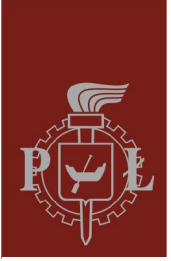

Politechnika Łódzka
Instytut Elektroniki

Programowanie telefonów z Windows Phone 7, cz. 2

Piotr M. Szczypiński
Instytut Elektroniki Politechniki Łódzkiej
http://www.eletel.p.lodz.pl/pms/
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Budynek B9, II piętro, pokój 217A

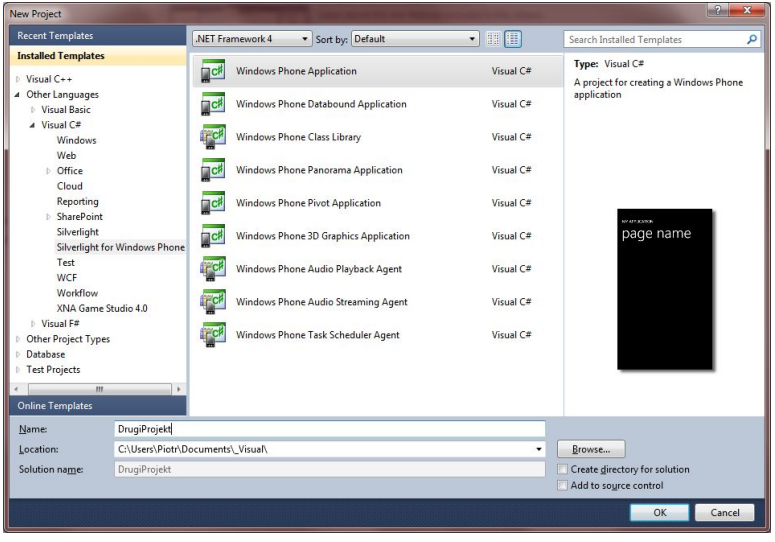
Materiał na dziś

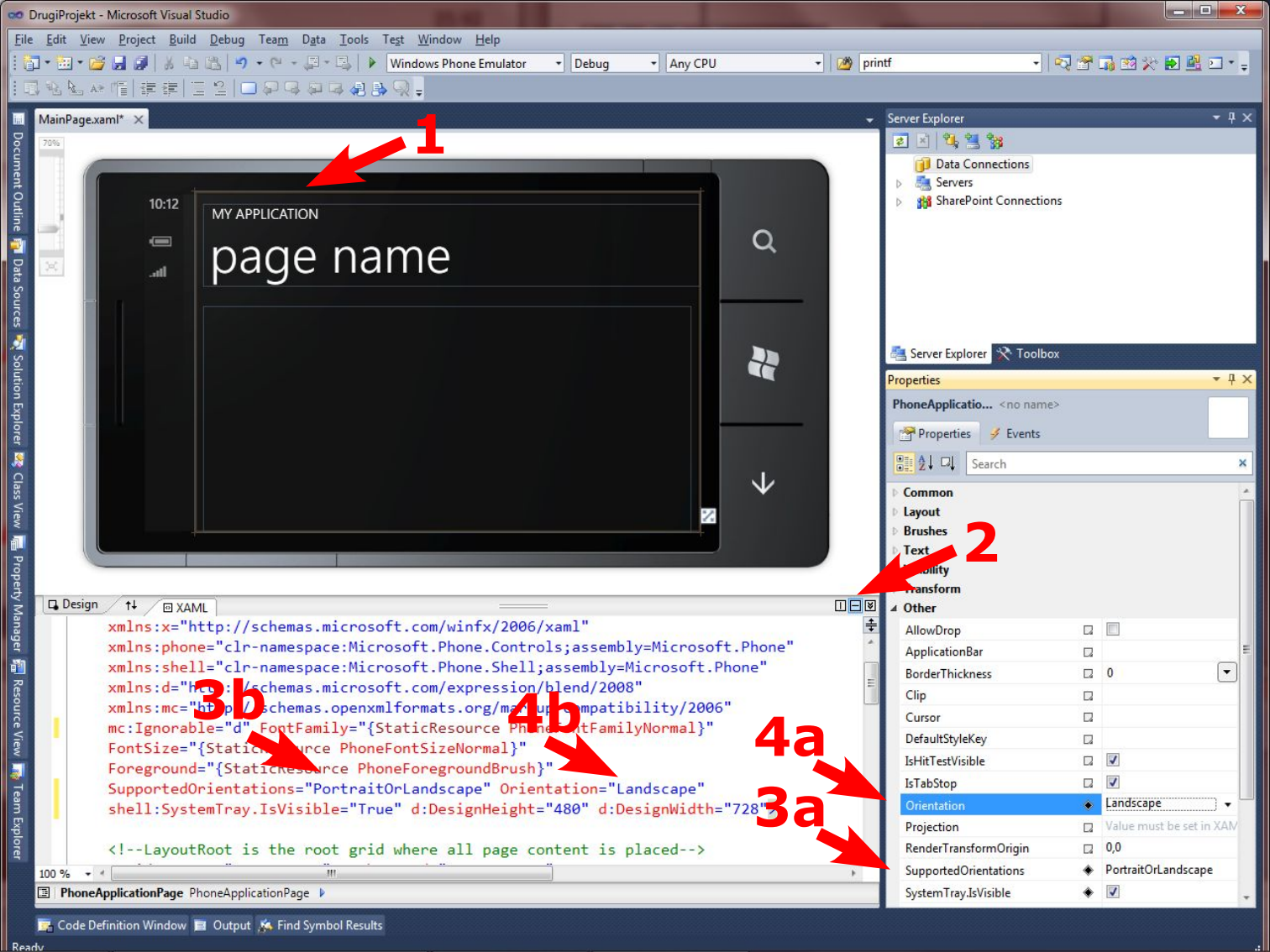
1. Zmiana orientacji strony
2. Kotwiczenie kontrolek
3. Okna komunikatów
4. Tworzenie i przełączanie stron
5. Przekazywanie danych między stronami
6. Uruchamianie zewnętrznych programów
    - Launcher – przykład przeglądarki www
    - Chooser – wyboru obrazka i uruchomienie kamery
7. Obsługa urządzeń zewnętrznych
    - Akcelerometr
8. Programy przykładowe

