



Introduction to Windows Phone 7 and Silverlight

Nicolai Marquardt

CPSC 581, Saul Greenberg
University of Calgary, Canada
September 2012

Email: nicolai.marquardt@ucalgary.ca

Office: Math Science, 6th floor, 671

<http://pages.cpsc.ucalgary.ca/~saul/wiki/pmwiki.php/CPSC581/>

Overview for today

1. Introduction to Silverlight and Windows Phone
2. Recommended books and resources
3. Hands-on programming tutorials

Windows Phone 7



Windows Phone 7



Graphic interface

Touch input

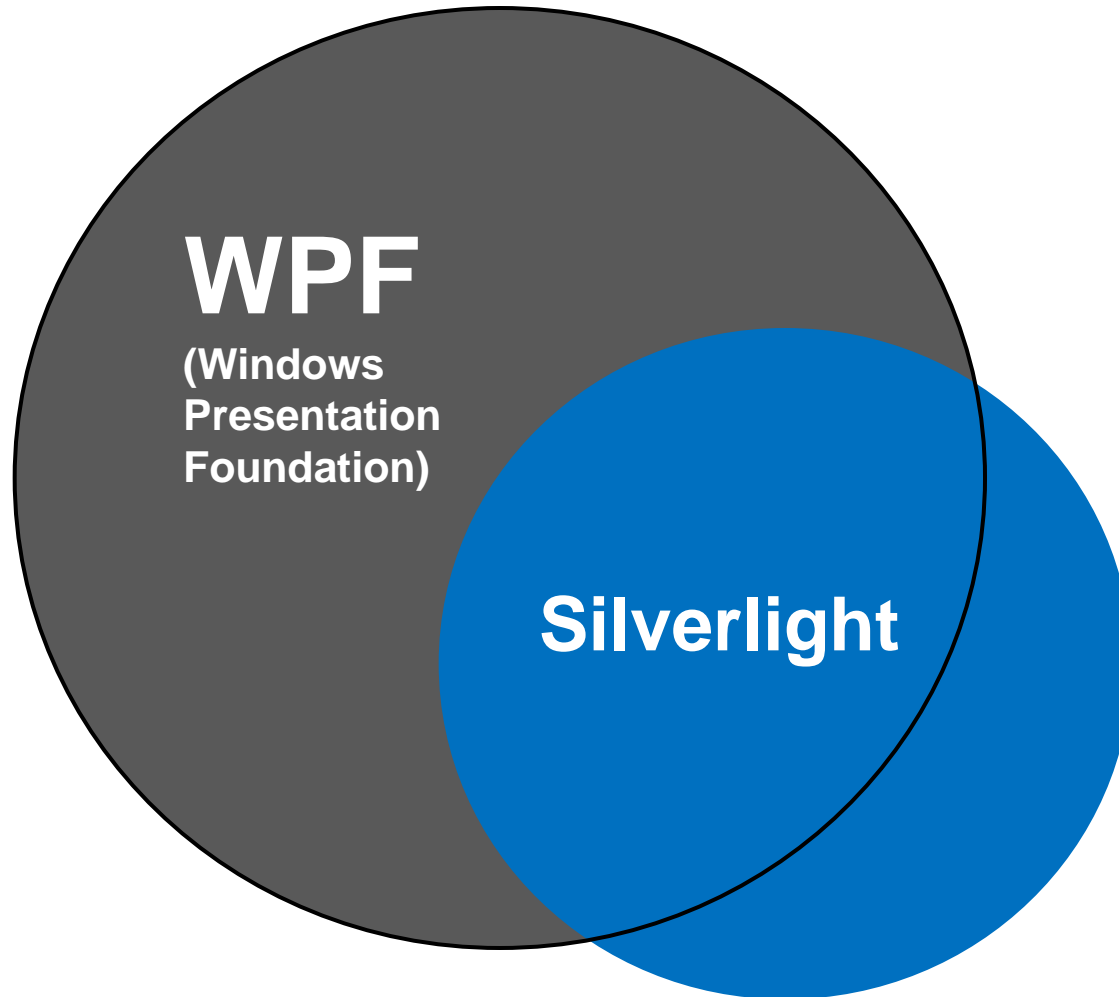
Sensors

Media content

