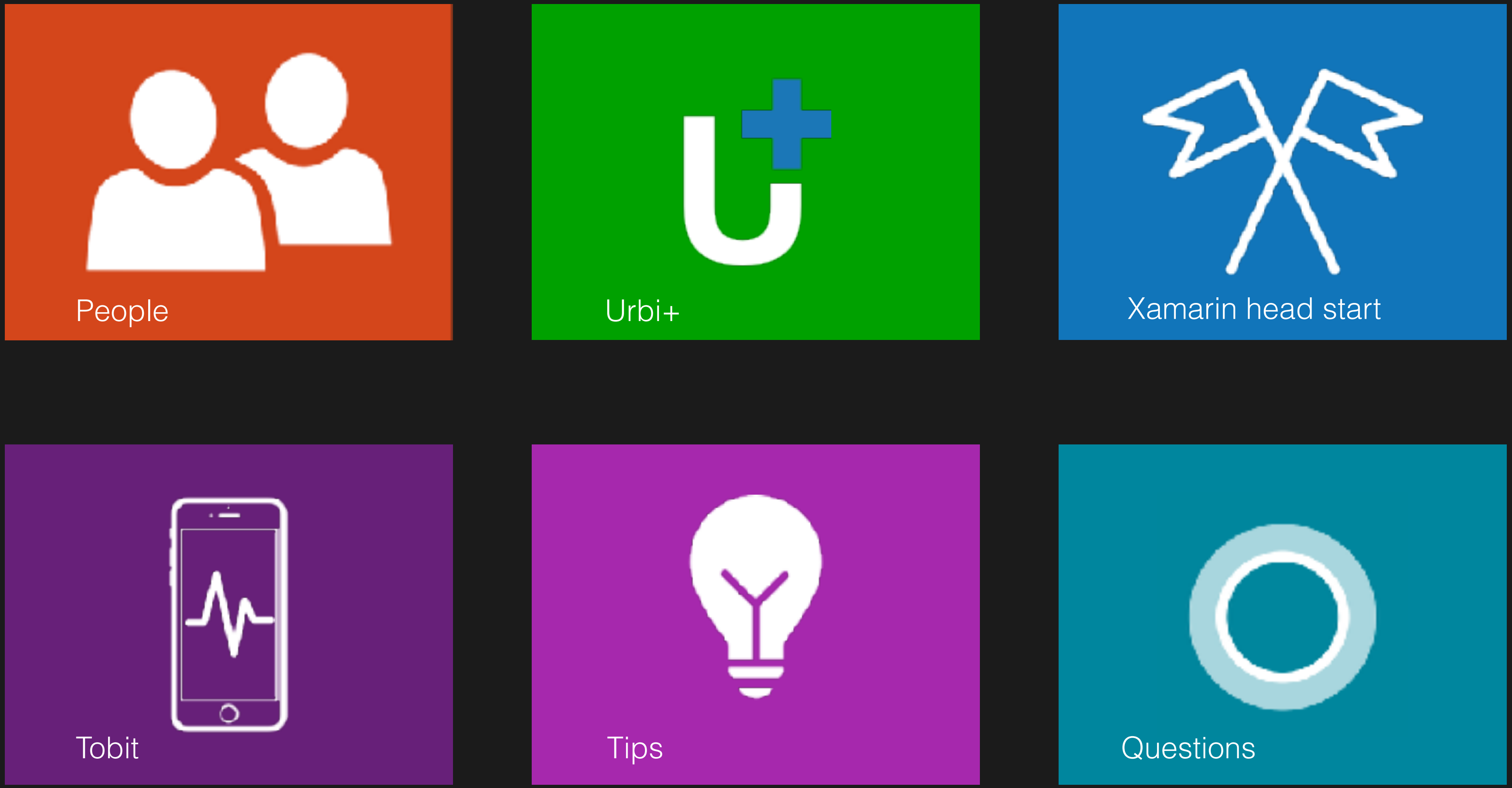
Xamarin after Hello World



People

Urbi+

Xamarin head start

Tobit

Tips

Questions

People

Jan Tourlamain
Xamarin mobile Developer

jan.tourlamain@tobania.be

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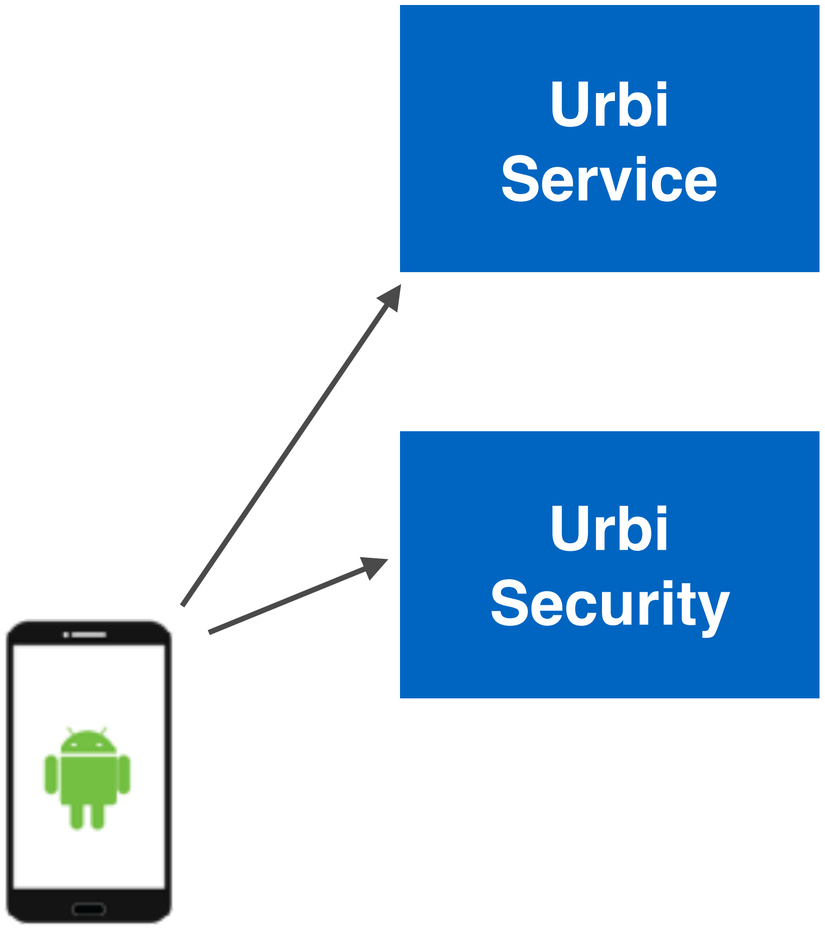
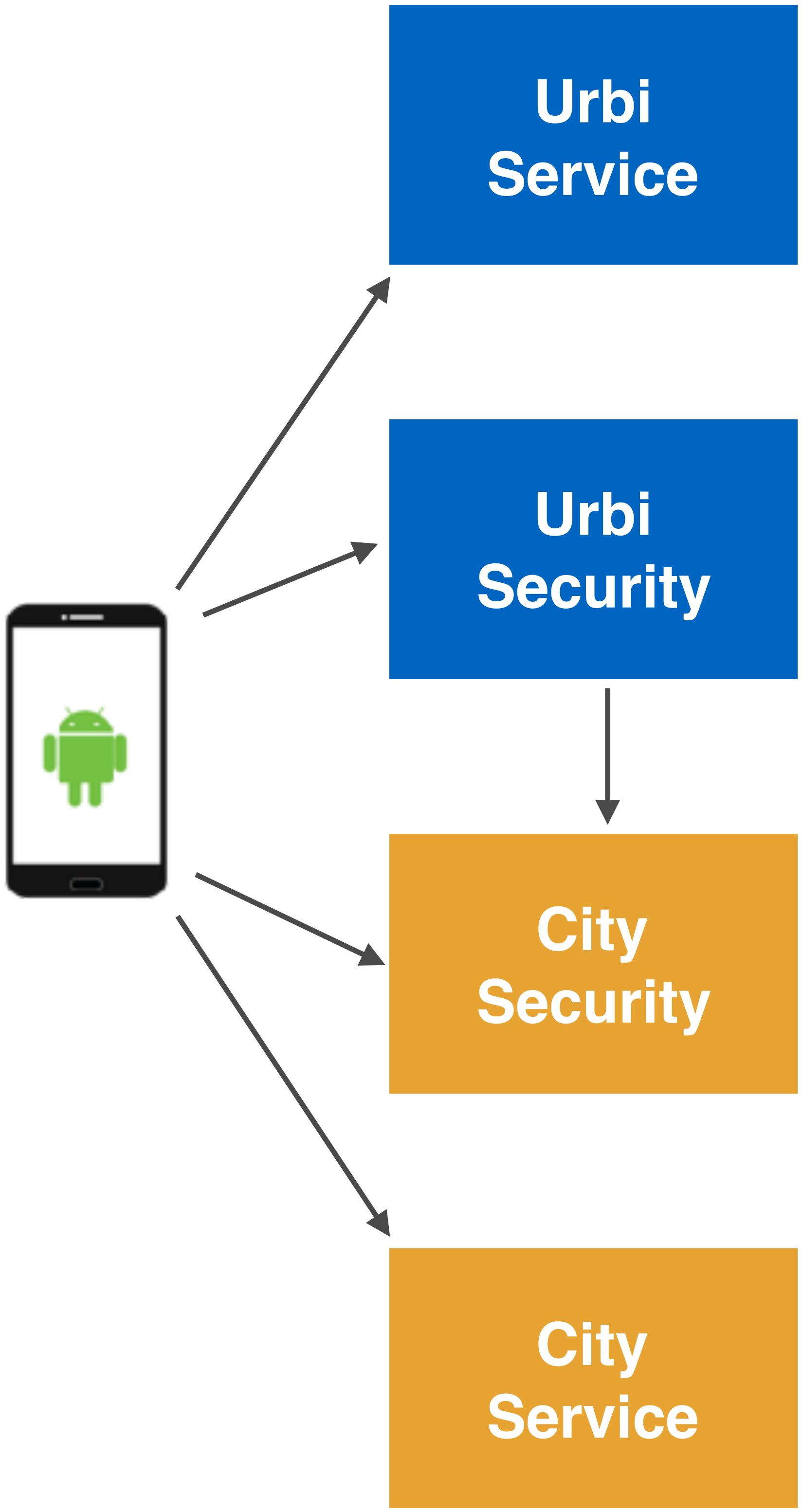