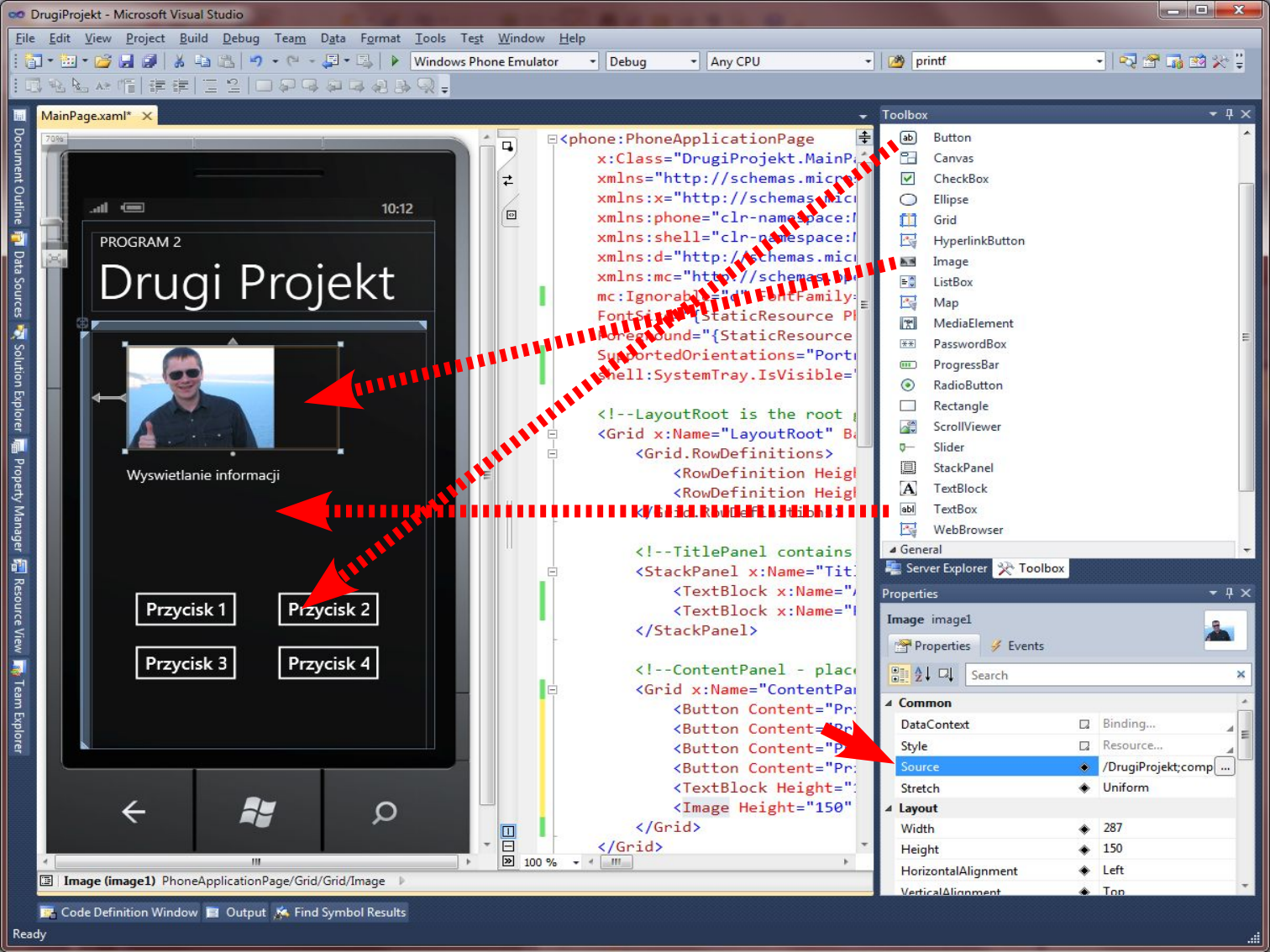
Zmiana orientacji strony

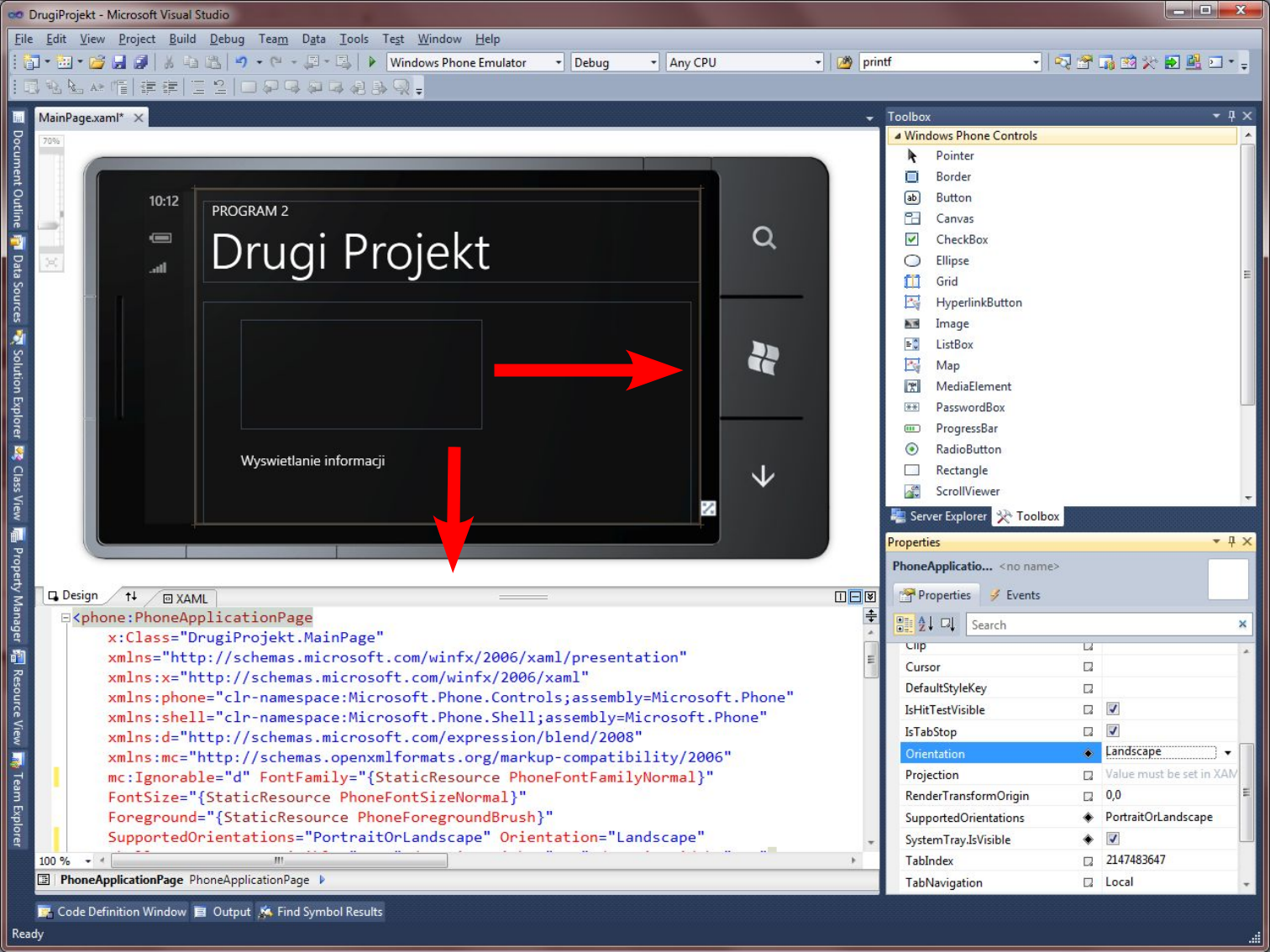
Zacznijmy od utworzenia nowego projektu

- Visual C#
- Silverlight for Windows Phone
- Windows Phone Application

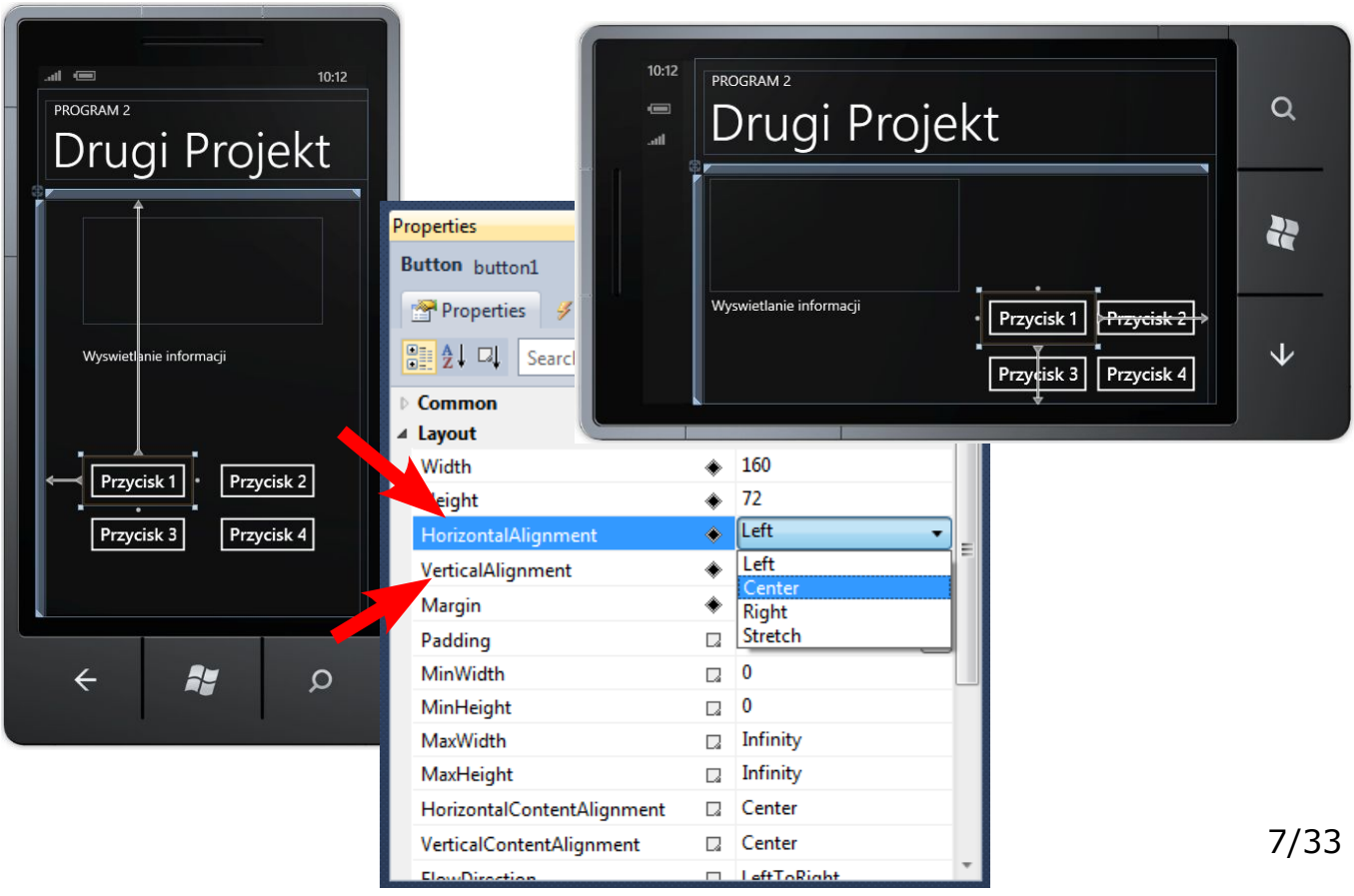



DrugiProjekt - Microsoft Visual Studio
File Edit View Project Build Debug Team Data Tools Test Window Help
Windows Phone Emulator
Debug
Any CPU
printf
MainPage.xaml*
1
10:12
MY APPLICATION
page name
Server Explorer
Data Connections
Servers
SharePoint Connections
Server Explorer
Toolbox
Properties
PhoneApplicatio... <no name>
Properties
Events
Search
Common
Layout
Brushes
Text
Transform
Other
AllowDrop
ApplicationBar
BorderThickness
0
Clip
Cursor
DefaultStyleKey
IsHitTestVisible
IsTabStop
Orientation
Landscape
Projection
Value must be set in XAM
RenderTransformOrigin
0,0
SupportedOrientations
PortraitOrLandscape
SystemTray.IsVisible
2
Design
XAML
xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml"
xmlns:phone="clr-namespace:Microsoft.Phone.Controls;assembly=Microsoft.Phone"
xmlns:shell="clr-namespace:Microsoft.Phone.Shell;assembly=Microsoft.Phone"
xmlns:d="http://schemas.microsoft.com/expression/blend/2008"
mc:Ignorable="d" FontFamily="{StaticResource PhoneFontFamilyNormal}"
FontSize="{StaticResource PhoneFontSizeNormal}"
Foreground="{StaticResource PhoneForegroundBrush}"
SupportedOrientations="PortraitOrLandscape" Orientation="Landscape"
shell:SystemTray.IsVisible="True" d:DesignHeight="480" d:DesignWidth="728"
<!--LayoutRoot is the root grid where all page content is placed-->
3b
4b
4a
3a
100 %
PhoneApplicationPage PhoneApplicationPage
Code Definition Window
Output
Find Symbol Results
Ready


