DRAWING ADVANCED USER INTERFACES IN XAMARIN

- Konrad Müller

- Software Developer
  @ Onventis

- Xamarin, ASP.NET Core,
  Cloud stuff

@konmue

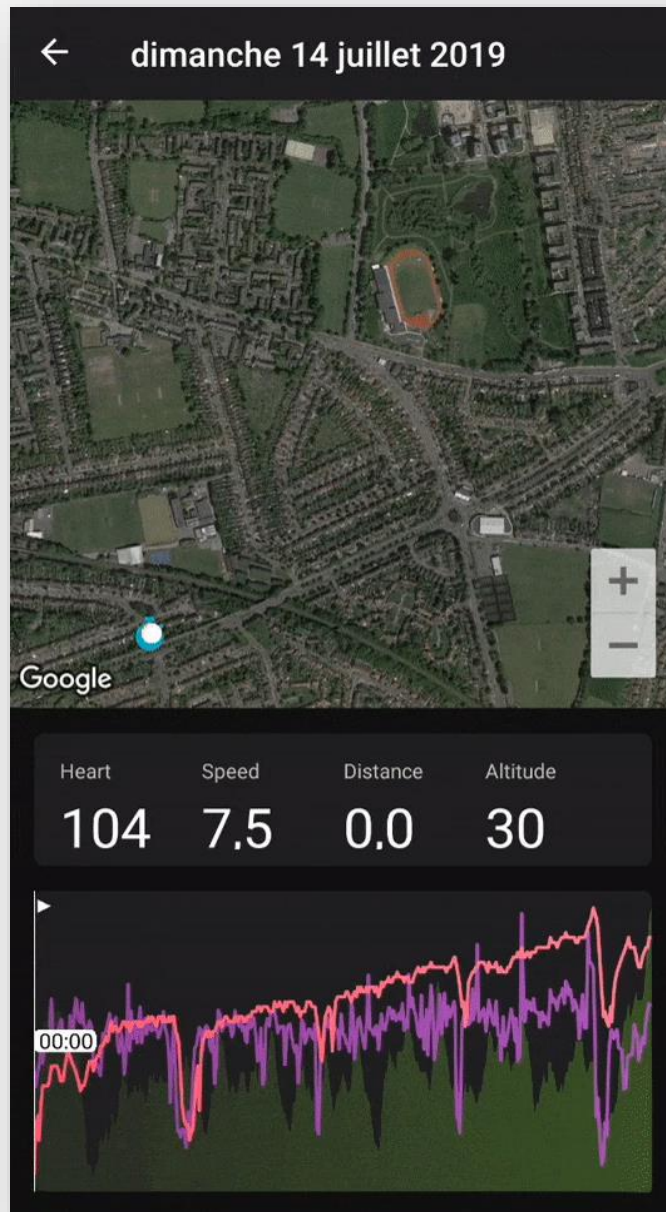krdmllr

onventis

What do I need this for?

