# .NET MAUI

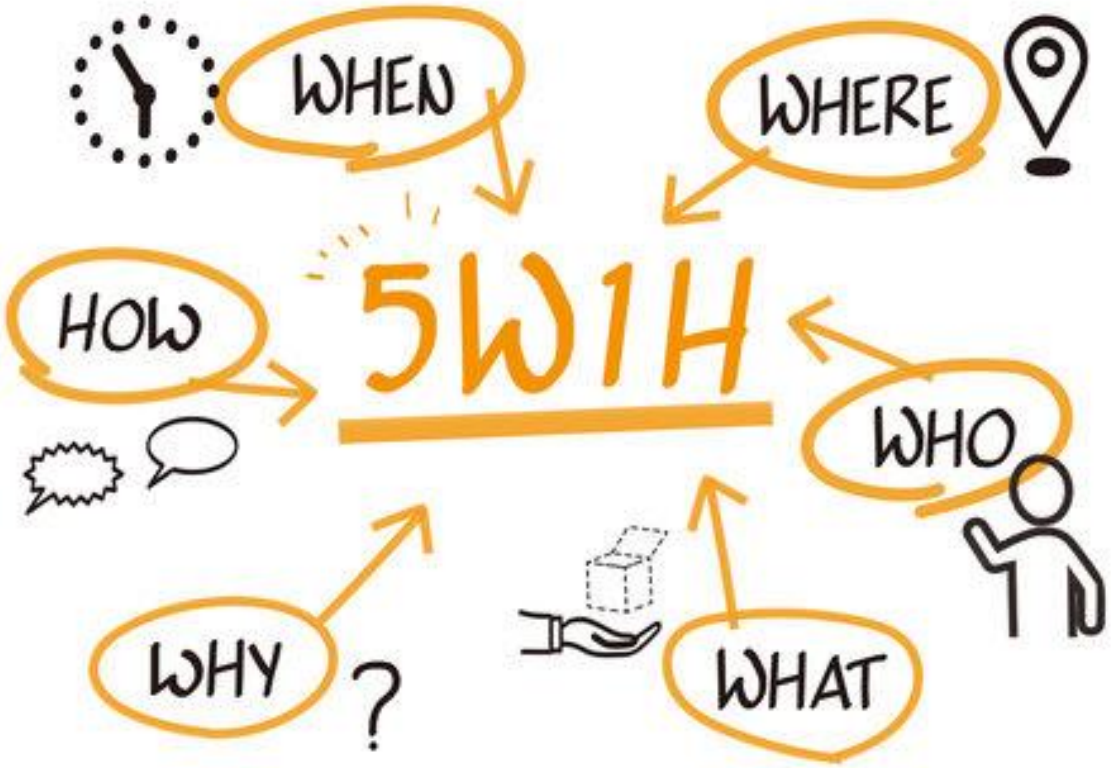
Overview

# About Me

| | |
|---|---|
| Name: | Sivaraj Ambat |
| Bio: | Software Professional with 25+ years of experience in the industry |
| Work: | DXC Technology |
| Areas of interest: | ▪ Application Development for Web, Mobile & Desktop<br>▪ Cloud Native Application Development<br>▪ Intelligent Applications using ML & AI |
| LinkedIn: | https://www.linkedin.com/in/sivaraj/ |
| Twitter: | @sivarajambat |

*Disclaimer:*
*Opinions expressed are solely my own and do not express the views or opinions of my employer*

