



2008 UI Dev Day | 2008 05 23

# RIA and Silverlight

Daum bringing joyful changes to the world

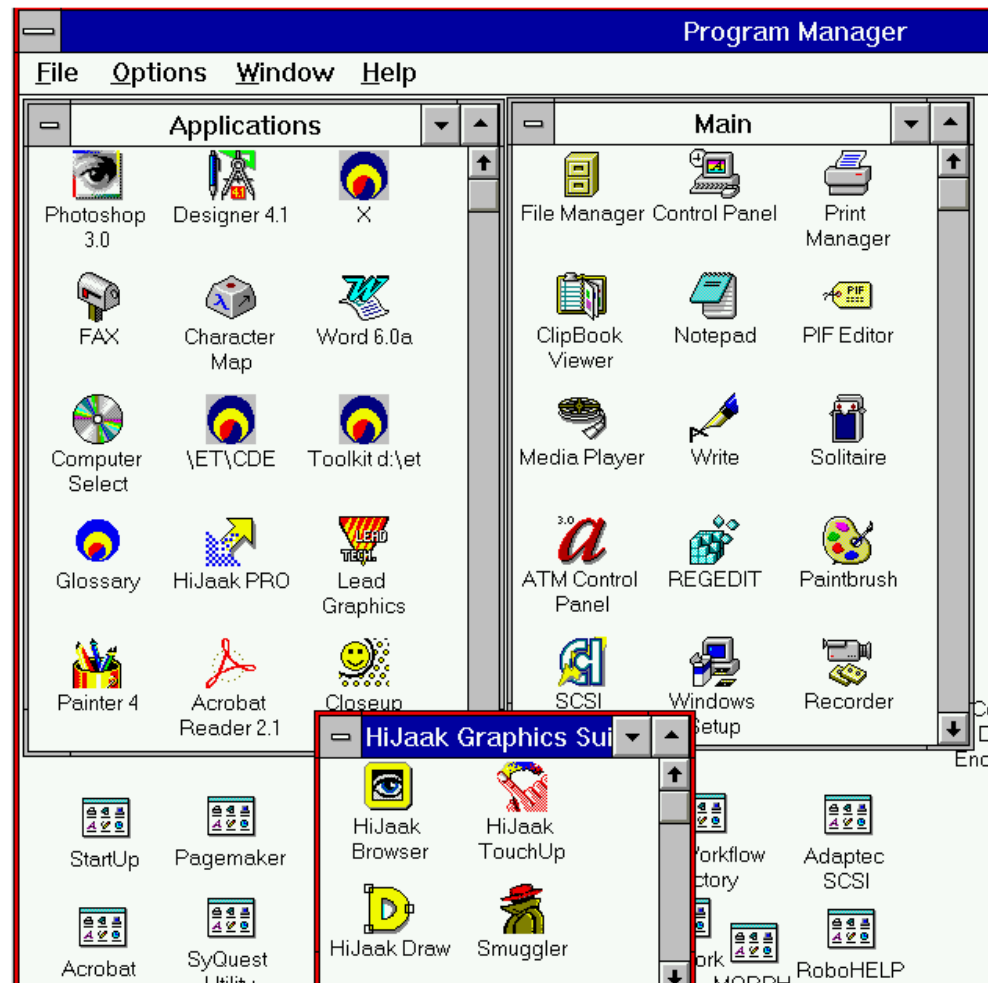


- **About RIA?**
- **About Silverlight?**
- **Version of Silverlight**
- **Silverlight Architecture**
- **Silverlight 1.0 and 2.0 features**
- **Scenarios for applying Silverlight**
- **Conclusion**



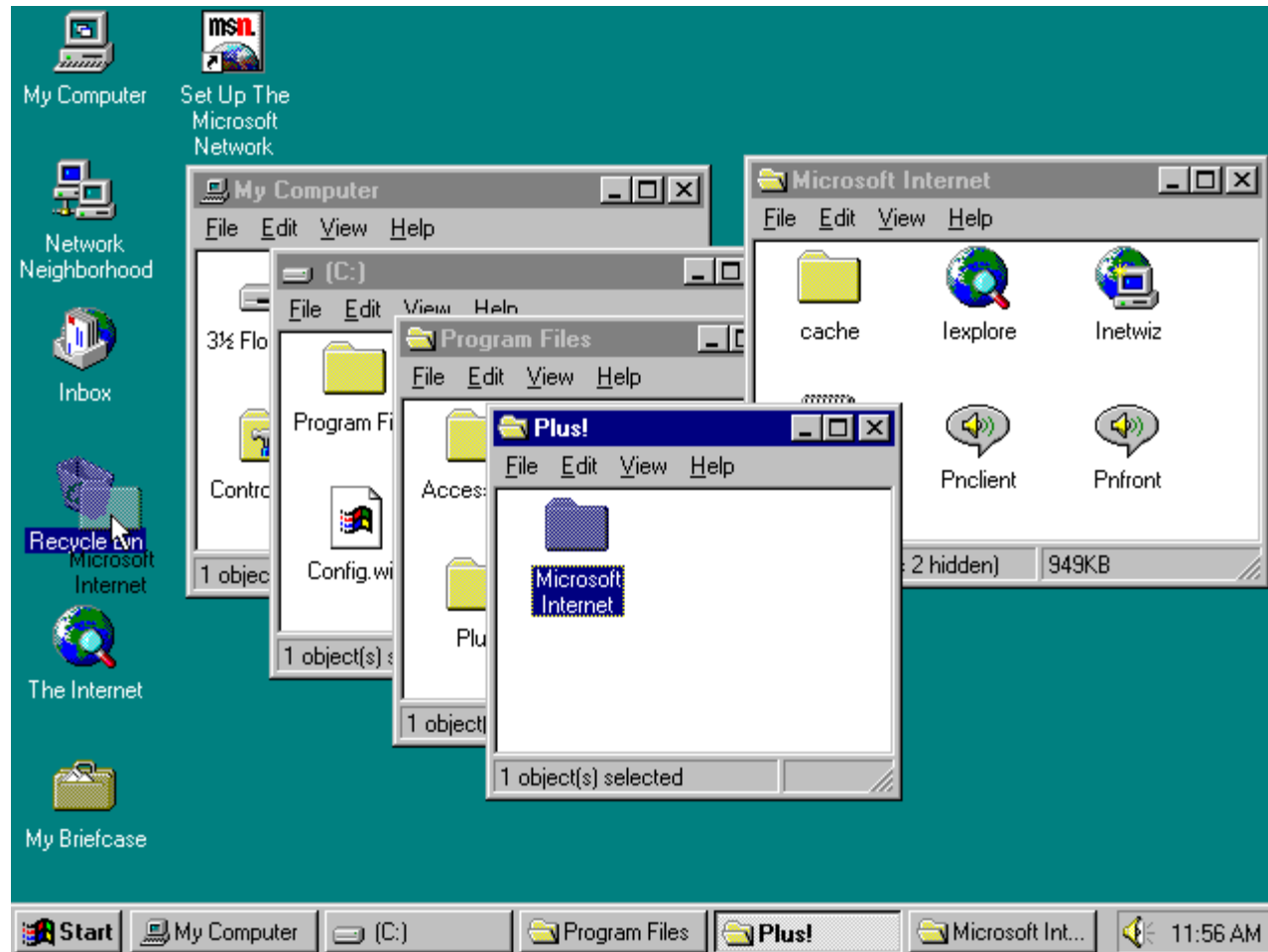
## Windows 3.0

From Computer Desktop Encyclopedia  
© 2000 The Computer Language Co. Inc.