Kym Phillpotts

🐦 @kphillpotts

kymphillpotts.com

https://kymphillpotts.com/xamarin-forms-ui-challenge-dayvsnight.html

Jean-Marie Alfonsi

@Piskariov

sharpnado.com

Microcharts

- Microcharts/Microcharts.Forms
- github.com/dotnet-ad/Microcharts

Drawing basics

0,0

Canvas

width,height
100, 200
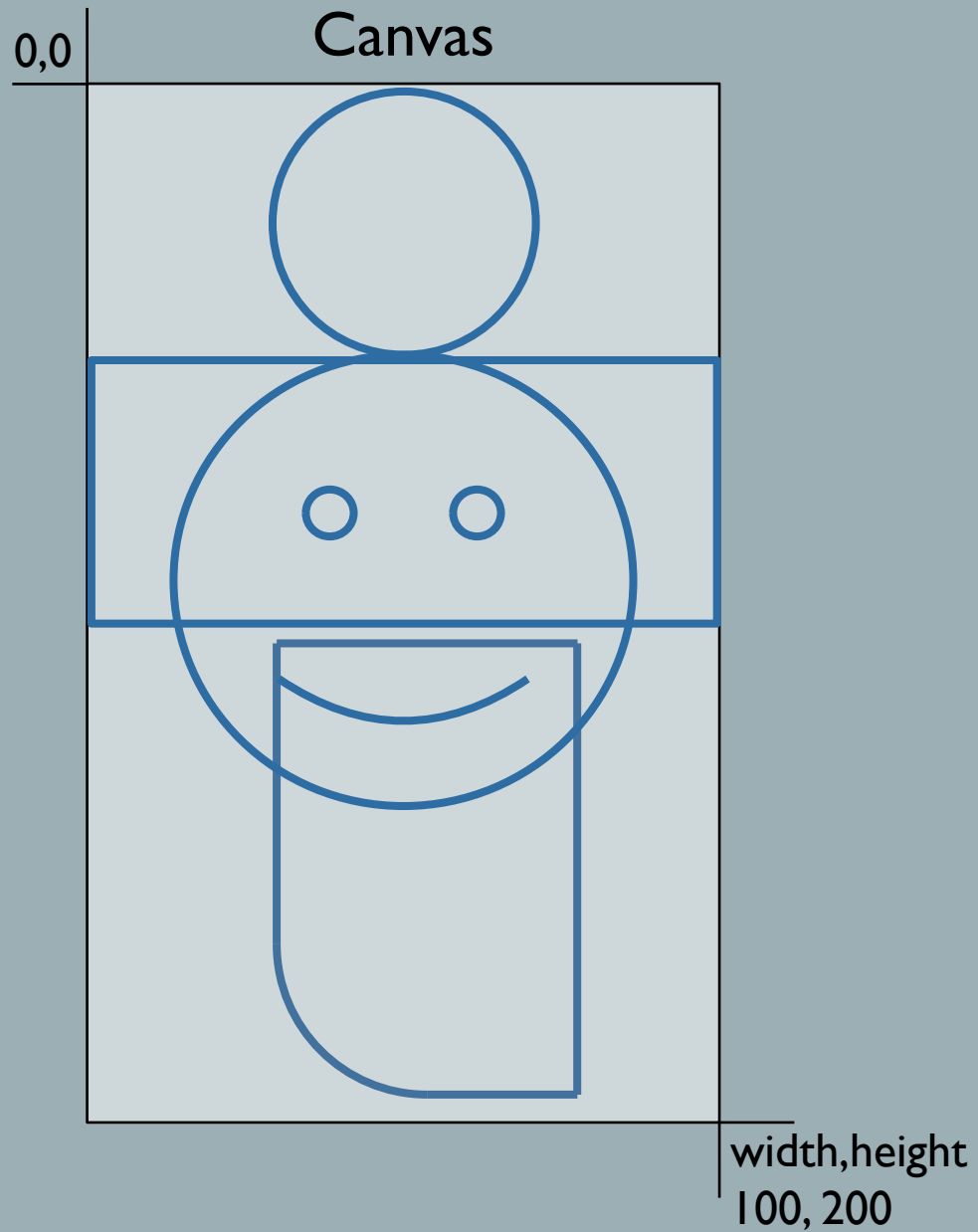
Shapes

- clear()

- drawCircle(x: 50, y: 25, r: 25)

- drawRect(l: 0, t: 50, r, 100, b: 100)

- drawPath(PATH)