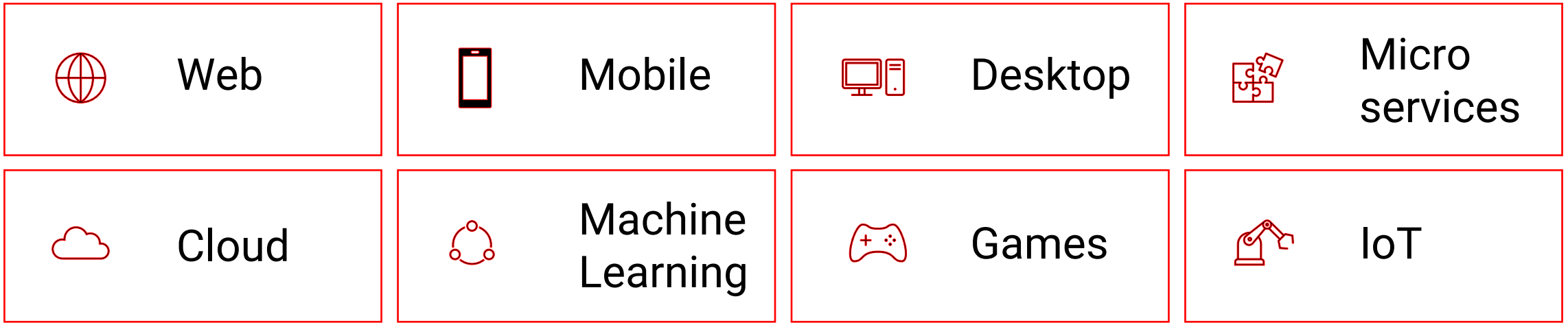
# Agenda



# The Basics

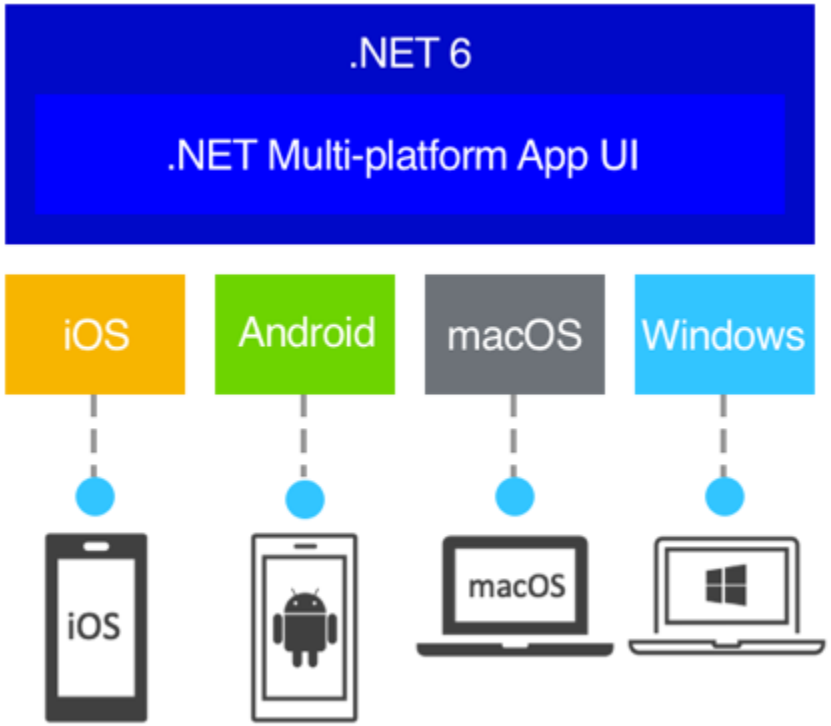
★ .NET is a **FREE** and **OPEN-SOURCE** developer platform

★ It is made up of tools, programming languages & libraries for building different types of applications.

