

Adaptive Universal Apps

für Windows 8.1 und Windows Phone 8.1

Oliver Scheer
Senior Technical Evangelist
Microsoft Deutschland
@theoliver // oliver.scheer@microsoft.com



Slides, Links und Code

<http://aka.ms/oliveradaptivelayout>



Der Wunsch

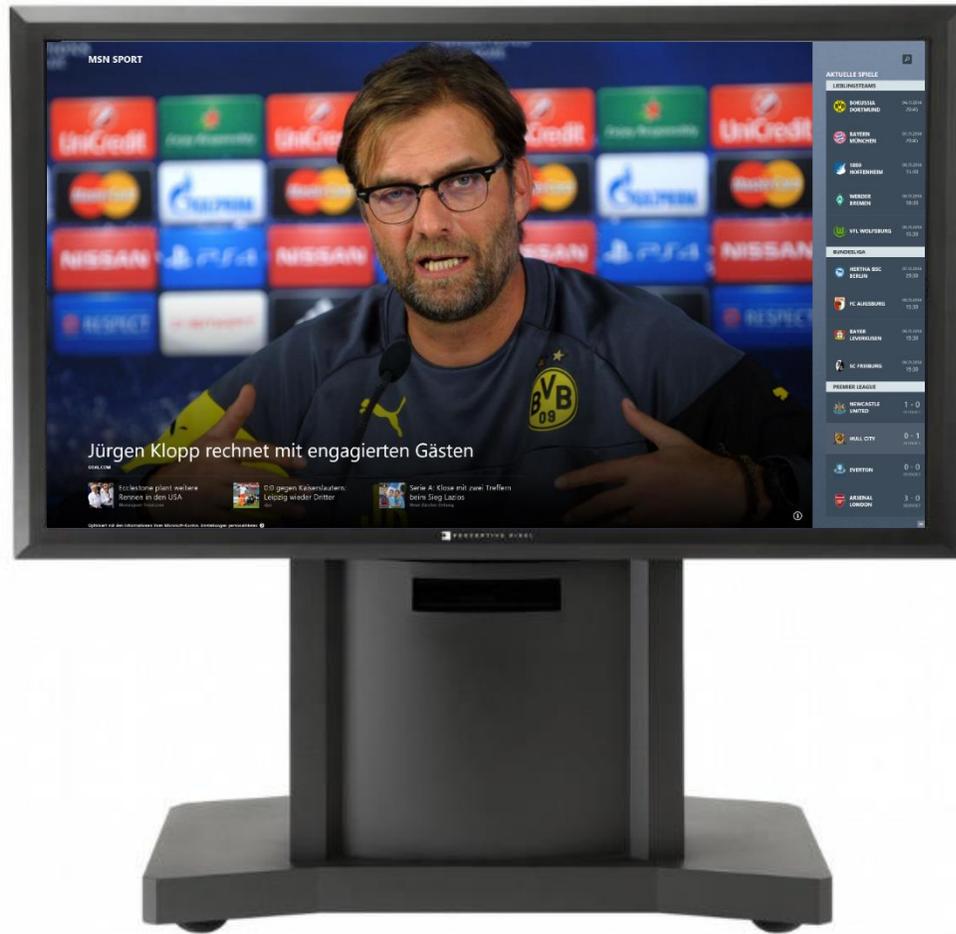
Eine App, mit möglichst wenig Mehraufwand für alle Screens erstellen.

Herausforderungen

Bildschirmgrößen







MSN SPORT



Jürgen Klopp rechnet mit engagierten Gästen

GOAL.COM



Ecclestone plant weitere Rennen in den USA

Motorsport-Total.com



0:0 gegen Kaiserslautern: Leipzig wieder Dritter

dpa



Serie A: Klose mit zwei Treffern beim Sieg Lazios

Neue Zürcher Zeitung



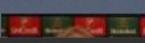


NOKIA

MSN Sport 08:32 9:30

nachrichten

TOP-STORIES >

-  Jürgen Klopp rechnet mit engagierten Gästen
Goal.com Vor 10 Std.
-  Ecclestone plant weitere Rennen in den USA
Motorsport-Total.com Vor 12 Std.
-  0:0 gegen Kaiserslautern: Leipzig wieder Dritter
dpa Vor 10 Std.
-  Serie A: Klose mit zwei Treffern beim Sieg Lazios
Neue Zürcher Zeitung Vor 9 Std.
-  Afrika-Cup 2015 wird nicht verschoben
Deutsche Welle Vor 15 Std.
-  Zur Sicherheit: Dortmund

← Windows →







Sport 08:32

richten m

lopp rechnet mit
Gästen
Std.

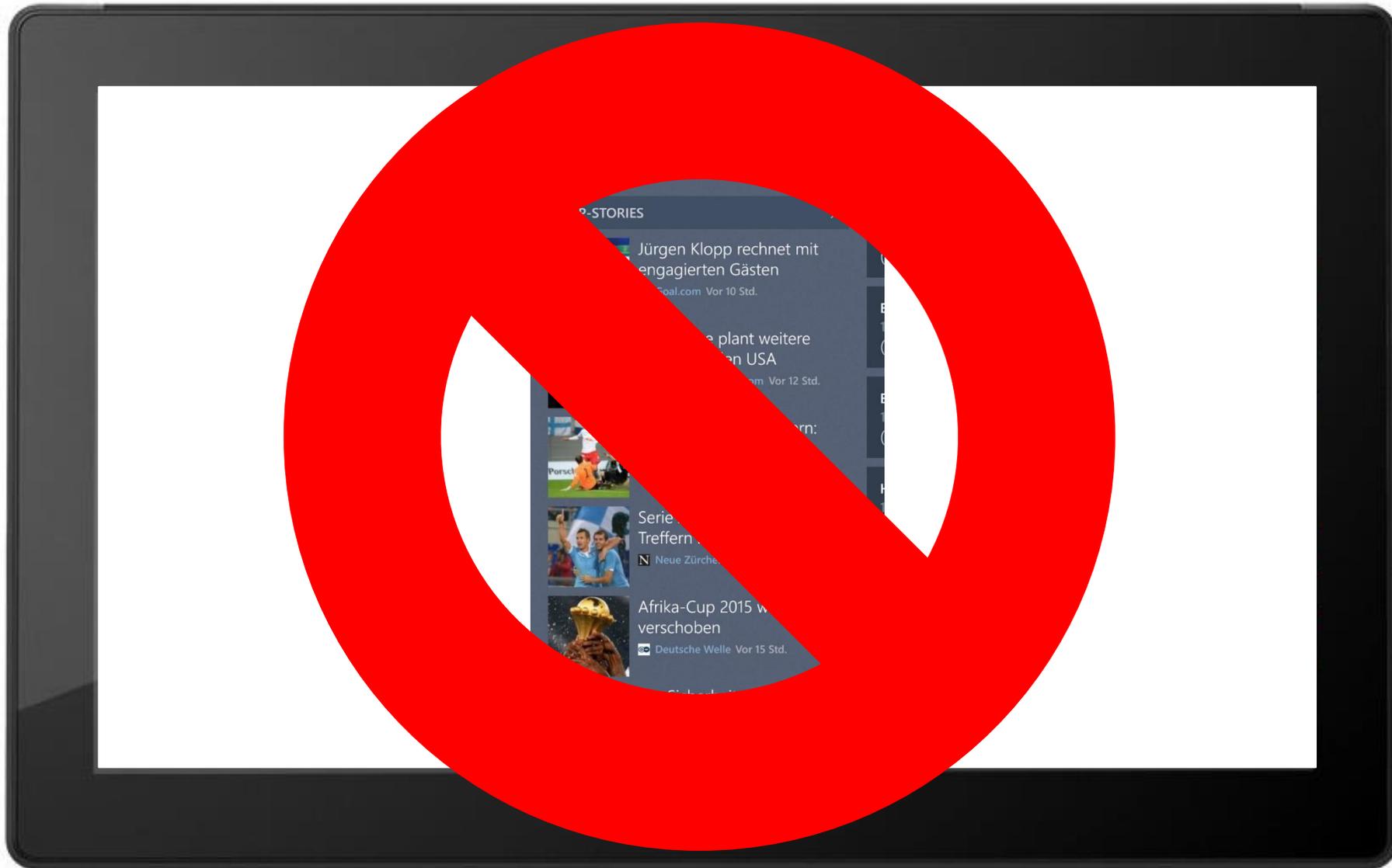
ere

Serie-
Treffen v
Neue Zürcher

Afrika-Cup 2015 w
verschoben
Deutsche Welle Vor 15 Std.