Canvas

0,0

width,height
100, 200
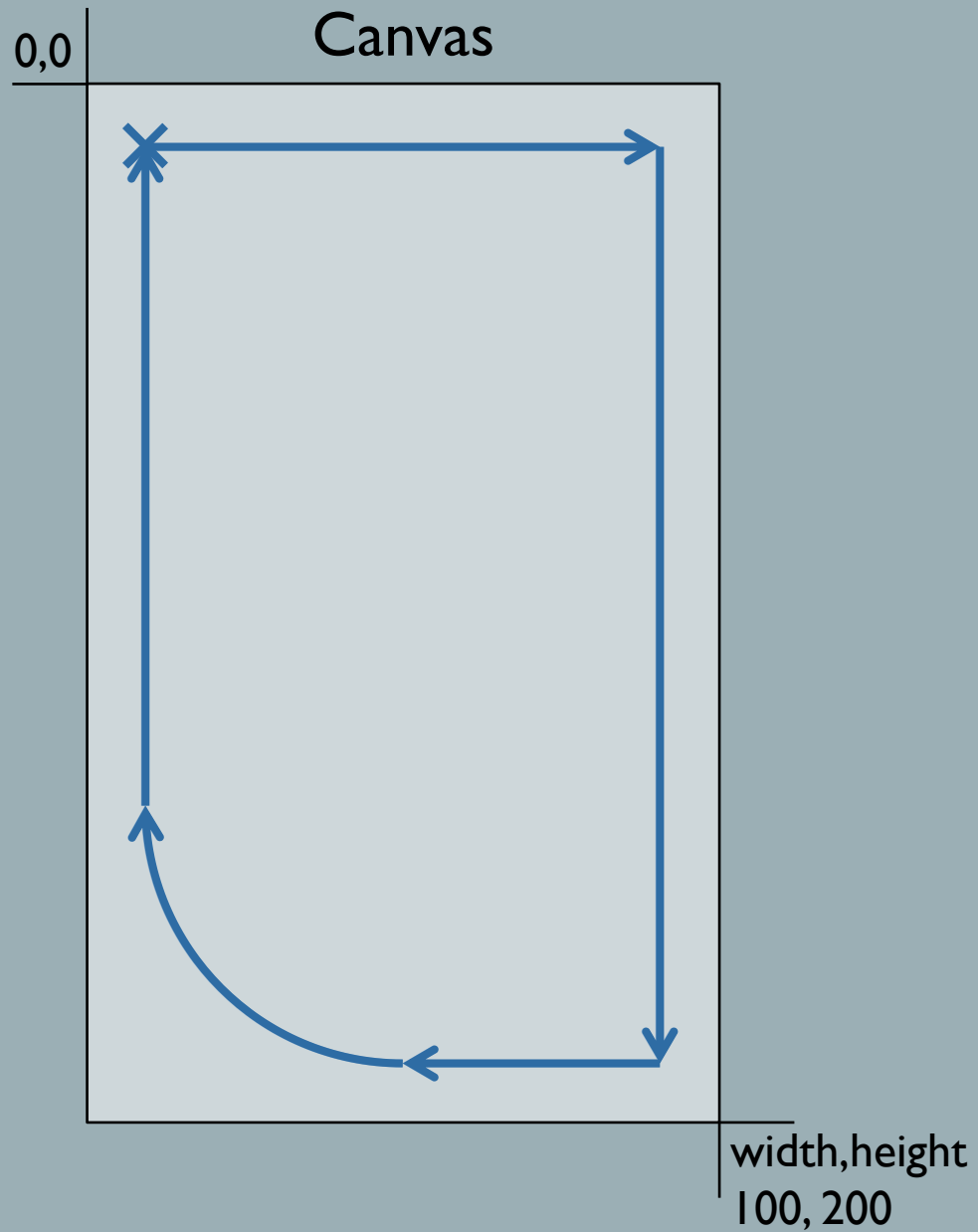
Path

- moveTo(0,0)
- lineTo(100,0)