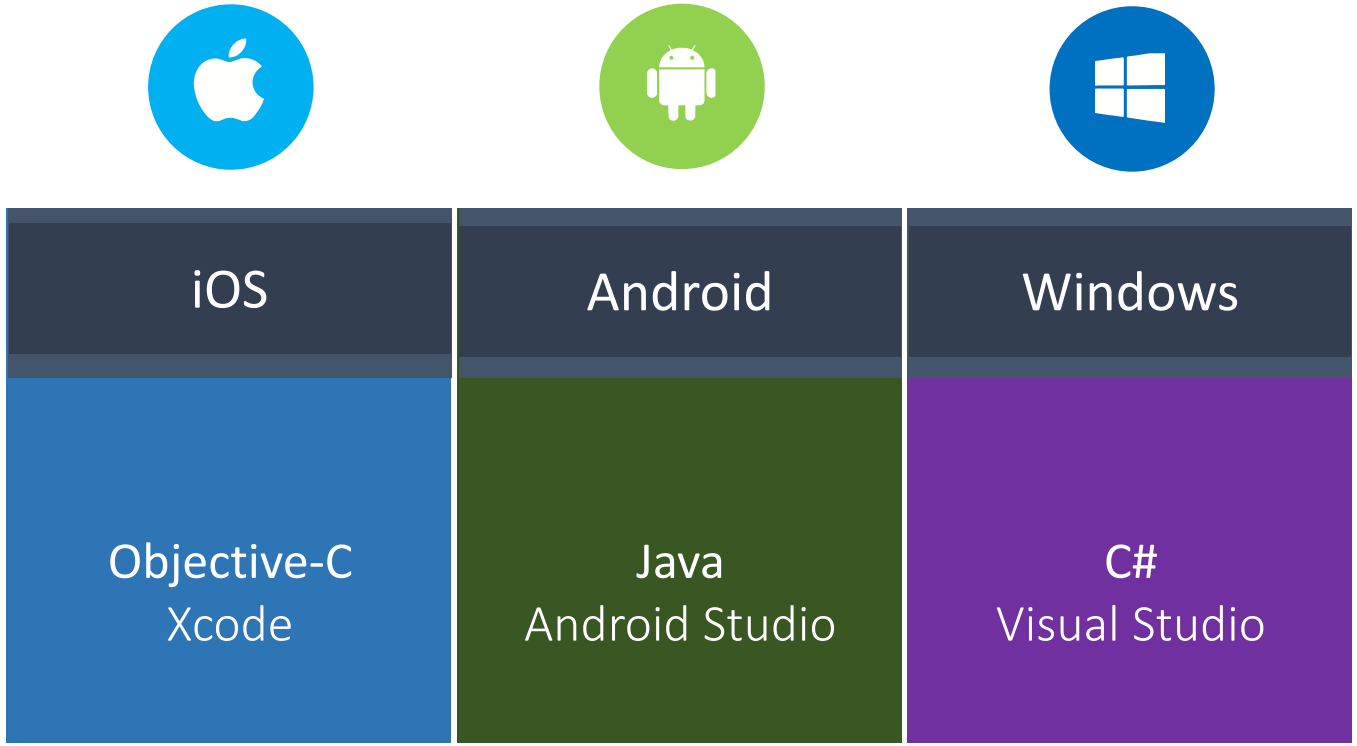


# .NET MAUI (Multi-platform App UI)

- Native apps for
  - iOS
  - Android
  - macOS
  - Windows
- Single code-base
- Platform API in C#
- User Interface in XAML
- Open-source
- Evolution of Xamarin.Forms