## Windows 95

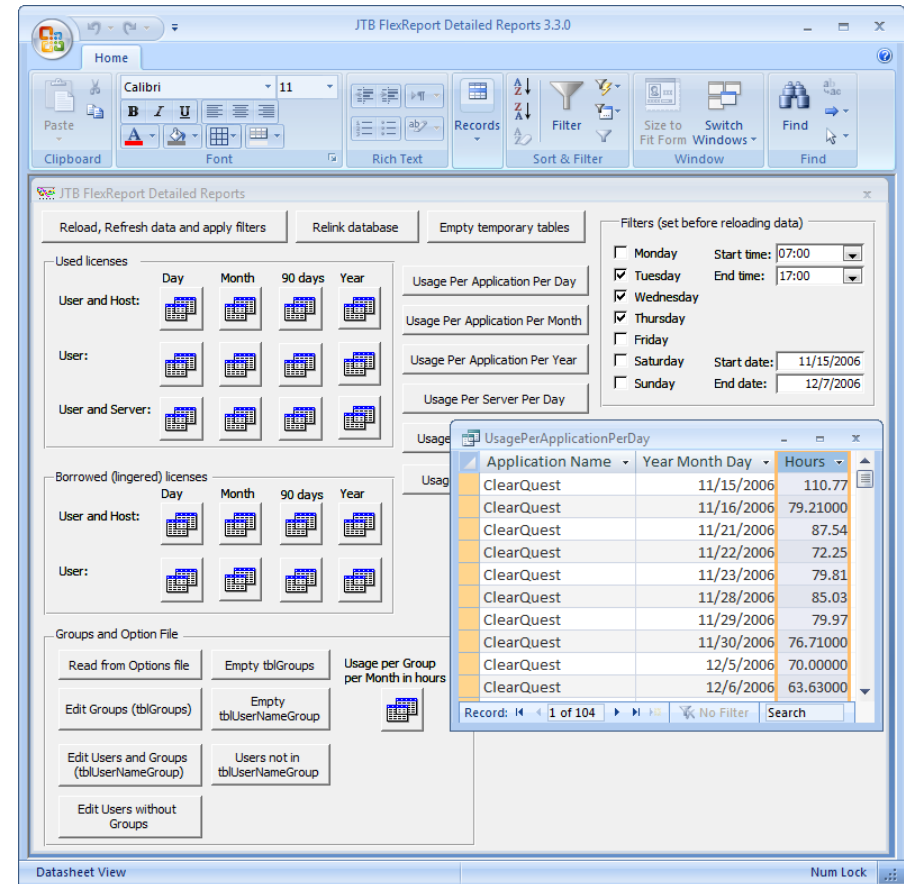




## Windows Vista



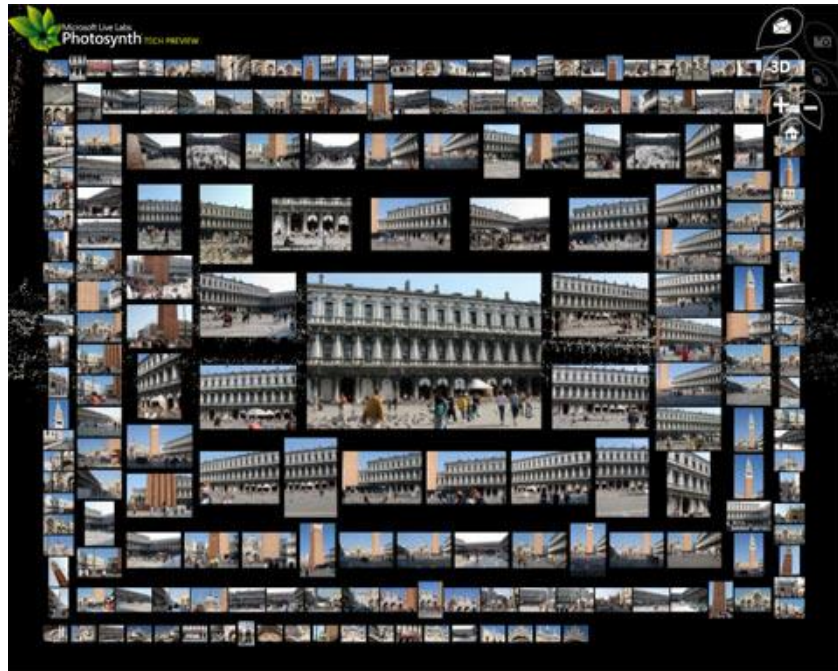
## Windows Office 2007



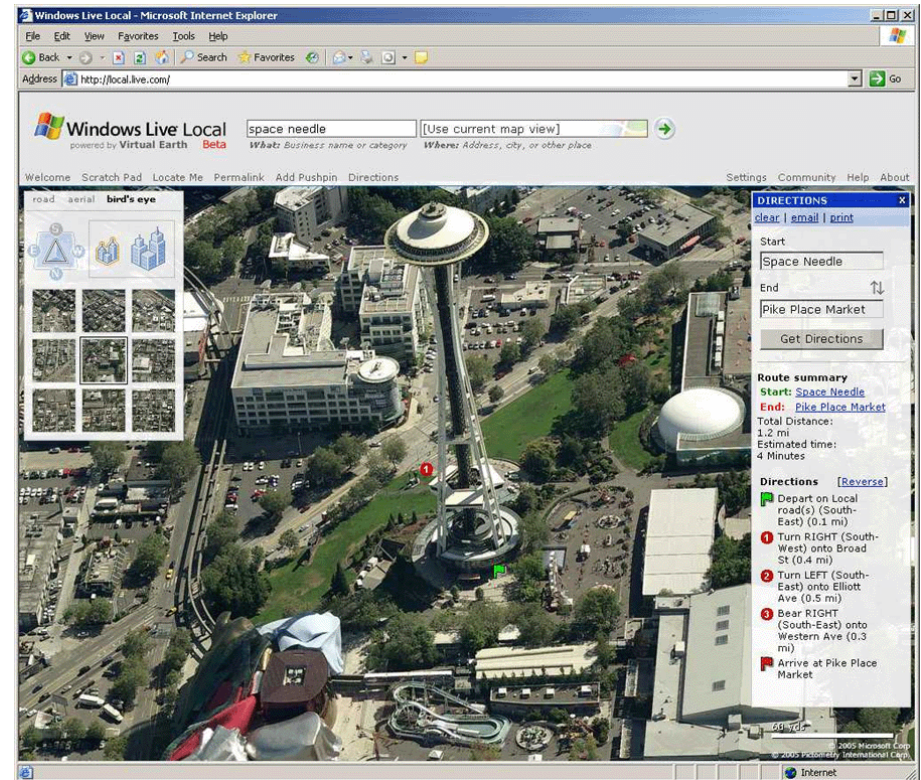




## Photosynth



## Virtual Earth





- **RIA Technology**

- Java, XUL, Flash and Flex, Oracle Forms, ActiveX, JavaScript/Ajax, Silverlight

- **왜 RIA를 해야 하는가?**

- 날로 복잡해지고 다양해지는 **Application**에 대한 고려
- 그래픽 요소적 표현과 실시간 데이터 처리

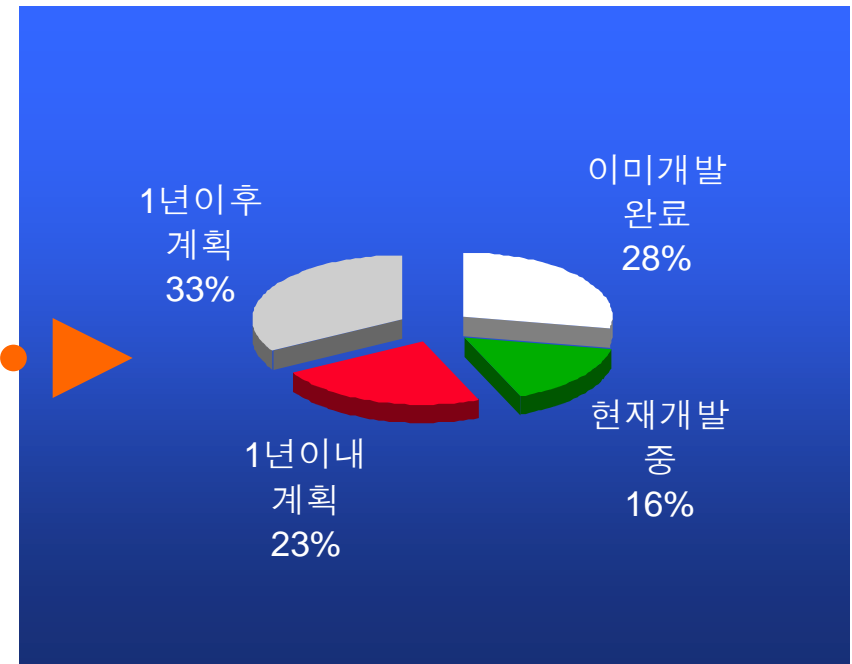
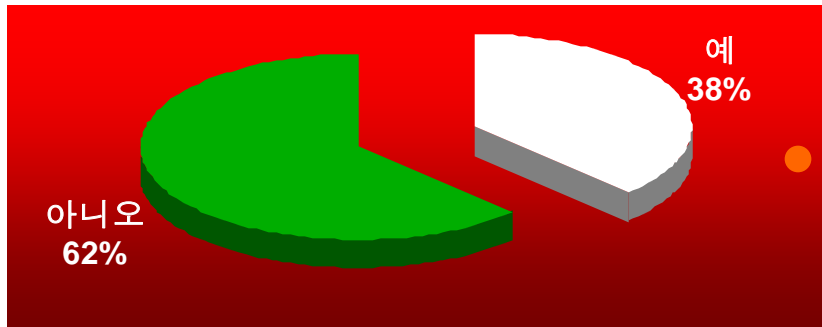