Zur Sicherheit: Dortmund

PROEXTREME KINOL



Fullscreen Apps vs. Fenster-Modus

The image shows a mobile application interface in fullscreen mode. The main content area features a large photo of Jürgen Klopp, a Borussia Dortmund coach, speaking at a press conference. The background of the photo is a wall of various sponsor logos including UniCredit, Heineken, Mastercard, Nissan, and PlayStation. Overlaid on the photo is the text "Jürgen Klopp rechnet mit engagierten Gästen" in white. Below the photo, there are three small news snippets with thumbnails and text: "Ecclestone plant weitere Rennen in den USA" from Motorsport-Total.com, "0:0 gegen Kaiserslautern: Leipzig wieder Dritter" from dpa, and "Serie A: Klose mit zwei Treffern beim Sieg Lazios" from Neue Zürcher Zeitung. The top left corner of the app shows "MSN SPORT" and "GOAL.COM". On the right side, a dark grey sidebar menu is visible, containing a search icon, "AKTUELLE SPIELE", "LIEBLINGSTEAM:", "VFL WOLFGANG", "BORUSSIA DORTMUND", "BUNDESLIGA", "HERTHA BERLIN", "EINTRACH FRANKFURT", and "SC FREIBURG". A small information icon (i) is located at the bottom right of the main content area.

The image is a screenshot of a web browser displaying a sports news article. The browser's address bar shows 'Sport'. The article's main heading is 'Jürgen Klopp rechnet mit engagierten Gästen', with 'MSN SPORT' as the source. The background is a photo of Jürgen Klopp in a Borussia Dortmund jersey. Below the main heading are three news snippets, each with a source: 'Ecclestone plant weitere Rennen in den USA' from Motorsport-Total.com, '0:0 gegen Kaiserslautern: Leipzig wieder Dritter' from dpa, and 'Serie A: Klose mit zwei Treffern beim Sieg Lazios' from Neue Zürcher Zeitung. A search icon is in the top right, and an information icon is in the bottom right.