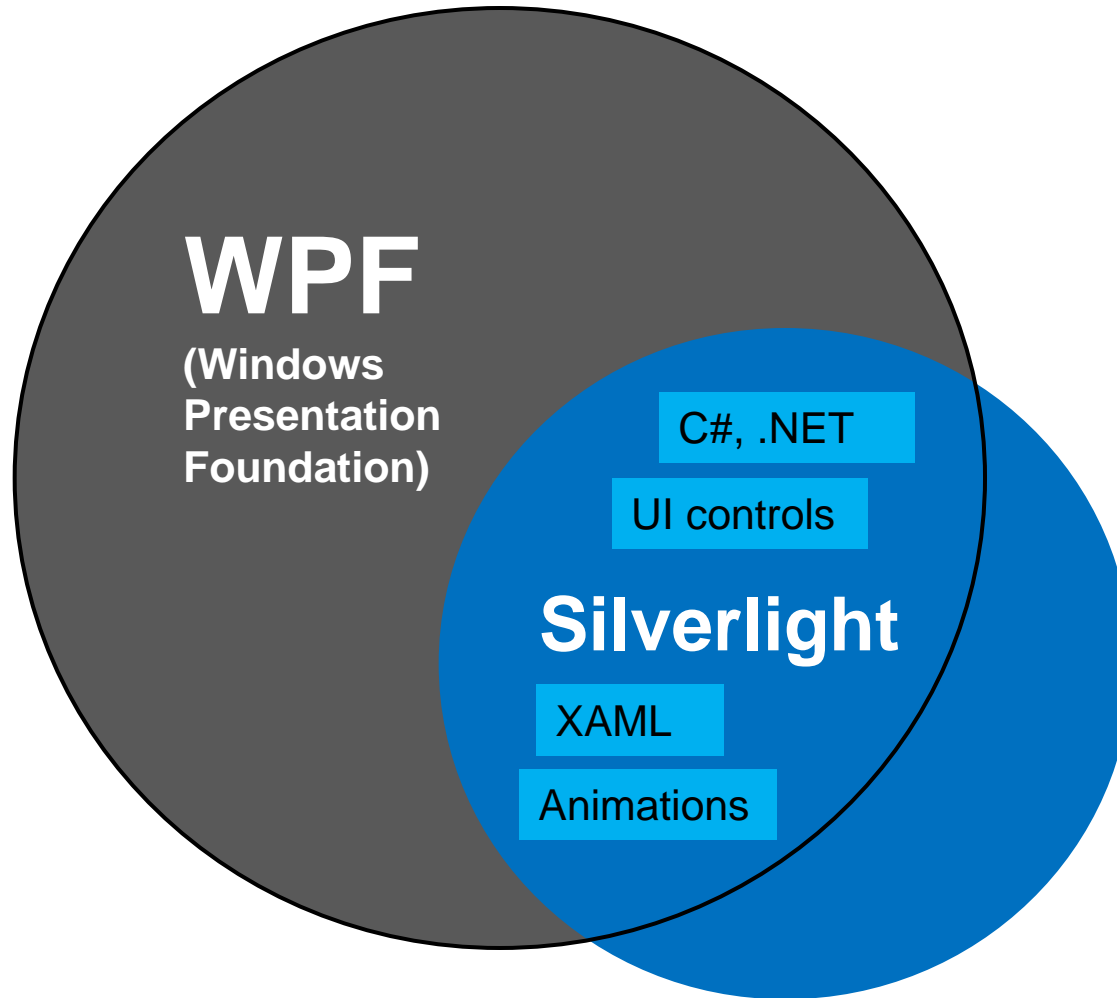
Animations

Wireless connectivity

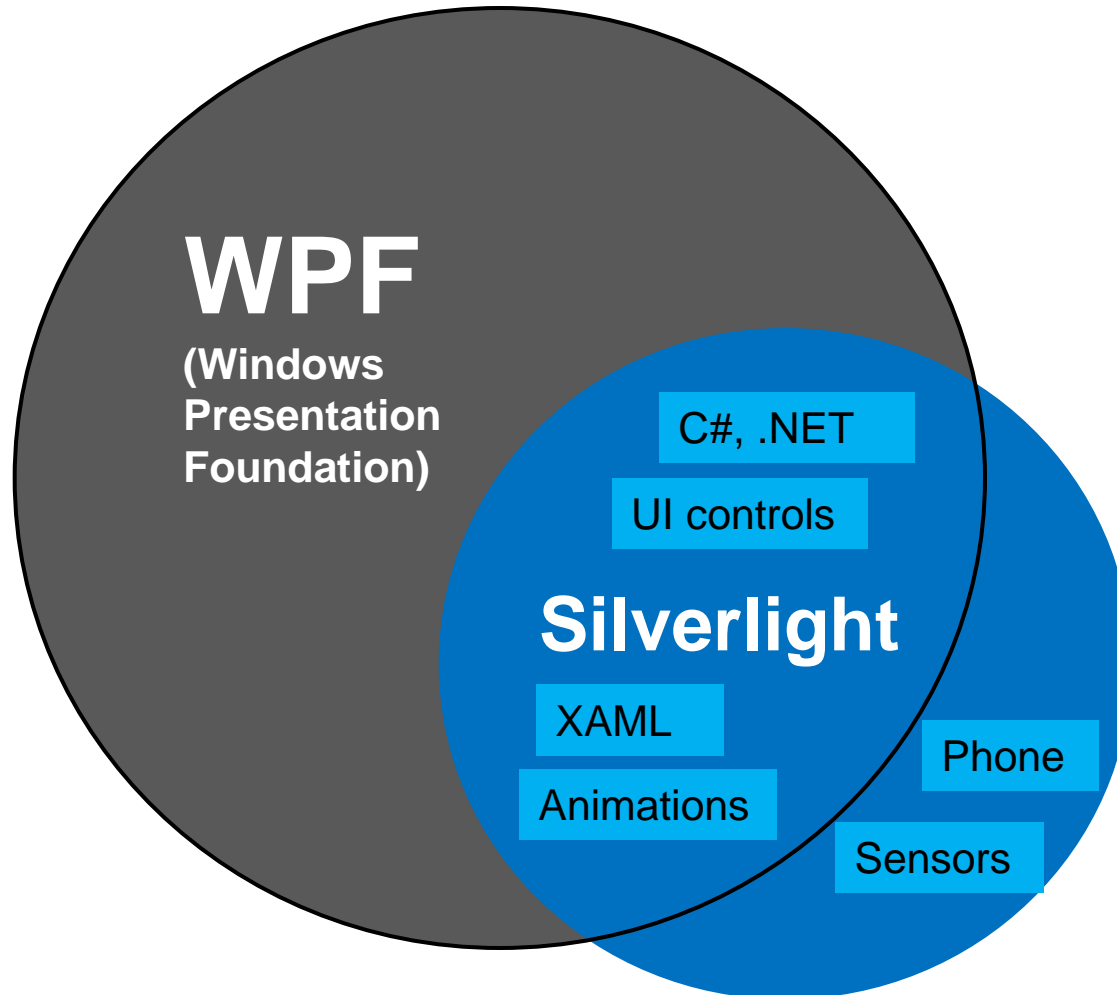
Programming platforms



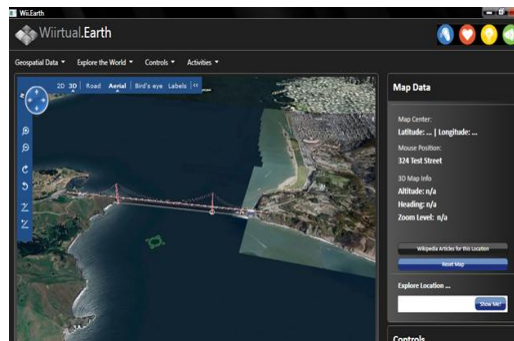
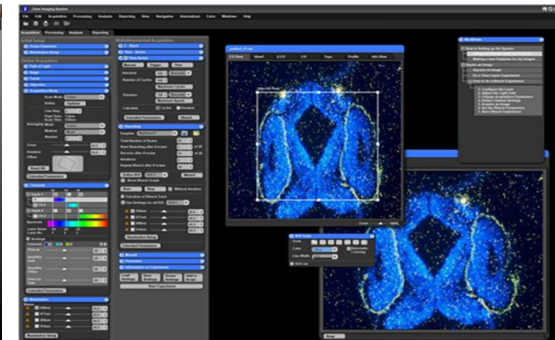
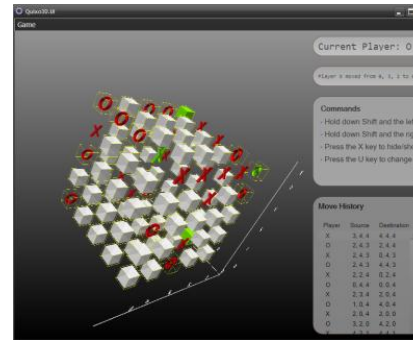
Programming platforms