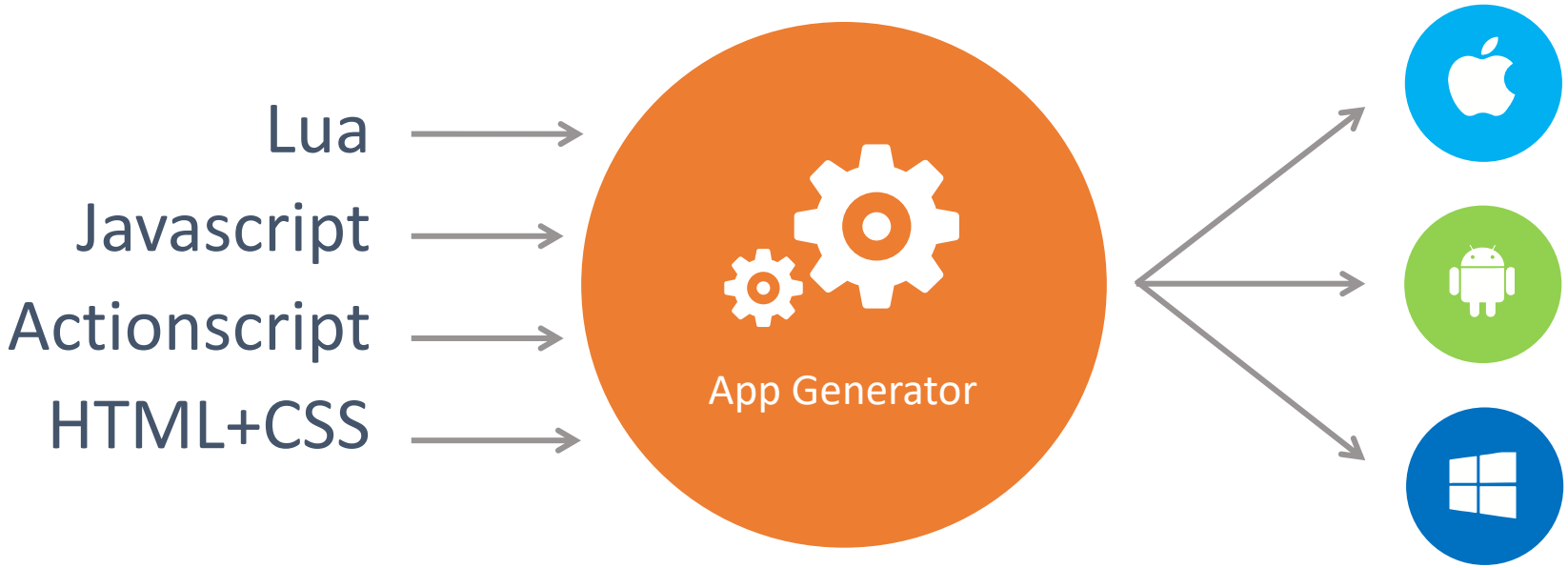


# Silo Approach




No shared code • Many languages & development environments • Multiple teams

# Write Once, Run Anywhere (Hybrid)

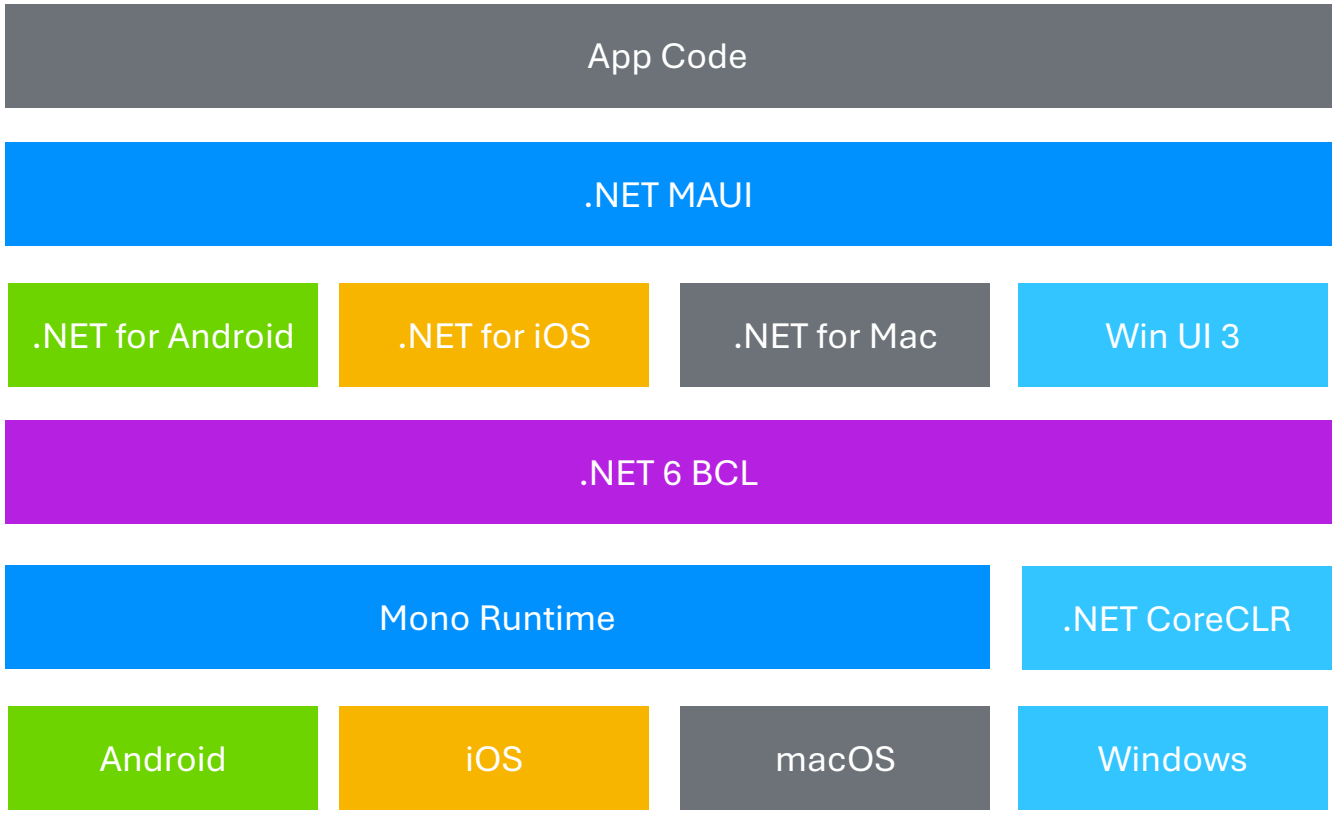



Limited native API access • Slow performance • Poor user experience

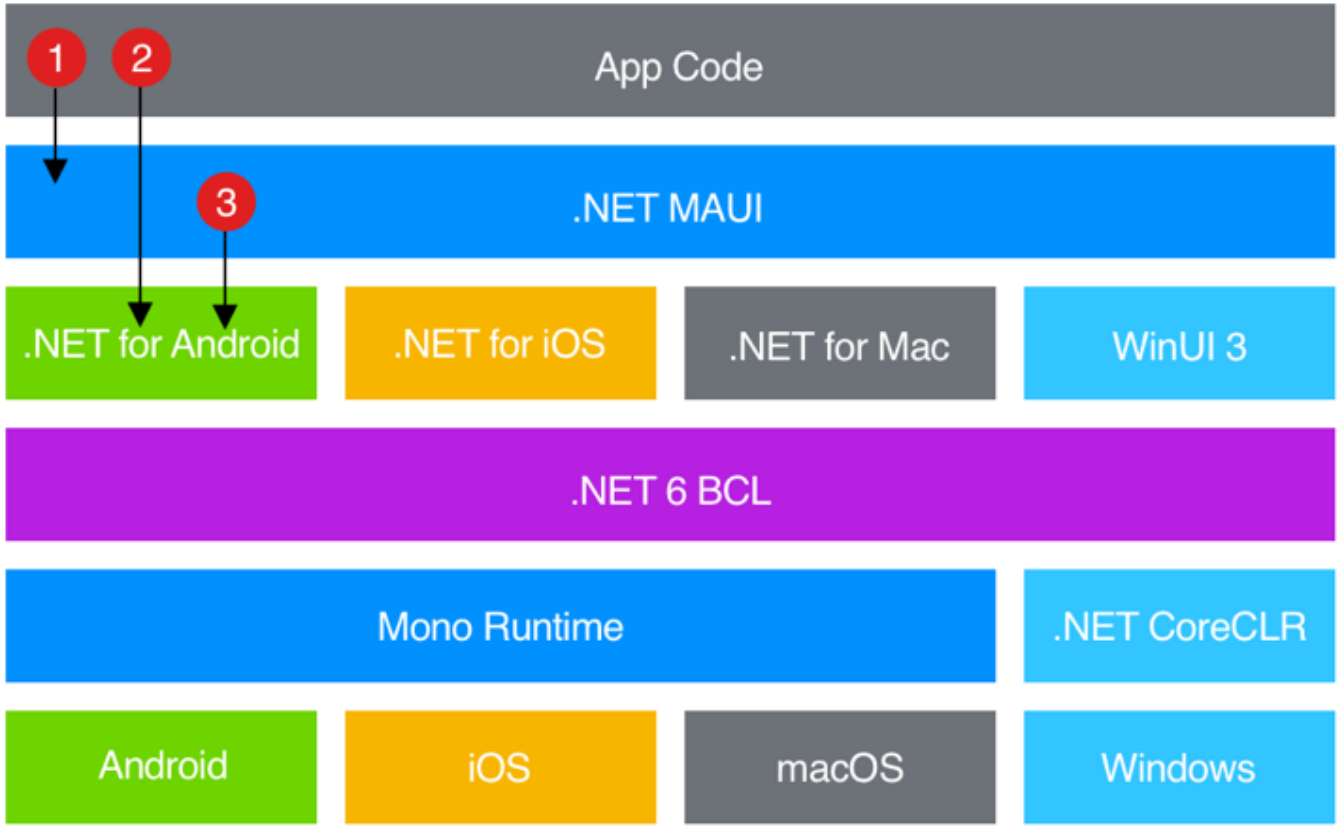
# Cross-Platform Native development

- ★ Flutter  (Google)
- ★ React Native (Facebook)
- ★ NativeScript (Telerik)
- ★ .NET MAUI (Microsoft)

# How .NET MAUI Works



# How .NET MAUI Works



# Which platforms are supported?

- ★ Android 5.0 (API 21) or higher.
- ★ iOS 10 or higher.
- ★ macOS 10.15 or higher, using Mac Catalyst.
- ★ Windows 11 and Windows 10 version 1809 or higher, using Windows UI Library (WinUI) 3.