- **Desktop Application merits**
- **The limitation of Web faculty**
- **Rich Interface, User friendly, Usability Up**
- **Network efficiency**





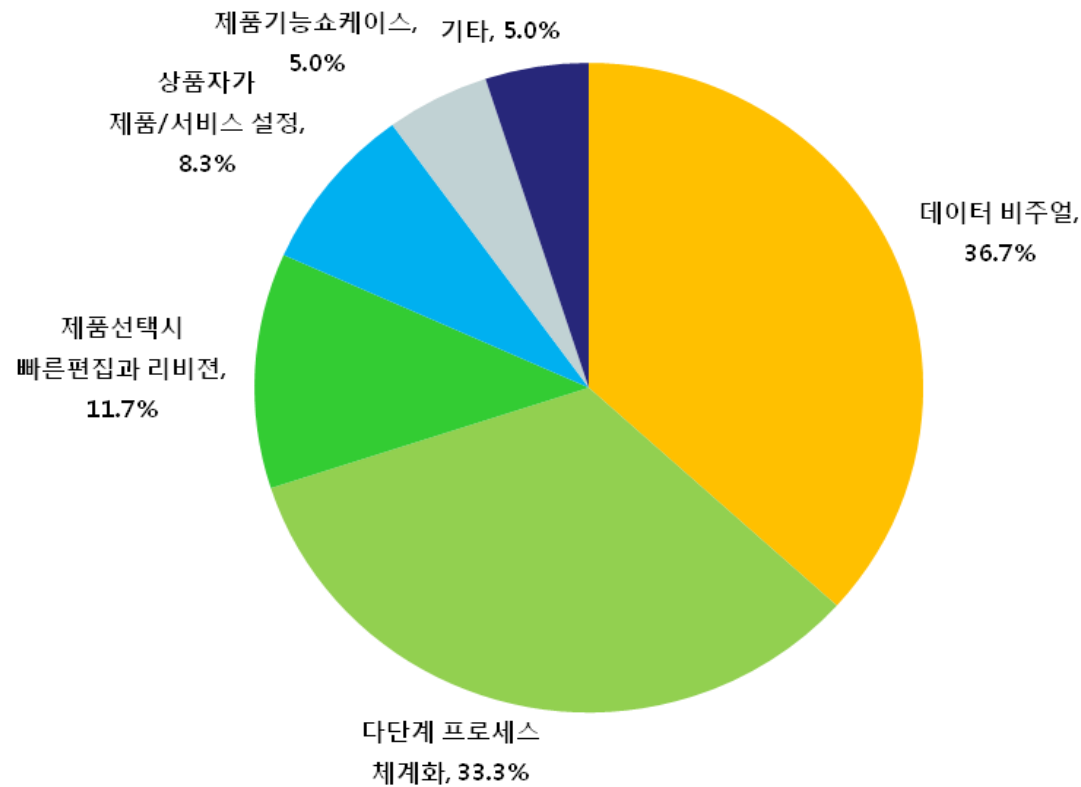
- 국내 RIA 구축 계획 및 시기



출처 : KRG(2008년)



- **국내 RIA 구축 배경**
  - Data의 시각화
  - 다단계 프로세스의 체계화

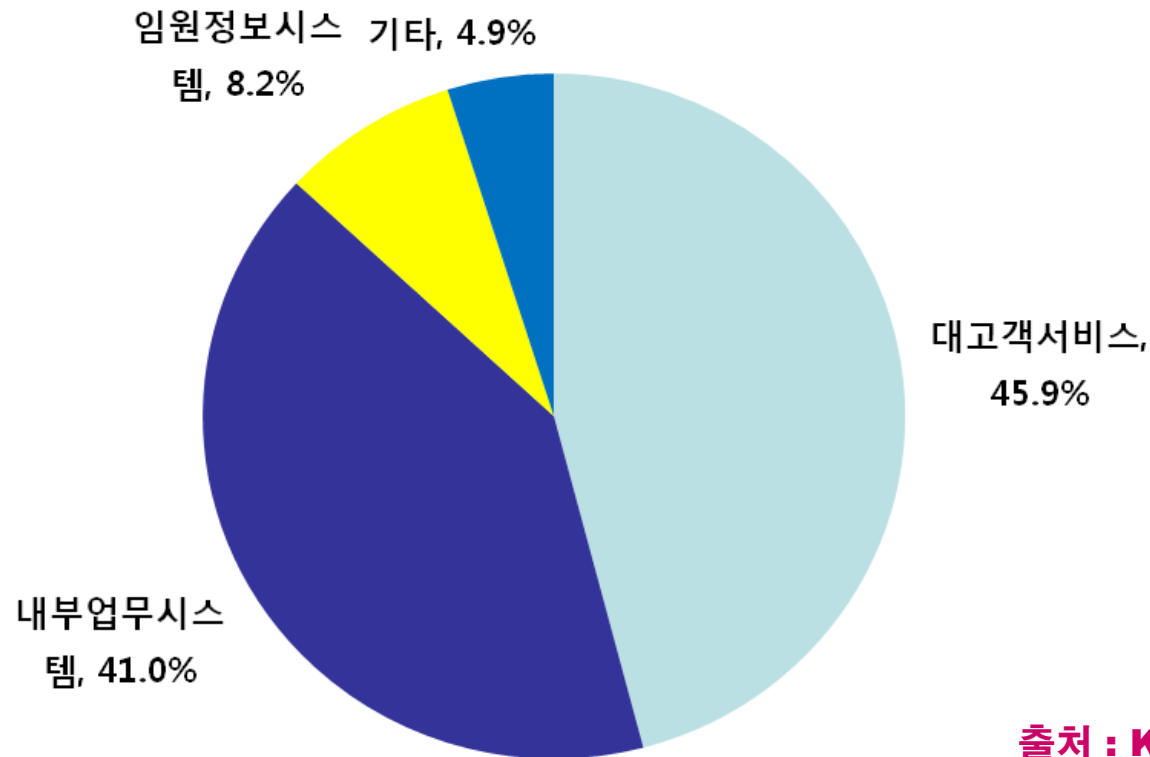


출처 : KRG(2008년)



### • 국내 RIA 적용 분야

- 대고객서비스 분야 (45.9%)
- 내부업무시스템에 적용 (49%)



출처 : KRG(2008년)



- **RIA Application**이 가져야 할 기본 조건
  - 고성능 런타임
  - 다양한 네트워킹
  - 웹 서비스를 이용한 유연한 데이터와의 연계
  - 개발을 위한 최상의 툴
  - 기존 인프라 기술과 연계



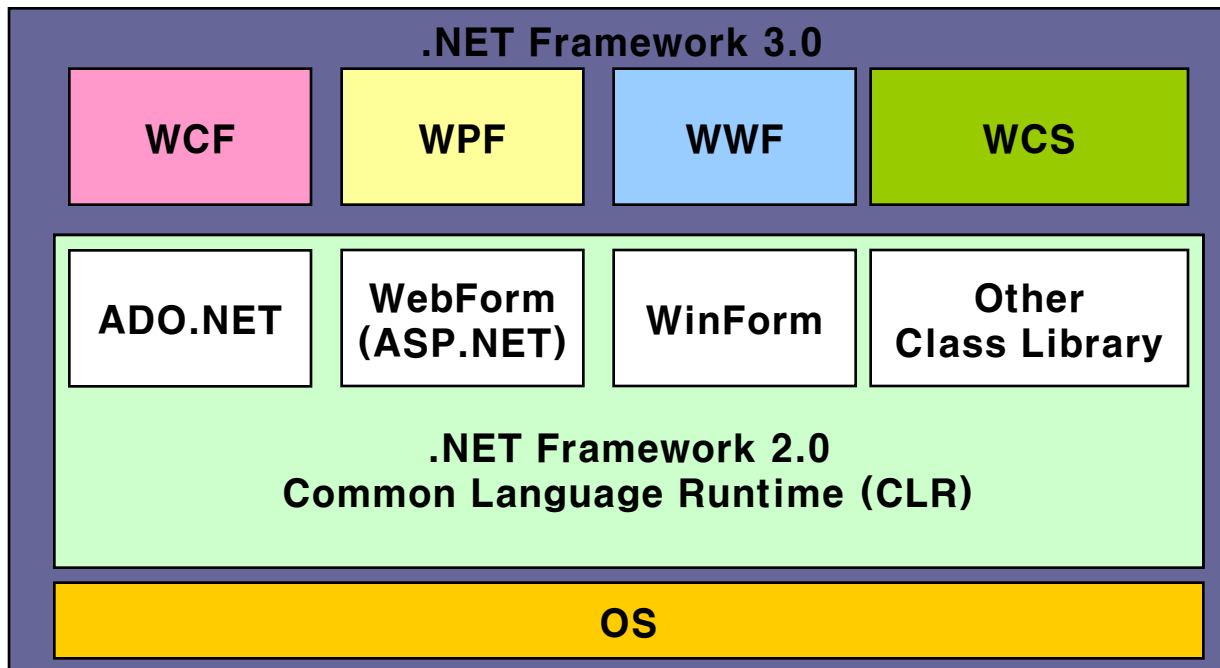
- **Cross – Platform, Cross-Browser, Web Client Runtime**
- **XAML of lightweight subset, Previously codenamed “WPF/E”**
- **Lightweight Browser plug-in**
- **Multimedia Support (WMV, WMA, MP3)**
- **.NET Programming model Support**
  - IronPython, Ruby, Managed Jscript 지원
- **기존 응용프로그램 지원(WPF/e + Flash, Silverlight + JScript)**
  - <http://www.thewpfblog.com/examples/wpfe/microbe/Default.html>
- **XAP, DRM, LINQ, Isolated storage, JSON, POX, XML lib.**



