

# Windows Phone 7

# Introduction

# The Windows Phone 7 Platform

- ❖ Windows Phone 7 is Microsoft's platform for mobile telephones.
- ❖ Makes an extensive use of Silverlight and XNA.



# Developer Tools

- ❖ In order to start developing for the windows phone 7 platform setting up the development environment involves with one single free download at <http://developer.windowsphone.com/>.

# Developer Tools

The screenshot shows the Windows Phone Developer Home website in Internet Explorer. The browser's address bar displays `http://developer.windowsphone.com/`. The page features the Windows Phone logo and navigation links for **Developer Home**, **Your apps**, **Resources**, **Forums**, and **Help**. A search bar labeled "Search MSDN" is present, along with links for **Business solutions** and **Consumers**. The main content area includes a large banner with the text "Distribute your applications to Windows Phone users worldwide." and a prominent orange **Register** button. Below this, it says "Already registered? [Sign In](#)". To the right of the banner is an image of a Windows Phone device with the text "Start designing your Windows Phone applications" and a blue **Download the tools today!** button. Below the banner, there are sections for "Developing for Windows Phone 7 Series" (with a "Learn More" link), "Announcements" (including links for "Catch the latest buzz on Windows Phone 7 Series" and "Windows Marketplace Registration and Submission walkthroughs"), "Developer Programs" (listing "Microsoft Partner Program", "Ramp Up", and "BizSpark™"), and "Developer Blog" (dated Friday, March 19, 2010, with a link to "The Windows Phone Marketplace Part 2 of 2: A different way to encourage application discoverability, monetization and customer"). The Windows taskbar at the bottom shows several open applications and the system clock at 22:10.

# Developer Tools

- ❖ Installing the 'Visual Studio 2010 Express for Windows Phone CTP' will install the following components on your desktop:

Visual Studio 2010 Express for Windows Phone

The .NET Framework 4.0

Silverlight 4.0 Runtime for Windows Phone

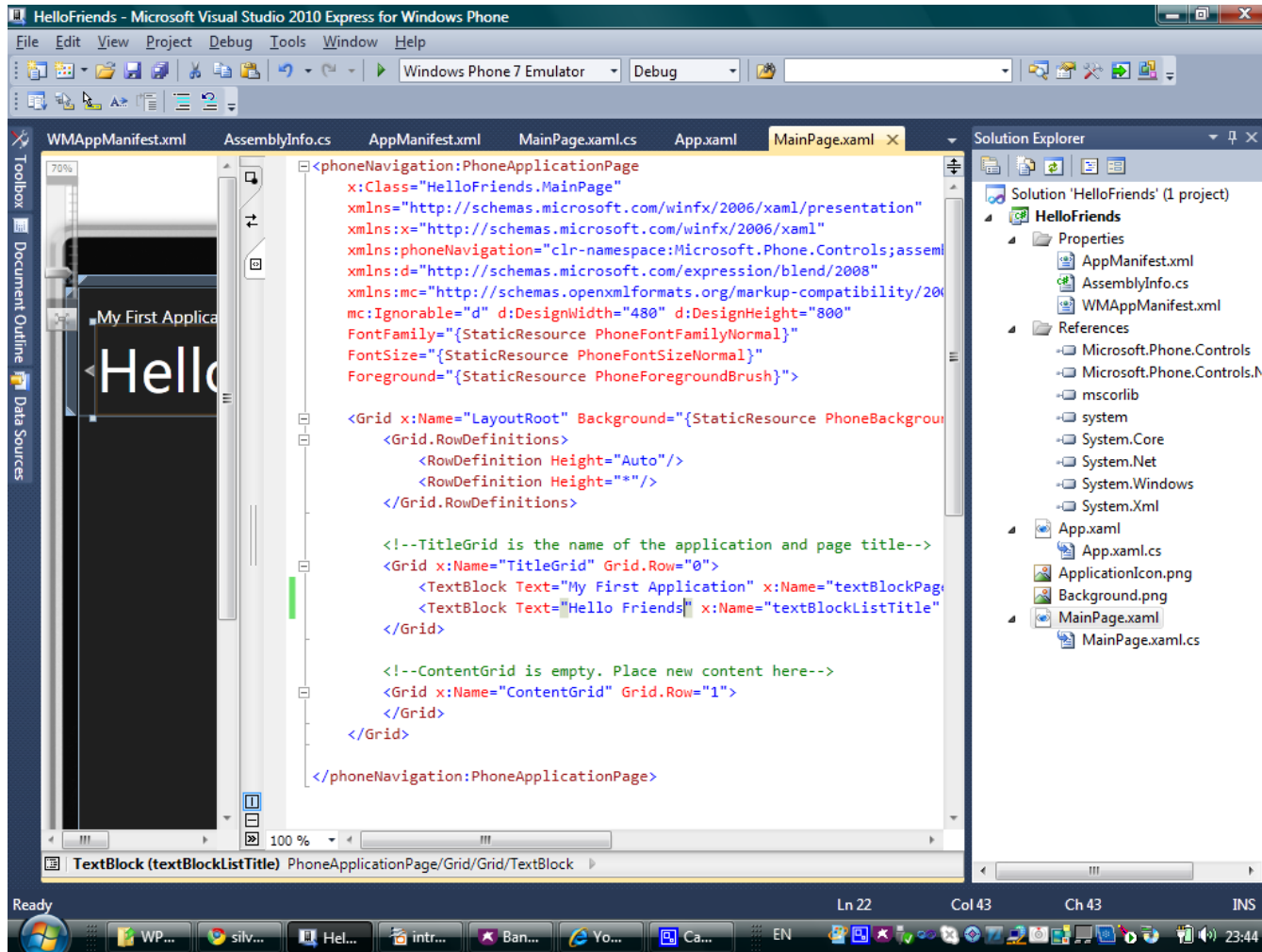
XNA Framework and XNA Game Studio 4.0

Windows Phone Emulator

# The Hello World Application

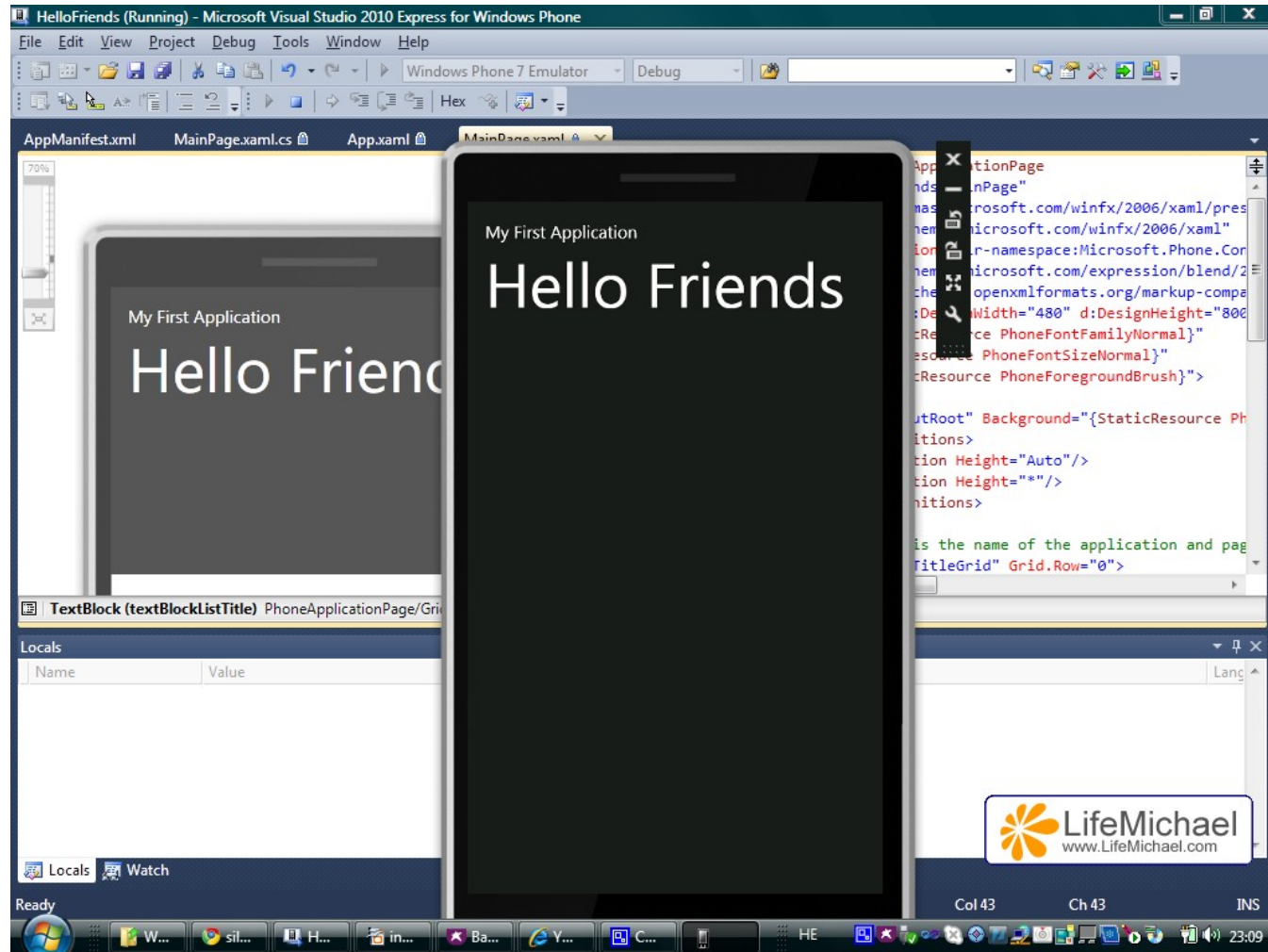
- ❖ Developing your first application should be fairly simple. Select the 'File' menu option and select 'New Project'.
- ❖ The opened dialog allows you to choose the template and the application type you want to develop. Choose the 'Silverlight for Windows Phone' template and the 'Windows Phone Application'.
- ❖ The IDE automatically generates a project you can work on.

# The Hello World Application





# The Hello World Application



# Project Structure

- ❖ The Visual Studio 2010 IDE automatically generates a project that includes files and folders on which you can continue your work.

# Project Structure


The screenshot displays the Visual Studio 2010 Express for Windows Phone interface. The main window shows the 'MainPage.xaml' file in design view, displaying a mobile application interface with the text 'My First Application' and 'Hello Friends'. The code editor on the right shows the XAML code for the page, including the namespace declarations, the 'LayoutRoot' grid, and the 'TitleGrid' containing the text blocks.