Urbi Service

Urbi Security

Urbi+



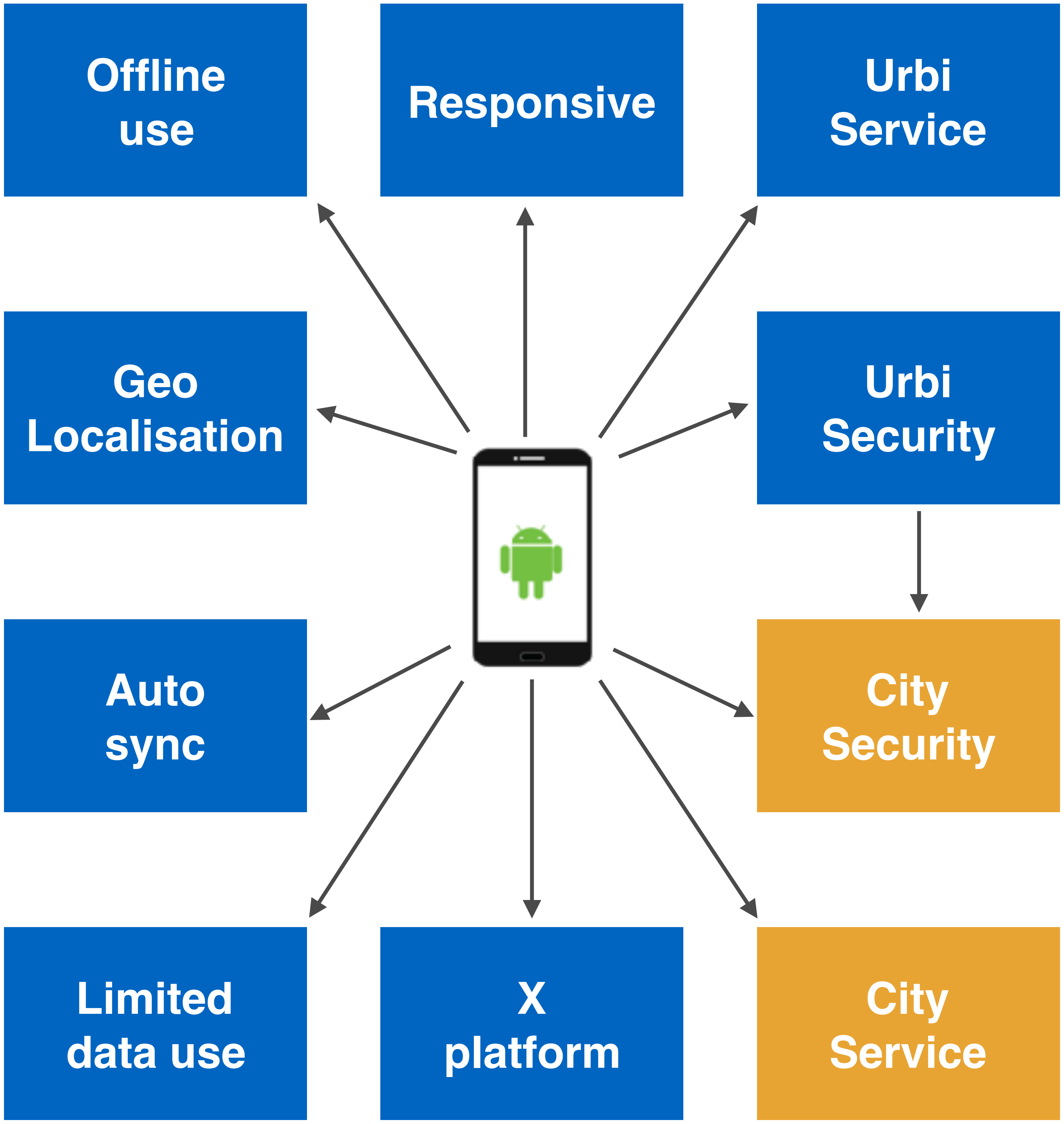
Urbi Service

Urbi Security

City Security

City Service

Urbi+



Offline use

Responsive

Urbi Service

Geo Localisation

Urbi Security

Auto sync

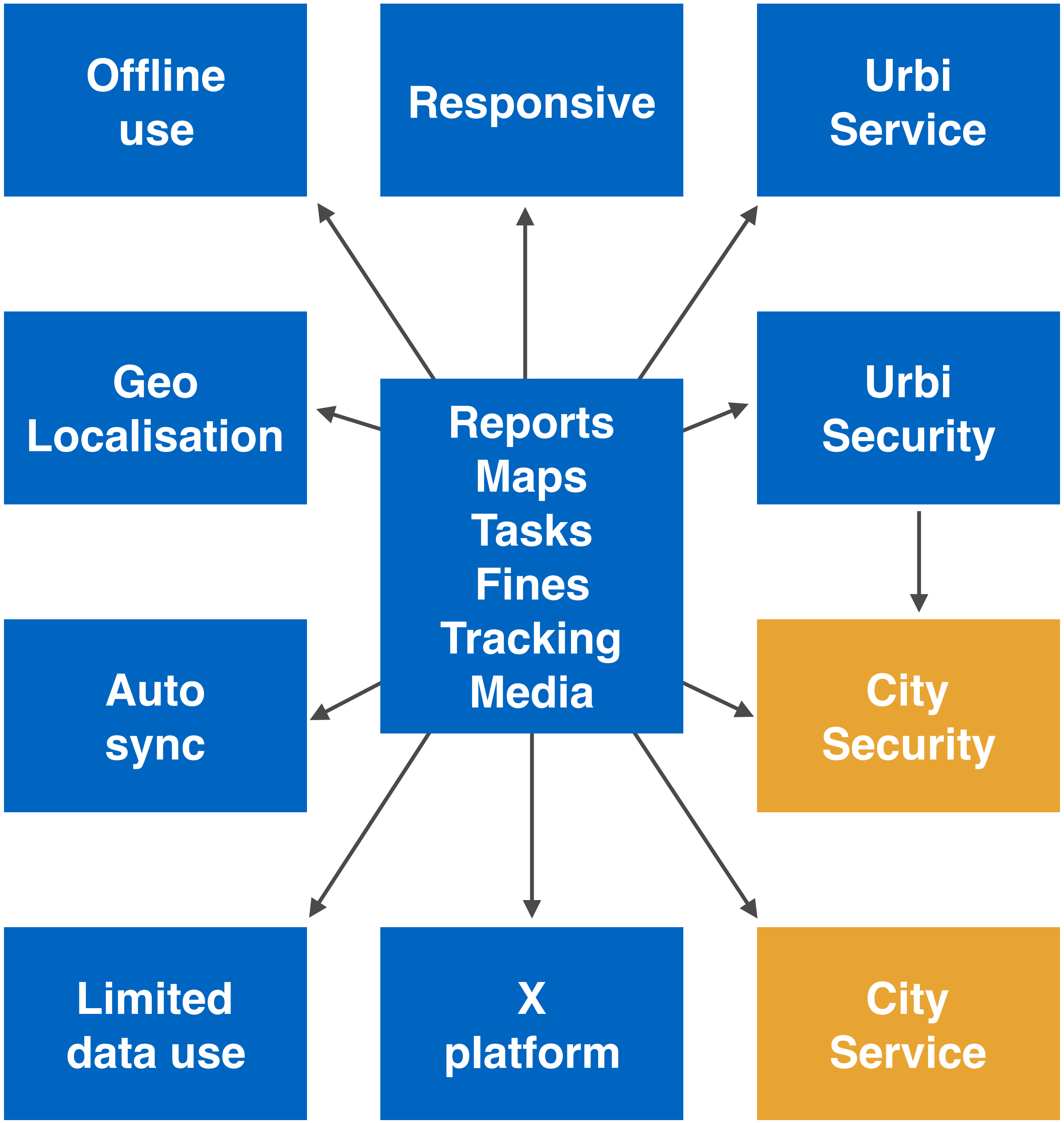
City Security

Limited data use

X platform

City Service