DrugiProjekt - Microsoft Visual Studio
File Edit View Project Build Debug Team Data Format Tools Test Window Help
Windows Phone Emulator
Debug
Any CPU
printf
MainPage.xaml*
10:12
PROGRAM 2
Drugi Projekt
Wyswietlanie informacji
Przycisk 1
Przycisk 2
Przycisk 3
Przycisk 4
<phone:PhoneApplicationPage
x:Class="DrugiProjekt.MainP
xmlns="http://schemas.micr
xmlns:x="http://schemas.mic
xmlns:phone="clr-namespace:
xmlns:shell="clr-namespace:
xmlns:d="http://schemas.micr
xmlns:mc="http://schemas.
mc:Ignorable="d" FontFamily=
FontSize="{StaticResource Pl
Foreground="{StaticResource
SupportedOrientations="Portr
shell:SystemTray.IsVisible="
<!--LayoutRoot is the root
<Grid x:Name="LayoutRoot" Ba
<Grid.RowDefinitions>
<RowDefinition Heigh
<RowDefinition Heigh
</Grid.RowDefinitions>
<!--TitlePanel contains
<StackPanel x:Name="Tit
<TextBlock x:Name="A
<TextBlock x:Name="I
</StackPanel>
<!--ContentPanel - plac
<Grid x:Name="ContentPa
<Button Content="Pr
<Button Content="Pr
<Button Content="P
<Button Content="Pr
<TextBlock Height="
<Image Height="150"
</Grid>
</Grid>
100 %
Image (image1) PhoneApplicationPage/Grid/Grid/Image
Toolbox
Button
Canvas
CheckBox
Ellipse
Grid
HyperlinkButton
Image
ListBox
Map
MediaElement
PasswordBox
ProgressBar
RadioButton
Rectangle
ScrollViewer
Slider
StackPanel
TextBlock
TextBox
WebBrowser
General
Server Explorer
Toolbox
Properties
Image image1
Properties
Events
Search
Common
DataContext
Binding...
Style
Resource...
Source
/DrugiProjekt;comp
Stretch
Uniform
Layout
Width
287
Height
150
HorizontalAlignment
Left
VerticalAlignment
Top
Code Definition Window
Output
Find Symbol Results
Ready
Document Outline
Data Sources
Solution Explorer
Property Manager
Resource View
Team Explorer

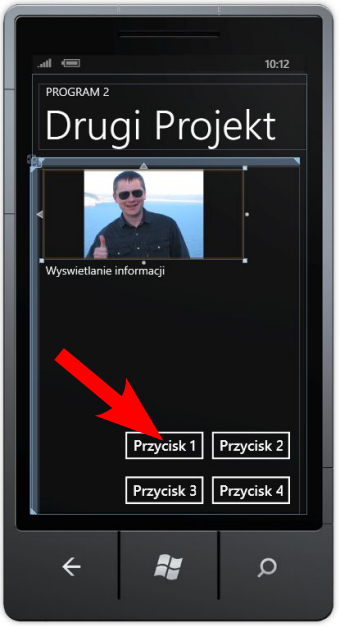

DrugiProjekt - Microsoft Visual Studio
File Edit View Project Build Debug Team Data Tools Test Window Help
Windows Phone Emulator
Debug
Any CPU
printf
MainPage.xaml*
10:12
PROGRAM 2
Drugi Projekt
Wyswietlanie informacji
Toolbox
Windows Phone Controls
Pointer
Border
Button
Canvas
CheckBox
Ellipse
Grid
HyperlinkButton
Image
ListBox
Map
MediaElement
PasswordBox
ProgressBar
RadioButton
Rectangle
ScrollViewer
Server Explorer
Toolbox
Properties
PhoneApplicatio... <no name>
Properties
Events
Search
Cursor
DefaultStyleKey
IsHitTestVisible
IsTabStop
Orientation
Landscape
Projection
Value must be set in XAM
RenderTransformOrigin
0,0
SupportedOrientations
PortraitOrLandscape
SystemTray.IsVisible
TabIndex
2147483647
TabNavigation
Local
Design
XAML
<phone:PhoneApplicationPage
x:Class="DrugiProjekt.MainPage"
xmlns="http://schemas.microsoft.com/winfx/2006/xaml/presentation"
xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml"
xmlns:phone="clr-namespace:Microsoft.Phone.Controls;assembly=Microsoft.Phone"
xmlns:shell="clr-namespace:Microsoft.Phone.Shell;assembly=Microsoft.Phone"
xmlns:d="http://schemas.microsoft.com/expression/blend/2008"
xmlns:mc="http://schemas.openxmlformats.org/markup-compatibility/2006"
mc:Ignorable="d" FontFamily="{StaticResource PhoneFontFamilyNormal}"
FontSize="{StaticResource PhoneFontSizeNormal}"
Foreground="{StaticResource PhoneForegroundBrush}"
SupportedOrientations="PortraitOrLandscape" Orientation="Landscape"
100 %
PhoneApplicationPage PhoneApplicationPage
Code Definition Window
Output
Find Symbol Results
Ready

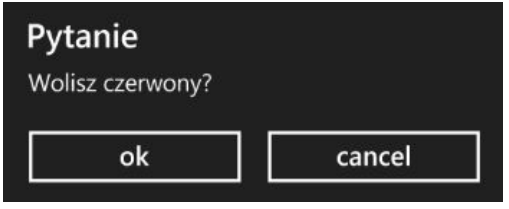
Kotwiczenie kontrolek



Okna komunikatów

```
using System.Windows.Media;

…
private void button1_Click(object sender, RoutedEventArgs e)
{
    if (MessageBox.Show("Wolisz czerwony?", "Pytanie",
            MessageBoxButton.OKCancel) == MessageBoxResult.OK)
    {
        SolidColorBrush redbrush = new SolidColorBrush(Colors.Red);
        button1.Background = redbrush;
    }
    else
    {
        Color transparent = new Color();
        transparent.A = 0;
        SolidColorBrush whitebrush = new SolidColorBrush(transparent);
        button1.Background = whitebrush;
    }
}
```





The **SolidColorBrush** type exposes the following members.

Constructors

	Name	Description
	SolidColorBrush	Initializes a new instance of the **SolidColorBrush** class with no color or animations.
	SolidColorBrush(Color)	Initializes a new instance of the **SolidColorBrush** class with the specified Color.

Top

Properties

	Name	Description
	CanFreeze	Gets a value that indicates whether the object can be made unmodifiable. (Inherited from Freezable.)
	Color	Gets or sets the color of this **SolidColorBrush**.
	DependencyObjectType	Gets the DependencyObjectType that wraps the CLR type of this instance. (Inherited from DependencyObject.)
	Dispatcher	Gets the Dispatcher this DispatcherObject is associated with. (Inherited from DispatcherObject.)
	HasAnimatedProperties	Gets a value that indicates whether one or more AnimationClock objects is associated with any of this object's dependency properties. (Inherited from Animatable.)
	IsFrozen	Gets a value that indicates whether the object is currently modifiable. (Inherited from Freezable.)

Search MSDN with Bing

- MSDN Library
- .NET Development
- .NET Framework 4
- .NET Framework Class Library
- System.Windows Namespaces
- System.Windows.Media
  - Colors Class
    - Colors Methods
    - Colors Properties

Community Content

Property List...
As a note, you could use the fol...

I second the color list comment...
I want to bind a ComboBox to a l...

More...

