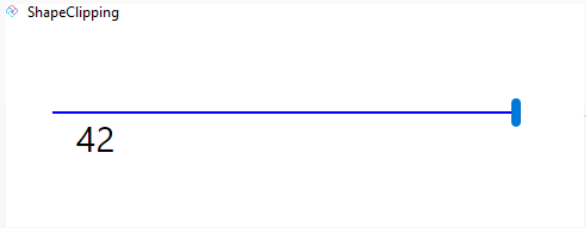
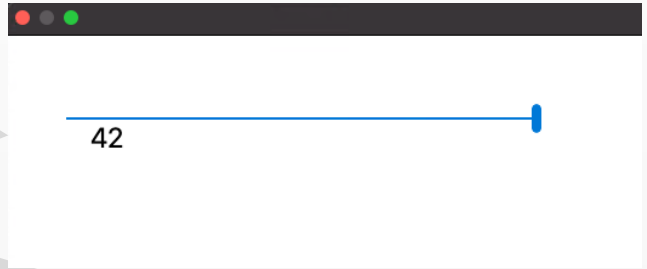
</Grid>
```

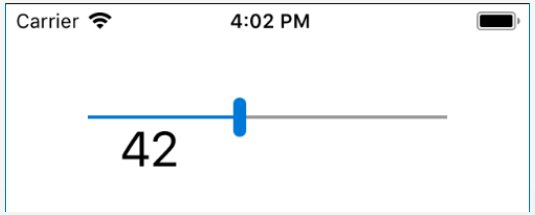
Linux



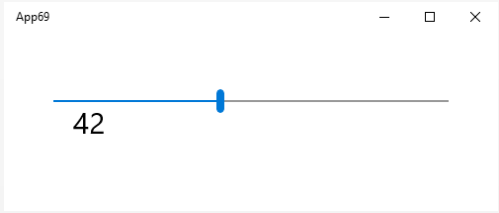
macOS



iOS

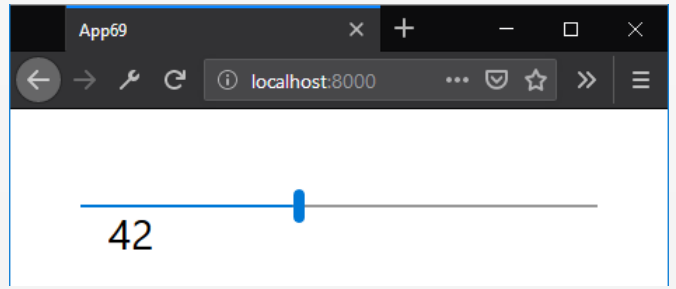


WINDOWS



ANDROID

WEBASSEMBLY



XAML Support

- Control Templating / Data Templating
- Styling / Theming
- Conditional XAML
- Native Controls integration
- Animations (VisualStates, StateTriggers)
- DataBinding / Property Inheritance / x:Bind functions
- Complex TextBlocks
- Shapes and Brushes

Localization and Images

- Assets added only once
  - Add assets as in UWP (with .scale- suffix)
    - Don’t bother with iOS @2x, @3x or android densities (mdpi, hdpi, xhdpi).
  - Supports for localized assets (.lang- suffix)

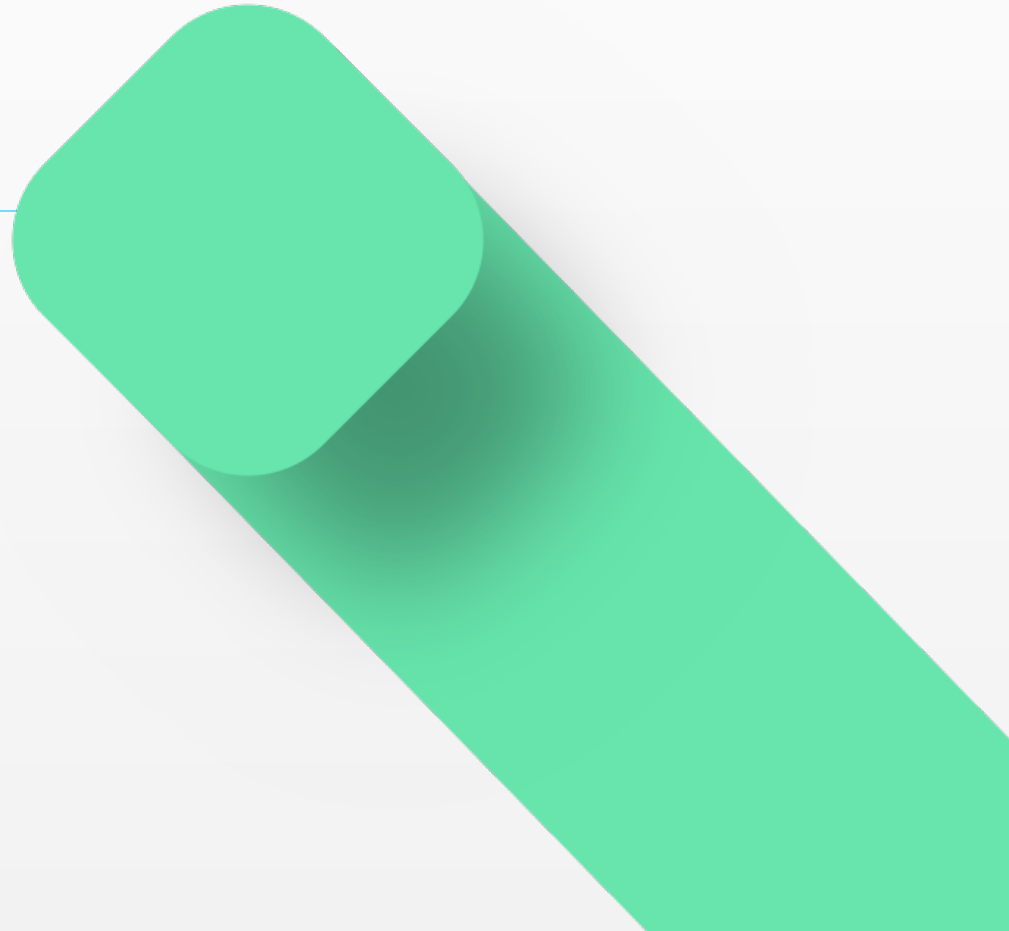
- Localize strings only once
  - Use the UWP’s .resw files.