Urbi+



Offline use

Responsive

Urbi Service

Geo Localisation

Reports
Maps
Tasks
Fines
Tracking
Media

Urbi Security

Auto sync

City Security

Limited data use

X platform

City Service

BOOM!

Xamarin after Hello World

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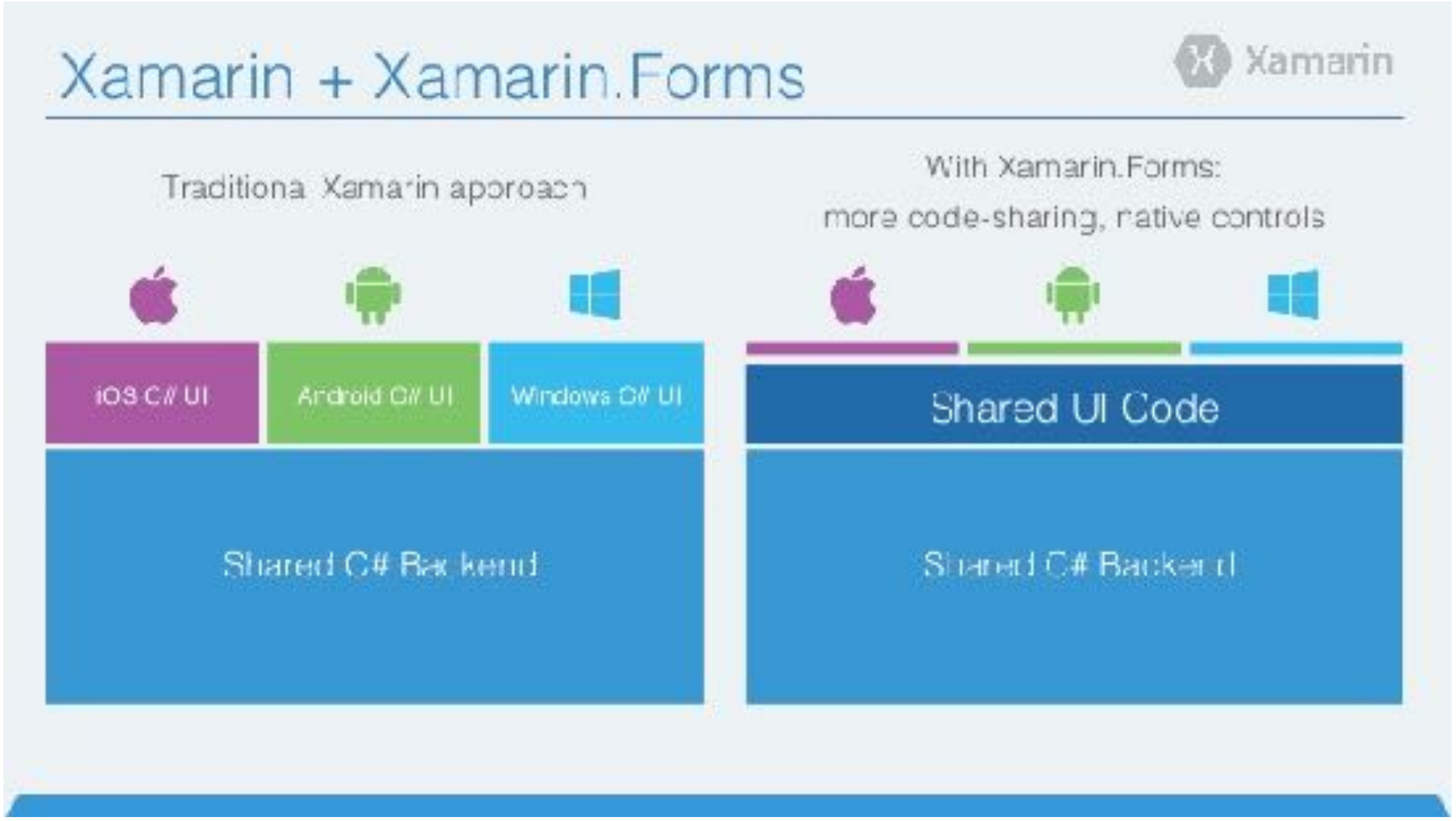
Xamarin