- **.NET Framework?**

- 2000년 NGWS, C#
- 2002년 .NET Framework 1.0 (ASP.NET)
- 2003년 .NET Framework 1.1
- 2005년 .NET Framework 2.0 (제너릭 지원, ADO.NET, 64비트 지원)
- 2007년 .NET Framework 3.0

- **.NET Framework 3.x 란?**







- **Version**

- Microsoft Silverlight 1.0
- Microsoft Silverlight 2.0

- **Tools**

- Microsoft Silverlight Tools Beta 1 for Visual Studio 2008
- Microsoft Silverlight 2 SDK Beta1
- Expression Studio2(2.5)
- Expression Design
- Expression Blend2
- Expression Encoder

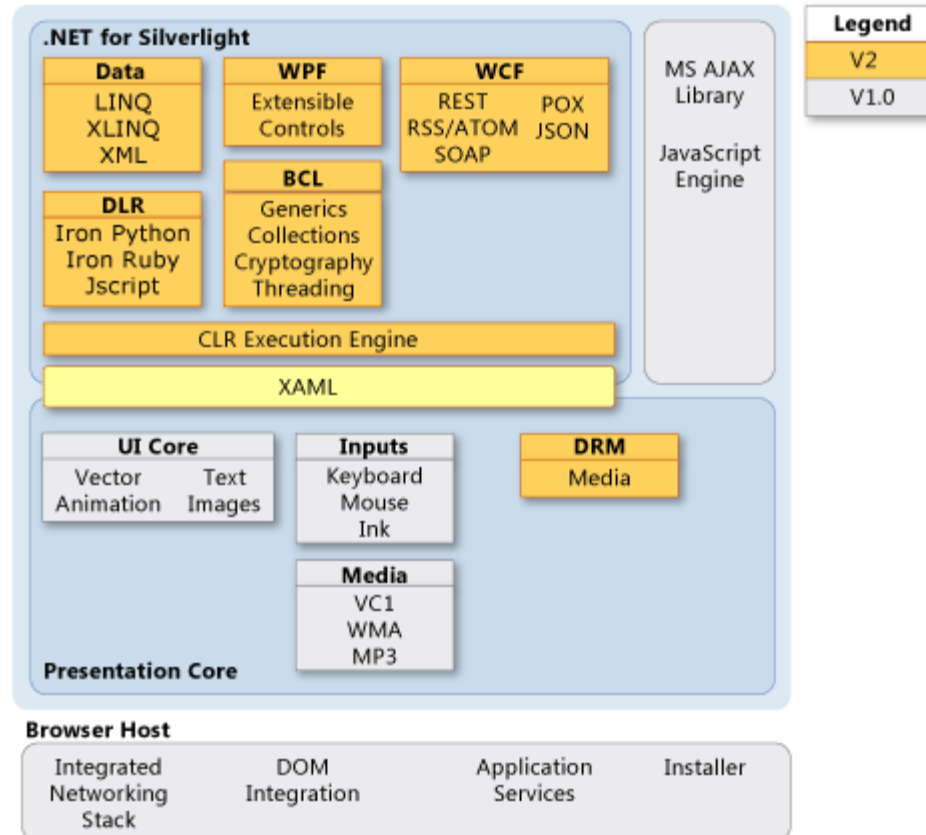


## Silverlight 1.0 Architecture





## Silverlight 2.0 Architecture





- **Silverlight 1.0 and 2.0 Common features**
  - **Graphic**
  - **Media**
  - **JavaScript 지원**
  - **HTTP Networking**



- **Silverlight 2.0 features**
  - .NET Framework 언어 지원
  - 웹 서비스 지원
  - LINQ
  - 디자인 객체 요소 강화
  - 다양한 Controls
  - Security
  - XML Reader / Writer



- Canvas Object?

- 모양을 만들기 위한 포지션과 컨트롤을 포함하는 객체

```
1 <Canvas
2   xmlns="http://schemas.microsoft.com/client/2007"
3   xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml">
4 </Canvas>
```



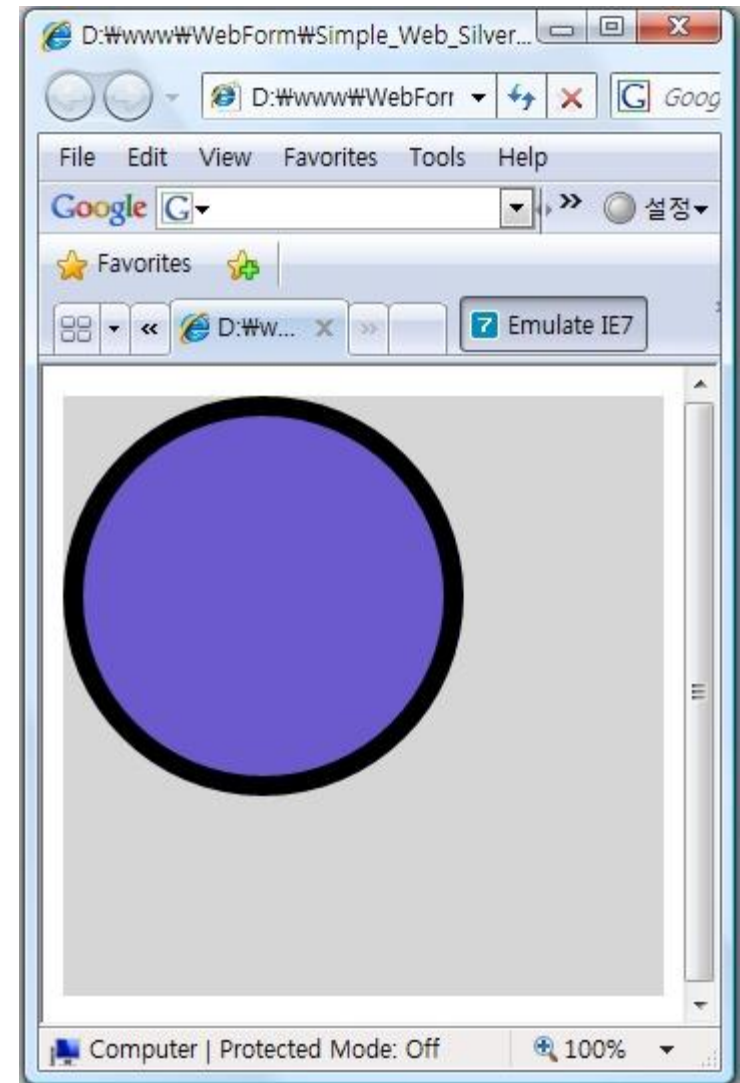
```
1 <Canvas
2   xmlns="http://schemas.microsoft.com/client/2007"
3   xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml">
4
5   <Ellipse
6     Height="200" Width="200"
7     Stroke="Black" StrokeThickness="10" Fill="SlateBlue" />
8
9 </Canvas>
```