- lineTo(100, 200)
- lineTo(50, 200)
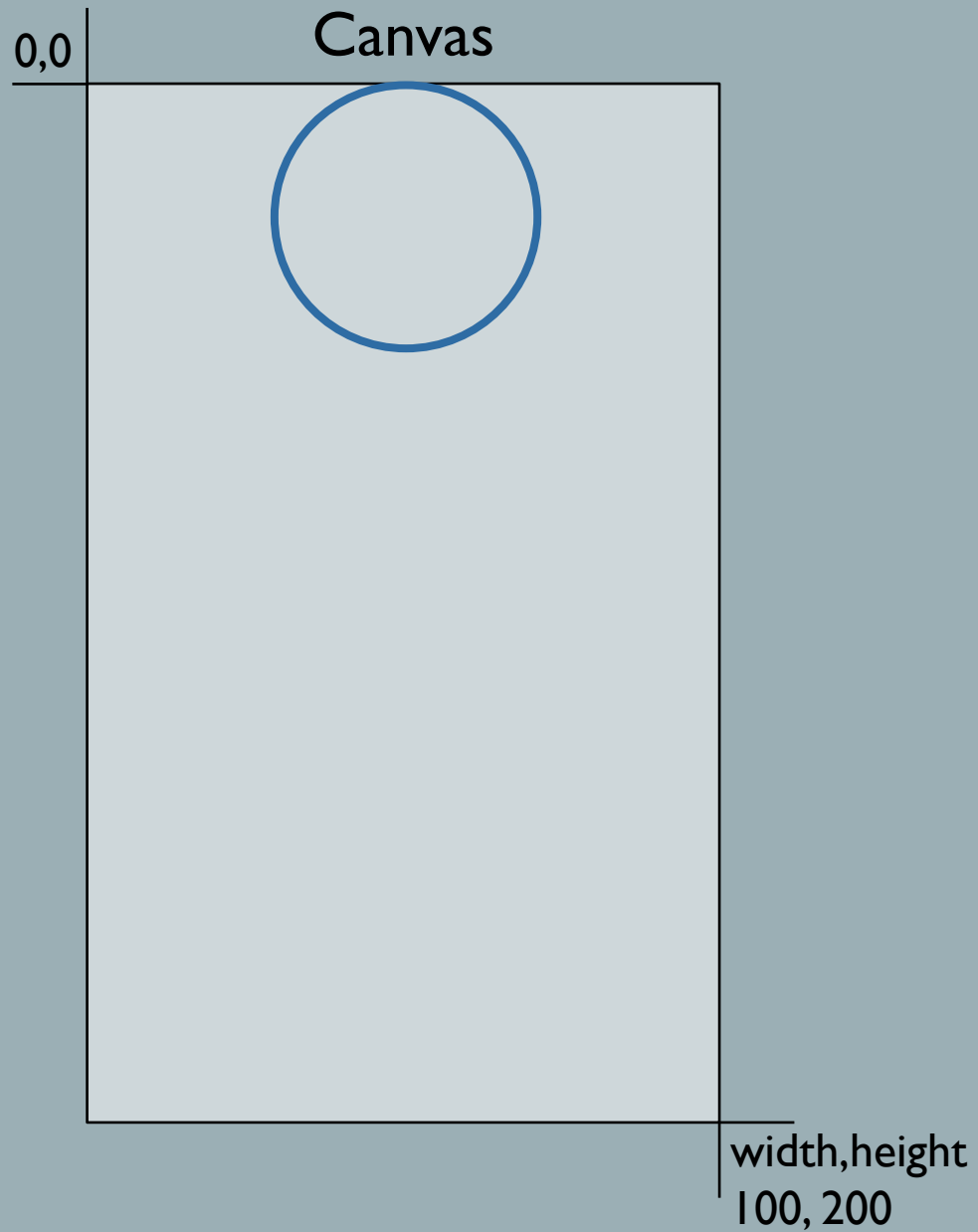- arcTo(0, 150)
- lineTo(0,0)
- drawPath(PATH)