Programming platforms

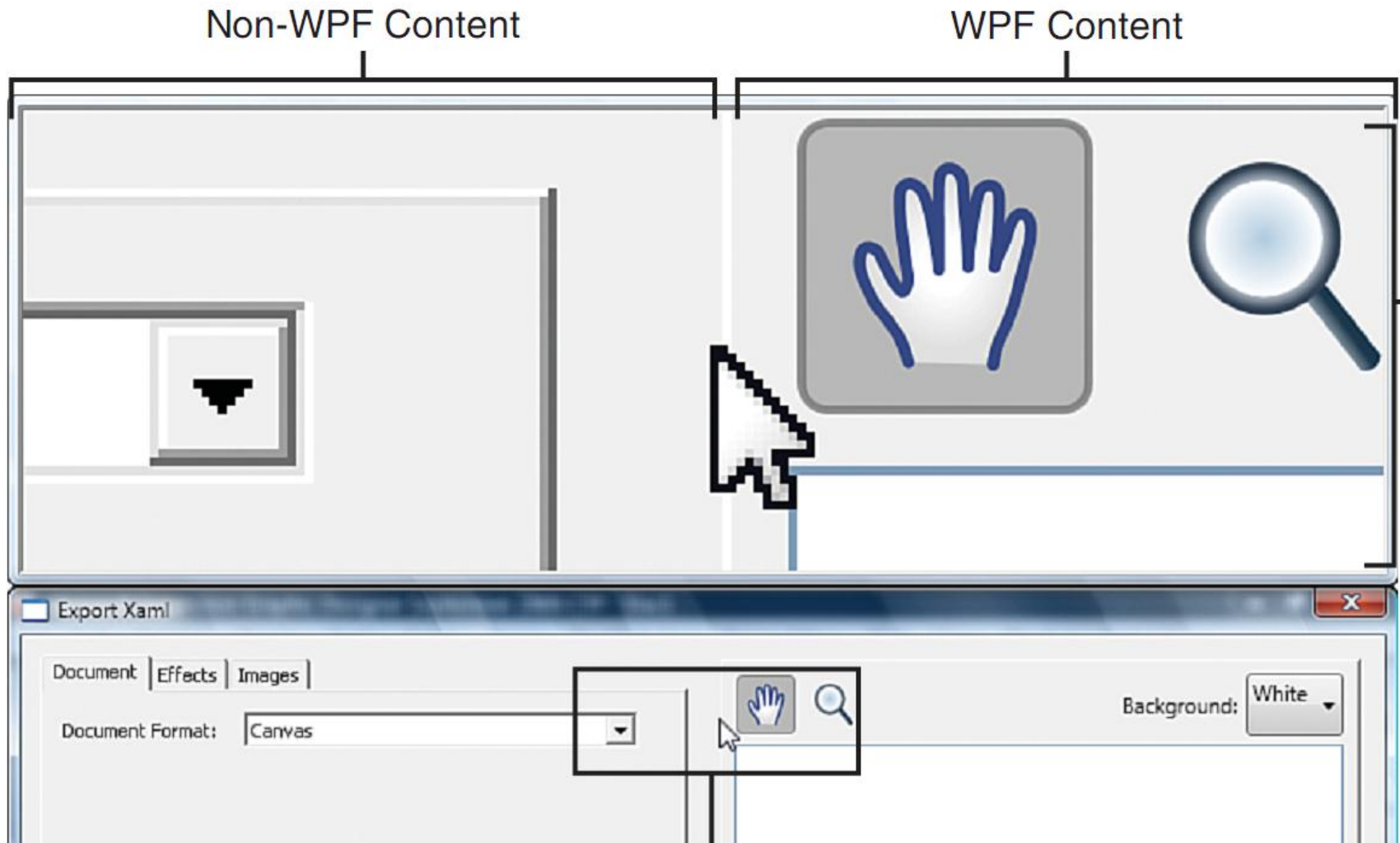


Unified framework



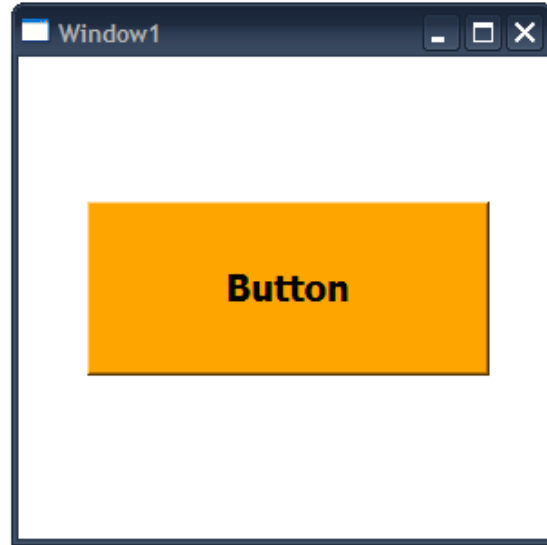
Examples: <http://windowsclient.net/community/showcase.aspx>

Resolution independent

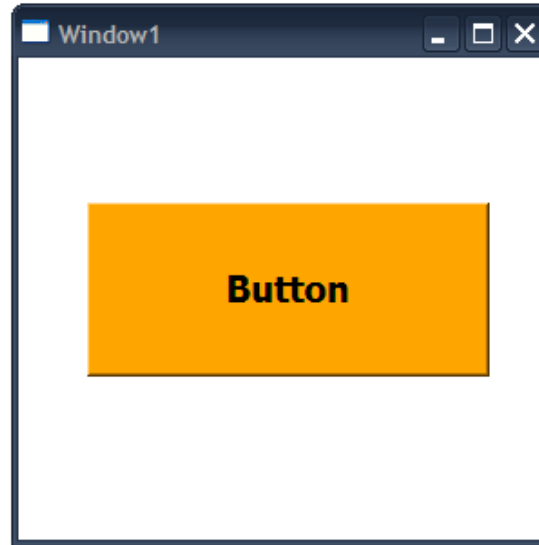


Source: Adam Nathan "Windows Presentation Foundation Unleashed", SAMS Publishing 2007

Extensible Application Markup Language (XAML)