# What you'll need: System Requirements

- ★Windows
  - ★PC with Windows 10 or 11
  - ★Visual Studio 2022 Version 17.3+
  - ★Install .NET MAUI Workload
  - ★Virtualization Support
- ★Mac
  - ★macOS Monterey 12.0 or higher.
  - ★macOS Big Sur 11.0 or higher.
  - ★macOS Catalina 10.15 or higher

- .NET MAUI Apps for Android, iOS & Windows can be built in Visual Studio on Windows. But a networked Mac is required for iOS development!
- Emulators are good for development, but real devices are recommended for testing
- Developer accounts for respective app stores required for publishing apps

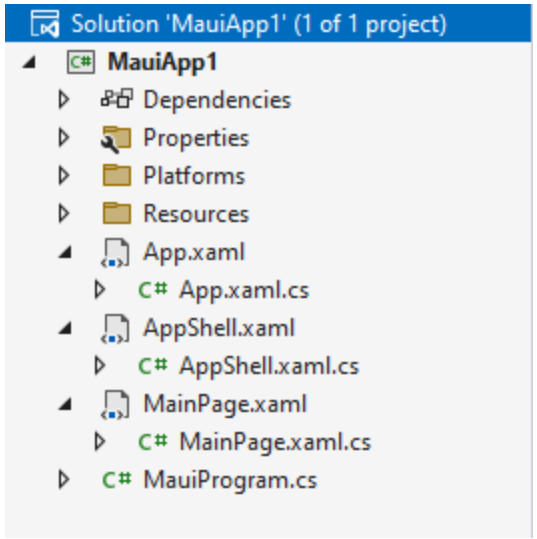
# What you'll need: Skills

- Frontend:
  - C# Programming
  - UI design using XAML
  - Mobile UX principles
- Backend:
  - Database design & development
  - Web API design & development
  - Hosting Web API in Server/Cloud