- **Canvas Object?**
  - **Ellipse Object**
    - **Canvas.Left and Canvas.Top**

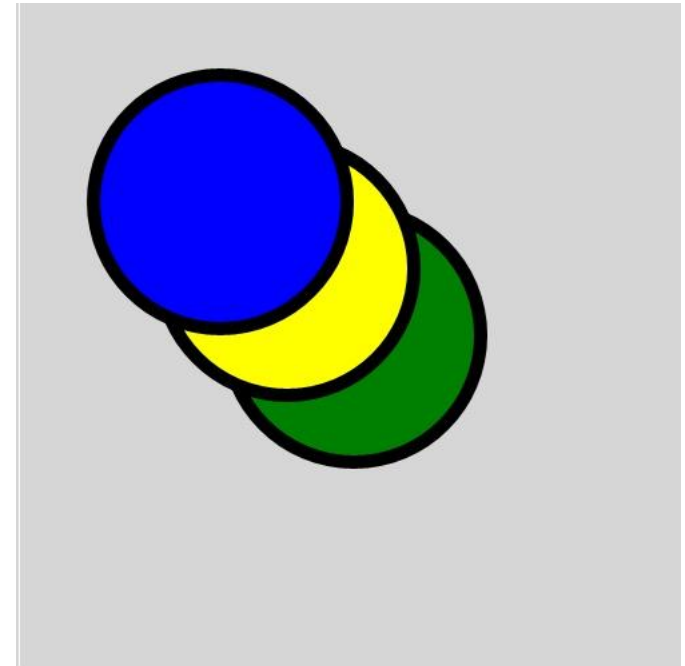
```
1 <Canvas
2   xmlns="http://schemas.microsoft.com/client/2007"
3   xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml">
4
5   <Ellipse
6     Canvas.Left = "0" Canvas.Top = "0"
7     Height="200" Width="200"
8     Stroke="Black" StrokeThickness="10" Fill="SlateBlue" />
9 </Canvas>
10 |
```





- Canvas Object?
  - Ellipse Object
  - ZIndex

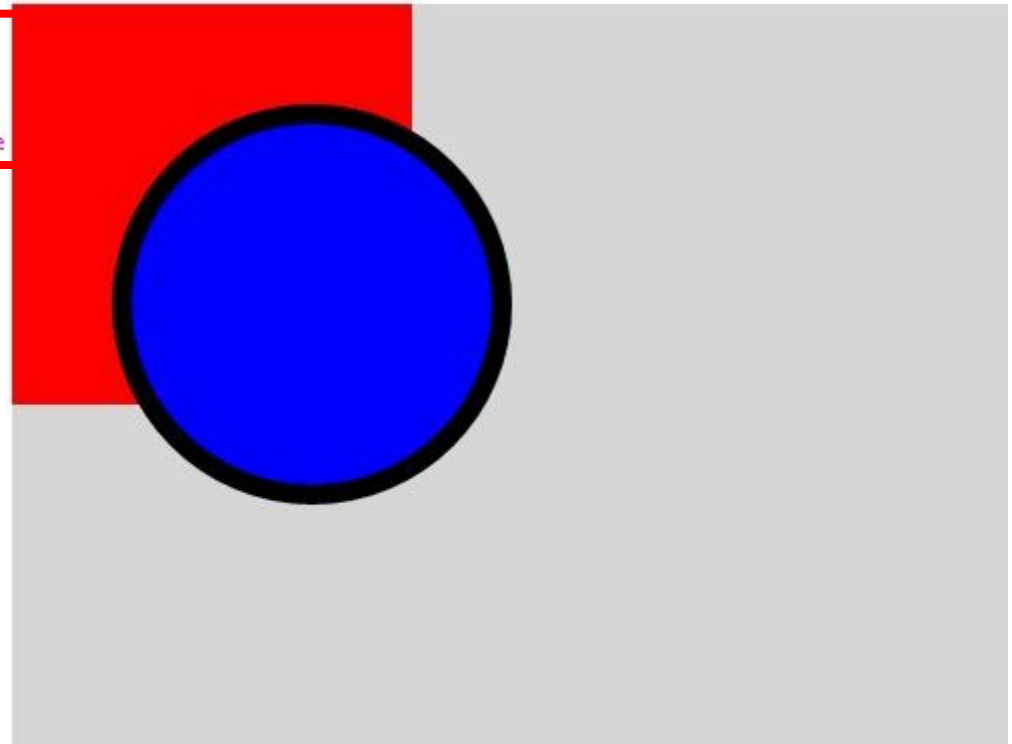
```
1 <Canvas
2   xmlns="http://schemas.microsoft.com/client/2007"
3   xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml">
4
5   <Ellipse
6     Canvas.ZIndex = "3" Canvas.Left = "50" Canvas.Top = "50"
7     Height="200" Width="200"
8     Stroke="Black" StrokeThickness="10" Fill="blue" />
9
10  <Ellipse
11    Canvas.ZIndex = "2" Canvas.Left = "100" Canvas.Top = "100"
12    Height="200" Width="200"
13    Stroke="Black" StrokeThickness="10" Fill="yellow" />
14
15  <Ellipse
16    Canvas.ZIndex = "1" Canvas.Left = "150" Canvas.Top = "150"
17    Height="200" Width="200"
18    Stroke="Black" StrokeThickness="10" Fill="Green" />
19 </Canvas>
```





- Canvas Object?
  - Canvas Height and Width

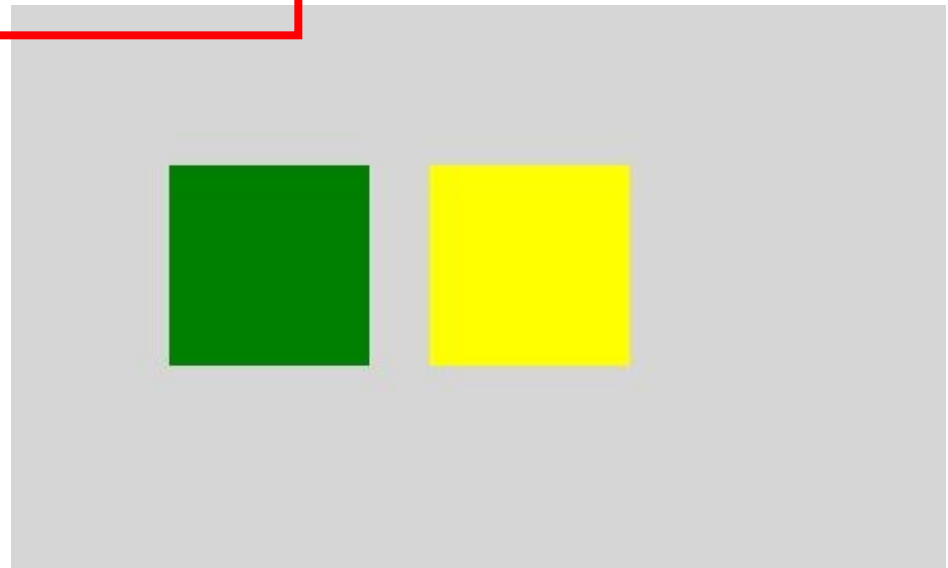
```
1 <Canvas
2   xmlns="http://schemas.microsoft.com/client/2007"
3   xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml"
4   Width = "200" Height = "200" Background = "red"
5   >
6
7   <Ellipse
8     Canvas.Left = "50" Canvas.Top = "50"
9     Height="200" Width="200"
10    Stroke="Black" StrokeThickness="10" Fill="blue"
11
12 </Canvas>
13
```





- Canvas Object?
  - Canvas and Canvas

```
1 <Canvas
2   xmlns="http://schemas.microsoft.com/client/2007"
3   xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml"
4   >
5
6   <Canvas Height="100" Width="100" Canvas.Left="80" Canvas.Top="80"
7     Background="green"/>
8
9   <Canvas Height="100" Width="100" Canvas.Left="210" Canvas.Top="80"
10    Background="yellow"/>
11
12 </Canvas>
13
```