Sport

MSN SPORT

Jürgen Klopp rechnet mit engagierten Gästen

GOAL.COM

Ecclestone plant weitere Rennen in den USA
Motorsport-Total.com

0:0 gegen Kaiserslautern: Leipzig wieder Dritter
dpa

Serie A: Klose mit zwei Treffern beim Sieg Lazios
Neue Zürcher Zeitung

i

Fazit

One „fix“ Design does not fit all Sizes

Die Plattformen

Die Plattformen

XAML

Universal Apps

- Windows Phone
- Windows
-

WPF* & Silverlight*

*viele Tipps und Trick gehen, aber nicht alle oder wenn dann etwas anders

Die Tools

Die Tools

Visual Studio

Coding & Design

Switch zwischen Windows und Windows Phone

Devices-Window

Blend für Visual Studio

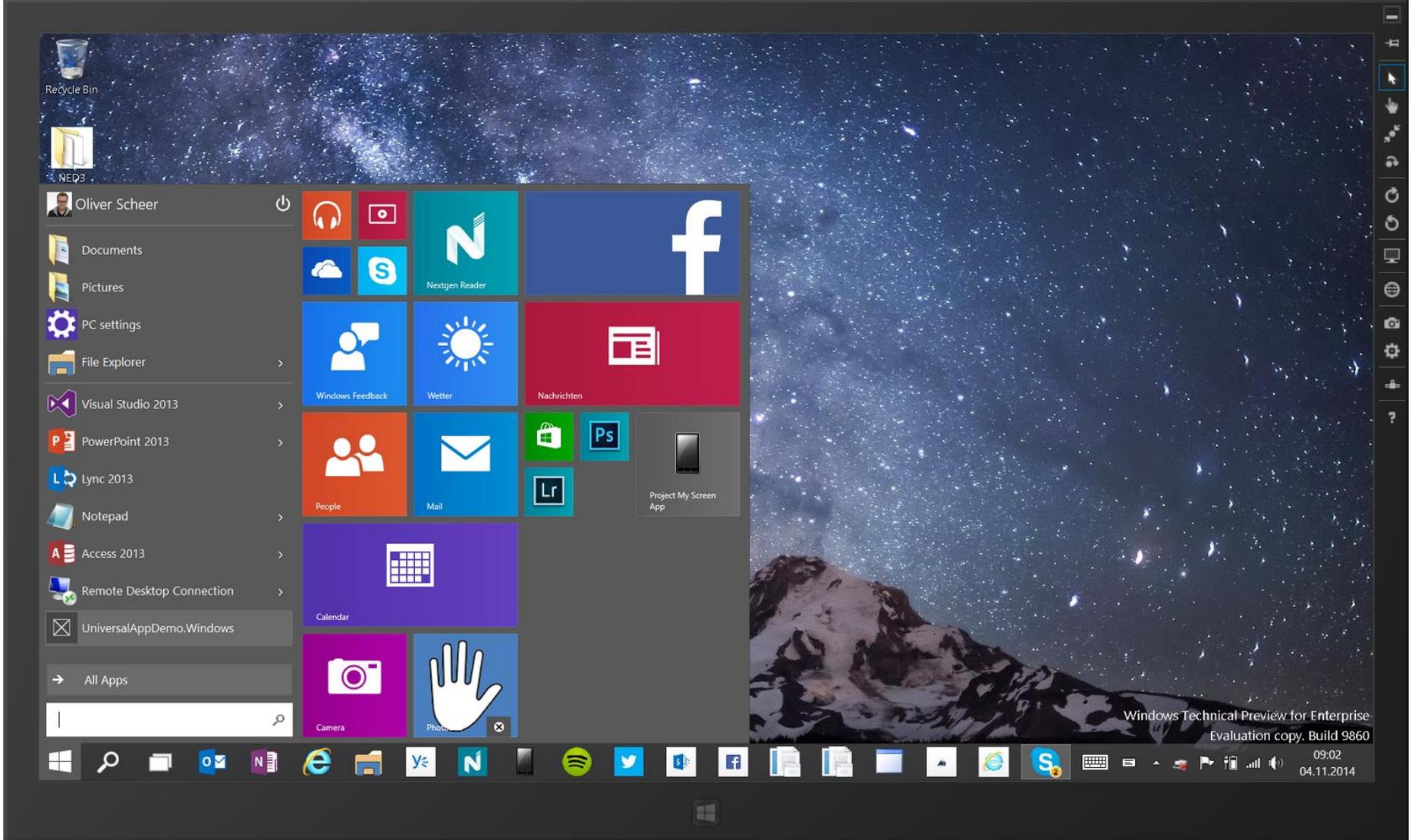
Animationen

Behaviors via Drag & Drop

Emulatoren

Windows-Emulator

Windows Phone-Emulator



Recycle Bin

NEQ3

Oliver Scheer

Documents

Pictures

PC settings

File Explorer

Visual Studio 2013

PowerPoint 2013

Lync 2013

Notepad

Access 2013

Remote Desktop Connection

UniversalAppDemo.Windows

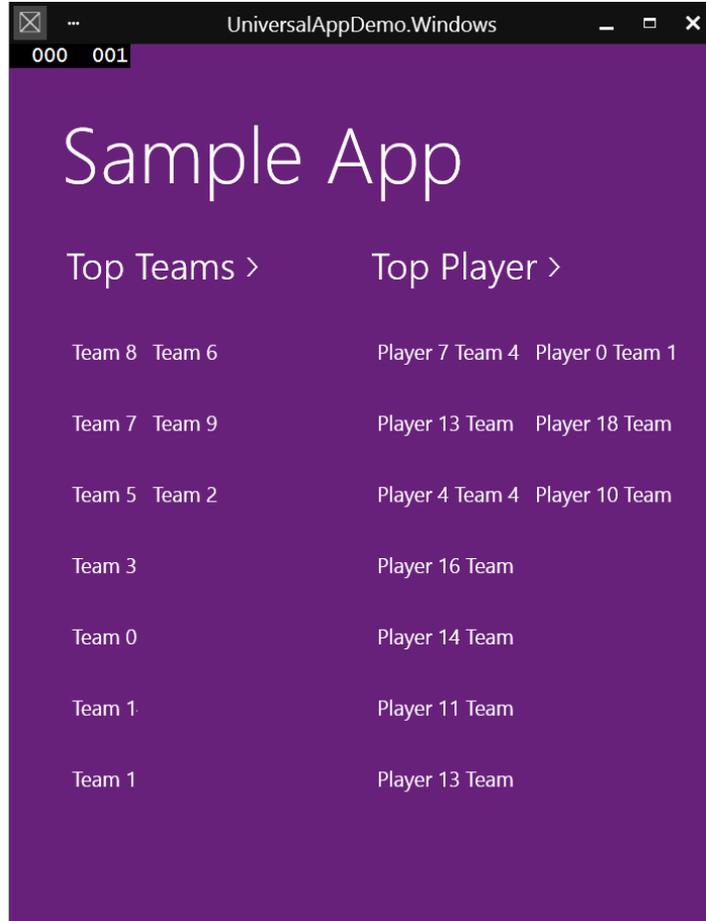
All Apps



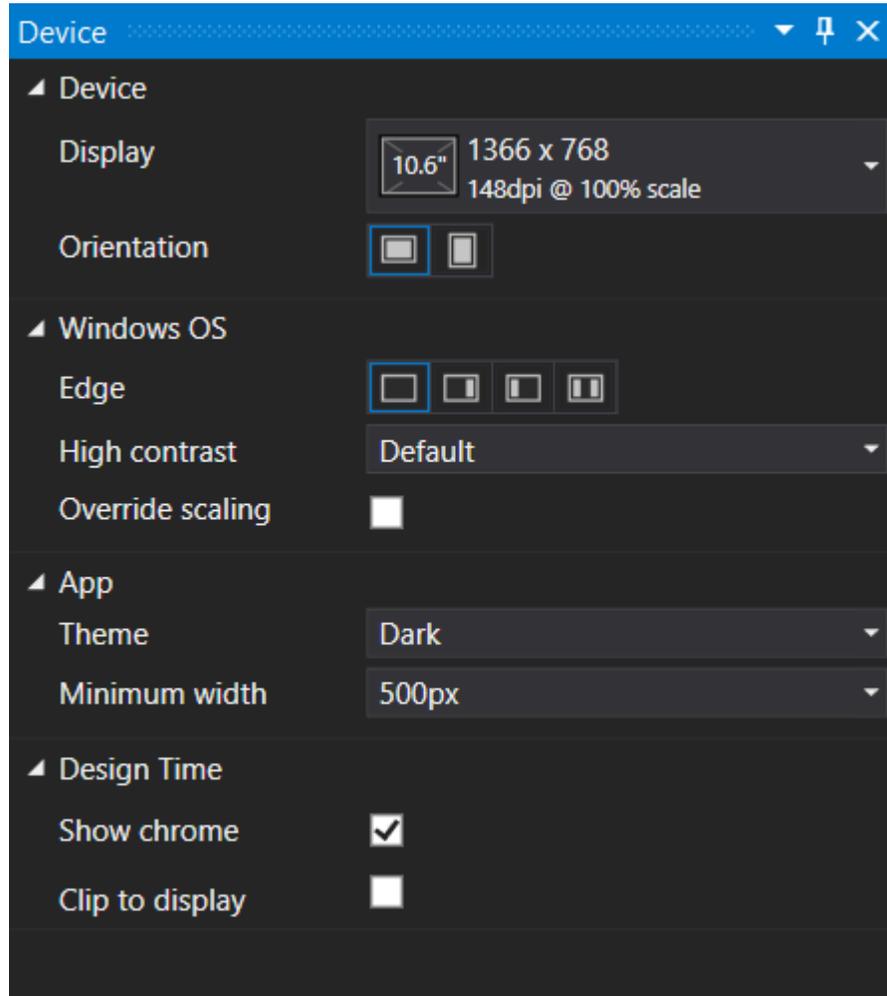
Windows Technical Preview for Enterprise
Evaluation copy. Build 9860