PATH

Canvas

0,0

width,height
100, 200

Utilizing vector images

- path = fromSvg(„{SVG_DATA}")
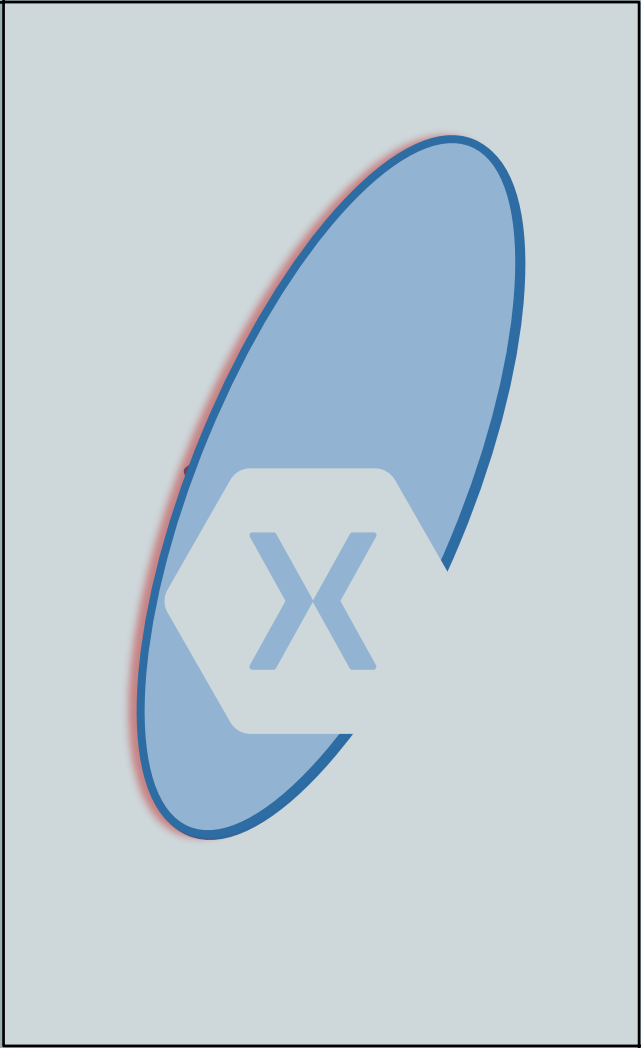- path.Add(fromSvg(„{SVG_DATA}"))
- drawPath(path)

Canvas

0,0

width,height
100, 200

Animation

- clear()
- drawCircle(x: 50, y: 25, r: 25)
- Time(n) = 0 … 1
  - clear()
  - drawCircle(x: 50, y: **25 + 150*n**, r: 25)