# Getting Started with .NET MAUI

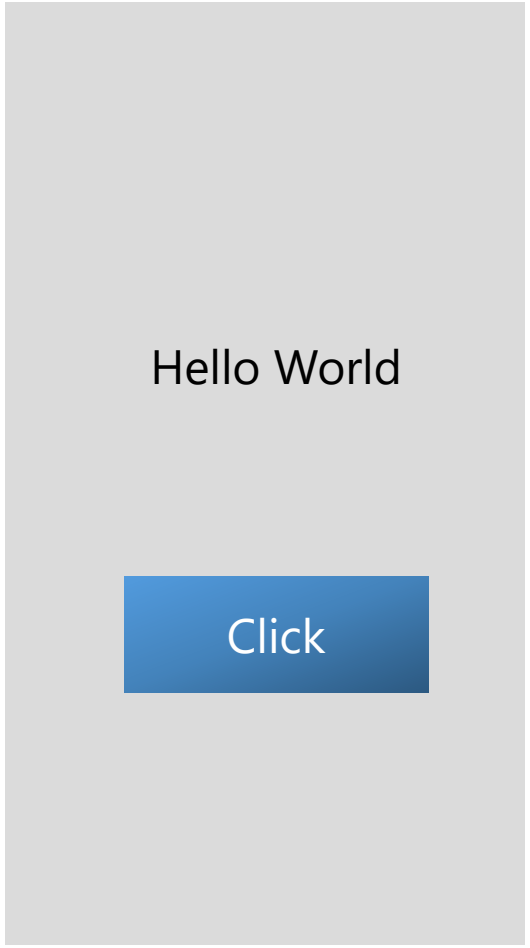
★ Demo

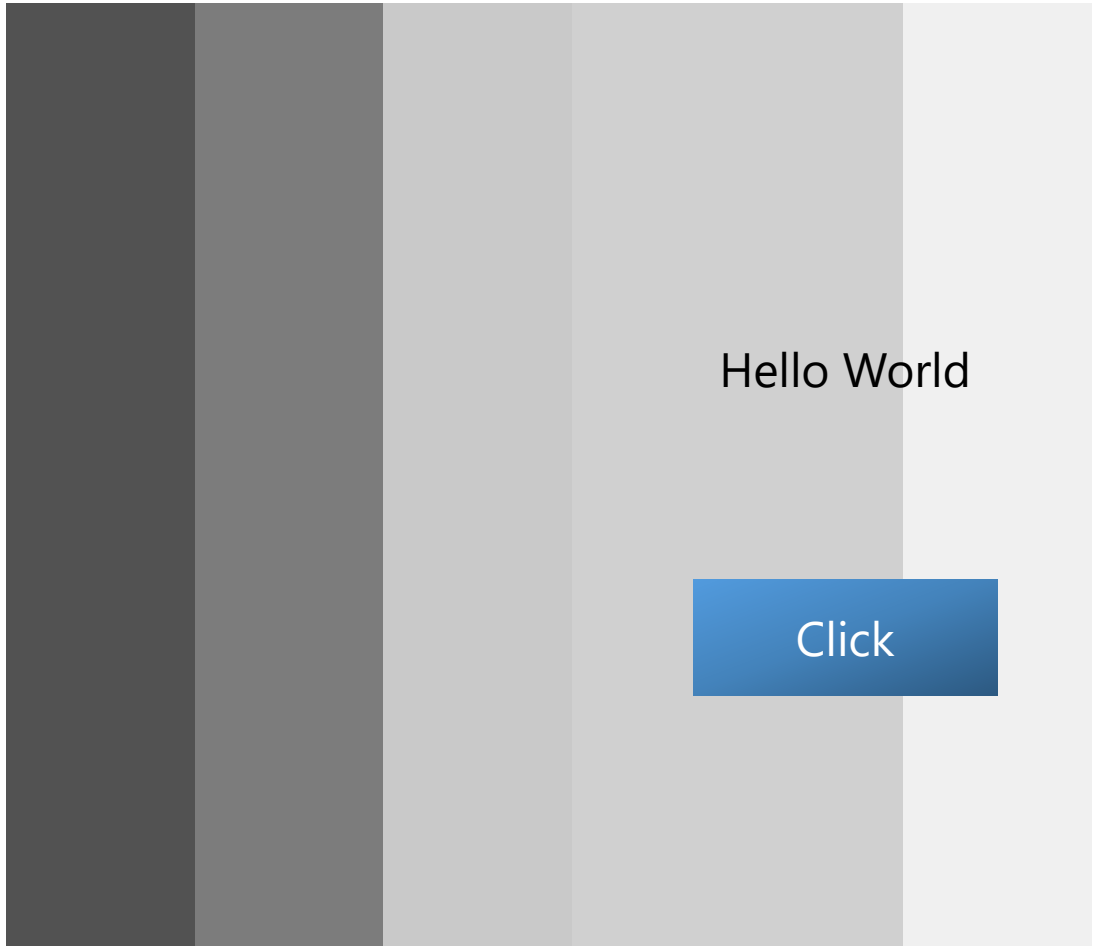
# Project Structure

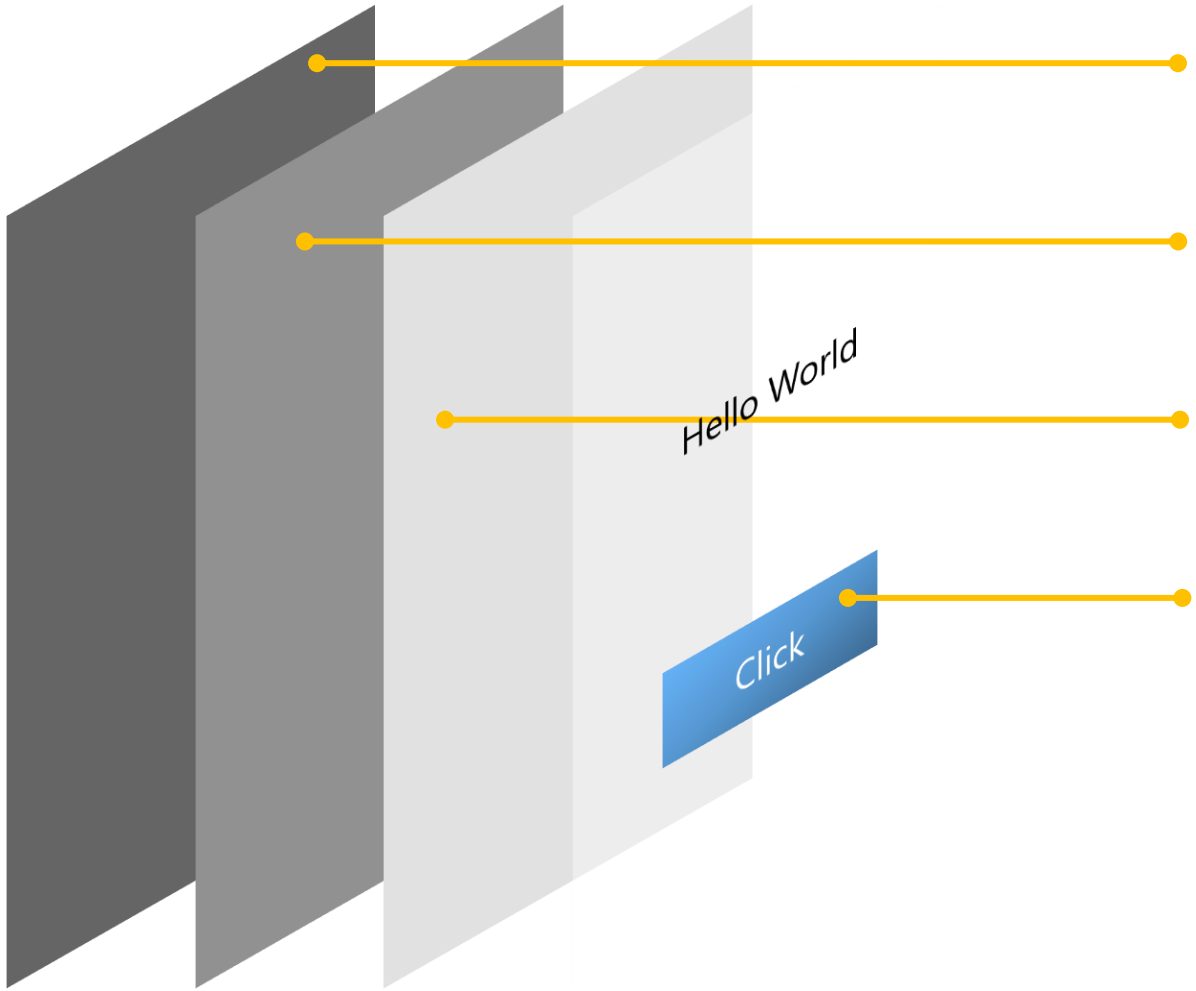



- **MauiProgram.cs**: Contains the code for creating and configuring the Application object.
- **App.xaml** and **App.xaml.cs**: Provide UI resources and create the initial window for the app.
- **AppShell.xaml** and **AppShell.xaml.cs**: Specify the initial page for the application and handle the registration of pages for navigation routing.
- **MainPage.xaml** and **MainPage.xaml.cs**: Define the layout and UI logic for the page displayed by default in the initial window.

# App Anatomy




Hello World
Click




SHELL

CONTENT VIEW

STACK LAYOUT

BUTTON

# XAML

- ★ Abbrev. for eXtensible Application Markup Language
- ★ Pronounced as *Zamel* (rhyming with Camel)
- ★ Has code-behind file for implementing methods & events
- ★ Follows rules similar to XML as it is an XML-based language
- ★ Markup Extensions & Binding Syntax are unique to XAML

# Essential XAML concepts

- ★ Property Elements