09:02
04.11.2014





Devices-Fenster



Tipps und Tricks

Tipp 1: Universal App Template

Universal Apps

- Windows App
- Windows Phone App
- Shared Library für beide Projekte

Demo

Universal Apps

Tipp 2: DesignTime-Daten

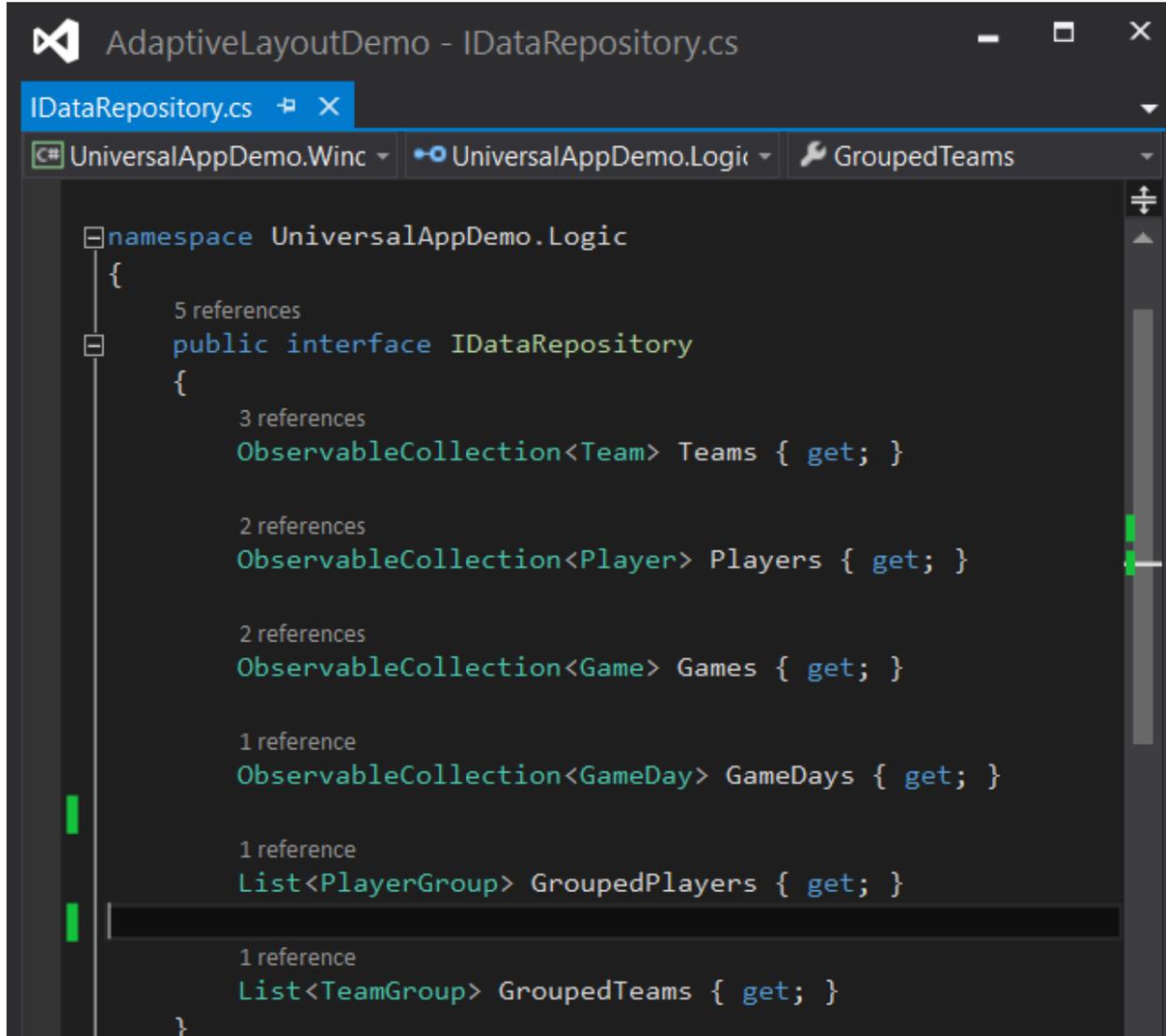
DesignTime-Daten

Echte Daten, z.B. vom Server können nicht während der Entwicklungszeit geladen werden ☹

Testdaten ersparen viel Zeit und ständiges Starten der Apps, und können zur Laufzeit gegen echte Datenquellen ausgetauscht werden.

Fazit: Das bisschen Aufwand zahlt sich sehr schnell aus.

IDataRepository - Interface



```
AdaptiveLayoutDemo - IDataRepository.cs
IDataRepository.cs
C# UniversalAppDemo.Winc UniversalAppDemo.Logic GroupedTeams

namespace UniversalAppDemo.Logic
{
    5 references
    public interface IDataRepository
    {
        3 references
        ObservableCollection<Team> Teams { get; }

        2 references
        ObservableCollection<Player> Players { get; }

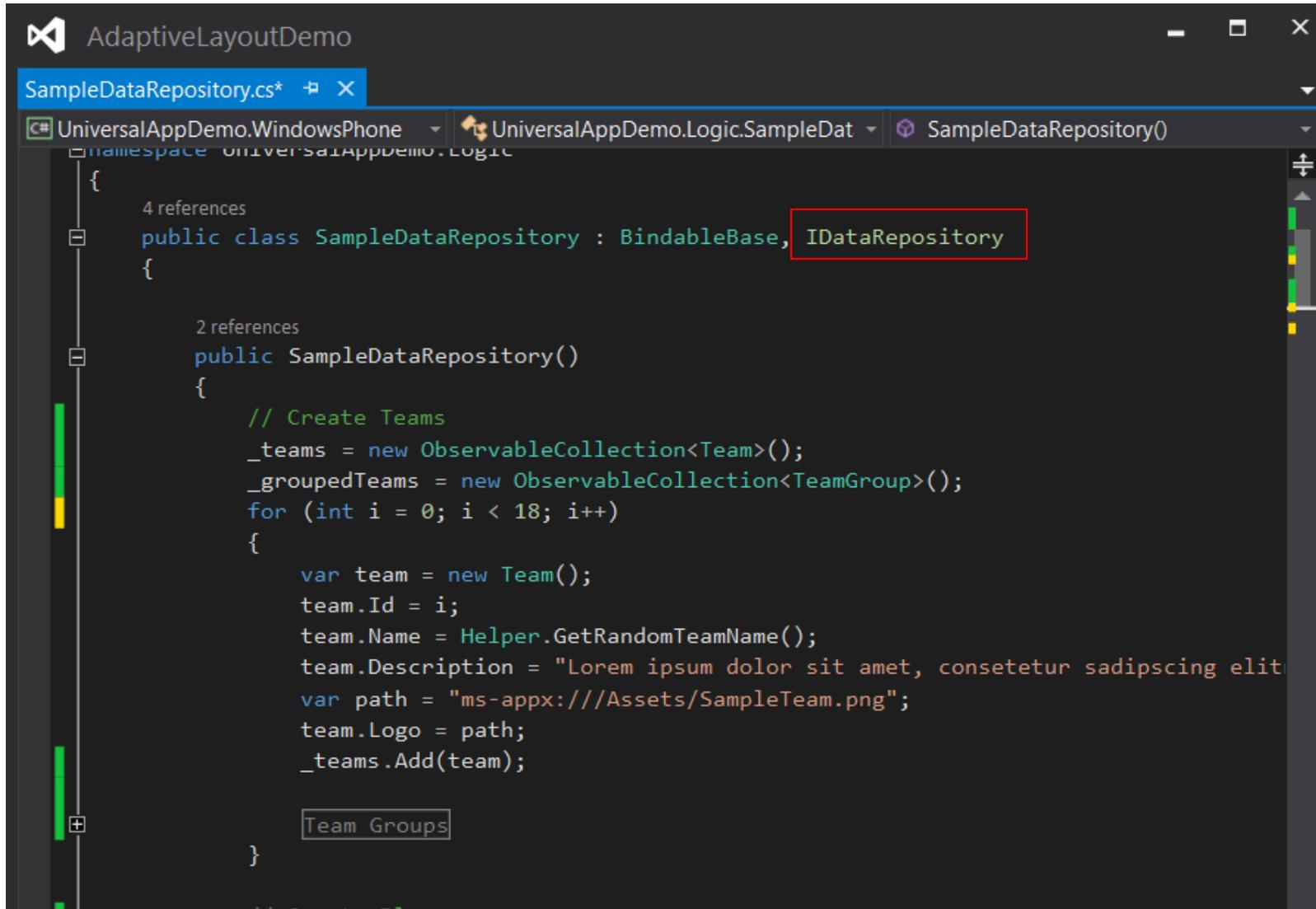
        2 references
        ObservableCollection<Game> Games { get; }

        1 reference
        ObservableCollection<GameDay> GameDays { get; }

        1 reference
        List<PlayerGroup> GroupedPlayers { get; }

        1 reference
        List<TeamGroup> GroupedTeams { get; }
    }
}
```

SampleDataRepository : IDataRepository



The screenshot shows a Visual Studio window titled "AdaptiveLayoutDemo" with a file named "SampleDataRepository.cs*" open. The code is in C# and implements the "SampleDataRepository" class, which inherits from "BindableBase" and implements the "IDataRepository" interface. The class has a constructor that initializes two collections: "_teams" and "_groupedTeams". The "_teams" collection is populated with 18 teams, each with a unique ID, a random name, and a description. The "_groupedTeams" collection is also initialized. The code is as follows:

```
namespace UniversalAppDemo.Logic
{
    4 references
    public class SampleDataRepository : BindableBase, IDataRepository
    {
        2 references
        public SampleDataRepository()
        {
            // Create Teams
            _teams = new ObservableCollection<Team>();
            _groupedTeams = new ObservableCollection<TeamGroup>();
            for (int i = 0; i < 18; i++)
            {
                var team = new Team();
                team.Id = i;
                team.Name = Helper.GetRandomTeamName();
                team.Description = "Lorem ipsum dolor sit amet, consetetur sadipscing elit";
                var path = "ms-appx:///Assets/SampleTeam.png";
                team.Logo = path;
                _teams.Add(team);
            }
        }
    }
}
```

```
private Player _selectedPlayer;
```

0 references

```
public Player SelectedPlayer
{
    get { return _selectedPlayer == null ? Players[0] : _selectedPlayer; }
    set { _selectedPlayer = value; OnPropertyChanged(); }
}
```

```
private Team _selectedTeam;
```

0 references

```
public Team SelectedTeam
{
    get { return _selectedTeam == null ? Teams[0] : _selectedTeam; }
    set { _selectedTeam = value; OnPropertyChanged(); }
}
```



MainViewModel.cs

UniversalAppDemo.WindowsPh... UniversalAppDemo.Logic.MainV... GoToGamesPage()

```
using UniversalAppDemo.Models;  
using UniversalAppDemo.Pages;  
using Windows.ApplicationModel;
```

```
namespace UniversalAppDemo.Logic
```