    - Don’t bother with iOS plist files or Android strings.xml

XAML HotReload

- Modify the XAML of a live application
- Supports iOS, Android and WebAssembly
- Supports partial reload
- Supported in online environments like GitPod

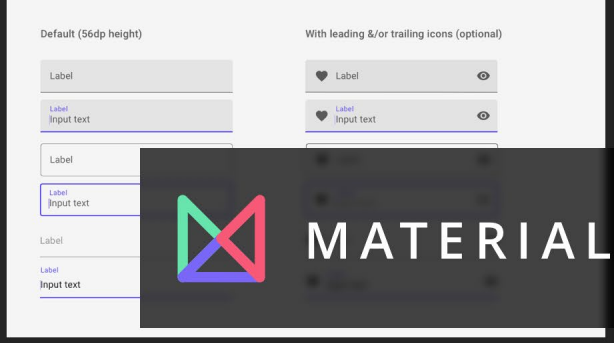
Hot Reload

DEMO

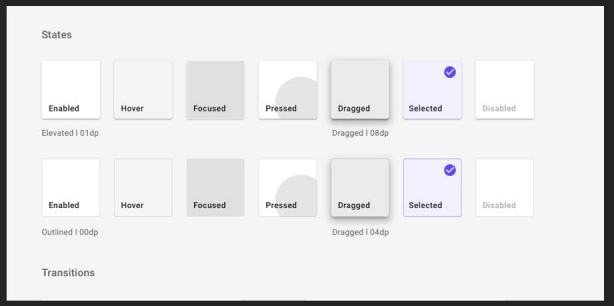


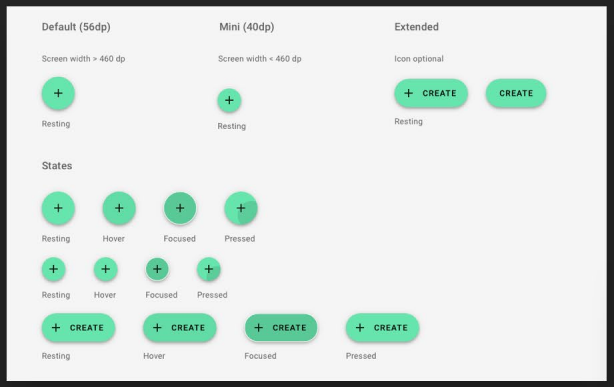
Ecosystem

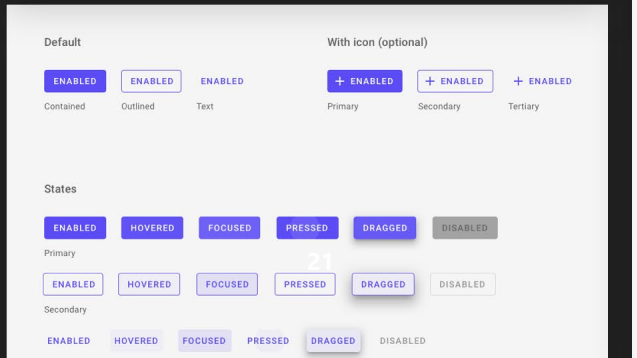
uno-fluentUI-assets

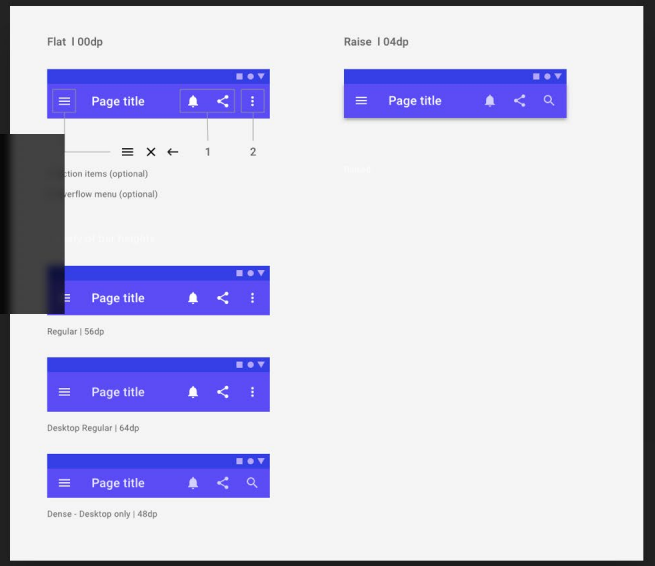

Default (56dp height)
With leading &/or trailing icons (optional)
Label
Input text

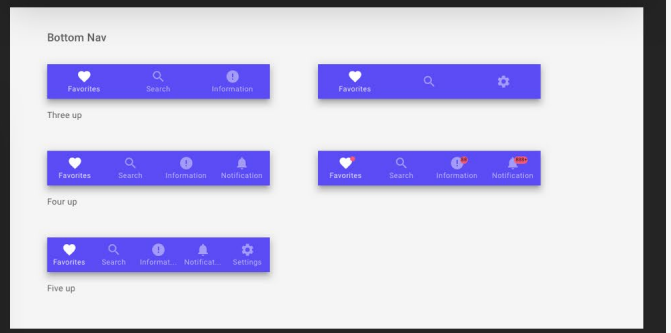
MATERIAL

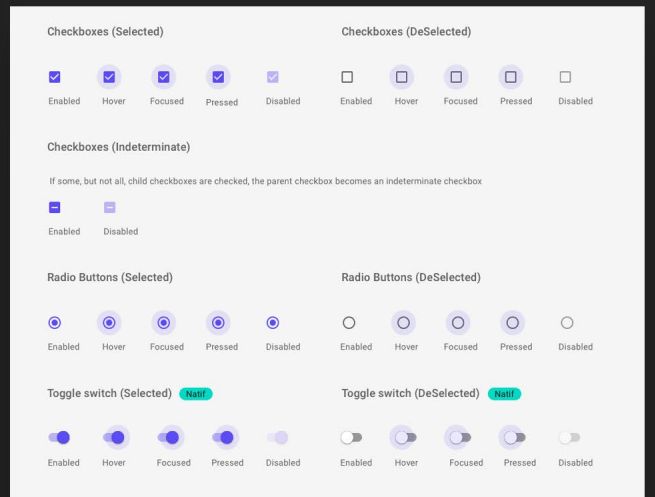

States
Enabled
Hover
Focused
Pressed
Dragged
Selected
Disabled
Elevated | 01dp
Dragged | 08dp
Outlined | 00dp
Dragged | 04dp
Transitions

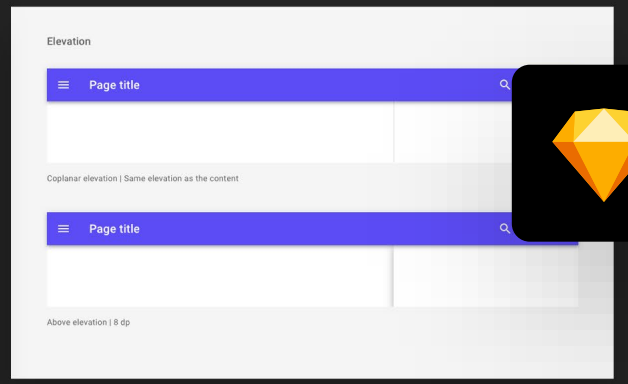