- ★ Attached Properties
- ★ Content Properties
- ★ Markup Extensions
- ★ Data Binding
- ★ Control Templates
- ★ Data Templates

# Pages

- ★ ContentPage
- ★ FlyoutPage
- ★ NavigationPage
- ★ TabbedPage

# Types of Layouts

- ★ StackLayout
- ★ VerticalStackLayout
- ★ HorizontalStackLayout
- ★ Grid
- ★ FlexiLayout
- ★ AbsoluteLayout

# Controls

**To present data:**

★BoxView
★Label
★Line
★Rectangle
★Polygon
★Polyline
★Border
★Image
★Frame
★WebView

**To initiate commands:**

★Button
★RadioButton
★SearchBar
★SwipeView

# Controls

**To set values:**

★Checkbox

★Slider

★Switch

★DatePicker

**To edit text:**

★Entry

**To indicate activity:**

★ActivityIndicator

★ProgressBar

**To display collections**:

★CarouselView

★ListView

★CollectionView

★TableView

# Further References

- Resources for Learning .NET MAUI
  - https://docs.microsoft.com/en-us/dotnet/maui/get-started/resources
- Reactor Session:
  - https://www.youtube.com/watch?v=rCUqqeDjZiM
- Follow:
  - James Montemagno: https://twitter.com/JamesMontemagno
  - Nish Anil: https://twitter.com/nishanil

# Questions?