21 references

```
public class MainViewModel : BindableBase
```



2

2 references

```
public MainViewModel()
```



```
if (DesignMode.DesignModeEnabled)  
{  
    _dataRepository = new SampleDataRepository();  
}  
else  
{  
    _dataRepository = new LiveDataRepository();  
}
```



Data Repository

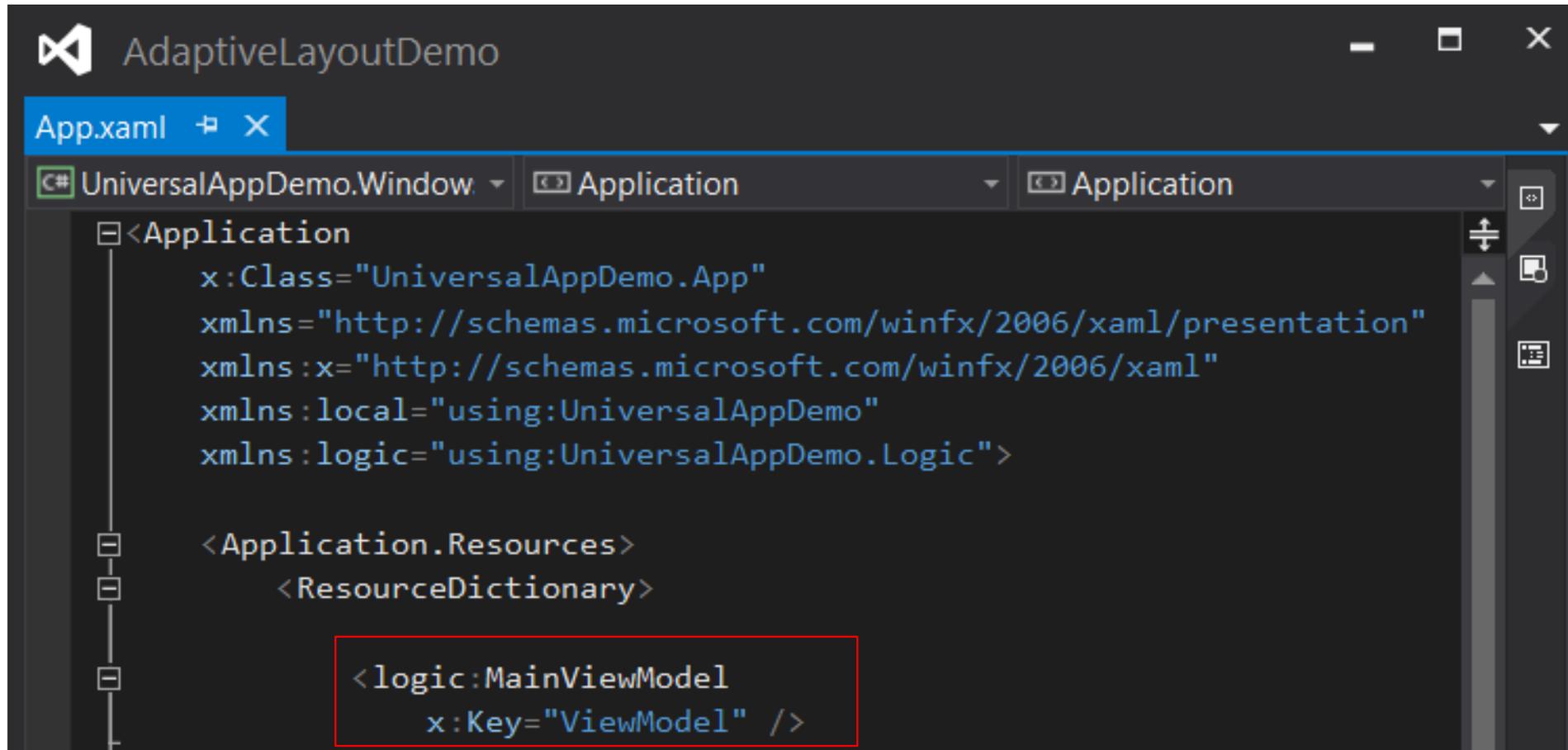


Properties



Navigation Methods

ViewModel in App.xaml



The screenshot shows the Visual Studio IDE with the file 'App.xaml' open in the 'AdaptiveLayoutDemo' project. The code editor displays the XAML for the application. A red rectangular box highlights the following XAML element:

```
<logic:MainViewModel  
    x:Key="ViewModel" />
```

The full XAML code visible in the editor is:

```
<Application  
    x:Class="UniversalAppDemo.App"  
    xmlns="http://schemas.microsoft.com/winfx/2006/xaml/presentation"  
    xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml"  
    xmlns:local="using:UniversalAppDemo"  
    xmlns:logic="using:UniversalAppDemo.Logic">  
  
    <Application.Resources>  
        <ResourceDictionary>  
  
            <logic:MainViewModel  
                x:Key="ViewModel" />  
  
        </ResourceDictionary>  
  
    </Application.Resources>  
  
</Application>
```

```
using Windows.UI.Xaml.Media;
```

```
namespace UniversalAppDemo
```

```
{
```

```
    30 references
```

```
    public sealed partial class App : Application
```

```
    {
```

```
        13 references
```

```
        public static MainViewModel ViewModel { get; private set; }
```

```
100 %
```

```
    0 references
```

```
    protected override void OnLaunched(LaunchActivatedEventArgs e)
```

```
    {
```

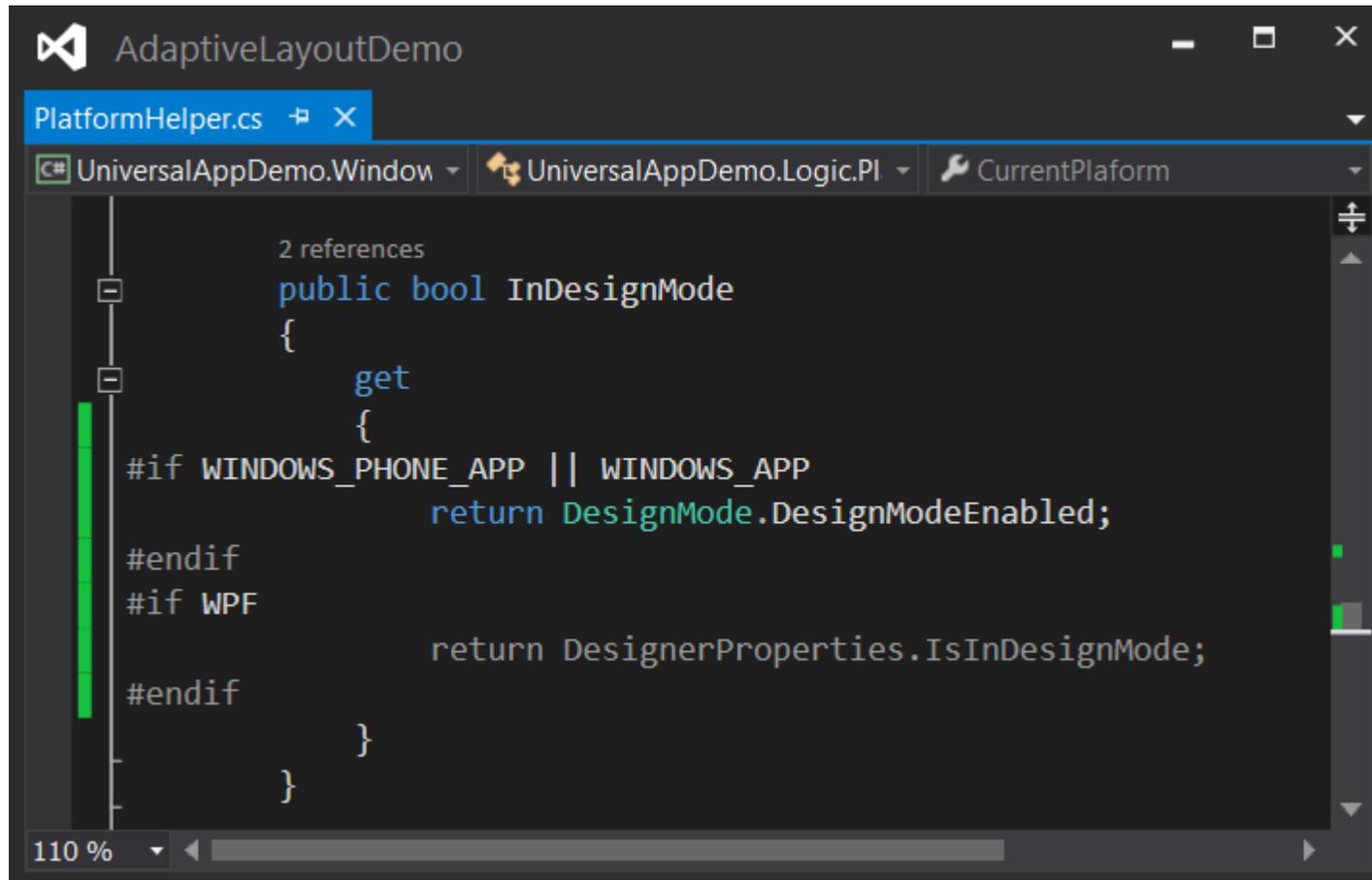
```
        Typical OnLaunched Stuff
```

```
        App.RootFrame = RootFrame;
```

```
        ViewModel = (MainViewModel)Resources["ViewModel"];
```

```
        // Ensure the current window is active
```