Default (56dp)
Mini (40dp)
Extended
Screen width > 460 dp
Screen width < 460 dp
Icon optional
CREATE
Resting
States
Hover
Focused
Pressed

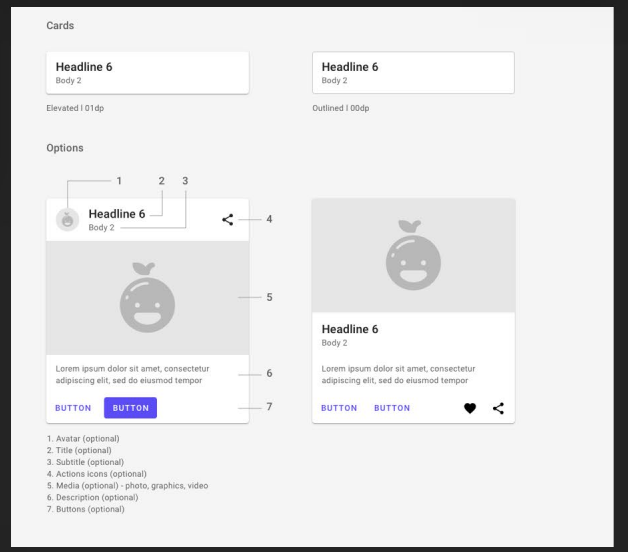

Default
With icon (optional)
ENABLED
Contained
Outlined
Text
Primary
Secondary
Tertiary
States
HOVERED
FOCUSED
PRESSED
DRAGGED
DISABLED

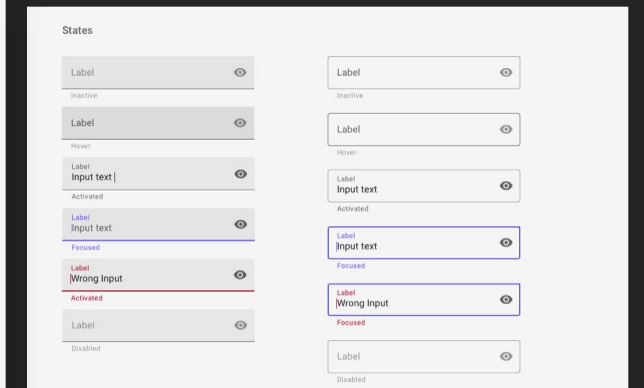

Flat | 00dp
Raise | 04dp
Page title
Regular | 56dp
Desktop Regular | 64dp
Dense - Desktop only | 48dp

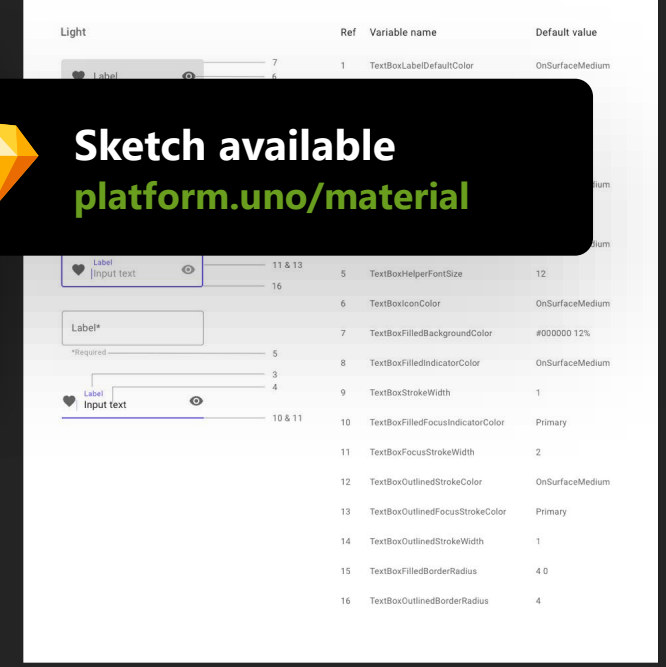

Bottom Nav
Favorites
Search
Information
Notification
Settings
Three up
Four up
Five up

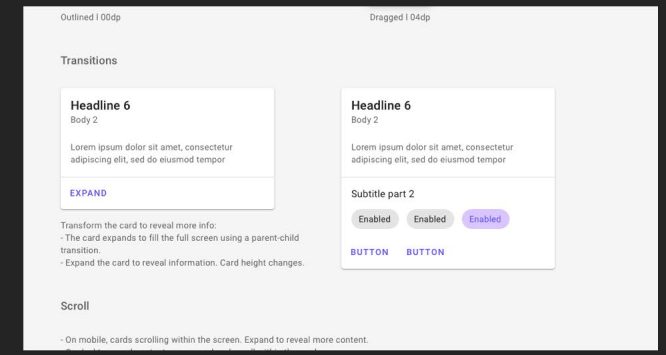

Checkboxes (Selected)
Checkboxes (DeSelected)
Enabled
Hover
Focused
Pressed
Disabled
Checkboxes (Indeterminate)
If some, but not all, child checkboxes are checked, the parent checkbox becomes an indeterminate checkbox