Canvas

0,0

width,height
100, 200

Rendering

- Stroke

- Fill

- AntiAlias

- Matrix Transform

- Clipping

- Effects

Usage in Xamarin
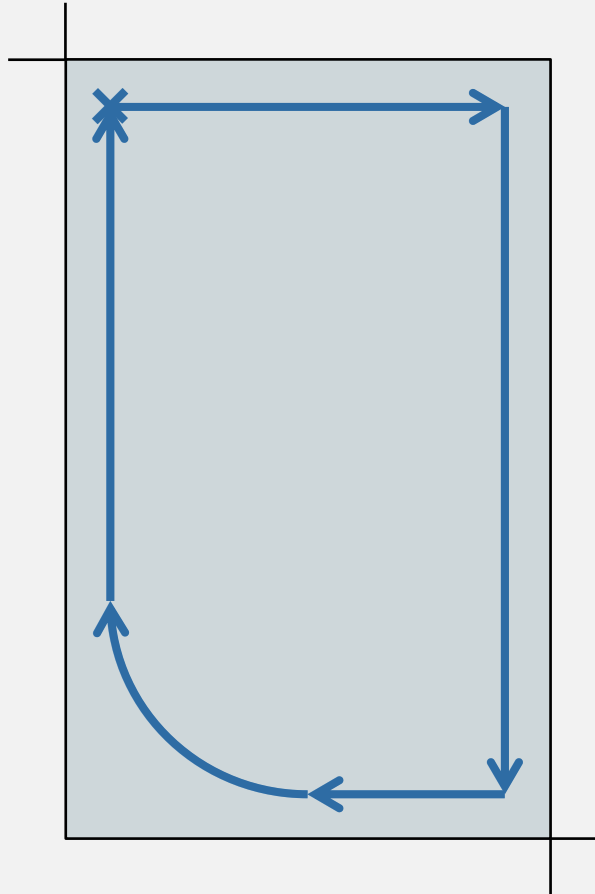
Xamarin.Forms Shapes

- 2D drawing API

- Preview API in Xamarin.Forms – Release in 5.0

- Supported on iOS, Android, macOS, UWP, WPF

- Uses native drawing API

- High level abstraction

Xamarin.Forms Shapes
Features

- Views: Shapes and Geometries

- Elipse, Polygon, Polyline, Line, Rectangle, Path

- XAML and C#

- FillRules, Aspects, Masks
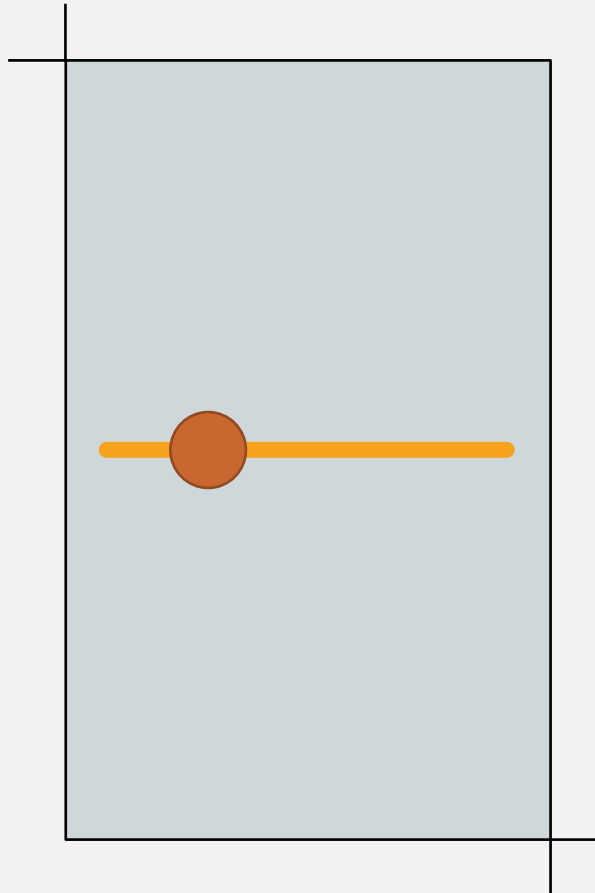
Xamarin.Forms Shapes
Sample

SkiaSharp

- 2D drawing library

- Bindings, Views and Abstractions of Skia Graphics Library

- Supports … everything ?! (.NET Core/.NET Standard/Xamarin. Android/iOS/tvOS/watchOS/Mac/Forms, WPF, UWP, WebAssembly, Tizen, GTK, UNO)

- Active development by Microsoft
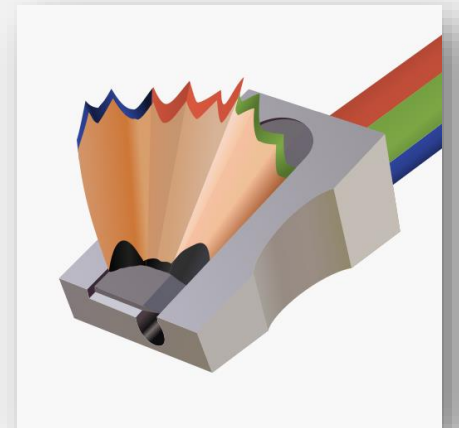
SkiaSharp
Features

- Unified API across platforms

- Touch support

- SVG

- Rich geometric functions

- Clipping, Masks, Effects, Shader, Blending, Caching

- Different rendering backends

SkiaSharp
Sample

- Touch input

- Dynamically sizeable

- Cool thumb

Which should I use?

Xamarin.Forms Shapes

+ Build-in

+ Simple API

+ Bindable

− Only Xamarin.Forms

− Layered views

− Feature set

SkiaSharp

+ Feature set

+ Compatability

+ Performance

− Large (4-6mb)

− Complexity

Konrad Müller

Q&A

@konmue   krdmllr