```
<phoneNavigation:PhoneApplicationPage
  xmlns:phoneNavigation="clr-namespace:Microsoft.Phone.Controls;assembly=Microsoft.Phone.Controls"
  xmlns="http://schemas.microsoft.com/winfx/2006/xaml"
  xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml"
  xmlns:mc="http://schemas.openxmlformats.org/markup-compatibility/2006"
  xmlns:d="http://schemas.microsoft.com/expression/2010/declarative"
  d:DesignWidth="480"
  FontFamily="{StaticResource PhoneFontFamilyNormal}"
  FontSize="{StaticResource PhoneFontSizeNormal}"
  Foreground="{StaticResource PhoneForegroundBrush}"
  >
  <Grid x:Name="LayoutRoot" Background="White" >
    <Grid.RowDefinitions>
      <RowDefinition Height="Auto" />
      <RowDefinition Height="*" />
    </Grid.RowDefinitions>
    <!-- TitleGrid is the name of the grid that contains the title -->
    <Grid x:Name="TitleGrid" Grid.Row="0" >
      <TextBlock Text="My First Application" />
      <TextBlock Text="Hello Friends" />
    </Grid>
    <!-- ContentGrid is empty. Place content here -->
    <Grid x:Name="ContentGrid" Grid.Row="1" />
  </Grid>
</phoneNavigation:PhoneApplicationPage>
```

