What is Silverlight?

• By Microsoft
• Browser plug-in
• Available for Windows, MacOS and Linux* (*using Moonlight)
• Supports Internet Explorer, Firefox and Safari
What is Silverlight?

• Enables creation of RIAs (Rich Internet Applications)
  – Video,
  – Audio,
  – Graphics,
  – Animation,
  – Interactivity
Overview

• Silverlight includes a mini CLR (Common Language Runtime)
  – supports .NET languages (C#, VB, Iron Ruby, ...)

• Implements a subset of the .NET Framework
  – developers can use their existing skills in .NET programming
  – Huge, reliable code base already available

• Uses XAML for defining UI
XAML

- Extensible Application Markup Language
- Extensively used in the .NET Framework
- Used to define user interface and graphics
- Facilitates separation of UI and program logic
- Used together with code-behind files
- XML namespaces and elements correspond to namespace and objects in code
Tools

• MS Visual Studio 2008
  – With Silverlight Tools \(\rightarrow\) Code

• MS Expression Studio 2
  – Expression Blend \(\rightarrow\) XAML, UI
  – Expression Web \(\rightarrow\) HTML
  – Expression Graphics \(\rightarrow\) Graphics
  – Expression Encoder \(\rightarrow\) Video
• Visual Studio generates a set of files when creating a new project
  – Code and XAML file
  – An HTML page for embedding the Silverlight control
<Application
    xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml"
    x:Class="Sample.App">

    <Application.Resources>
        <Style x:Key="SampleText" TargetType="TextBlock">
            <Setter Property="FontSize" Value="16"/>
            <Setter Property="Foreground" Value="Red"/>
            <Setter Property="Margin" Value="10,3,0,0"/>
        </Style>
        ...
    </Application.Resources>
</Application>
using System.Windows;
...
namespace Sample
{
    public partial class App : Application
    {
        public App()
        {
            this.RootVisual = new Page();
            InitializeComponent();
        }
        private void Exit(Object sender, EventArgs e) {...}
    }
}
<UserControl
    x:Class="Sample.Page"
    xmlns="http://schemas.microsoft.com/winfx/2006/xaml/presentation"
    xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml"
    Width="300" Height="300">

    <Grid x:Name="RootLayout">
        <TextBlock x:Name="MyTextBlock"
            Text="Hello World!"
            Style="{StaticResource SampleText}"/>
    </Grid>

</UserControl>
using System.Windows;
...
namespace Sample
{
    public partial class Page: UserControl
    {
        public Page()
        {
            InitializeComponent();
            MyTextBox.Text = "Hej Silverlight!";
        }
        ...
    }
}
Web Page

```
<html xmlns="http://www.w3.org/1999/xhtml">
<head><title>TestPage</title></head>
<body>
<div id="silverlightControlHost">
<object data="data:application/x-silverlight," type="application/x-silverlight-2" width="100%" height="100%">
<param name="source" value="SampleApp.xap"/>
<param name="onerror" value="onError"/>
<param name="background" value="white"/>
<param name="minRuntimeVersion" value="2.0.31005.0"/>
</object>
</div>
</body></html>
```
Deployment

- A Silverlight app is deployed in a .xap file
- A .xap file is an archive (actually a zip archive) containing all files needed to run the SL app
<Deployment
    xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml"
    EntryPointAssembly="Sample"
    EntryPointType="Sample.App"
    RuntimeVersion="2.0.31005.0">
    <Deployment.Parts>
        <AssemblyPart x:Name="Sample"
                      Source="Sample.dll"/>
    </Deployment.Parts>
</Deployment>
Functionality - Layout

- 3 different layout container:
  - Canvas → arbitrary positioning
  - StackPanel → horizontal or vertical stack
  - Grid → complex grid, like HTML table

```xml
<UserControl>
  <StackPanel>
    <Button Content="Hej Silverlight!" Width="150" Height="60"/>
    <TextBlock Text="Hur är läget?"/>
    <Image Source="{Binding MyImage}"/>
  </StackPanel>
</UserControl>
```
Functionality - Controls

- A lot of controls are already built in
- Many more available online (free & commercial)
- Silverlight controls sample
Functionality – Deep Zoom

• Deep Zoom is a technology for displaying large sets of images
• One can zoom in and out smoothly
• Deep Zoom Composer tool for arranging images and creating data files

→ Deeplol
→ Hard Rock Memorabilia
How does it compare?

- Direct competitor: Adobe Flash

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<th>Flash</th>
<th>Silverlight</th>
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<tr>
<td>Developed by</td>
<td>Adobe (Macromedia)</td>
<td>Microsoft</td>
</tr>
<tr>
<td>Version</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
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<td>2007</td>
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Thanks for your attention!