Intro
Setup
Connectivity



Xamarin + Xamarin.Forms

Xamarin

Traditional Xamarin approach

iOS C# UI | Android C# UI | Windows C# UI

Shared C# Backend

With Xamarin.Forms:
more code-sharing, native controls

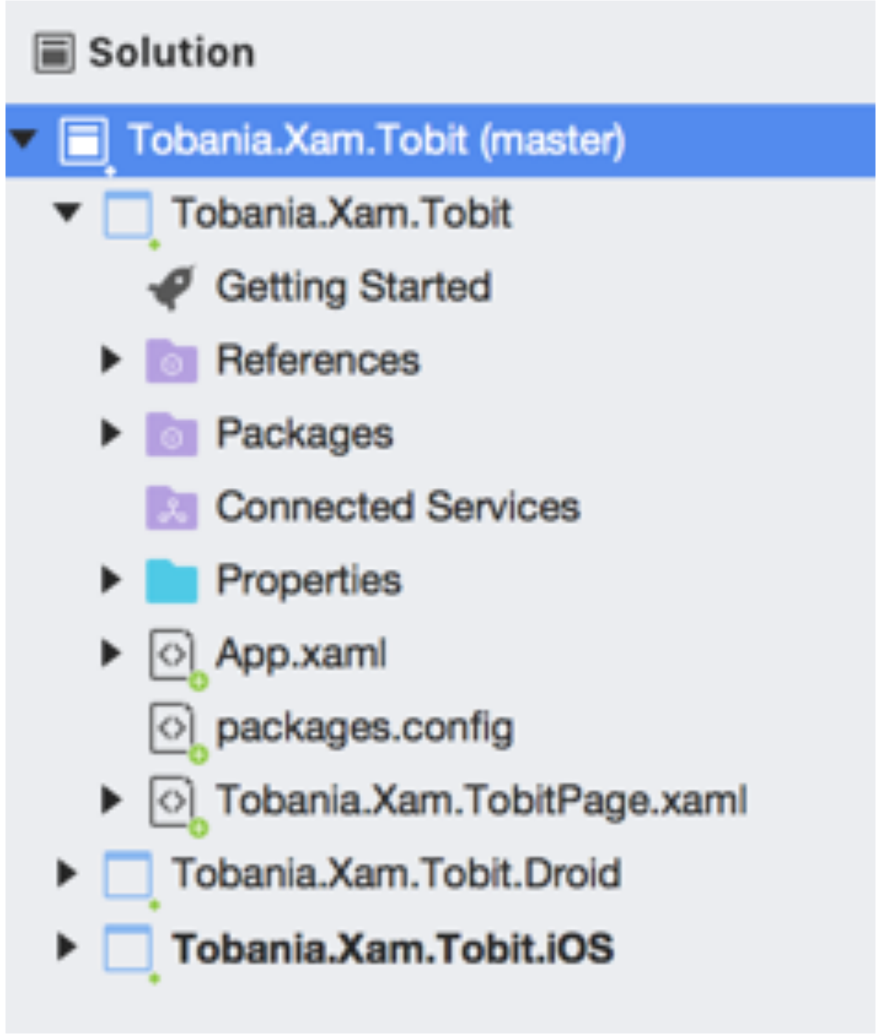
Shared UI Code

Shared C# Backend

Xamarin

Intro
Setup
Connectivity

The default setup



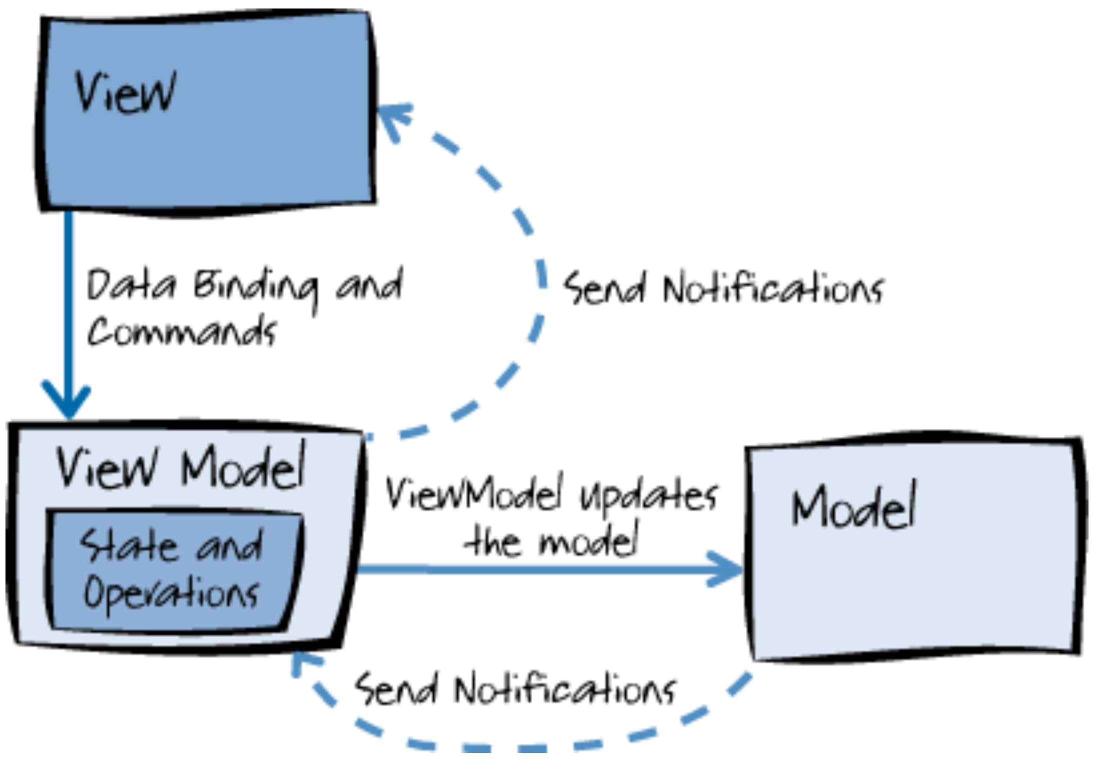
Solution

- Tobania.Xam.Tobit (master)
  - Tobania.Xam.Tobit
    - Getting Started
    - References
    - Packages
    - Connected Services
    - Properties
    - App.xaml
    - packages.config
    - Tobania.Xam.TobitPage.xaml
  - Tobania.Xam.Tobit.Droid
  - Tobania.Xam.Tobit.iOS