The Solution Explorer on the right shows the project structure for 'HelloFriends' (1 project):

- Properties
  - AppManifest.xml
  - AssemblyInfo.cs
  - WMAppManifest.xml
- References
  - Microsoft.Phone.Controls
  - Microsoft.Phone.Controls.Navigation
  - mscorlib
  - system
  - System.Core
  - System.Net
  - System.Windows
  - System.Xml
- App.xaml
- App.xaml.cs
- ApplicationIcon.png
- Background.png
- MainPage.xaml
- MainPage.xaml.cs

The status bar at the bottom indicates the current selection: 'TextBlock (textBlockListTitle) PhoneApplicationPage/Grid/TextBlock'.



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# Project Structure

## ❖ The `App.xaml` and `App.xaml.cs` Files

These files define the application entry point and the application first page. Their main purpose is to define the styles to be used by the application. The `Application.RootVisual` XML element includes the `Source` attribute. The value of this attribute is the name of the first page the application shows. The default value of this attribute is `'MainPage.xaml'`.

## ❖ The `MainPage.xaml` and `MainPage.xaml.cs` Files

The `MainPage.xaml` file defines the user interface of a specific page. One of many pages the application can include. The code responsible for the user interface events handling is saved within the `MainPage.xaml.cs` file.

# Project Structure

## ❖ The Reference Folder

The reference folder includes a list of assemblies that provide services and functionality for the application.

## ❖ The Properties Folder

This folder includes auto generated files the IDE is responsible for their generation, such as the 'AppManifest.xml', 'AssemblyInfo.cs' and the 'WMAppManifest.xml' files.

# Windows Phone Silverlight Runtime

- ❖ Unlike the silverlight known run-time executed in a browser, the windows phone silverlight run-time is executed in a separated process, known as the taskhost.exe process.
- ❖ The windows phone silverlight runtime isn't limited by web browsers security restrictions.

# The `WMAppManifest.xml` File

- ❖ This file includes meta data information about the phone application.

# The WMAppManifest.xml File

```
<?xml version="1.0" encoding="utf-8"?>

<Deployment
  xmlns="http://schemas.microsoft.com/windowsphone/2009/deployment"
  AppPlatformVersion="7.0">

  <App xmlns="" ProductID="{6898b558-3ec8-4ca6-b1f1-cb87a1808a8e}"
    Title="HelloFriends" RuntimeType="SilverLight"
    Version="1.0.0.0" Genre="NormalApp" Author="" Description=""
    Publisher="">

    <IconPath IsRelative="true" IsResource="false">
      ApplicationIcon.png
    </IconPath>

    <Capabilities>
    </Capabilities>

    <Tasks>
      <DefaultTask Name="_default" PlaceholderString="Default task"/>
    </Tasks>
```



# The WMAppManifest.xml File

```
<Tokens>
  <PrimaryToken TokenID="HelloFriendsToken" TaskName="_default">
    <TemplateType5>
      <BackgroundImageURI IsRelative="true" IsResource="false">
        Background.png
      </BackgroundImageURI>
      <Count>0</Count>
      <Title>HelloFriends</Title>
    </TemplateType5>
  </PrimaryToken>
</Tokens>

</App>

</Deployment>
```

# The `WMAppManifest.xml` File

- ❖ The project properties dialog box allows us changing the `WMAppManifest.xml` file.

# The WMAppManifest.xml File