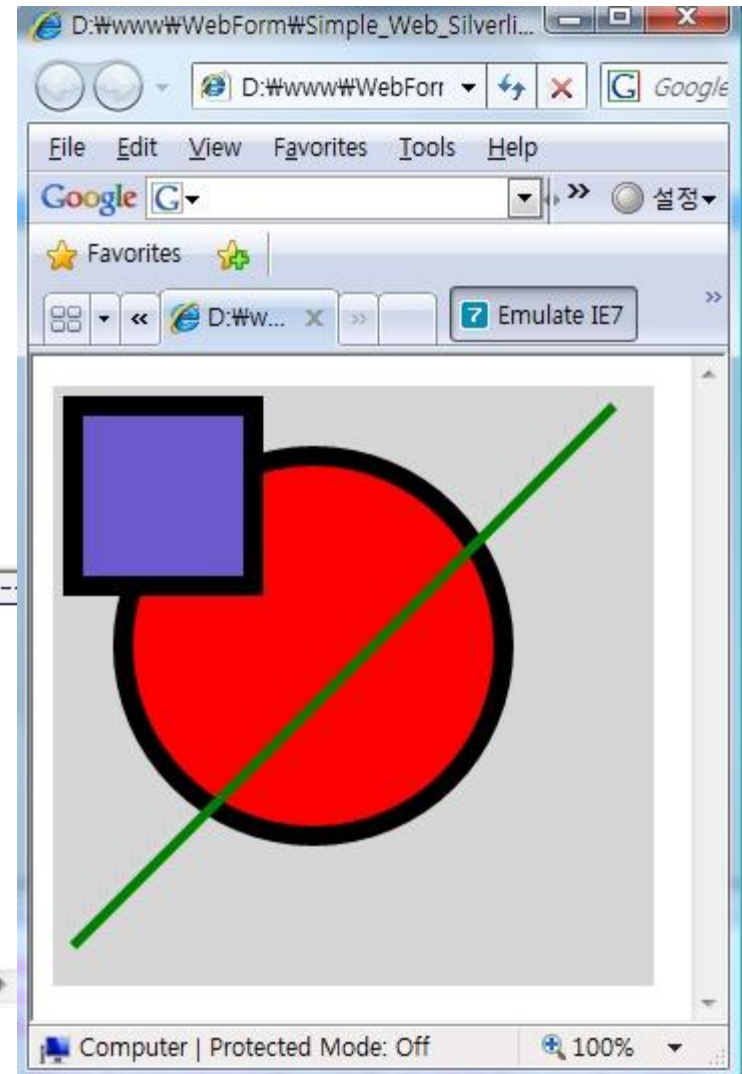




- **Drawing and Painting**

- **Ellipse**
- **Rectangle**
- **Line**

```
1 <Canvas
2   xmlns="http://schemas.microsoft.com/client/2007"
3   xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml">
4   <Ellipse Height="200" Width="200" Canvas.Left="30" Canvas.Top="30"
5     Stroke="Black" StrokeThickness="10" Fill="SlateBlue"/>
6   <Rectangle Height="100" Width="100" Canvas.Left="5" Canvas.Top="5"
7     Stroke="Black" StrokeThickness="10" Fill="SlateBlue"/>
8   <Line X1="280" Y1="10" X2="10" Y2="280"
9     Stroke="black" StrokeThickness="5"/>
10 </Canvas>
11
```

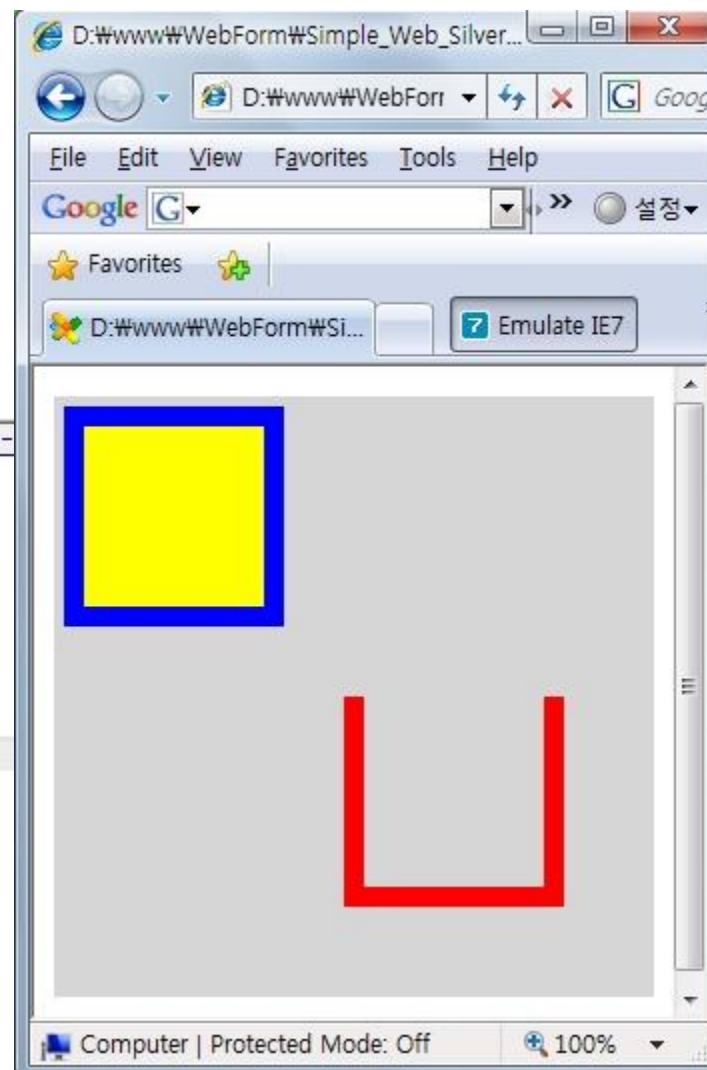




- Drawing and Painting

- Polygon
- Polyline

```
1 <Canvas
2   xmlns="http://schemas.microsoft.com/client/2007"
3   xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml">
4   <Polyline Points="150, 150 150, 250 250, 250 250, 150"
5     Stroke="red" StrokeThickness="10"/>
6   <Polygon Points="10,10 10,110 110,110 110,10"
7     Stroke="blue" StrokeThickness="10" Fill="yellow"/>
8 </Canvas>
```



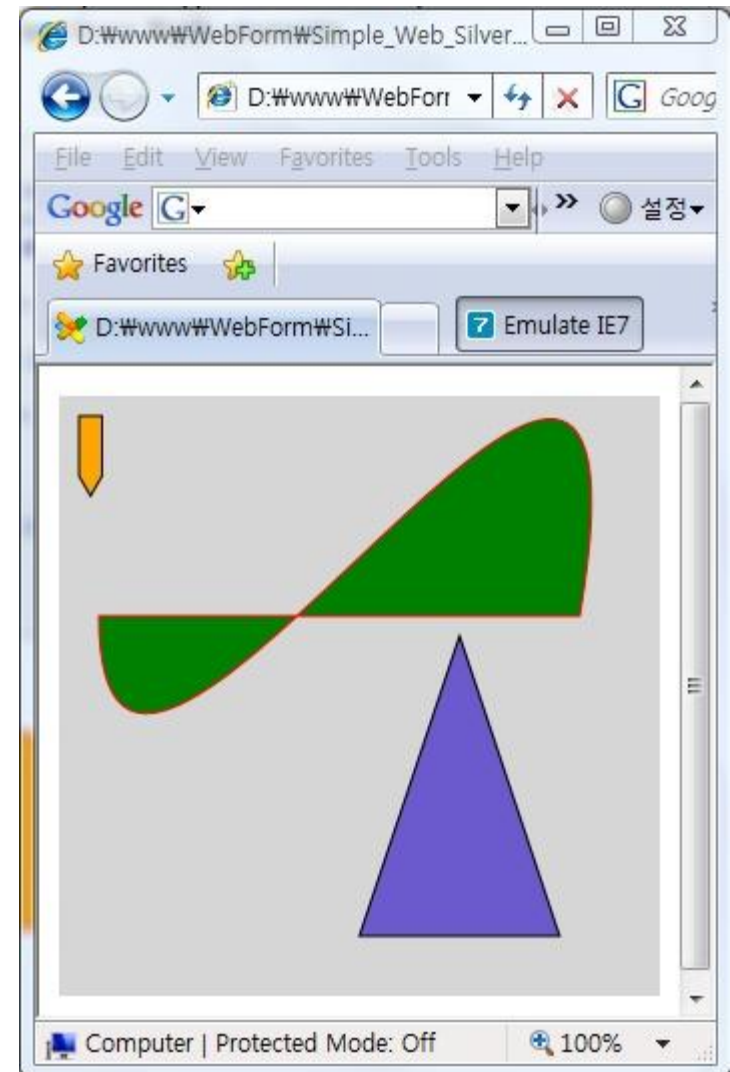




- Drawing and Painting

- Path

```
1 <Canvas
2   xmlns="http://schemas.microsoft.com/client/2007"
3   xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml">
4   <Path Data="M0,0 L11.5,0 11.5,30 5.75,40 0,30z"
5       Stroke="Black" Fill="orange"
6       Canvas.Left="10" Canvas.Top="10" />
7
8   <Path Data="M 10,100 C 10,300 300,-200 250,100z"
9       Stroke="Red" Fill="green"
10      Canvas.Left="10" Canvas.Top="10" />
11
12   <Path Data="M 0,200 L100,200 50,50z"
13       Stroke="Black" Fill="SlateBlue"
14       Canvas.Left="150" Canvas.Top="70" />
15
16
17 </Canvas>
18
```