Tipp: DesignMode or Not?



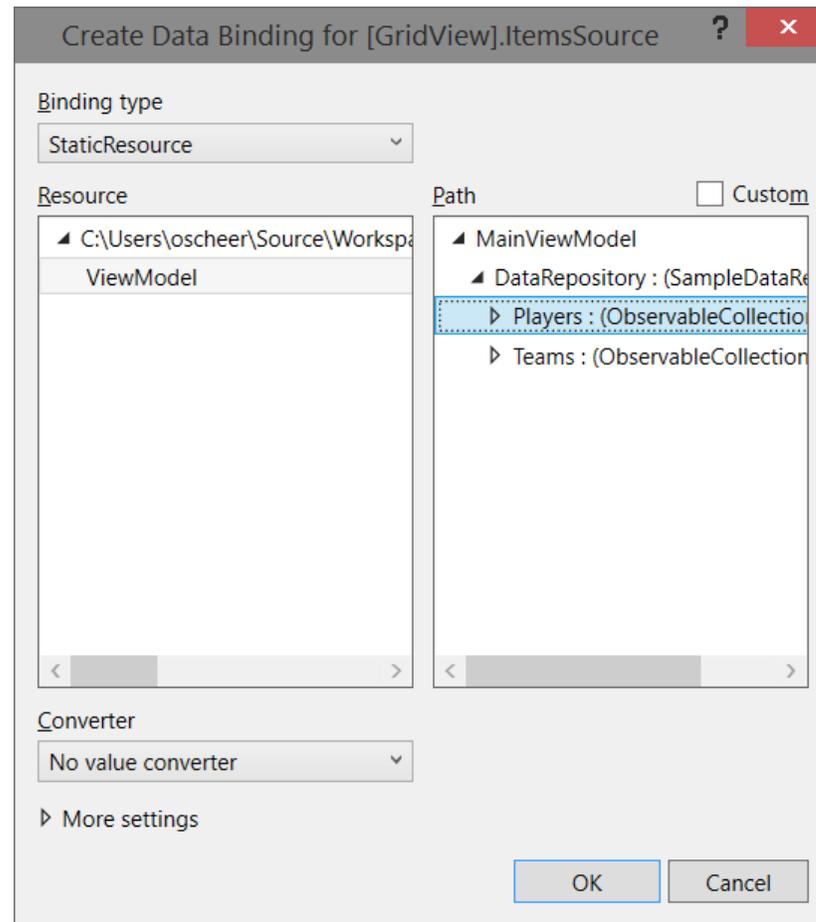
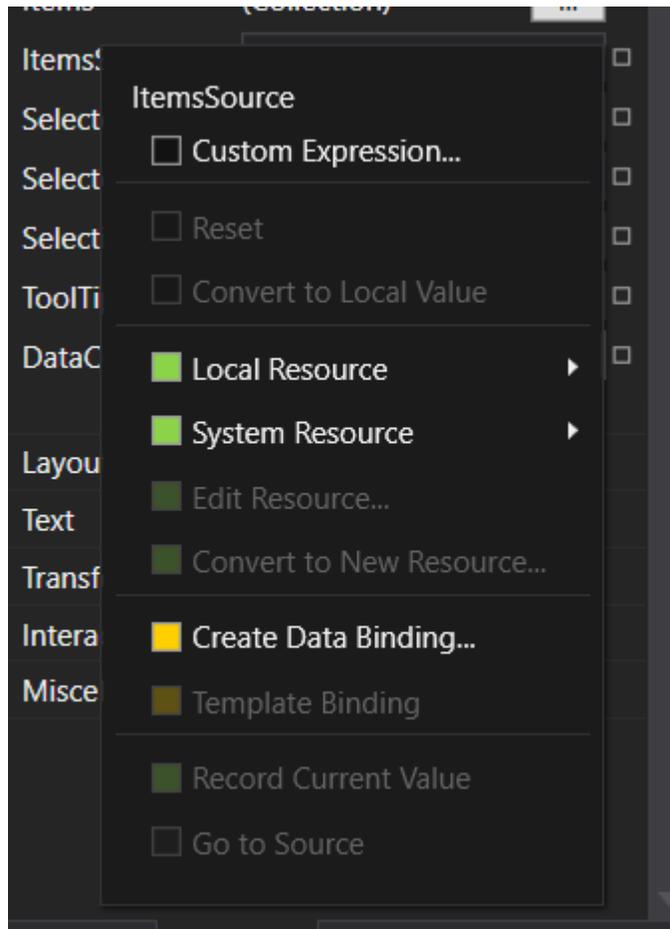
The screenshot shows a Visual Studio window titled "AdaptiveLayoutDemo" with a tab for "PlatformHelper.cs". The code editor displays the following C# code:

```
2 references
public bool InDesignMode
{
    get
    {
#if WINDOWS_PHONE_APP || WINDOWS_APP
        return DesignMode.DesignModeEnabled;
#endif
#if WPF
        return DesignerProperties.IsInDesignMode;
#endif
    }
}
```

The code is displayed with syntax highlighting and a vertical scrollbar on the left. The zoom level at the bottom left is 110%.

Warum das Ganze?