Extensible Application Markup Language (XAML)



```
<Grid>
  <Button Name="buttonXAML"
    FontSize="20"
    FontWeight="Bold"
    Background="Orange"
    Margin="40,80,40,80">Button</Button>
</Grid>
```

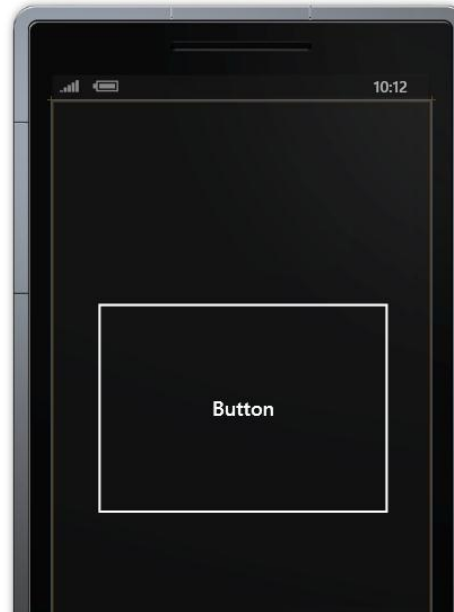
XAML

```
Button button = new Button();
button.Name = "button";
button.FontSize = 20.0;
button.FontWeight = FontWeights.Bold;
button.Background = new SolidColorBrush(Colors.Orange);
button.Margin = new Thickness(40, 80, 40, 80);
button.Content = "Button";

Grid grid = new Grid();
grid.Children.Add(button);
```

C#

Extensible Application Markup Language (XAML)



```
<Grid>
  <Button Name="buttonXAML"
    FontSize="20"
    FontWeight="Bold"
    Background="Orange"
    Margin="40,80,40,80">Button</Button>
</Grid>
```

XAML

```
Button button = new Button();
button.Name = "button";
button.FontSize = 20.0;
button.FontWeight = FontWeights.Bold;
button.Background = new SolidColorBrush(Colors.Orange);
button.Margin = new Thickness(40, 80, 40, 80);
button.Content = "Button";

Grid grid = new Grid();
grid.Children.Add(button);
```

C#

Rich composition and customization

Example: video inside of button

```
<Button Name="buttonVideo">  
  <MediaElement Source="video.wmv" Width="240" Height="160" Name="mediaElement" />  
</Button>
```

XAML



What we will learn in the tutorials...

- Developing applications with **C#, Silverlight, and XAML**
- Programming for **phones and desktop**
- Using **VisualStudio 2010**

What we will learn in the tutorials...

- User interface elements
- Graphics
- Animations
- Sensors (accelerometer, GPS)
- Media, sound
- Data storage
- ...

Recommended books and resources

Windows Phone

Windows Phone is one of the three big Smart Phone operating systems (the others are Android and the Apple IOS). If you already know how to program Windows using C# and WPF or Silverlight, you will find programming the phone pretty straightforward but highly interesting. As well as doing the usual graphical user interfaces, you can access sensor and multi-touch input.

NOTE
This page is under construction

Contents

- Downloads
- Creating Various Required accounts
- Registering your phone
- Recipes, How-To's
- Tutorials and Examples
- Links

Downloading software (if you want to develop on your own Windows machine):

1. Download and install the Windows Phone SDK 7.1. If Visual Studio is not currently installed on your computer, this setup will install the Express edition of Visual Studio. Note that as a student of the UoC, you can get the full version of Visual Studio 2010 via the MSDNAA program.
2. Install the Windows Phone SDK 7.1 Update 2.
3. Install the Windows Phone SDK 7.1 Update 3.
4. Install the Windows Phone Toolkit.

Creating Various Required Accounts

Unlike programming on windows, you need to establish several accounts that will ultimately let you register your phone for application development, and to download programs you develop on your phone.