Xamarin

Intro
Setup
Connectivity

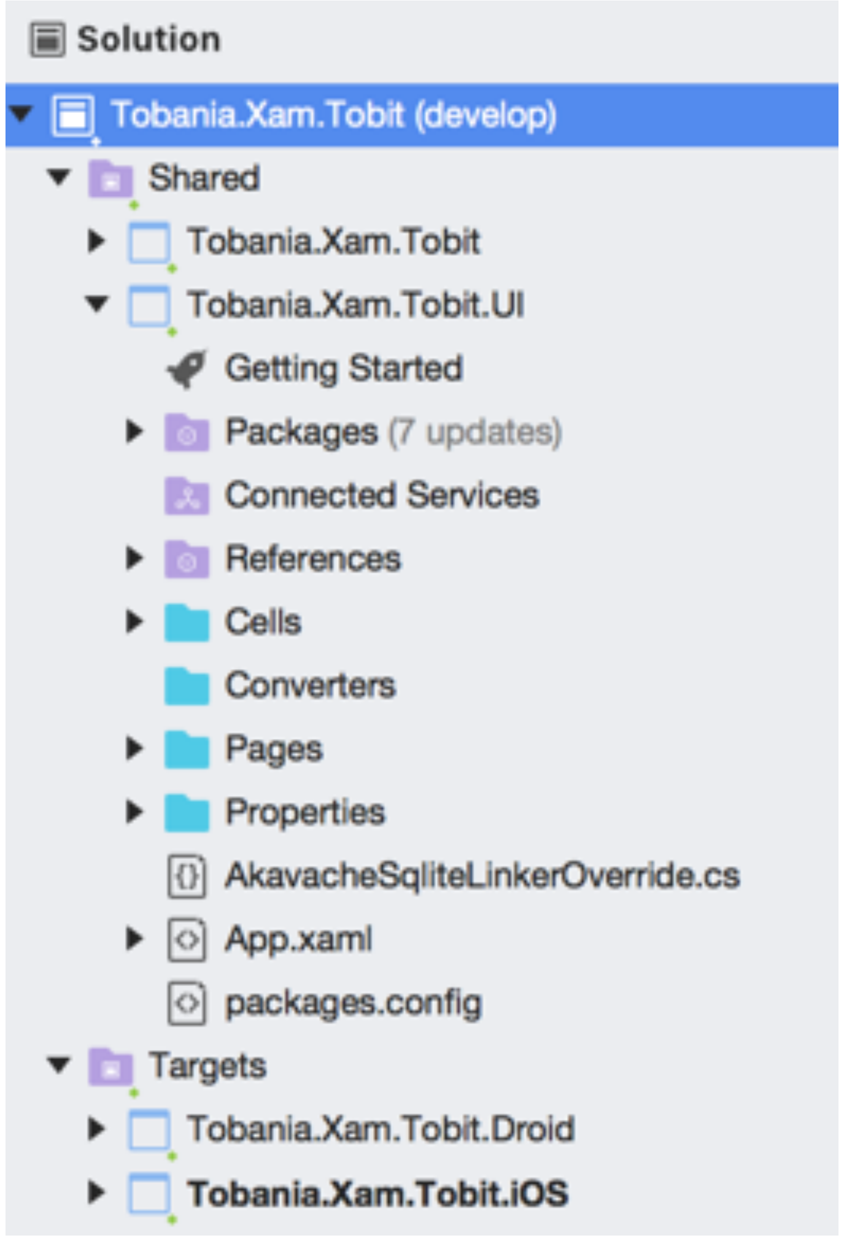
What about the UI?



Xamarin

Intro
Setup
Connectivity

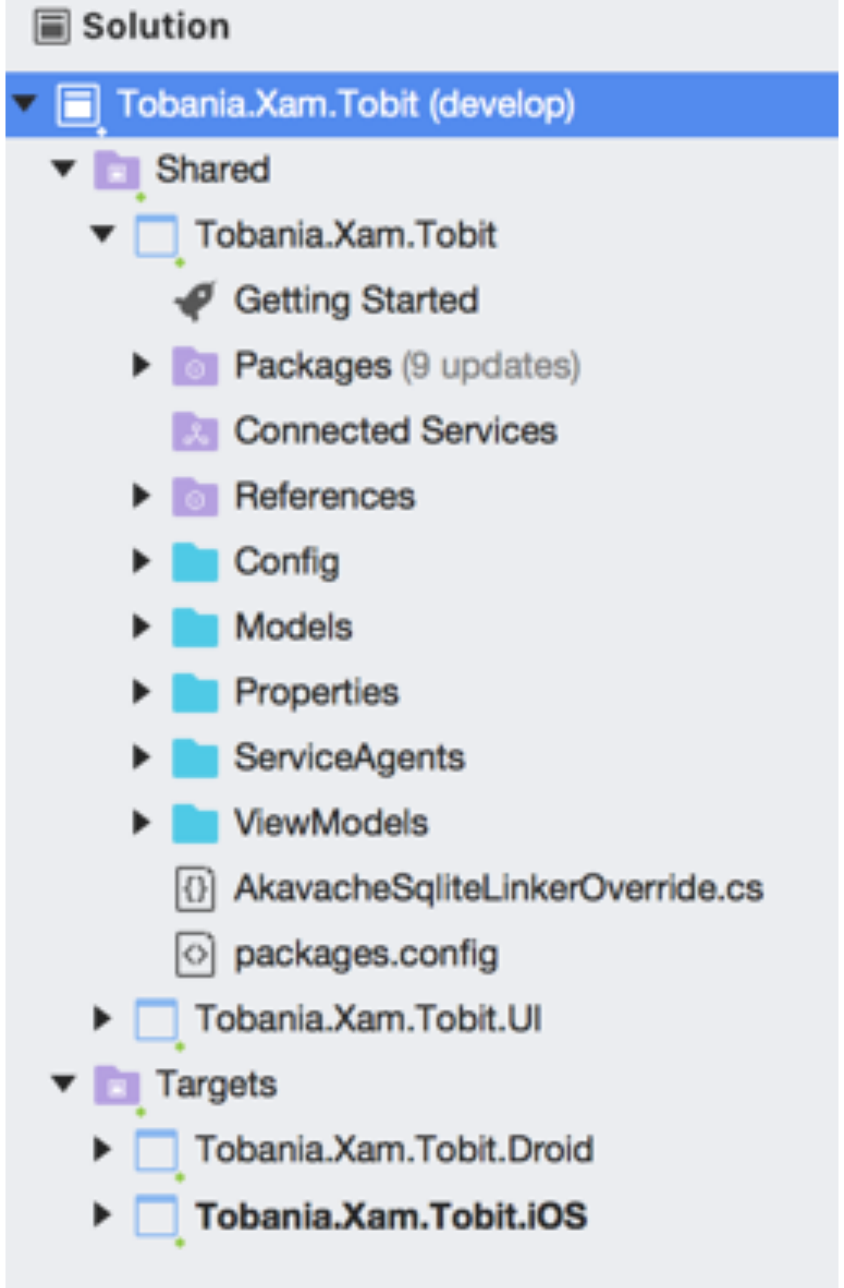
What about the UI?


Solution
Tobania.Xam.Tobit (develop)
Shared
Tobania.Xam.Tobit
Tobania.Xam.Tobit.UI
Getting Started
Packages (7 updates)
Connected Services
References
Cells
Converters
Pages
Properties
AkavacheSqliteLinkerOverride.cs
App.xaml
packages.config
Targets
Tobania.Xam.Tobit.Droid
Tobania.Xam.Tobit.iOS

Xamarin

Intro
Setup
Connectivity

What about the PCL?



Solution
- Tobania.Xam.Tobit (develop)
  - Shared
    - Tobania.Xam.Tobit
      - Getting Started
      - Packages (9 updates)
      - Connected Services
      - References
      - Config
      - Models
      - Properties
      - ServiceAgents
      - ViewModels
      - AkavacheSqliteLinkerOverride.cs
      - packages.config
    - Tobania.Xam.Tobit.UI
  - Targets
    - Tobania.Xam.Tobit.Droid
    - **Tobania.Xam.Tobit.iOS**

Xamarin

Intro
Setup
Connectivity

What about the PCL?