Remarks

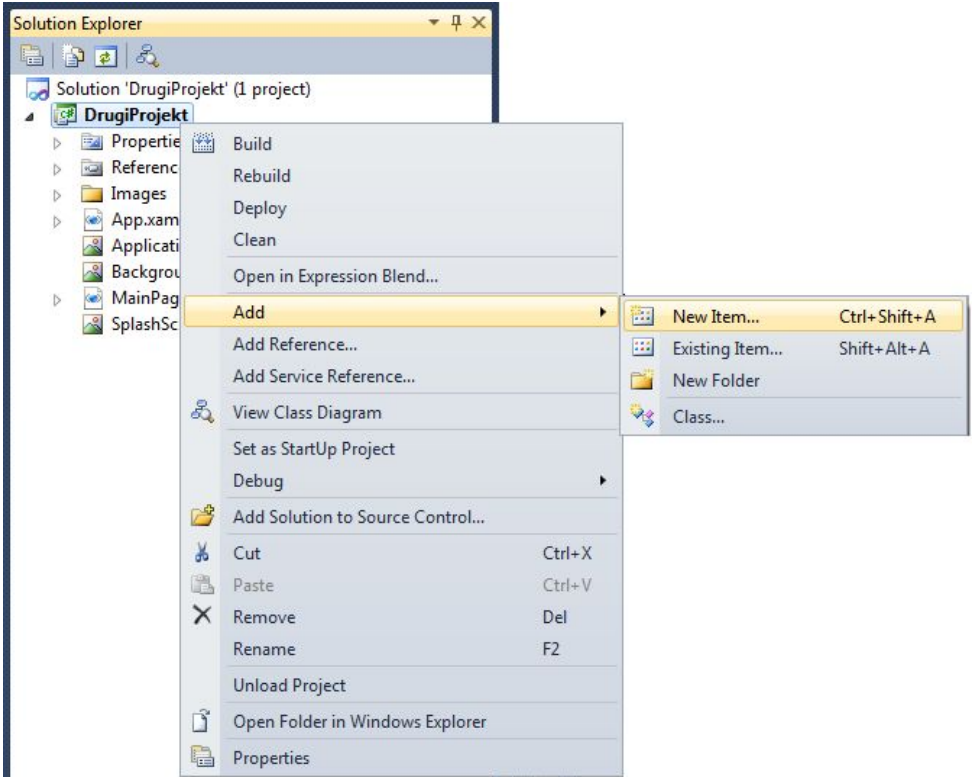
The Windows Presentation Foundation (WPF) color names match the Microsoft .NET Framework version 1.0, Windows Forms, and Microsoft Internet Explorer color names. This representation is based on UNIX X11 named color values.

The following image shows each predefined color, its name, and its hexadecimal value.

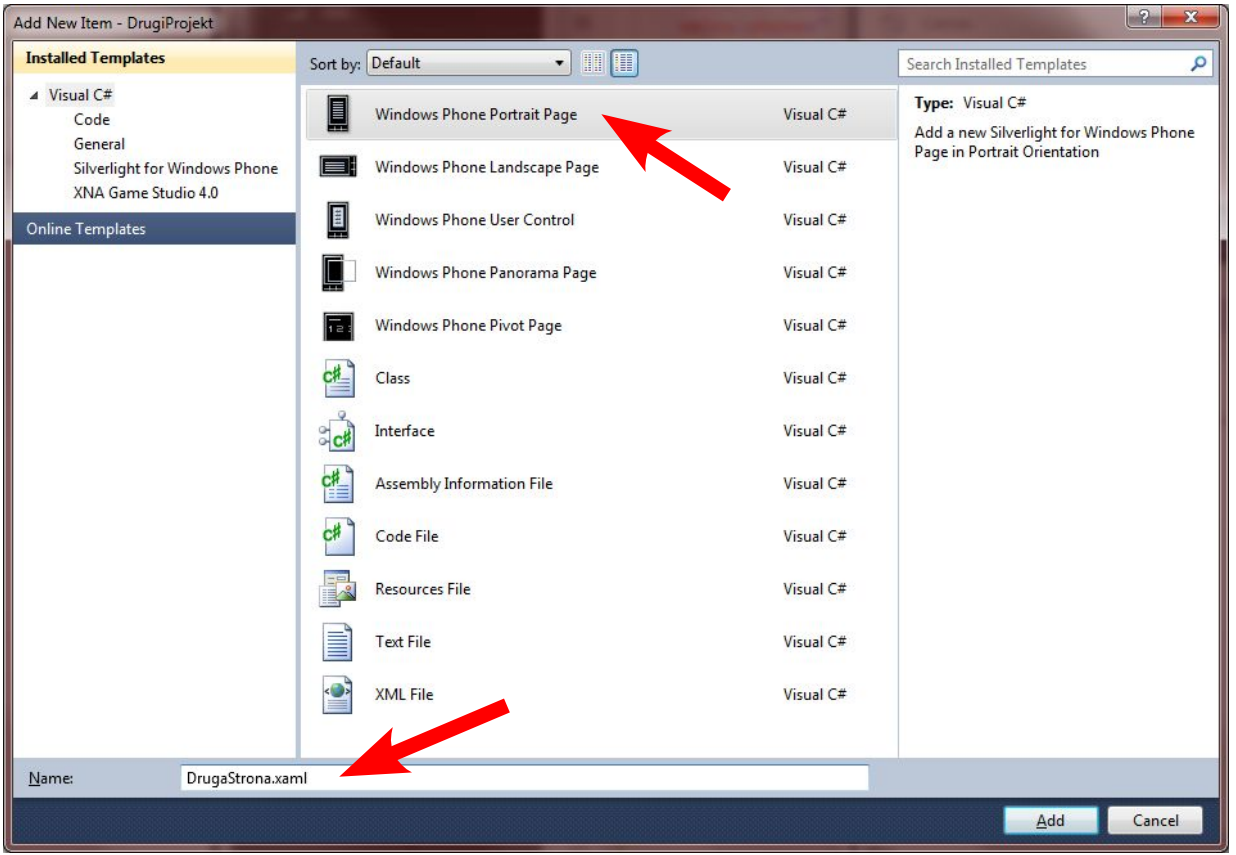
Color Table including a color swatch, the color name, and the hexadecimal value

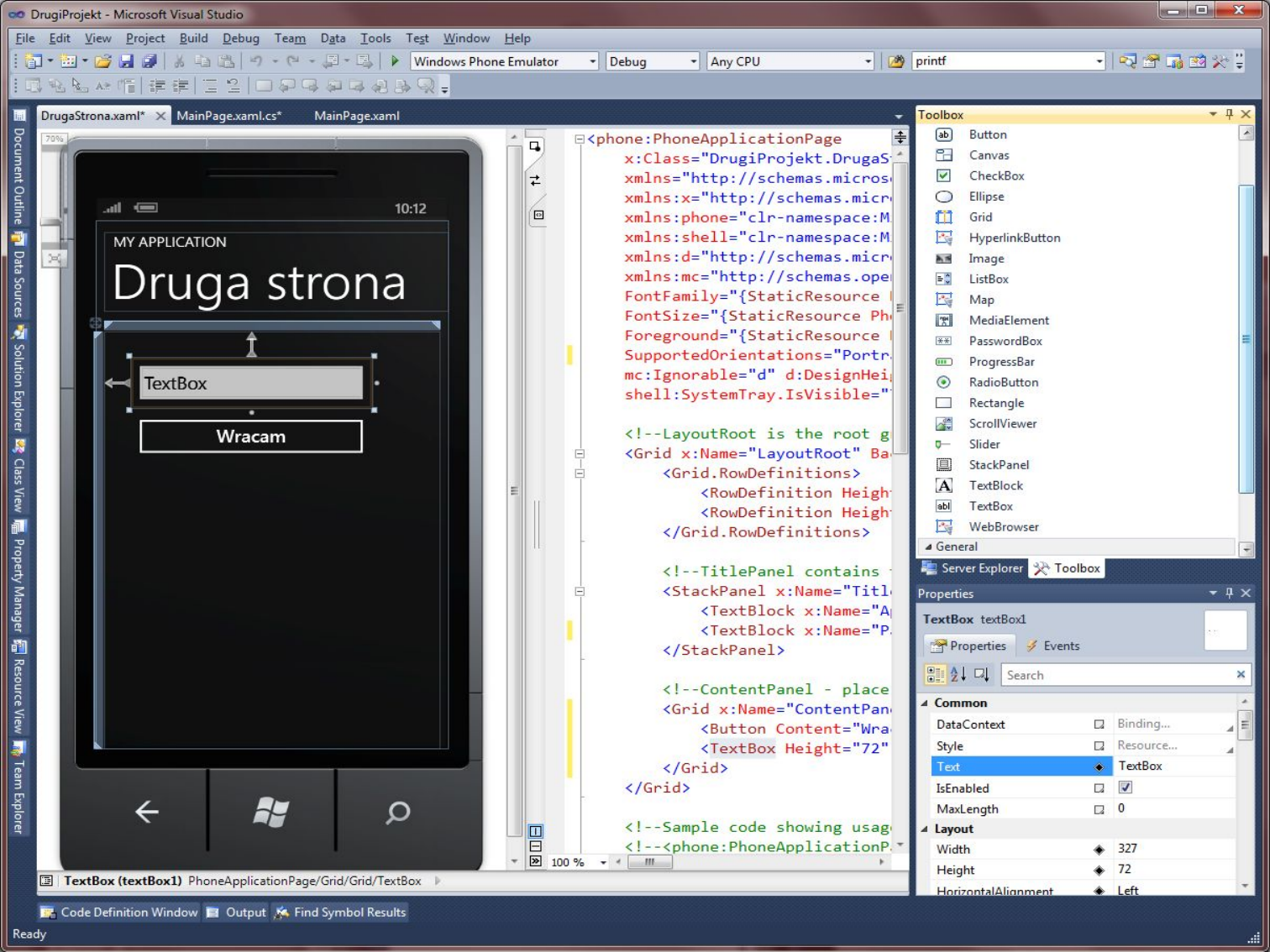
AliceBlue	#FFF0F8FF	DarkTurquoise	#FF00CED1	LightSeaGreen	#FF2
AntiqueWhite	#FFFAEBD7	DarkViolet	#FF9400D3	LightSkyBlue	#FF8
Aqua	#FF00FFFF	DeepPink	#FFFF1493	LightSlateGray	#FF7
Aquamarine	#FF7FFFD4	DeepSkyBlue	#FF00BFFF	LightSteelBlue	#FFE
Azure	#FFF0FFFF	DimGray	#FF696969	LightYellow	#FFF
Beige	#FFF5F5DC	DodgerBlue	#FF1E90FF	Lime	#FF0
Bisque	#FFFFE4C4	Firebrick	#FFB22222	LimeGreen	#FF3
Black	#FF000000	FloralWhite	#FFFFFAF0	Linen	#FFF
BlanchedAlmond	#FFFFEBCD	ForestGreen	#FF228B22	Magenta	#FFF
Blue	#FF0000FF	Fuchsia	#FFFF00FF	Maroon	#FF8
BlueViolet	#FF8A2BE2	Gainsboro	#FFDCDCDC	MediumAquamarine	#FF6
Brown	#FFA52A2A	GhostWhite	#FFF8F8FF	MediumBlue	#FF0
BurlyWood	#FFDEB887	Gold	#FFFFD700	MediumOrchid	#FFE
CadetBlue	#FF5F9EA0	Goldenrod	#FFDAA520	MediumPurple	#FF9
Chartreuse	#FF7FFF00	Gray	#FF808080	MediumSeaGreen	#FF3
Chocolate	#FFD2691E	Green	#FF008000	MediumSlateBlue	#FF7
Coral	#FFFF7F50	GreenYellow	#FFADFF2F	MediumSpringGreen	#FF0
CornflowerBlue	#FF6495ED	Honeydew	#FFF0FFF0	MediumTurquoise	#FF4
Cornsilk	#FFFFF8DC	HotPink	#FFFF69B4	MediumVioletRed	#FF0
Crimson	#FFDC143C	IndianRed	#FFCD5C5C	MidnightBlue	#FF1
Cyan	#FF00FFFF	Indigo	#FF4B0082	MintCream	#FFF
DarkBlue	#FF00008B	Ivory	#FFFFFFF0	MistyRose	#FFF
DarkCyan	#FF008B8B	Khaki	#FFF0E68C	Moccasin	#FFF
DarkGoldenrod	#FFB8860B	Lavender	#FFE6E6FA	NavajoWhite	#FFF