Radio Buttons (Selected)
Radio Buttons (DeSelected)
Toggle switch (Selected)
Toggle switch (DeSelected)
Natif

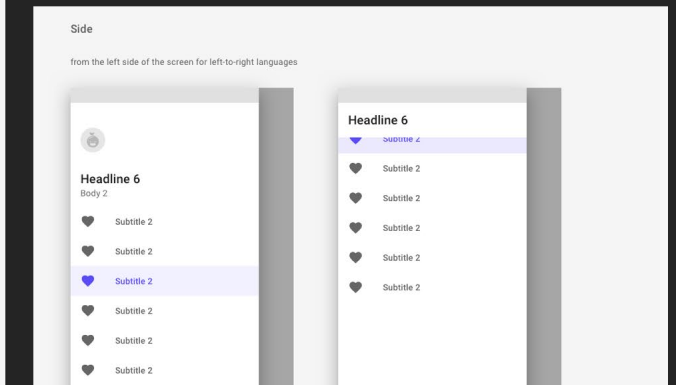

Elevation
Page title
Coplanar elevation | Same elevation as the content
Above elevation | 8 dp

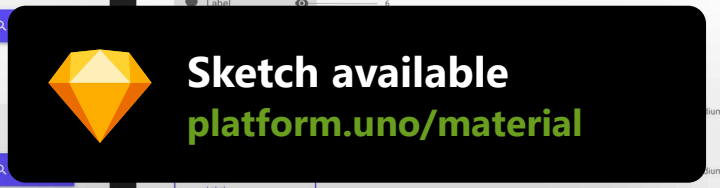

Cards
Headline 6
Body 2
Elevated | 01dp
Outlined | 00dp
Options
Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor
BUTTON
1. Avatar (optional)
2. Title (optional)
3. Subtitle (optional)
4. Actions icons (optional)
5. Media (optional) - photo, graphics, video
6. Description (optional)
7. Buttons (optional)


States
Label
Inactive
Hover
Input text
Activated
Focused
Wrong Input
Disabled


Light
Ref
Variable name
Default value
1 TextBoxLabelDefaultColor OnSurfaceMedium
5 TextBoxHelperFontSize 12
6 TextBoxIconColor OnSurfaceMedium