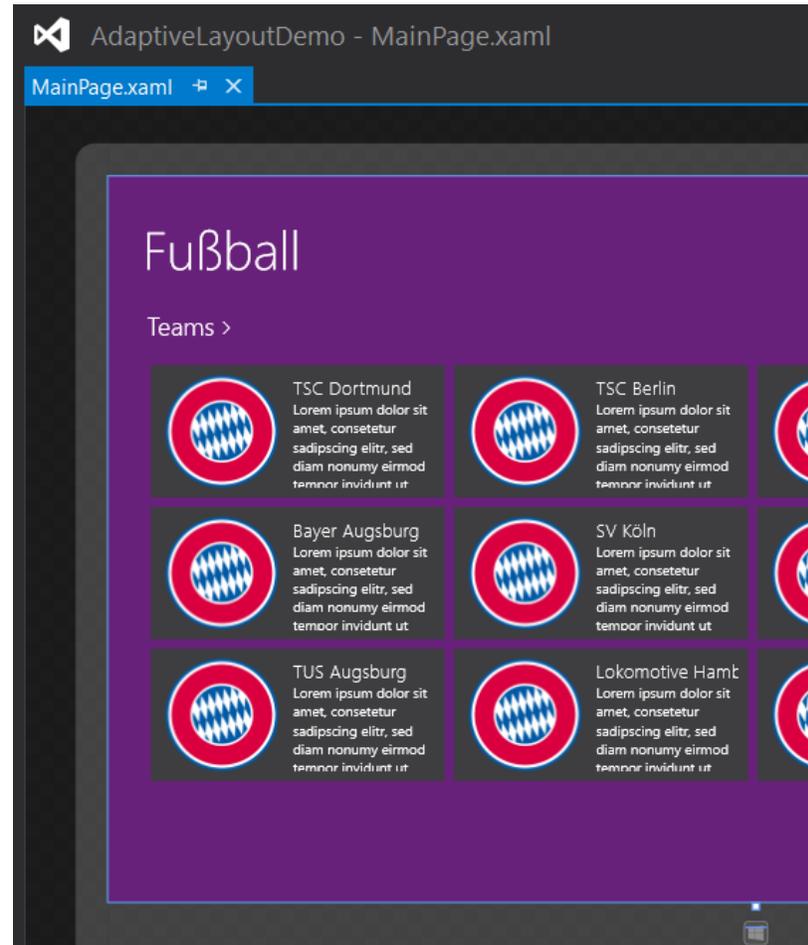
Warum das Ganze?



Warum das Ganze?

```
private void PerformSomeThings()
{
    var playerCount = App.ViewModel.DataRepository.Players.Count();
}
```

Ergebnis: „Echte“ Daten in der IDE



Demo

DesignTime-Daten

Tipp 3:
Welche Plattform bin ich?

Arbeiten mit Compiler-Direktiven

```
1 reference
public bool IsWindowsPhone
{
    get
    {
#if WINDOWS_PHONE_APP
        return true;
#endif
#if WINDOWS_APP
        return false;
#endif
    }
}
```

Demo

Plattform-Helper

Tipp 4: Standard-Controls

Standard Controls

Grid (Tabellenlayout)

StackPanel (Stapel)

ViewBox (Vergrößerung)

Können sich dynamisch der Größe anpassen und ihren Inhalt dynamisch ausrichten

Demo

Standard-Controls

Tipp 5: Adaptive Standard-Controls

Adaptive Standard-Controls

DatePicker & TimePicker

ComboBox

MenuFlyout

Hub

GridView

Semantic Zoom

Demo

Adaptive Standard-Controls

Tipp 6: Adaptive Custom-Controls

Herausforderung: Der Zurück-Button

Software-Button vs. Hardware-Button

```
public PlatformHelper()
{
    Init

    if (DesignMode.DesignModeEnabled)
    {
        return;
    }

    #region Windows Phone Hardware Back Button

    #if WINDOWS_PHONE_APP

    // Deaktivieren des Standardverhaltens des Telefons
    Windows.Phone.UI.Input.HardwareButtons.BackPressed += (s, e) =>
    {
        e.Handled = true;
        App.ViewModel.GoBack();
    };

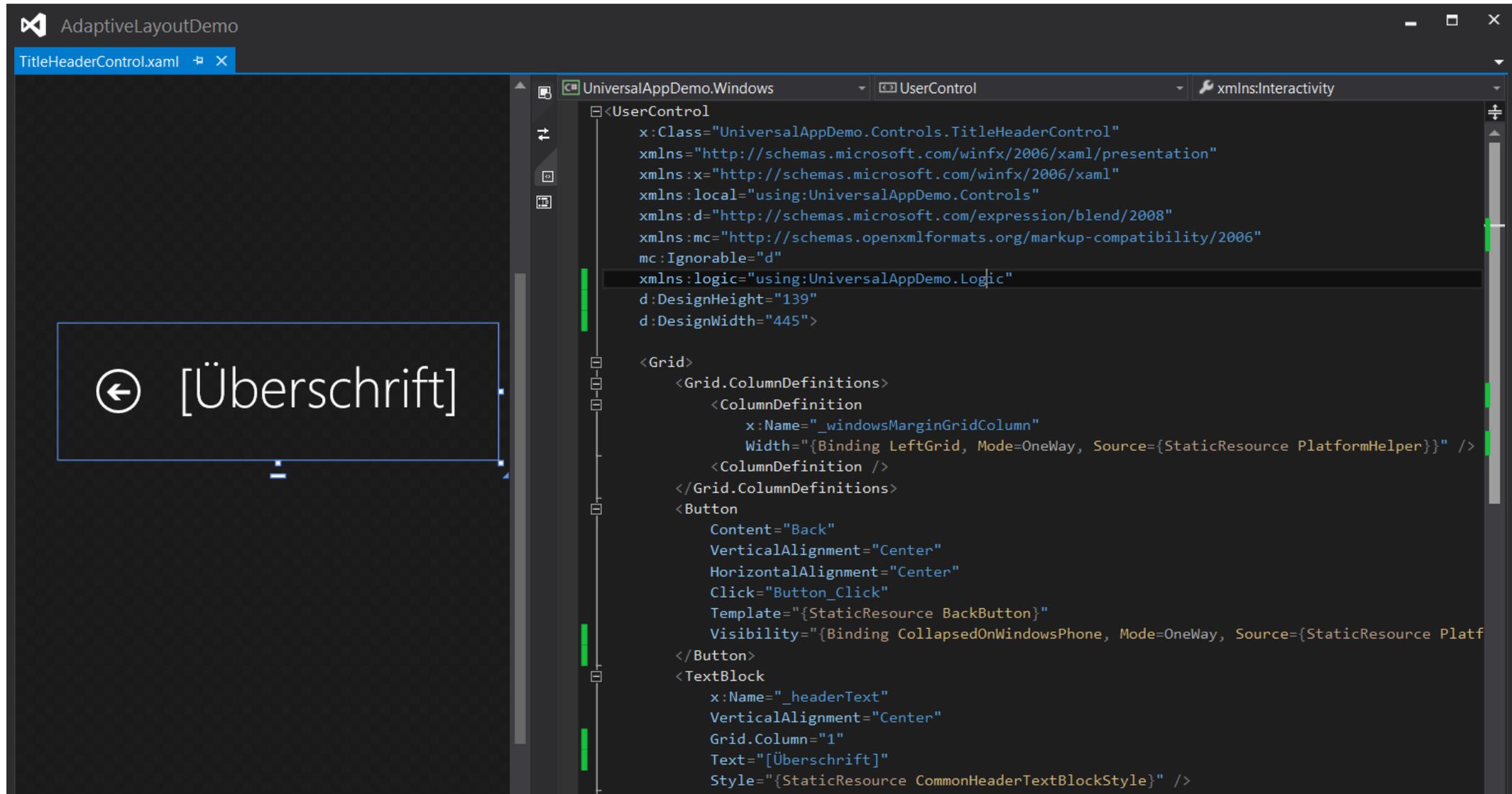
    #endif

    #endregion

}

private const double C LeftMargin = 120.0;
```

Die Lösung: Ein dynamisches Header-Control



The screenshot displays the Visual Studio IDE with the following components:

- Preview Window (Left):** Shows a visual representation of the XAML control. It features a white back arrow icon on the left and the text "[Überschrift]" in the center, all contained within a white rectangular box with a blue border.
- Code Editor (Right):** Shows the XAML code for the `TitleHeaderControl`. The code is as follows:

```
<UserControl
  x:Class="UniversalAppDemo.Controls.TitleHeaderControl"
  xmlns="http://schemas.microsoft.com/winfx/2006/xaml/presentation"
  xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml"
  xmlns:local="using:UniversalAppDemo.Controls"
  xmlns:d="http://schemas.microsoft.com/expression/blend/2008"
  xmlns:mc="http://schemas.openxmlformats.org/markup-compatibility/2006"
  mc:Ignorable="d"
  xmlns:logic="using:UniversalAppDemo.Logic"
  d:DesignHeight="139"
  d:DesignWidth="445">

  <Grid>
    <Grid.ColumnDefinitions>
      <ColumnDefinition
        x:Name="_windowsMarginGridColumn"
        Width="{Binding LeftGrid, Mode=OneWay, Source={StaticResource PlatformHelper}}" />
      <ColumnDefinition />
    </Grid.ColumnDefinitions>
    <Button
      Content="Back"
      VerticalAlignment="Center"
      HorizontalAlignment="Center"
      Click="Button_Click"
      Template="{StaticResource BackButton}"
      Visibility="{Binding CollapsedOnWindowsPhone, Mode=OneWay, Source={StaticResource Platf"
    </Button>
    <TextBlock
      x:Name="_headerText"
      VerticalAlignment="Center"
      Grid.Column="1"
      Text="[Überschrift]"
      Style="{StaticResource CommonHeaderTextBlockStyle}" />
```

```
<Grid.ColumnDefinitions>
  <ColumnDefinition
    x:Name="_windowsMarginGridColumn"
    Width="{Binding LeftGrid, Mode=OneWay, Source={StaticResource PlatformHelper}}" />
  <ColumnDefinition />
</Grid.ColumnDefinitions>
<Button
  Content="Back"
  VerticalAlignment="Center"
  HorizontalAlignment="Center"
  Click="Button_Click"
  Template="{StaticResource BackButton}"
  Visibility="{Binding CollapsedOnWindowsPhone, Mode=OneWay, Source={StaticResource Platf"
</Button>
<TextBlock
  x:Name="_headerText"
  VerticalAlignment="Center"
  Grid.Column="1"
  Text="[Überschrift]"
  Style="{StaticResource CommonHeaderTextBlockStyle}" />
```

UniversalAppDemo.Windows

002 000

← Zack Scholl

Foto



Details

Name
Zack Scholl

Aktuelles Team
SC Stuttgart

Rückennummer
20

1:28

Ypsilon Commenius

058 004

Name
Ypsilon Commenius

Aktuelles Team
Lokomotive Essen

Rückennummer
2

062 013

Demo

Standard-Controls

Tipp 7: Merged Dictionaries in Universal Apps

```
<Application
  x:Class="UniversalAppDemo.App"
  xmlns="http://schemas.microsoft.com/winfx/2006/xaml/presentation"
  xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml"
  xmlns:local="using:UniversalAppDemo"
  xmlns:logic="using:UniversalAppDemo.Logic">

  <Application.Resources>
    <ResourceDictionary>

      <logic:PlatformHelper x:Key="PlatformHelper" />

      <logic:MainViewModel x:Key="ViewModel" />

      <ResourceDictionary.MergedDictionaries>
        <ResourceDictionary Source="CommonStyles.xaml" />
        <ResourceDictionary Source="IndividualStyles.xaml" />

        <ResourceDictionary Source="CommonTemplates.xaml" />
        <ResourceDictionary Source="IndividualTemplates.xaml" />
      </ResourceDictionary.MergedDictionaries>

    </ResourceDictionary>
  </Application.Resources>
</Application>
```

Demo

Merged Dictionaries

Tipp 8: Behavior SDK

Behavior SDK

Behaviors sind generische Helfer, die via Drag&Drop Controls um zusätzliche Features bereichern können.

Demo

Behaviors

Tipp 9: Reagieren auf Breiten- und Höhenänderungen

Demo

Höhen- und
Breitenänderungen

Tipp 10: Menüs/CommandBars

004 001

← Bayer Berlin

Logo

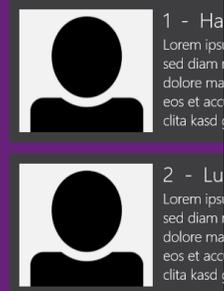


Allgemein

Bayer Berlin

Lorem ipsum dolor sit amet, consetetur sadipscing elitr, sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat, sed diam voluptua. At vero eos et accusam et justo duo dolores et ea rebum. Stet clita kasd gubergren, no sea takimata sanctus est Lorem ipsum dolor sit amet. Lorem ipsum dolor sit amet, consetetur sadipscing elitr, sed diam nonumy eirmod tempor invidunt ut labore et dolore magna aliquyam erat, sed diam voluptua. At vero eos et accusam et justo duo dolores et ea rebum. Stet clita kasd gubergren, no sea takimata sanctus est Lorem ipsum dolor sit amet.

Spieler



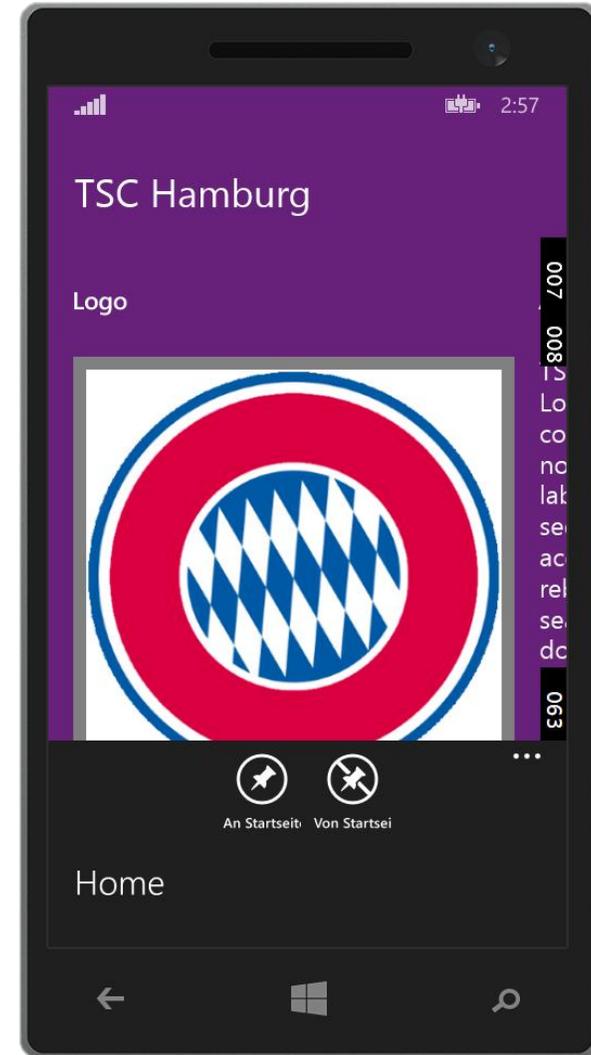
Home



An Startseite
heften



Von Startseite
lösen



007

008

009

010

011

012

013

014

015

016

017

018

019

020

021

022

023

024

025

026

027

028

029

030

031

032

033

034

035

036

037

038

039

040

Demo

Command Bars

Last but not least
Testen, Testen, Testen

Zusammenfassung

Universal App Template

DesignTime-Daten

Platform-Helper

Standard-Controls

Adaptive Controls

Custom Controls

Merged Dictionaries

Behaviors

Window Resizing

Slides, Links und Code

<http://aka.ms/oliveradaptivelayout>



Hausaufgabe

Entwickelt eine Universal App für Windows und Windows Phone mit

- Beispieldaten und DataBinding
- Möglichst wenigen bis keinen doppelten Pages

Weitere Informationen

Tips and tricks for using XAML controls in your universal Windows apps

<http://blogs.windows.com/buildingapps/2014/07/22/tips-and-tricks-for-using-xaml-controls-in-your-universal-windows-apps/>

Quickstart: Designing apps for different window sizes

<http://msdn.microsoft.com/en-us/library/windows/apps/xaml/dn297195.aspx>

Guidelines for Windows Store Apps

<http://msdn.microsoft.com/en-us/library/windows/apps/hh465424.aspx>

Noch Fragen?

oliver.scheer@microsoft.com

<http://the-oliver.com>

@TheOliver