Tworzenie i przełączanie stron



Tworzenie i przełączanie stron




DrugiProjekt - Microsoft Visual Studio
File Edit View Project Build Debug Team Data Tools Test Window Help
Windows Phone Emulator
Debug
Any CPU
printf
DrugaStrona.xaml*
MainPage.xaml.cs*
MainPage.xaml
10:12
MY APPLICATION
Druga strona
TextBox
Wracam
<phone:PhoneApplicationPage
x:Class="DrugiProjekt.DrugaS
xmlns="http://schemas.micros
xmlns:x="http://schemas.micr
xmlns:phone="clr-namespace:M
xmlns:shell="clr-namespace:M
xmlns:d="http://schemas.micr
xmlns:mc="http://schemas.ope
FontFamily="{StaticResource
FontSize="{StaticResource Ph
Foreground="{StaticResource
SupportedOrientations="Portr
mc:Ignorable="d" d:DesignHei
shell:SystemTray.IsVisible="
<!--LayoutRoot is the root g
<Grid x:Name="LayoutRoot" Ba
<Grid.RowDefinitions>
<RowDefinition Heigh
<RowDefinition Heigh
</Grid.RowDefinitions>
<!--TitlePanel contains
<StackPanel x:Name="Titl
<TextBlock x:Name="A
<TextBlock x:Name="P
</StackPanel>
<!--ContentPanel - place
<Grid x:Name="ContentPan
<Button Content="Wra
<TextBox Height="72"
</Grid>
</Grid>
<!--Sample code showing usag
<!--<phone:PhoneApplicationP
100 %
TextBox (textBox1) PhoneApplicationPage/Grid/Grid/TextBox
Toolbox
Button
Canvas
CheckBox
Ellipse
Grid
HyperlinkButton
Image
ListBox
Map
MediaElement
PasswordBox
ProgressBar
RadioButton
Rectangle
ScrollViewer
Slider
StackPanel
TextBlock
TextBox
WebBrowser
General
Server Explorer
Toolbox
Properties
TextBox textBox1
Properties
Events
Search
Common
DataContext
Binding...
Style
Resource...
Text
TextBox
IsEnabled
MaxLength
0
Layout
Width
327
Height
72
HorizontalAlignment
Left
Code Definition Window
Output
Find Symbol Results
Ready

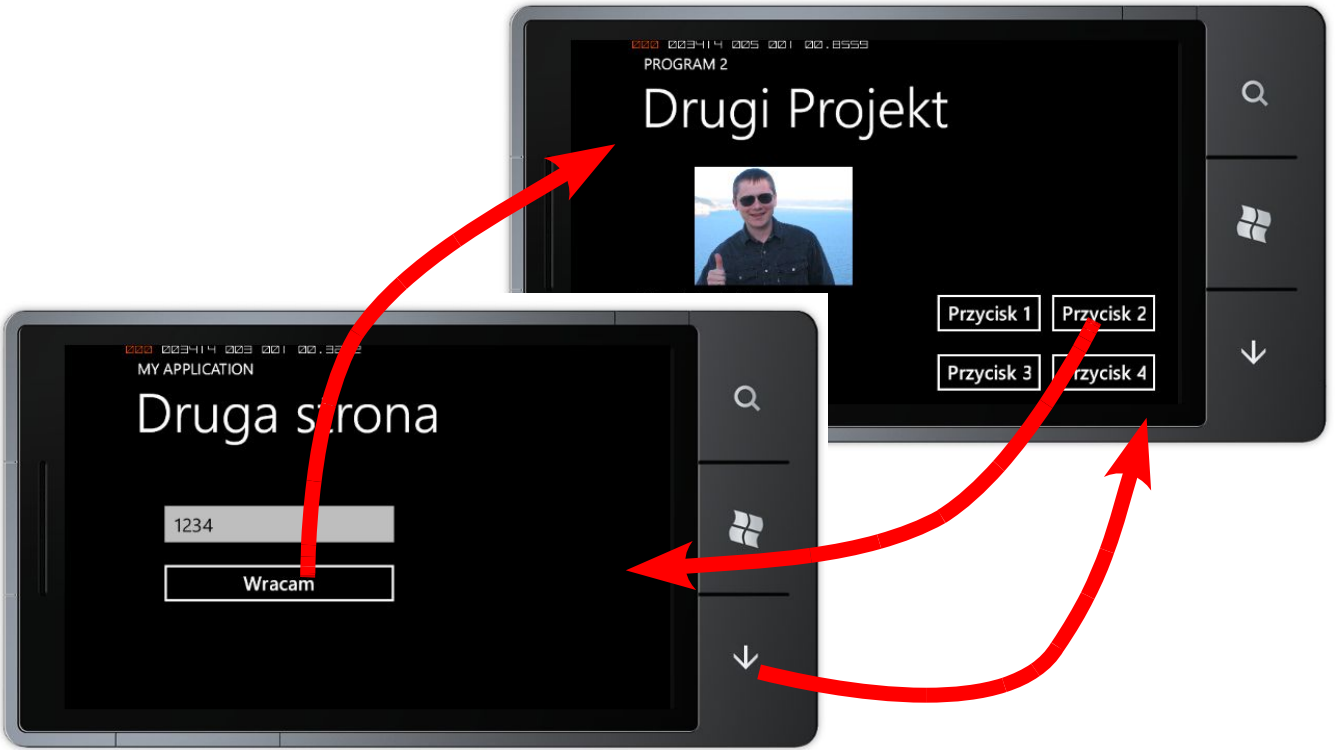
Tworzenie i przełączanie stron

```
private void button2_Click(object sender, RoutedEventArgs e)
{
    NavigationService.Navigate(new Uri("/DrugaStrona.xaml?arg= " + 1234,
                                       UriKind.RelativeOrAbsolute));
}
```

Tworzenie i przełączanie stron


```
namespace DrugiProjekt
{
  public partial class DrugaStrona : PhoneApplicationPage
  {
    public DrugaStrona()
    {
      InitializeComponent();
    }

    private void button1_Click(object sender, RoutedEventArgs e)
    {
      NavigationService.GoBack();
    }
    protected override void OnNavigatedTo(System.Windows.Navigation.NavigationEventArgs e)
    {
      string argument;
      if (NavigationContext.QueryString.TryGetValue("arg", out argument))
          textBox1.Text = argument;
    }
  }
}
```

Tworzenie i przełączanie stron



Przekazywanie danych między stronami

Współdzielenie obiektów (danych) między stronami jednego programu możliwe jest za pomocą klasy App (plik App.xaml.cs), która dostępna jest z poziomu pozostałych klas.

Plik App.xaml.cs:

```
public partial class App : Application
{
    public string wspoldzielony;
                    ...
```

Plik DrugaStrona.xaml.cs:

```
protected override void OnNavigatedFrom(System.Windows.Navigation.NavigationEventArgs e)
{
    App thisApp = Application.Current as App;
    thisApp.wspoldzielony = textBox1.Text;
}
```

Plik MainPage.xaml.cs:

```
protected override void OnNavigatedTo(System.Windows.Navigation.NavigationEventArgs e)
{
    App thisApp = Application.Current as App;
    textBlock1.Text = thisApp.wspoldzielony;
}
```

Przekazywanie danych między stronami

Dlaczego w DrugaStrona.xaml.cs dodajemy nową funkcję `OnNavigatedFrom`

a nie korzystamy z `button1_Click`?