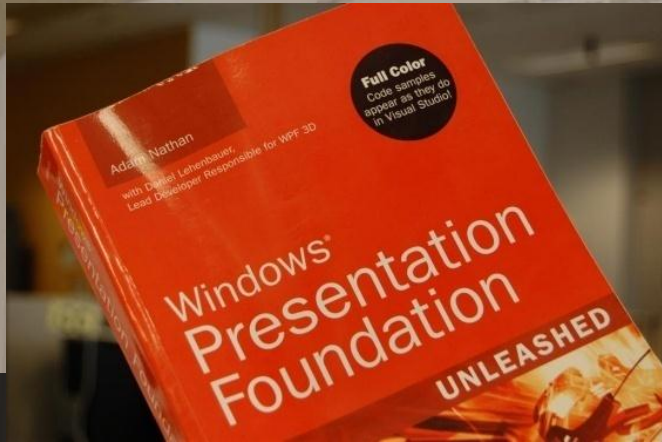
1. Sign up for a Windows Live ID account. You can use an existing account if you already signed up before.
2. Register on DreamSpark. Fill out the form. Select the UoC in the field "Institution/School". Finally, click "continue to verify".
3. On the next page, enter your UoC email address in order to verify your student status. Once you received the confirmation email, click the link in the email to confirm the student status.
4. You now have to link your Windows Live ID to the DreamSpark account. Go to the DreamSpark Windows Phone page (direct link) and click the green button "Map your Live ID".
5. Once you are logged in, you will see a message that says "Your DreamSpark and Windows Live ID accounts are not linked". Click "OK". Your DreamSpark and Windows Live ID accounts are now linked.
6. Register an AppHub account. On the page that opens, click on "Join now - membership registration". Use your Windows Live ID (created during step 1) for this registration. Select "Student" as account type, fill out the rest of the form, and click "I accept".

Interactions Lab Developer Cookbook

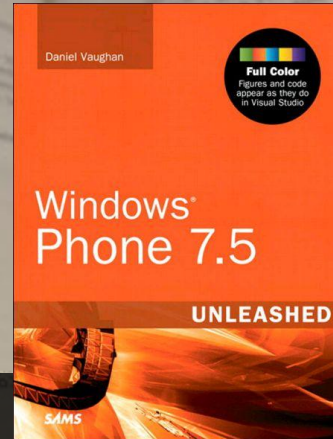
<http://grouplab.cpsc.ucalgary.ca/cookbook>

<http://grouplab.cpsc.ucalgary.ca/cookbook/index.php/Technologies/WindowsPhone>

Recommended books and resources



Adam Nathan "WPF 4 Unleashed"
SAMS Publishing 2010



Daniel Vaughan "Windows Phone Unleashed"
SAMS Publishing 2012

Full text of both books available online at UofC library

Recommended books and resources

The screenshot shows the MSDN website interface. At the top left is the 'msdn' logo. To its right is a search bar with the 'bing' logo. Further right are the links 'Canada (English)' and 'Sign in'. Below the search bar is a horizontal navigation menu with links: 'Home', 'Library', 'Learn', 'Downloads', 'Support', 'Community', and 'Forums'. Underneath this is a secondary menu with links: 'Developer Centres', 'Getting Started', 'Evaluation', 'Events & Webcasts', 'MSDN Subscriptions', and 'MSDN Canada Flash Newsletter'. The main content area features a 'PORTALS:' section with two tabs: 'Platforms' (selected) and 'Tasks'. Below the tabs is a large banner with the text 'explore platforms explore platforms'. Underneath the banner are four teal-colored buttons, each with a white icon and a label: 'desktop' (laptop icon), 'web' (www. icon), 'cloud' (cloud icon), and 'phone' (phone handset icon). At the bottom right of the page, there is a small link: 'All Developer Centers and Hubs'.

Microsoft Developer Network (MSDN) and Windows Phone Developer Center

<http://msdn.microsoft.com>

<http://dev.windowsphone.com/en-us/>

Hands-on programming

- UI widgets, images, resources
- Multi-touch, graphics