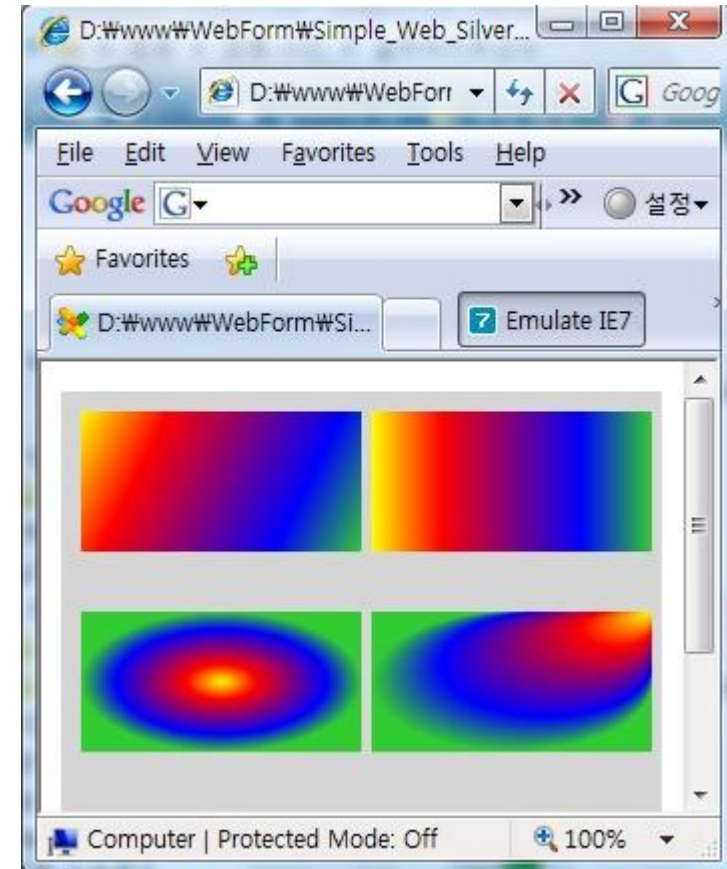




- Drawing and Painting

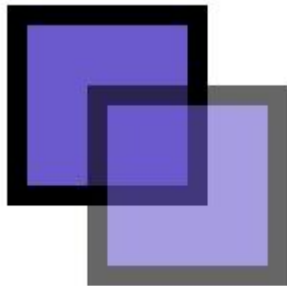
- LinearGradientBrush
- RadialGradientBrush

```
1 <Canvas
2 xmlns="http://schemas.microsoft.com/client/2007"
3 xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml">
4
5     <!-- Linear gradients -->
6     <Rectangle Width="140" Height="70" Canvas.Left="10"
7       Canvas.Top="10">
8       <Rectangle.Fill>
9         <LinearGradientBrush>
10           <GradientStop Color="Yellow" Offset="0.0" />
11           <GradientStop Color="Red" Offset="0.25" />
12           <GradientStop Color="Blue" Offset="0.75" />
13           <GradientStop Color="LimeGreen" Offset="1.0" />
14         </LinearGradientBrush>
15       </Rectangle.Fill>
16     </Rectangle>
17
18     <Rectangle Width="140" Height="70" Canvas.Left="155"
19       Canvas.Top="10">
20       <Rectangle.Fill>
21         <LinearGradientBrush StartPoint="0,0" EndPoint="1,0">
22           <GradientStop Color="Yellow" Offset="0.0" />
23           <GradientStop Color="Red" Offset="0.25" />
24           <GradientStop Color="Blue" Offset="0.75" />
25           <GradientStop Color="LimeGreen" Offset="1.0" />
26         </LinearGradientBrush>
27       </Rectangle.Fill>
28     </Rectangle>
29
30     <!-- Radial gradients -->
31     <Rectangle Width="140" Height="70" Canvas.Left="10"
32       Canvas.Top="110">
33       <Rectangle.Fill>
34         <RadialGradientBrush>
35           <GradientStop Color="Yellow" Offset="0.0" />
36           <GradientStop Color="Red" Offset="0.25" />
37           <GradientStop Color="Blue" Offset="0.75" />
38           <GradientStop Color="LimeGreen" Offset="1.0" />
39         </RadialGradientBrush>
40       </Rectangle.Fill>
41     </Rectangle>
42
43     <Rectangle Width="140" Height="70" Canvas.Left="155"
44       Canvas.Top="110">
45       <Rectangle.Fill>
46         <RadialGradientBrush GradientOrigin="1,0">
47           <GradientStop Color="Yellow" Offset="0.0" />
48           <GradientStop Color="Red" Offset="0.25" />
49           <GradientStop Color="Blue" Offset="0.75" />
50           <GradientStop Color="LimeGreen" Offset="1.0" />
51         </RadialGradientBrush>
52       </Rectangle.Fill>
53     </Rectangle>
54 </Canvas>
```





- **Drawing and Painting**
  - **Opacity property**
  - **OpacityMask property**
  - **Clip property**





- Text
  - TextBlock
    - FontSize
    - FontWeight
    - FontStyle
    - FontStretch
    - FontFamily (Portable User Interface)
    - Foreground

***Hello world!***



- **Media**
  - **MediaElement**
    - **Stretch**
    - **IsMuted**
    - **Volume**
  - **FullScreen**
    - **actualWidth, actualHeight**





## • Media Player

```

41
42 <!-- Begins media playback. -->
43 <Canvas MouseLeftButtonDown="media_begin"
44   Canvas.Left="130" Canvas.Top="265">
45   <Rectangle Stroke="Black" RadiusX="5" RadiusY="5"
46     Height="30" Width="55">
47     <Rectangle.Fill>
48       <RadialGradientBrush GradientOrigin="0.75,0.25">
49         <GradientStop Color="LimeGreen" Offset="0.0" />
50         <GradientStop Color="Green" Offset="1.0" />
51       </RadialGradientBrush>
52     </Rectangle.Fill>
53   </Rectangle>
54   <TextBlock Canvas.Left="5"
55     Canvas.Top="5">play</TextBlock>
56 </Canvas>
57
58 <!-- Switches to full screen mode. -->
59 <Canvas MouseLeftButtonDown="toggle_fullScreen"
60   Canvas.Left="190" Canvas.Top="265">
61   <Rectangle Stroke="Black" RadiusX="5" RadiusY="5"
62     Height="30" Width="55">
63     <Rectangle.Fill>
64       <RadialGradientBrush GradientOrigin="0.75,0.25">
65         <GradientStop Color="Gray" Offset="0.0" />
66         <GradientStop Color="Black" Offset="1.0" />
67       </RadialGradientBrush>
68     </Rectangle.Fill>
69   </Rectangle>
70   <TextBlock Canvas.Left="5" Canvas.Top="5"
71     Foreground="White" >full screen</TextBlock>
72 </Canvas>
73
74
75 </Canvas>

```

```

26
27 <!-- Pauses media playback. -->
28 <Canvas MouseLeftButtonDown="media_pause"
29   Canvas.Left="70" Canvas.Top="265">
30   <Rectangle Stroke="Black"
31     Height="30" Width="55" RadiusX="5" RadiusY="5">
32     <Rectangle.Fill>
33       <RadialGradientBrush GradientOrigin="0.75,0.25">
34         <GradientStop Color="Yellow" Offset="0.0" />
35         <GradientStop Color="Orange" Offset="1.0" />
36       </RadialGradientBrush>
37     </Rectangle.Fill>
38   </Rectangle>
39   <TextBlock Canvas.Left="5"
40     Canvas.Top="5">pause</TextBlock>
41 </Canvas>

```

```

1 <Canvas Width="300" Height="300"
2   xmlns="http://schemas.microsoft.com/client/2007"
3   xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml"
4   Loaded="canvas_loaded">
5
6   <MediaElement x:Name="media"
7     Source="thebutterflyandthebear.wmv"
8     Width="300" Height="300" />
9
10  <Canvas x:Name="buttonPanel">
11
12    <!-- Stops media playback.-->
13    <Canvas MouseLeftButtonDown="media_stop"
14      Canvas.Left="10" Canvas.Top="265">
15      <Rectangle Stroke="Black"
16        Height="30" Width="55" RadiusX="5" RadiusY="5">
17        <Rectangle.Fill>
18          <RadialGradientBrush GradientOrigin="0.75,0.25">
19            <GradientStop Color="Orange" Offset="0.0" />
20            <GradientStop Color="Red" Offset="1.0" />
21          </RadialGradientBrush>
22        </Rectangle.Fill>
23      </Rectangle>
24      <TextBlock Canvas.Left="5"
25        Canvas.Top="5">stop</TextBlock>
26    </Canvas>