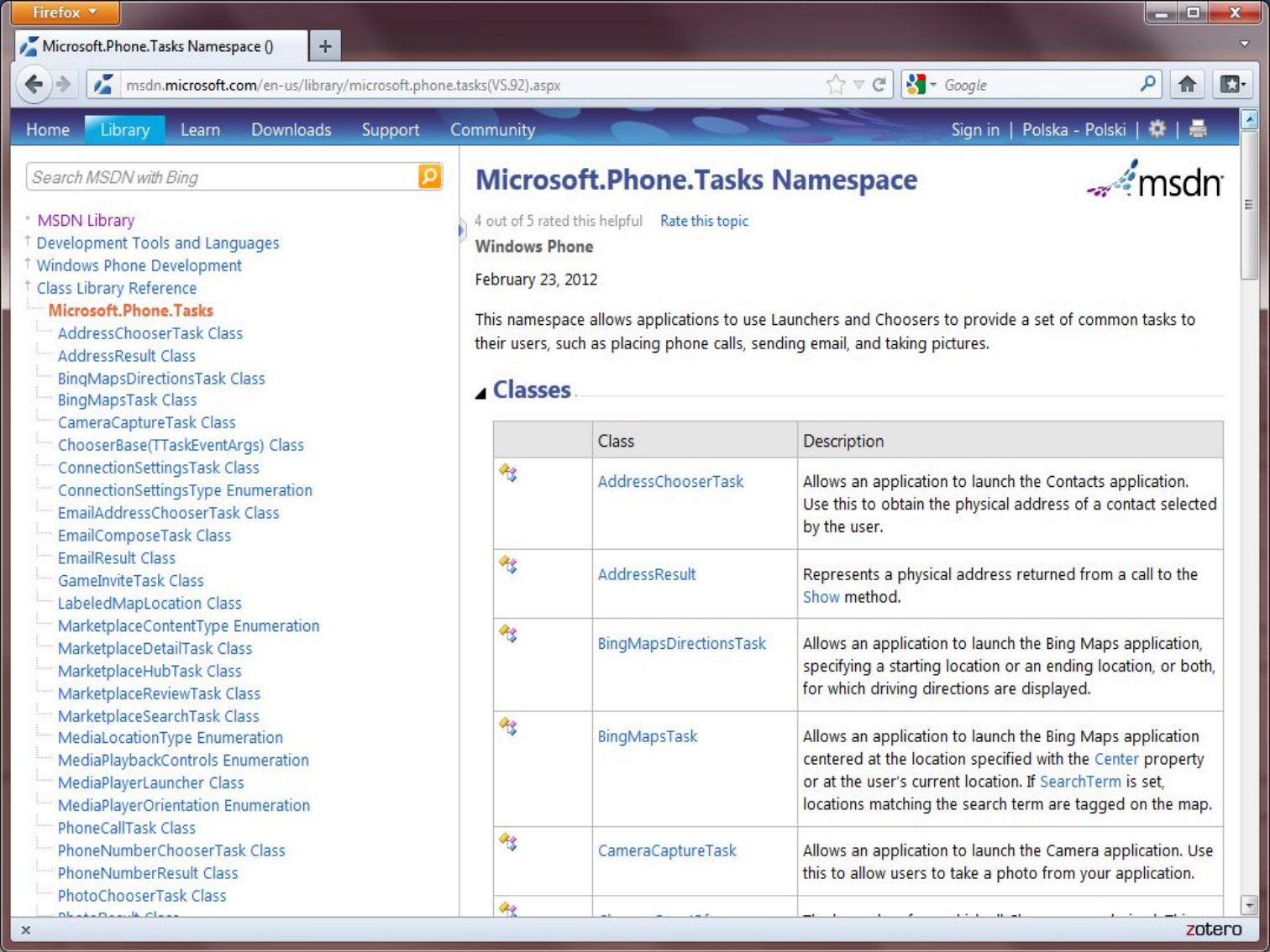
```
protected override void
OnNavigatedFrom(System.Windows.Navigation.NavigationEventArgs e)
{
    App thisApp = Application.Current as App;
    thisApp.wspoldzielony = textBox1.Text;
}
```

```
private void button1_Click(object sender, RoutedEventArgs e)
{
    App thisApp = Application.Current as App;
    thisApp.wspoldzielony = textBox1.Text;
    NavigationService.GoBack();
}
```

Uruchamianie zewnętrznych programów

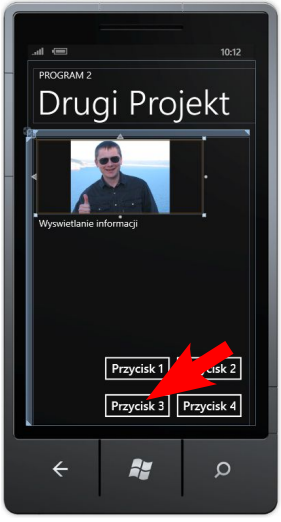
Launcher – uruchomienie programu i... już

Chooser – uruchomienie programu i oczekiwanie na wynik


Firefox
Microsoft.Phone.Tasks Namespace ()
msdn.microsoft.com/en-us/library/microsoft.phone.tasks(VS.92).aspx
Google
Home
Library
Learn
Downloads
Support
Community
Sign in | Polska - Polski
Search MSDN with Bing
MSDN Library
Development Tools and Languages
Windows Phone Development
Class Library Reference
Microsoft.Phone.Tasks
AddressChooserTask Class
AddressResult Class
BingMapsDirectionsTask Class
BingMapsTask Class
CameraCaptureTask Class
ChooserBase(TTaskEventArgs) Class
ConnectionSettingsTask Class
ConnectionSettingsType Enumeration
EmailAddressChooserTask Class
EmailComposeTask Class
EmailResult Class
GameInviteTask Class
LabeledMapLocation Class
MarketplaceContentType Enumeration
MarketplaceDetailTask Class
MarketplaceHubTask Class
MarketplaceReviewTask Class
MarketplaceSearchTask Class
MediaLocationType Enumeration
MediaPlaybackControls Enumeration
MediaPlayerLauncher Class
MediaPlayerOrientation Enumeration
PhoneCallTask Class
PhoneNumberChooserTask Class
PhoneNumberResult Class
PhotoChooserTask Class
Microsoft.Phone.Tasks Namespace
msdn
4 out of 5 rated this helpful
Rate this topic
Windows Phone
February 23, 2012
This namespace allows applications to use Launchers and Choosers to provide a set of common tasks to their users, such as placing phone calls, sending email, and taking pictures.
Classes
Class
Description
AddressChooserTask
Allows an application to launch the Contacts application. Use this to obtain the physical address of a contact selected by the user.
AddressResult
Represents a physical address returned from a call to the Show method.
BingMapsDirectionsTask
Allows an application to launch the Bing Maps application, specifying a starting location or an ending location, or both, for which driving directions are displayed.
BingMapsTask
Allows an application to launch the Bing Maps application centered at the location specified with the Center property or at the user's current location. If SearchTerm is set, locations matching the search term are tagged on the map.
CameraCaptureTask
Allows an application to launch the Camera application. Use this to allow users to take a photo from your application.
zotero

Uruchamianie zewnętrznych programów

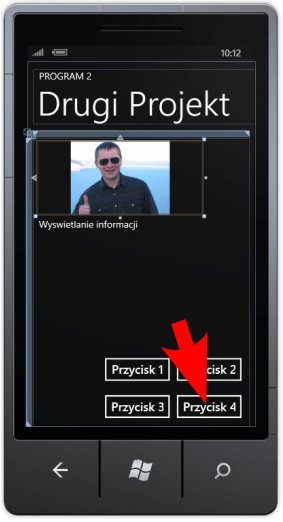
Uruchomienie WebBrowserTask (Launcher)




```
using Microsoft.Phone.Tasks;

...

    private void button3_Click(object sender, RoutedEventArgs e)
    {
        WebBrowserTask wb = new WebBrowserTask();
        Uri adres = new Uri("http://www.eletel.p.lodz.pl/pms");
        wb.Uri = adres;
        wb.Show();
    }
```

Uruchomienie CameraCaptureTask (Chooser)

```
using System.Windows.Media.Imaging;

namespace DrugiProjekt
{
   public partial class MainPage : PhoneApplicationPage
   {
      CameraCaptureTask kamera;
    // Constructor
      public MainPage()
      {
         InitializeComponent();
         kamera = new CameraCaptureTask();
         kamera.Completed += new EventHandler<PhotoResult>(ZdjecieZrobione);
      }
      void ZdjecieZrobione(object sender, PhotoResult e)
      {
         if (e.TaskResult == TaskResult.OK)
         {
            image1.Source = new BitmapImage(new Uri(e.OriginalFileName));
         }
      }
      private void button4_Click(object sender, RoutedEventArgs e)
      {
         kamera.Show();
      }
...
```



Obsługa urządzeń zewnętrznych

Klasy zdefiniowane w przestrzeniach nazw:

```
using Microsoft.Devices.Sensors;
using Microsoft.xna.framework;
```

Rodzaje czujników:

- Akcelerometr
- Kompas
- Żyroskop (opcjonalnie)
- Ruch
- Lokalizacja

Search MSDN with Bing

- MSDN Library
- Development Tools and Languages
- Windows Phone Development
- Class Library Reference
  - **Microsoft.Devices.Sensors**
    - Accelerometer Class
    - AccelerometerFailedException Class
    - AccelerometerReading Structure
    - AccelerometerReadingEventArgs Class
    - AttitudeReading Structure
    - CalibrationEventArgs Class
    - Compass Class
    - CompassReading Structure
    - Gyroscope Class
    - GyroscopeReading Structure
    - ISensorReading Interface
    - Motion Class
    - MotionReading Structure
    - SensorBase(TSensorReading) Class
    - SensorFailedException Class
    - SensorReadingEventArgs(T) Class
    - SensorState Enumeration

Microsoft.Devices.Sensors Namespace

Windows Phone

February 23, 2012

This namespace provides access to APIs to access the accelerometer.