- Check the profile settings!
- Keep an eye on.NET Standard 2.0

What about the Repository?

- Change the structure before your first commit
- src / docs / AppStore / Readme
- .gitignore
  - Ignore VS specifics
  - Ignore NuGet Packages
  - Resource.Designer.cs
  - .DS_Store
  - https://www.gitignore.io/

Xamarin

Intro
Setup
Connectivity

Connectivity

Xamarin

Connectivity

It’s all about UX

Xamarin

Wanted Connectivity for users

- Offline access
- Retry if a request fails
- Updates in background
- Fast data retrieval
- User requests get priority over background requests
- No unnecessary calls

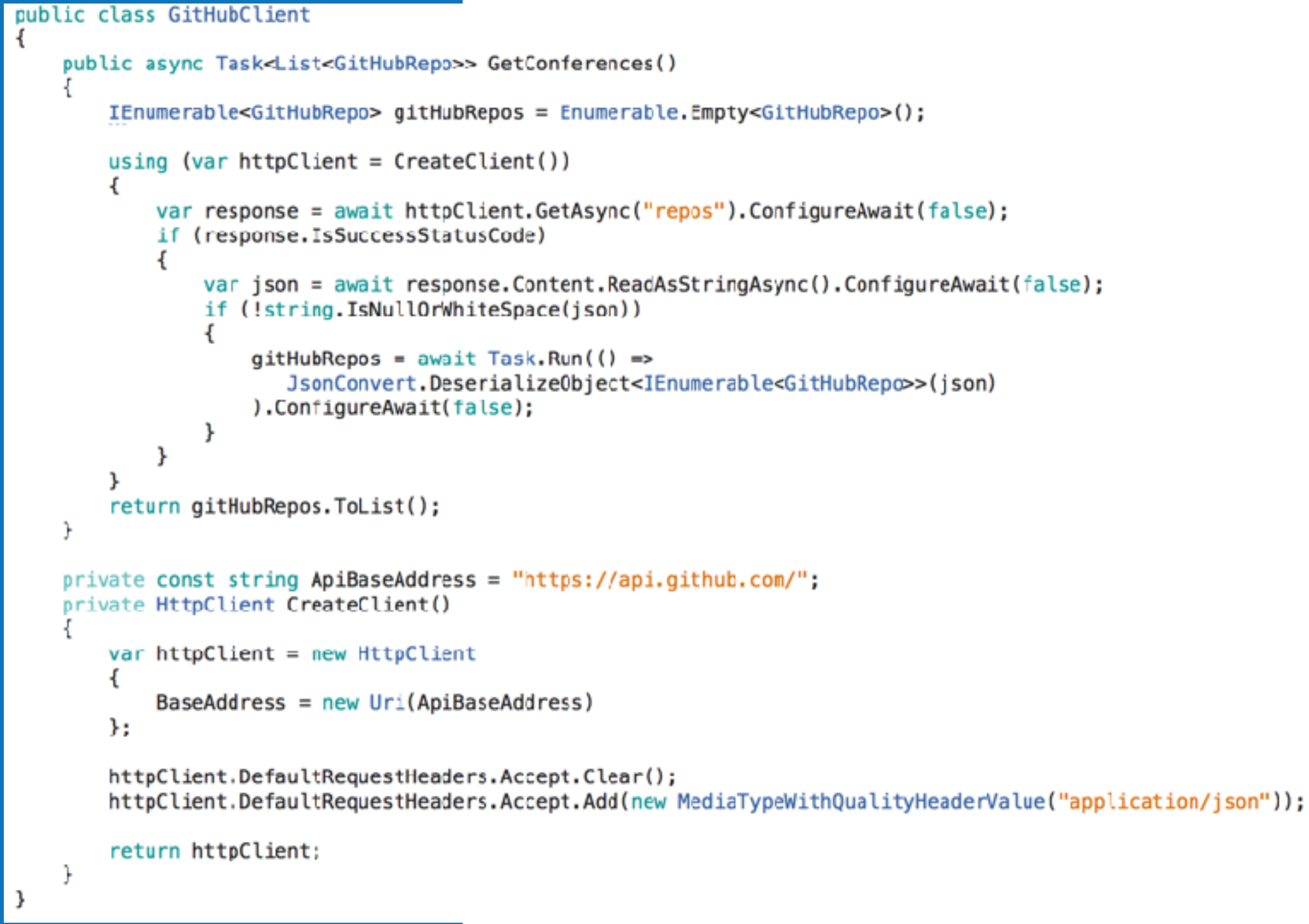
Xamarin

Wanted Connectivity for devs

- JSON format
- Productivity
- Structured way of working
- Code reuse
- Easy to use libs
- Bug free code :-)

Xamarin

Connectivity not optimised



```
public class GitHubClient
{
    public async Task<List<GitHubRepo>> GetConferences()
    {
        IEnumerable<GitHubRepo> gitHubRepos = Enumerable.Empty<GitHubRepo>();

        using (var httpClient = CreateClient())
        {
            var response = await httpClient.GetAsync("repos").ConfigureAwait(false);
            if (response.IsSuccessStatusCode)
            {
                var json = await response.Content.ReadAsStringAsync().ConfigureAwait(false);
                if (!string.IsNullOrWhiteSpace(json))
                {
                    gitHubRepos = await Task.Run(() =>
                       JsonConvert.DeserializeObject<IEnumerable<GitHubRepo>>(json)
                    ).ConfigureAwait(false);
                }
            }
        }
        return gitHubRepos.ToList();
    }

    private const string ApiBaseAddress = "https://api.github.com/";
    private HttpClient CreateClient()
    {
        var httpClient = new HttpClient
        {
            BaseAddress = new Uri(ApiBaseAddress)
        };

        httpClient.DefaultRequestHeaders.Accept.Clear();
        httpClient.DefaultRequestHeaders.Accept.Add(new MediaTypeWithQualityHeaderValue("application/json"));

        return httpClient;
    }
}
```

Xamarin

- **JSON format**
- Productivity
- Structured way of working
- Code reuse
- Easy to use libs
- Bug free code :-)

Connectivity basic

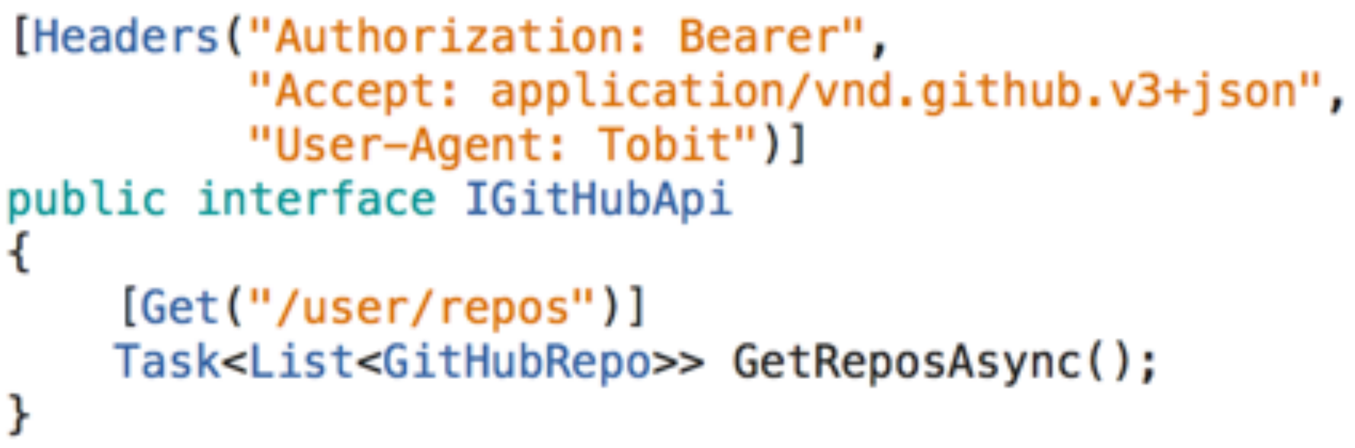
- Newtonsoft.json (json.net)
- Microsoft.Net.Http