7 TextBoxFilledBackgroundColor #000000 12%
8 TextBoxFilledIndicatorColor OnSurfaceMedium
9 TextBoxStrokeWidth 1
10 TextBoxFilledFocusIndicatorColor Primary
11 TextBoxFocusStrokeWidth 2
12 TextBoxOutlinedStrokeColor OnSurfaceMedium
13 TextBoxOutlinedFocusStrokeColor Primary
14 TextBoxOutlinedStrokeWidth 1
15 TextBoxFilledBorderRadius 4 0
16 TextBoxOutlinedBorderRadius 4
Label*
*Required
Input text

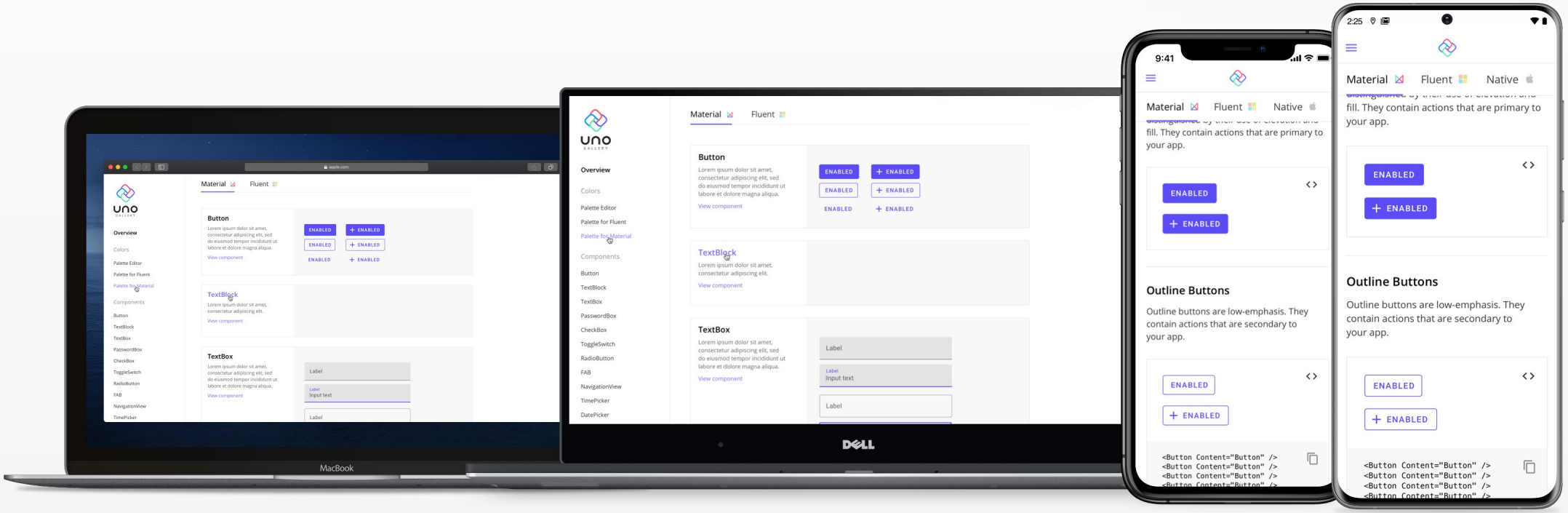

Outlined | 00dp
Dragged | 04dp
Transitions
Headline 6
Body 2
Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor
EXPAND
Transform the card to reveal more info:
- The card expands to fill the full screen using a parent-child transition.
- Expand the card to reveal information. Card height changes.
Subtitle part 2
Enabled
BUTTON
Scroll
- On mobile, cards scrolling within the screen. Expand to reveal more content.