Classes

	Class	Description
	Accelerometer	Provides Windows Phone applications access to the device's accelerometer sensor.
	AccelerometerFailedException	The exception that may be thrown during a call to Start or Stop. The **Message** field describes the reason for the exception and the ErrorId field contains the error code from the underlying native code implementation of the accelerometer framework.
	AccelerometerReadingEventArgs	Provides data for ReadingChanged events.
	CalibrationEventArgs	Provides data for Calibrate and events.
	Compass	Provides Windows Phone applications access to the device's compass sensor.
	Gyroscope	Provides Windows Phone applications access to the device's gyroscope sensor.
	Motion	Provides Windows Phone applications information

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    - Microsoft.Xna.Framework.Input.Touch
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XNA Framework Class Library

msdn

XNA Game Studio 4.0 | Other Versions | 1 out of 1 rated this helpful | Rate this topic

The XNA Framework class library is a library of classes, interfaces, and value types that are included in XNA Game Studio. This library provides access to XNA Framework functionality and is designed to be the foundation on which XNA Game Studio applications, components, and controls are built.

Namespaces

Microsoft.Xna.Framework
: Provides commonly needed game classes such as timers and game loops.

Microsoft.Xna.Framework.Audio
: Contains low-level application programming interface (API) methods that can load and manipulate XACT-created project and content files to play audio.

Microsoft.Xna.Framework.Content
: Contains the run-time components of the Content Pipeline.

Microsoft.Xna.Framework.Design
: Provides a unified way of converting types of values to other types.

Microsoft.Xna.Framework.GamerServices
: Contains classes that implement various services related to gamers. These services communicate directly with the gamer, the gamer's data, or otherwise reflect choices the gamer makes. Gamer services include input device and profile data APIs.

Microsoft.Xna.Framework.Graphics
: Contains low-level application programming interface (API) methods that take advantage of hardware acceleration capabilities to display 3D objects.

Microsoft.Xna.Framework.Graphics.PackedVector
: Represents data types with components that are not multiples of 8 bits.

Microsoft.Xna.Framework.Input
: Contains classes to receive input from keyboard, mouse, and Xbox 360 Controller devices.

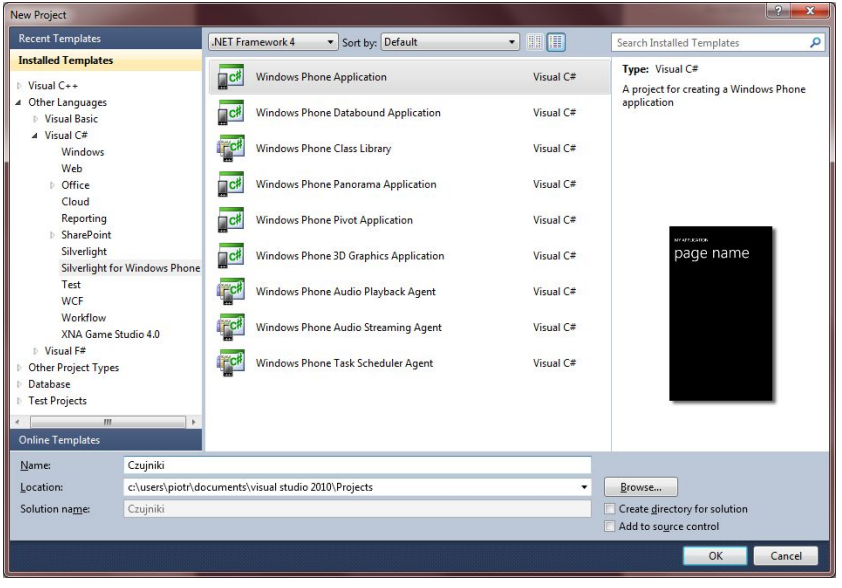
Microsoft.Xna.Framework.Input.Touch
: Contains classes that enable access to touch-based input on devices that support it.

Microsoft.Xna.Framework.Media

Obsługa urządzeń zewnętrznych

Zacznijmy od utworzenia kolejnego projektu

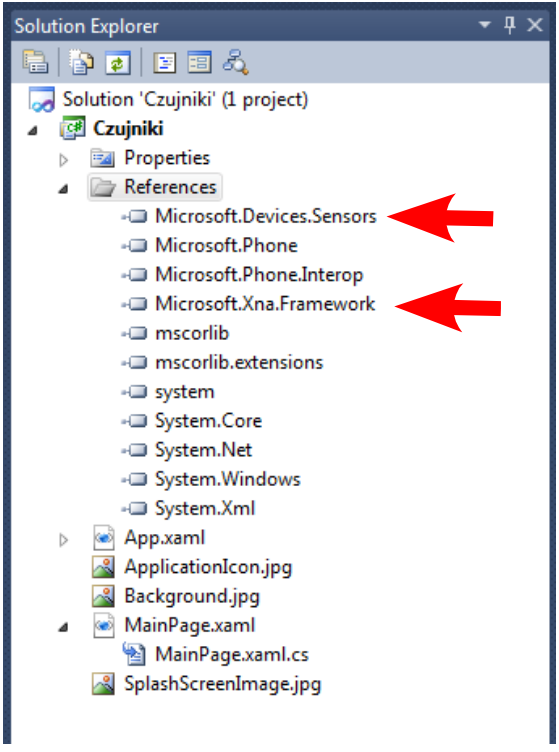
- Visual C#
- Silverlight for Windows Phone
- Windows Phone Application

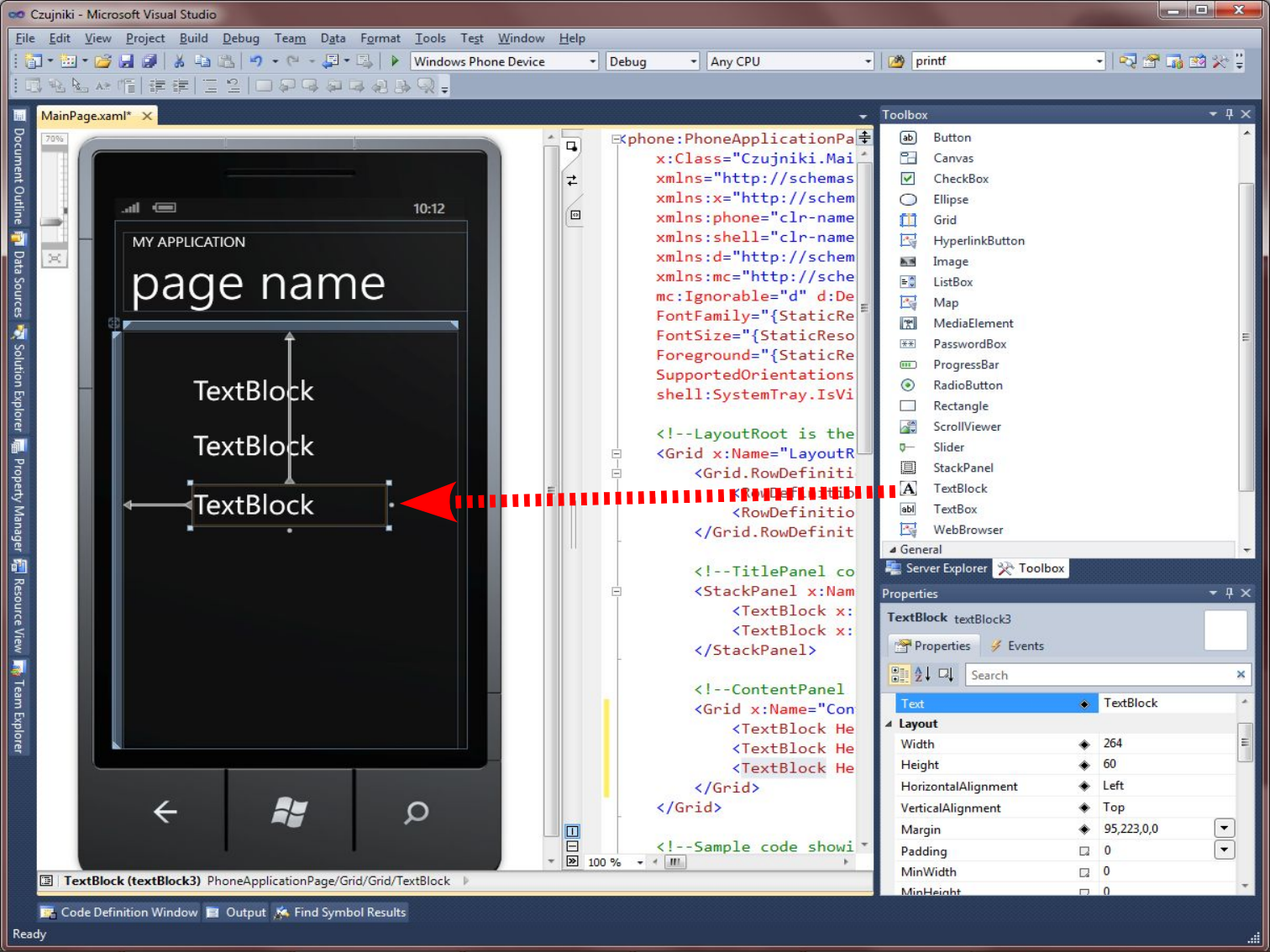


Obsługa urządzeń zewnętrznych

```
using Microsoft.Devices.Sensors;
using Microsoft.Xna.Framework;
```