Xamarin

- **JSON format**
- **Productivity**
- **Structured way of working**
- **Code reuse**
- **Easy to use libs**
- Bug free code :-)

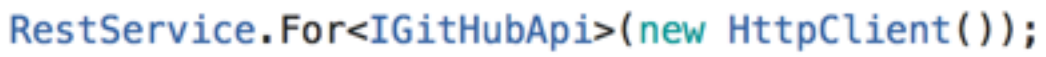
Connectivity with Refit

Define rest call



```
[Headers("Authorization: Bearer",
         "Accept: application/vnd.github.v3+json",
         "User-Agent: Tobit")]
public interface IGitHubApi
{
    [Get("/user/repos")]
    Task<List<GitHubRepo>> GetReposAsync();
}
```

Create instance



```
RestService.For<IGitHubApi>(new HttpClient());
```

Xamarin

Connectivity with Refit

- **JSON format**
- **Productivity**
- **Structured way of working**
- **Code reuse**
- **Easy to use libs**
- Bug free code :-)

Xamarin

Connectivity with Refit

- JSON format
- Productivity
- Structured way of working
- Code reuse
- Easy to use libs
- **Bug free code :-(**

Xamarin

- JSON format
- Productivity
- Structured way of working
- Code reuse
- Easy to use libs
- **Bug free code :-(**

Wanted Connectivity for users

- Offline access
- Retry if a request fails
- Updates in background
- Fast data retrieval
- User requests get priority over background requests
- No unnecessary calls

Xamarin

- Offline access
- Retry if a request fails
- Updates in background
- Fast data retrieval
- **User requests get priority over background requests**
- **No unnecessary calls**

Connectivity Fusillade

Demo GitHubServiceAgent

Xamarin

- Offline access
- Retry if a request fails
- Updates in background
- **Fast data retrieval**
- **User requests get priority over background requests**
- **No unnecessary calls**

Connectivity ModernHttpClient

Demo ApiHandler

Xamarin

- Offline access
- Retry if a request fails
- Updates in background
- Fast data retrieval
- User requests get priority over background requests
- No unnecessary calls

Connectivity

Demo GitHubService:
Akavache
Polly
Connectivity Plugin

Xamarin

Authorization

Xamarin

Authorization Xamarin.Auth

- Custom renderers in XForms
- Add as component (no NuGet)

Xamarin

Authorization Xamarin.Auth

Demo Xamarin.Auth

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Tobit

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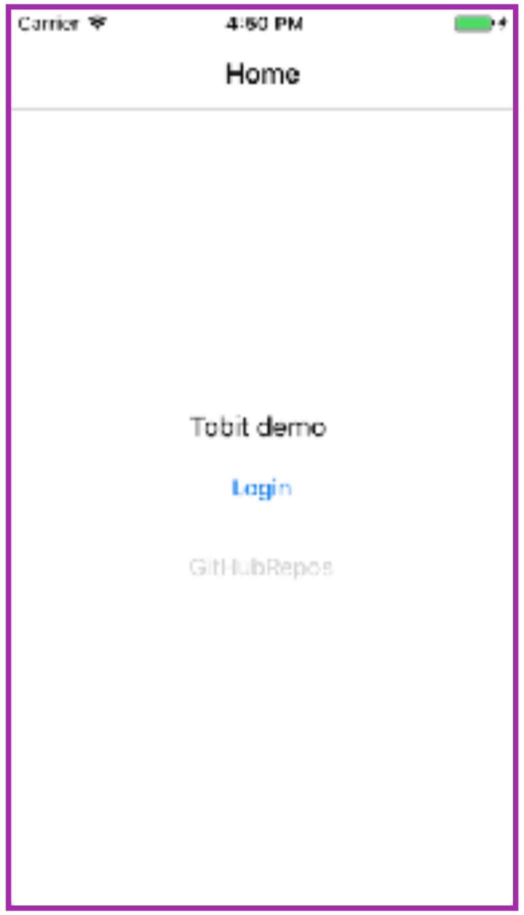

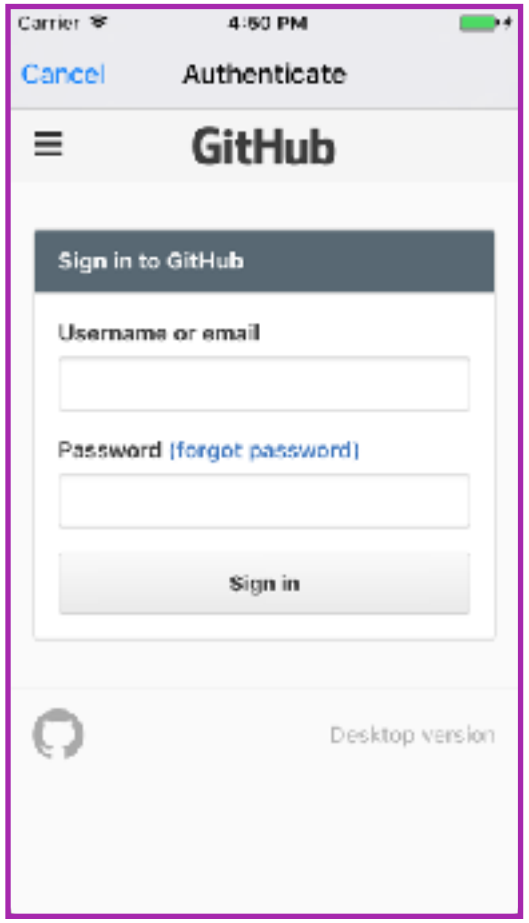

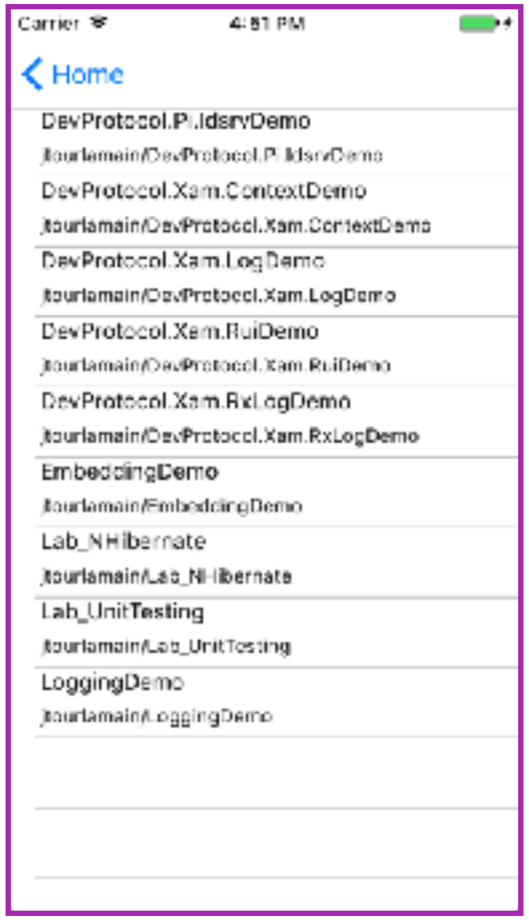

DevProtocol.PI.IdsrvDemo
jtourlamain/DevProtocol.PI.IdsrvDemo
DevProtocol.Xam.ContextDemo
jtourlamain/DevProtocol.Xam.ContextDemo
DevProtocol.Xam.LogDemo
jtourlamain/DevProtocol.Xam.LogDemo
DevProtocol.Xam.RuiDemo
jtourlamain/DevProtocol.Xam.RuiDemo
DevProtocol.Xam.RxLogDemo
jtourlamain/DevProtocol.Xam.RxLogDemo
EmbeddingDemo
jtourlamain/EmbeddingDemo
Lab_NHibernate
jtourlamain/Lab_NHibernate
Lab_UnitTesting
jtourlamain/Lab_UnitTesting
LoggingDemo
jtourlamain/LoggingDemo