Side
from the left side of the screen for left-to-right languages
Headline 6
Body 2
Subtitle 2


Sketch available
platform.uno/material

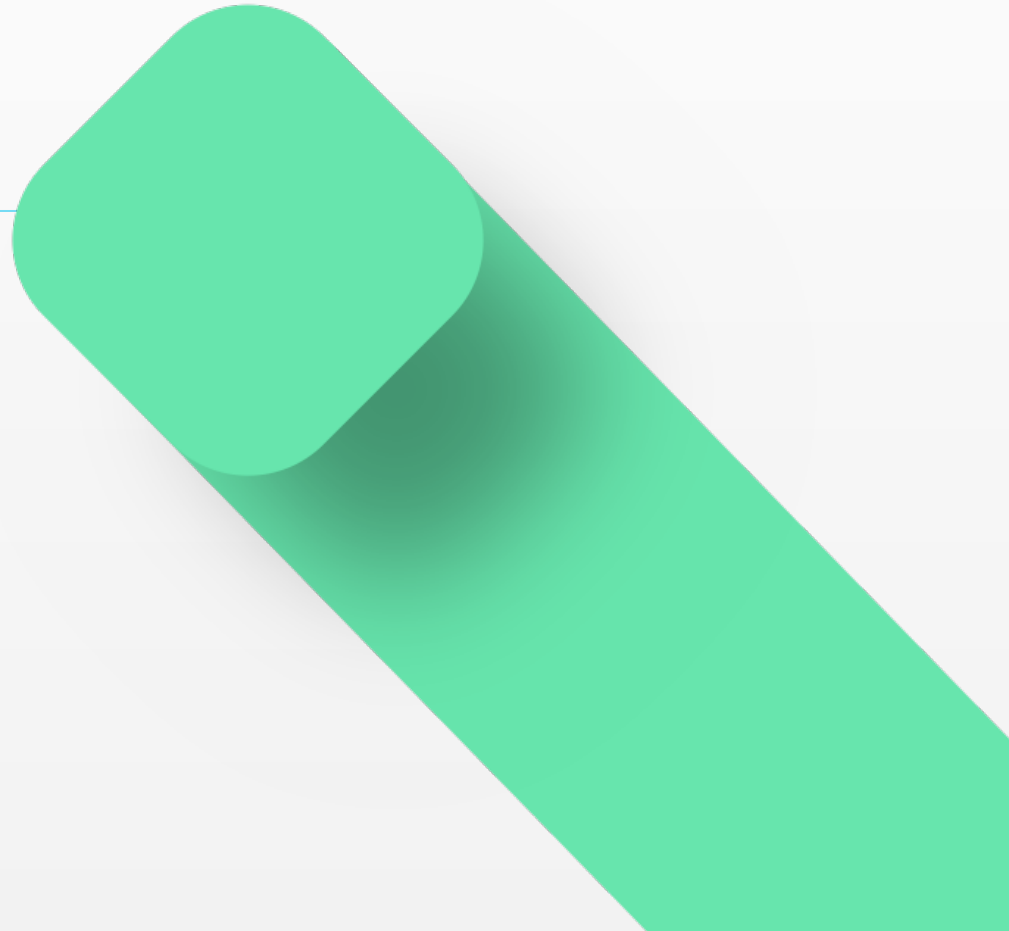
Uno Gallery

See more at platform.uno/gallery



Uno Gallery

DEMO



Uno Platform Playground