Dodać moduły do *References*




Czujniki - Microsoft Visual Studio
File Edit View Project Build Debug Team Data Format Tools Test Window Help
Windows Phone Device
Debug
Any CPU
printf
MainPage.xaml*
10:12
MY APPLICATION
page name
TextBlock
TextBlock
TextBlock
<phone:PhoneApplicationPa
x:Class="Czujniki.Mai
xmlns="http://schemas
xmlns:x="http://schem
xmlns:phone="clr-name
xmlns:shell="clr-name
xmlns:d="http://schem
xmlns:mc="http://sche
mc:Ignorable="d" d:De
FontFamily="{StaticRe
FontSize="{StaticReso
Foreground="{StaticRe
SupportedOrientations
shell:SystemTray.IsVi
<!--LayoutRoot is the
<Grid x:Name="LayoutR
<Grid.RowDefiniti
<RowDefinitio
</Grid.RowDefinit
<!--TitlePanel co
<StackPanel x:Nam
<TextBlock x:
<TextBlock x:
</StackPanel>
<!--ContentPanel
<Grid x:Name="Con
<TextBlock He
<TextBlock He
<TextBlock He
</Grid>
</Grid>
<!--Sample code showi
100 %
TextBlock (textBlock3) PhoneApplicationPage/Grid/Grid/TextBlock
Toolbox
Button
Canvas
CheckBox
Ellipse
Grid
HyperlinkButton
Image
ListBox
Map
MediaElement
PasswordBox
ProgressBar
RadioButton
Rectangle
ScrollViewer
Slider
StackPanel
TextBlock
TextBox
WebBrowser
General
Server Explorer
Toolbox
Properties
TextBlock textBlock3
Properties
Events
Search
Text
TextBlock
Layout
Width
264
Height
60
HorizontalAlignment
Left
VerticalAlignment
Top
Margin
95,223,0,0
Padding
0
MinWidth
0
Code Definition Window
Output
Find Symbol Results
Ready

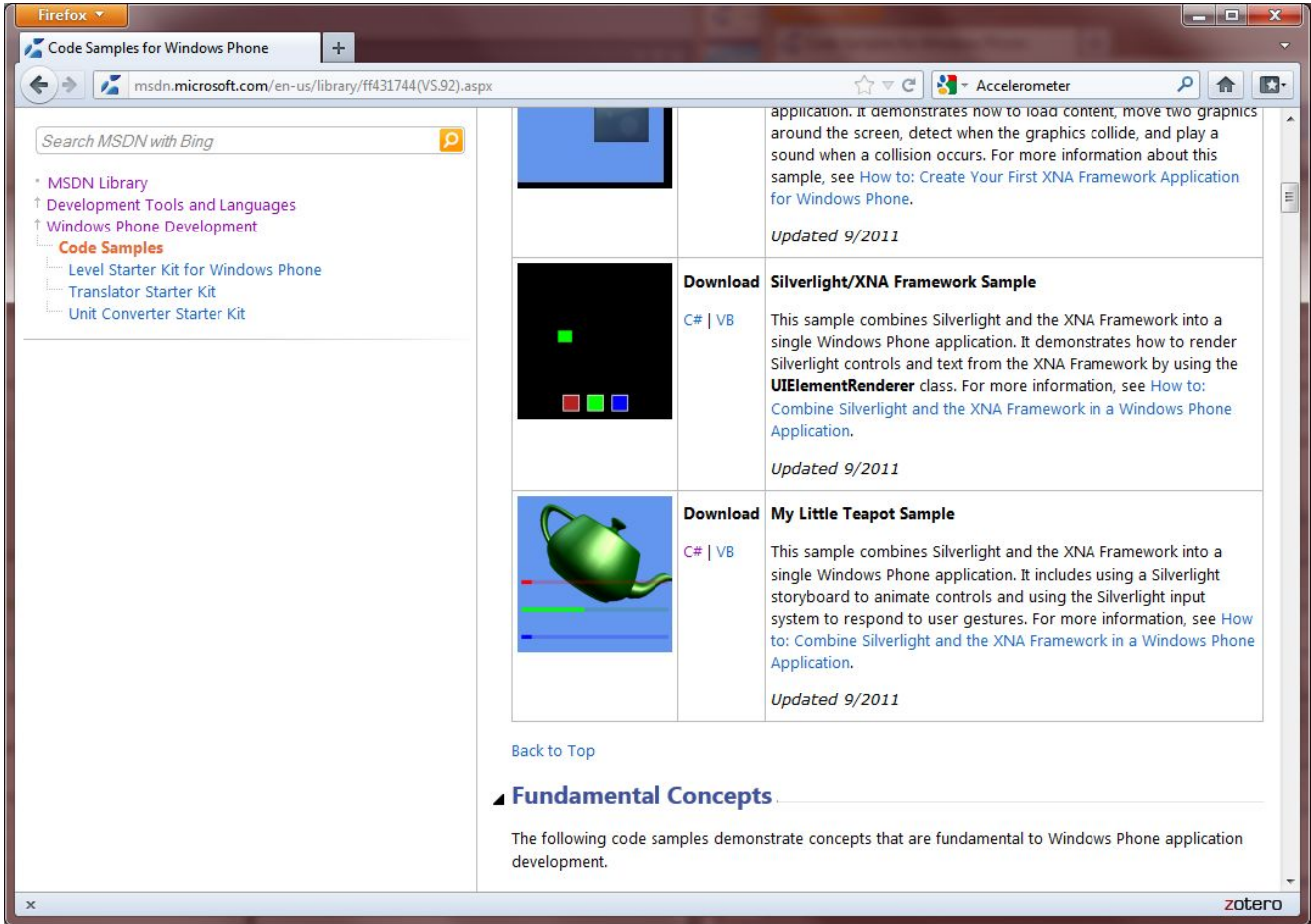
Obsługa urządzeń zewnętrznych

```
...
using Microsoft.Devices.Sensors;
using Microsoft.Xna.Framework;
namespace Czujniki
{
    public partial class MainPage : PhoneApplicationPage
    {
        Accelerometer accelerometer;

        public MainPage()
        {
            InitializeComponent();
            if (Accelerometer.IsSupported)
            {
                accelerometer = new Accelerometer();
                accelerometer.TimeBetweenUpdates = TimeSpan.FromMilliseconds(20);
                accelerometer.CurrentValueChanged += new EventHandler<SensorReadingEventArgs
                                                     <AccelerometerReading>>(ZmianaWskazania);
                try{accelerometer.Start();}
                catch (InvalidOperationException ex){ }
            }
        }
```

```
        void ZmianaWskazania(object sender, SensorReadingEventArgs<AccelerometerReading> e)
        {
            Dispatcher.BeginInvoke(() => ZmianaKontrolek(e.SensorReading));
        }
        private void ZmianaKontrolek(AccelerometerReading accelerometerReading)
        {
            Vector3 acceleration = accelerometerReading.Acceleration;
            textBlock1.Text = "X: " + acceleration.X.ToString("0.00");
            textBlock2.Text = "Y: " + acceleration.Y.ToString("0.00");
            textBlock3.Text = "Z: " + acceleration.Z.ToString("0.00");
        }
    }
}
```

Programy przykładowe




MyLittleTeapot - Microsoft Visual Studio 2010 Express for Windows Phone
Toolbox
Windows Phone Controls
Pointer
Border
Button
Canvas
CheckBox
Ellipse
Grid
HyperlinkButton
Image
ListBox
Map
MediaElement
PasswordBox
ProgressBar
RadioButton
Rectangle
ScrollViewer
Slider
StackPanel
TextBlock
TextBox
WebBrowser
General
There are no usable controls in this group. Drag an item onto this text to add it to the toolbox.
MainPage.xaml
TeapotPrimitive.cs
GeometricPrimitive.cs
BezierPrimitive.cs
Toggle Color
PhoneApplicationPage
Ready
Solution Explorer
Solution 'MyLittleTeapot' (1 project)
MyLittleTeapot
Properties
References
3D Primitives
BezierPrimitive.cs
GeometricPrimitive.cs
TeapotPrimitive.cs
VertexPositionNormal.cs
App.xaml
ApplicationIcon.jpg
Background.jpg
MainPage.xaml
SplashScreenImage.jpg
Toggle Color Panel

...i na tym koniec
drugiej części wykładu