- source code: https://github.com/jtourlamain/Tobania.Xam.Tobit

- tutorial: https://github.com/jtourlamain/Tobania.Xam.Tobit/blob/master/docs/tutorial.md

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Tips

Learn GIT

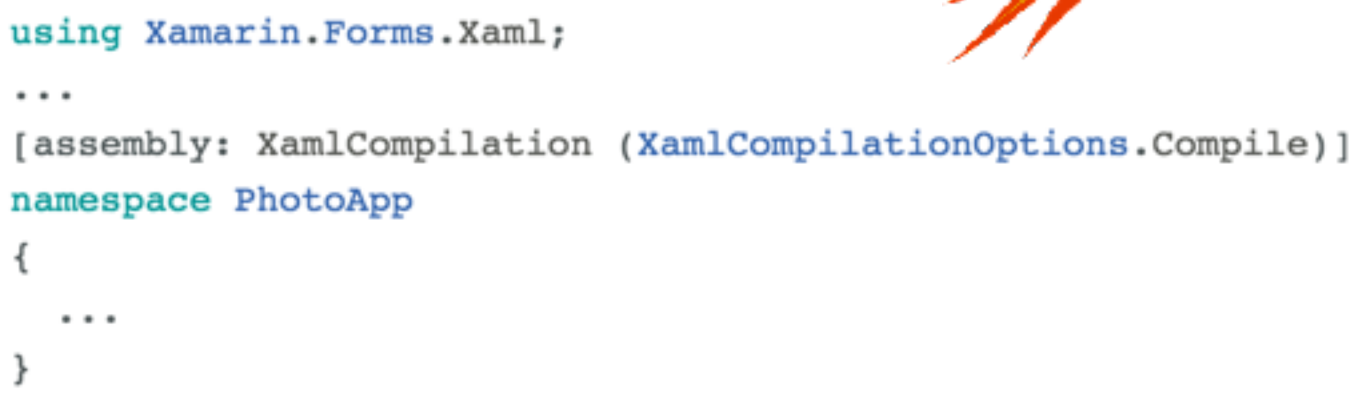
Tips

Use a REST Client

- Postman (chrome extension)
- Paw (MacOS only)

Tips

Use XAMLC



```
using Xamarin.Forms.Xaml;
...
[assembly: XamlCompilation (XamlCompilationOptions.Compile)]
namespace PhotoApp
{
    ...
}
```

Doesn’t work when using native view declarations (new in XForms 2.3.3)

Tips

OAuth2

- MSAL (Microsoft Authentication Library)
- ADAL (Azure AD Authentication Library)
- IdentityModel (Dominick Baier)

Tips

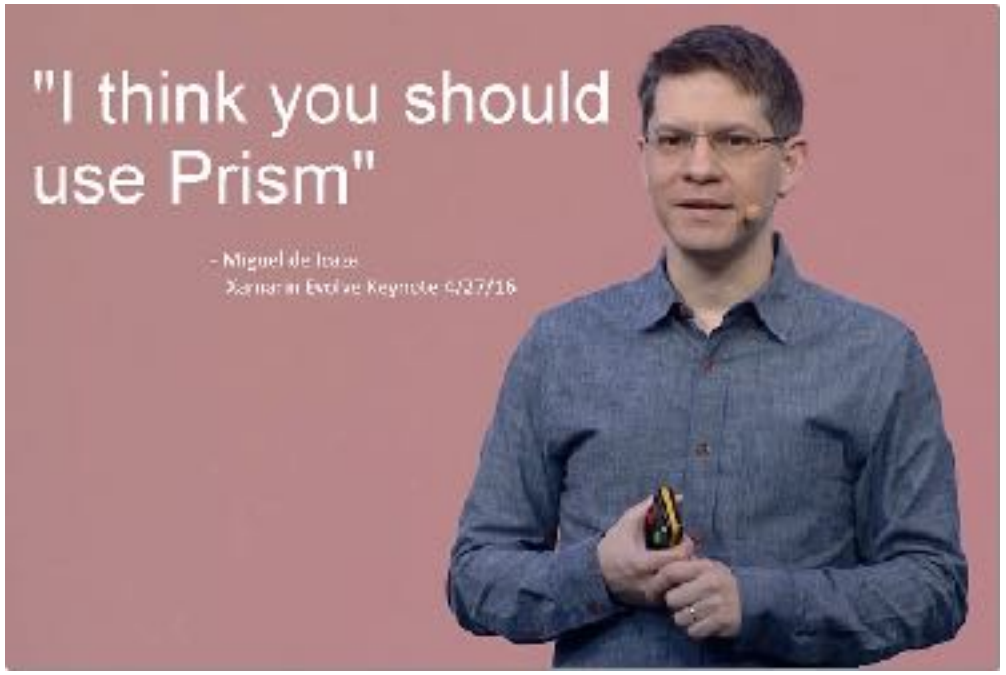
Version

- Put it somewhere visible in you app

Tips

MVVM

- MVVM isn’t about libraries
- Prism
- ReactiveUI



"I think you should use Prism"

- Miguel de Icaza
Xamarin Evolve Keynote 4/27/16

Not all MVVM frameworks support your wanted XForms features.

Tips

Make your app reactive

- Learn Rx
- Learn ReactiveUI

Tips

Turn on ListView recycling

```
<ListView CachingStrategy="RecycleElement" >
    <ListView.ItemTemplate>
        <DataTemplate>
            <ViewCell>
                <!-- ... -->
            </ViewCell>
        </DataTemplate>
    </ListView.ItemTemplate>
</ListView>
```

☠ If using LINQ do a ToList() before you bind

Tips

Xamarin Plugins

- https://github.com/jamesmontemagno/Xamarin.Plugins

Tips

Mobile if FUN

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Questions

Questions

Intellectual properties

- The Noun Project: race icon by Ralf Schmitzer
- The Noun Project: iPhone icon by Tinashe Mugayi
- The Noun Project: Lightbulb icon by Tracy Tam
- Electric shock from http://crazyjokes-9709.blogspot.be/2012/09/electric-shocks.html
- Rocket https://pixabay.com/en/rocket-space-ship-space-launch-312767/
- Skull https://www.iconfinder.com/search/?q=skull&style=flat&price=free&maximum=512
- Duvel https://colruyt.collectandgo.be/cogo/nl/zoeken?z=duvel
- Miguel de Icasa http://brianlagunas.com/xamarin-evolve-2016-slides-sample-code/

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