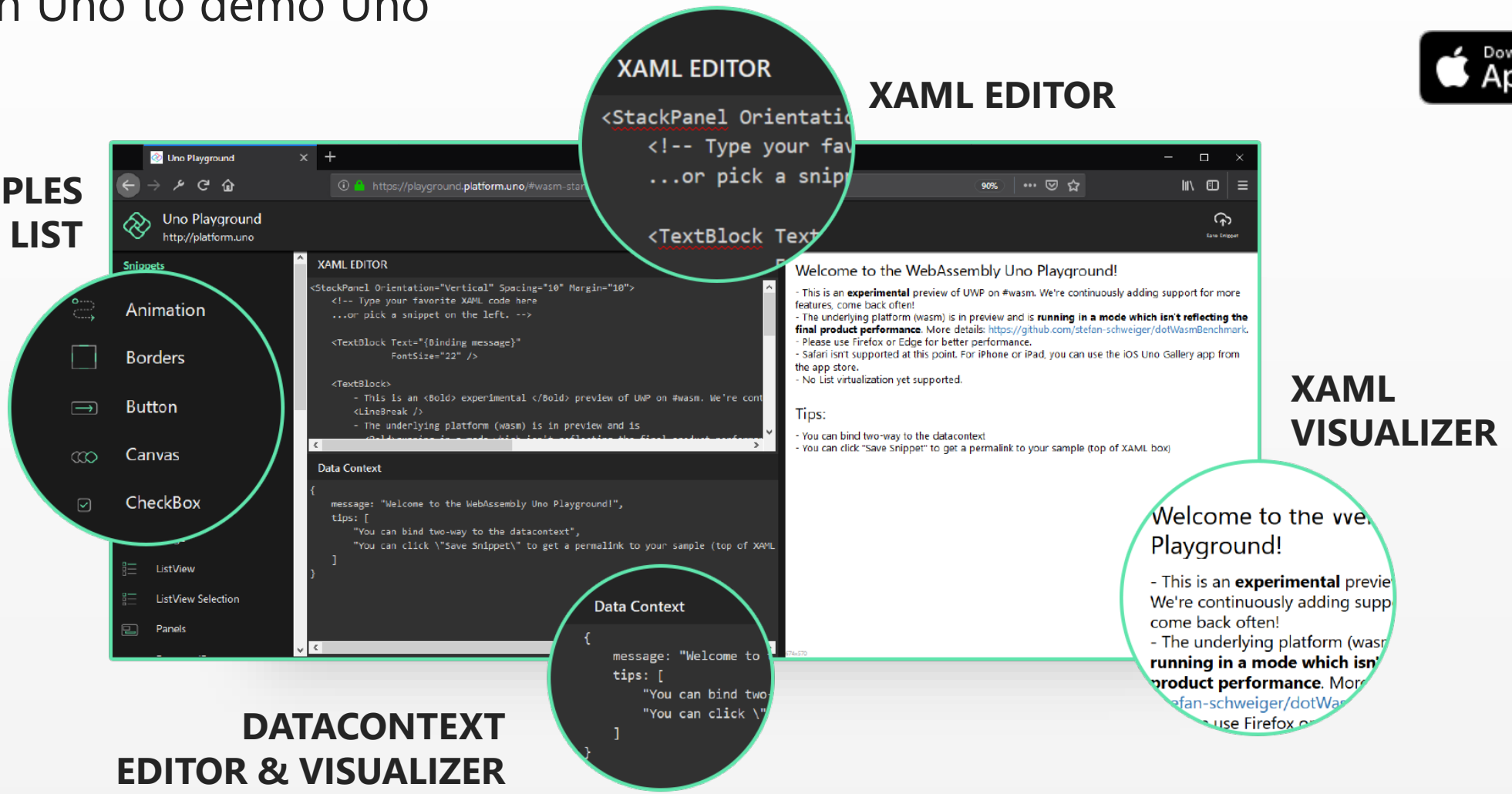
Built with Uno to demo Uno

Uno Gallery App

GET IT ON Google Play

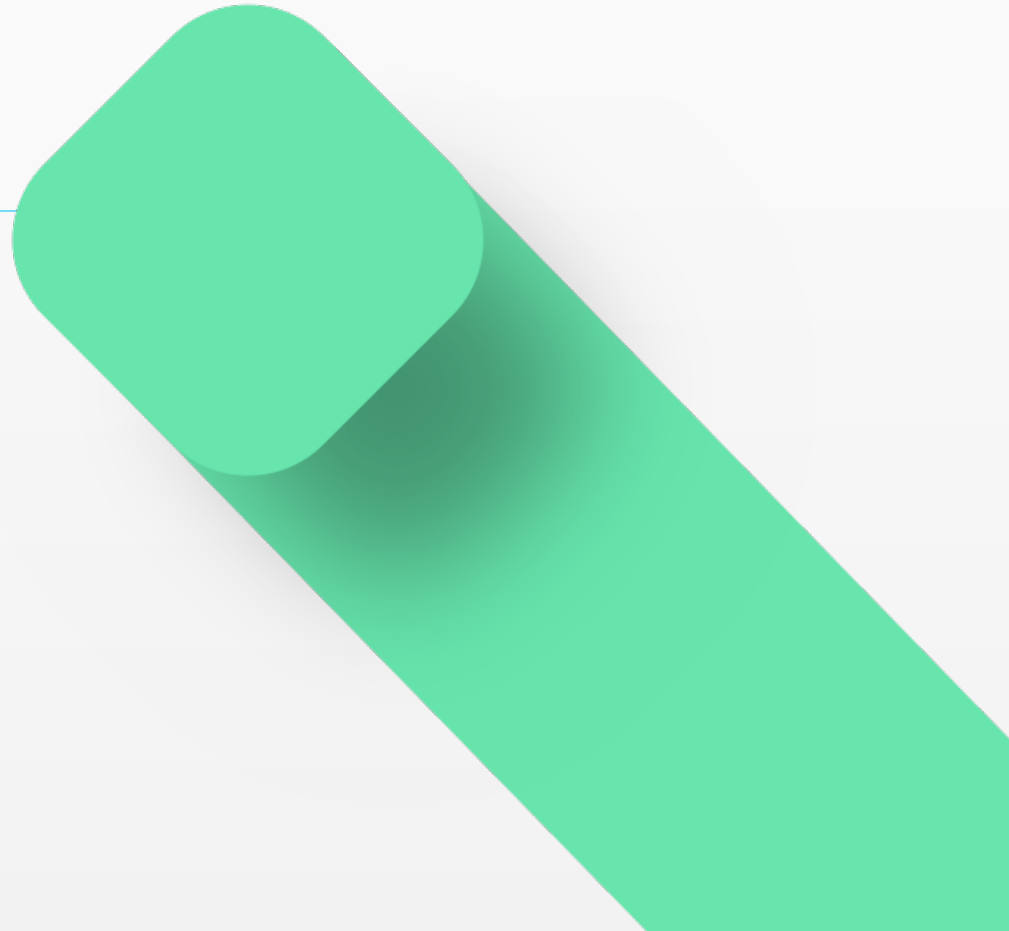
Download on the App Store

WA

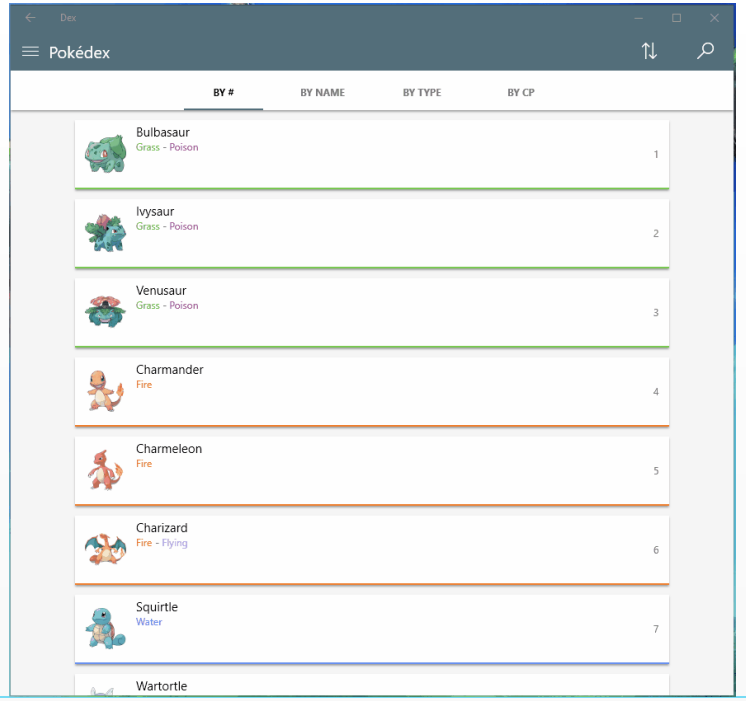


Uno Playground

DEMO



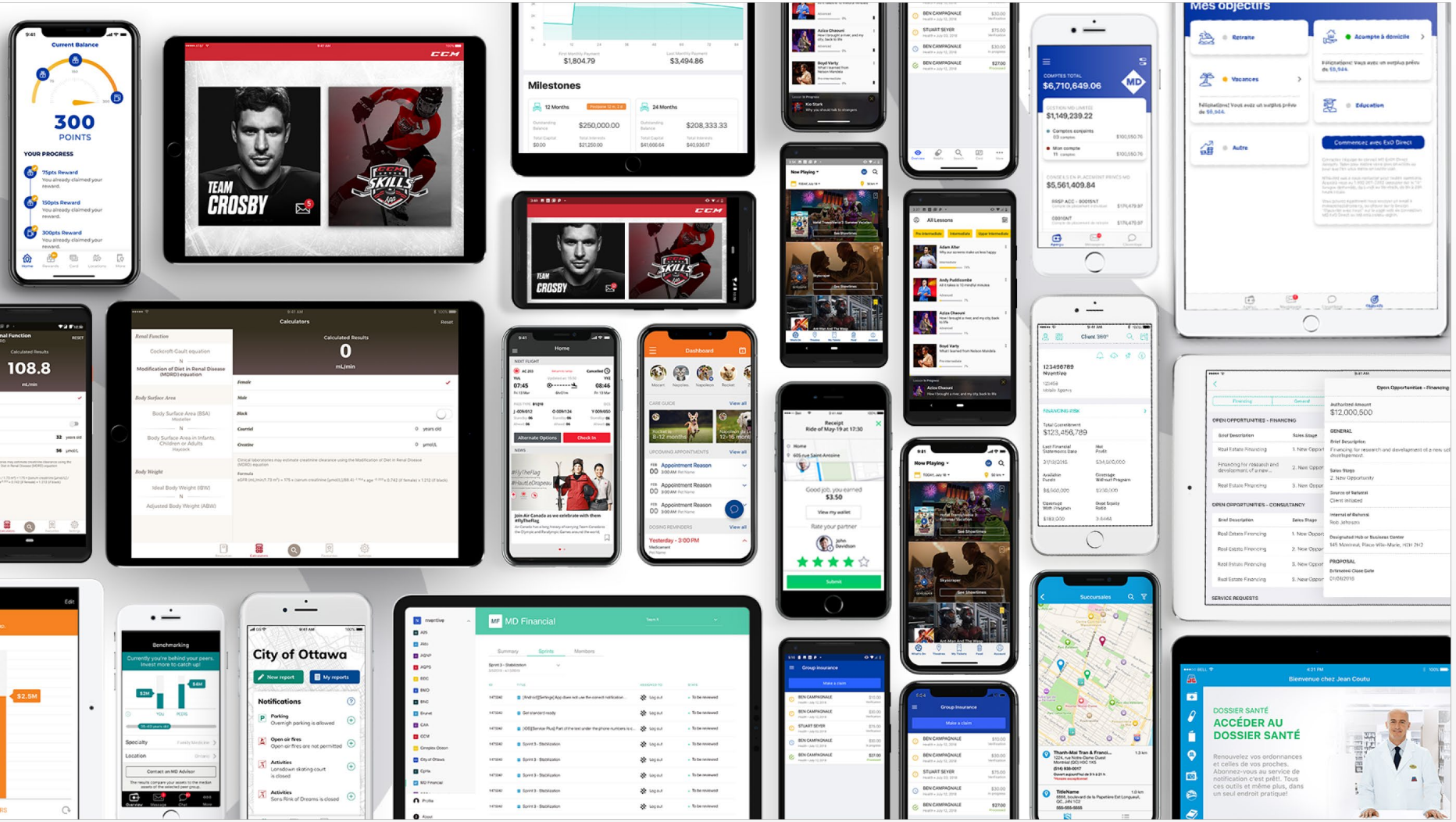
DexUno



DEMO

https://github.com/kazo0/DexUno

Originally sourced from https://github.com/disklosr/Dexr



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uno PLATFORM

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Thank You!

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Appendix (All Hidden Slides)