```





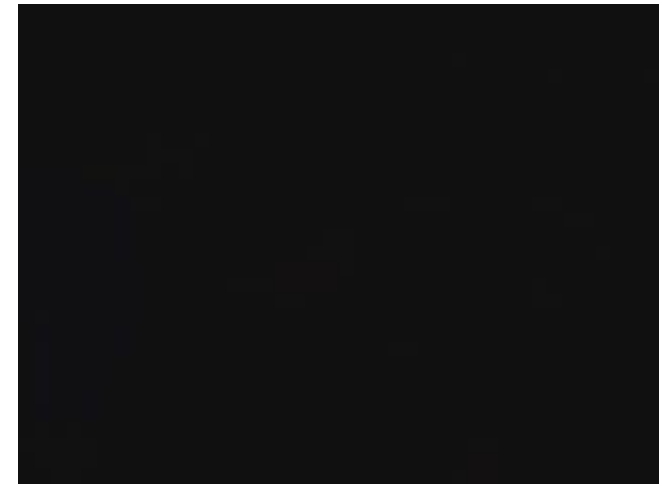
- Media Player

```
function media_stop(sender, args) {
    sender.findName("media").stop();
}
function media_pause(sender, args) {
    sender.findName("media").pause();
}
function media_begin(sender, args) {
    sender.findName("media").play();
}

function canvas_loaded(sender, args)
{
    var plugin = sender.getHost();
    plugin.content.onFullScreenChange = onFullScreenChanged;
}
function toggle_fullScreen(sender, args)
{
    var silverlightPlugin = sender.getHost();
    silverlightPlugin.content.fullScreen =
    !silverlightPlugin.content.fullScreen;
}
function onFullScreenChanged(sender, args)
{
    var silverlightPlugin = sender.getHost();
    var buttonPanel = sender.findName("buttonPanel");

    if (silverlightPlugin.content.fullScreen == true) {
        buttonPanel.opacity = 0;
    }
    else {
        buttonPanel.opacity = 1;
    }

    var mediaPlayer = sender.findName("media");
    mediaPlayer.width =
    silverlightPlugin.content.actualWidth;
    mediaPlayer.height =
    silverlightPlugin.content.actualHeight;
}
```



## Media Player 보기



- **Silverlight 2.0 Features?**
- **Controls**
  - **Button**
  - **TextBox**
  - **Calendar**
  - **CheckBox**
  - **DataGrid**
  - **DatePicker**
  - **GridSplitter**
  - **HyperlinkButton**
  - **ListBox**
  - **RadioButton**
  - **ScrollView**
  - **Slider**
  - **ToolTip**
  - **WatermarkedTextBox**



- **Silverlight 2.0 Features?**
- **Button**
  - Content 속성
  - Click 이벤트
    - `<Button x:Name = "Test" Height = "59" Content = "Hello Daum" Click = "Test_Click">`  
`</Button>`
- **Data Binding**
  - Support data template(repeat)
  - Data(.net object)
    - { FileName = "Html.html", FileImageUrl = "html.jpg" }
- **Networking**
  - Plain XML 메시지 이용
  - WCF를 이용한 Proxy
  - RSS 이용



- Silverlight 2.0 Features?

- LINQ

- Language Integrated Query

- Silverlight의 닷넷 코드에서 사용가능
    - LINQ to XML, LINQ to SQL
    - LINQ to XML은 Silverlight에서 제공

- **Var filteredPlayers = from p in players**  
**where p.HomeRuns > 20**  
**order by p.HomeRuns descending**  
**select p;**

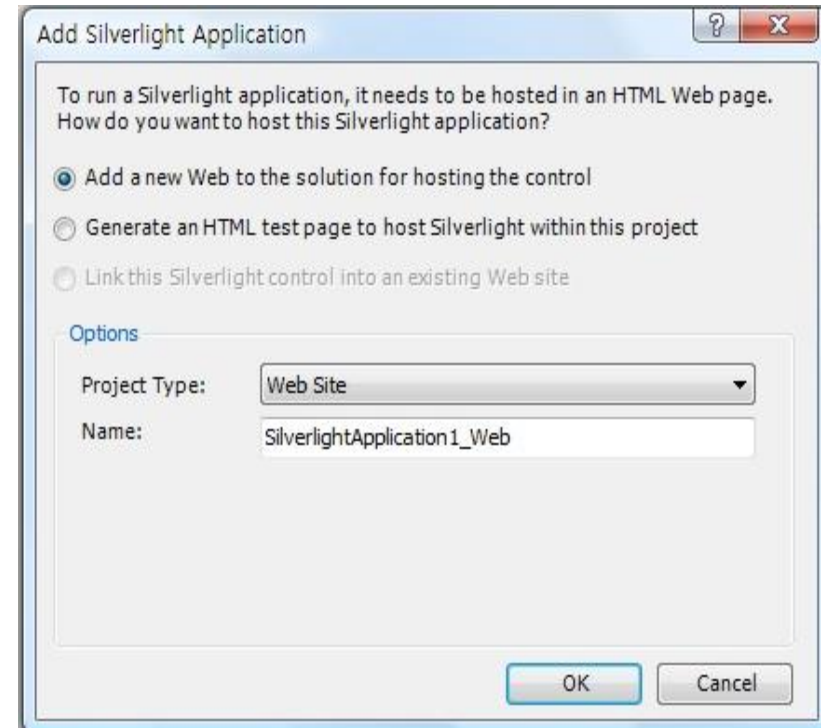
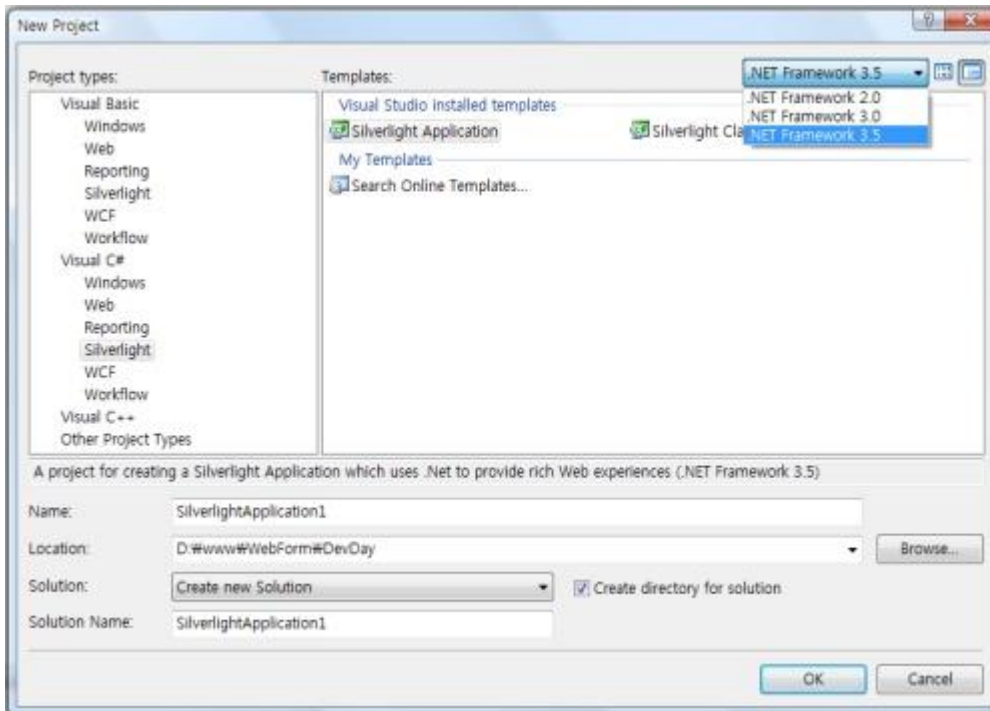
- Style, Template

```
<Style TargetType = "TextBox" x:Key = "TextBlockStyle">  
<Setter Property = "Foreground" Value = "Navy">  
</style>
```

```
<TextBlock Style = "{ StaticResource TextBlockStyle }">  
    Name : Daum UI Dev Day  
</TextBlock>
```

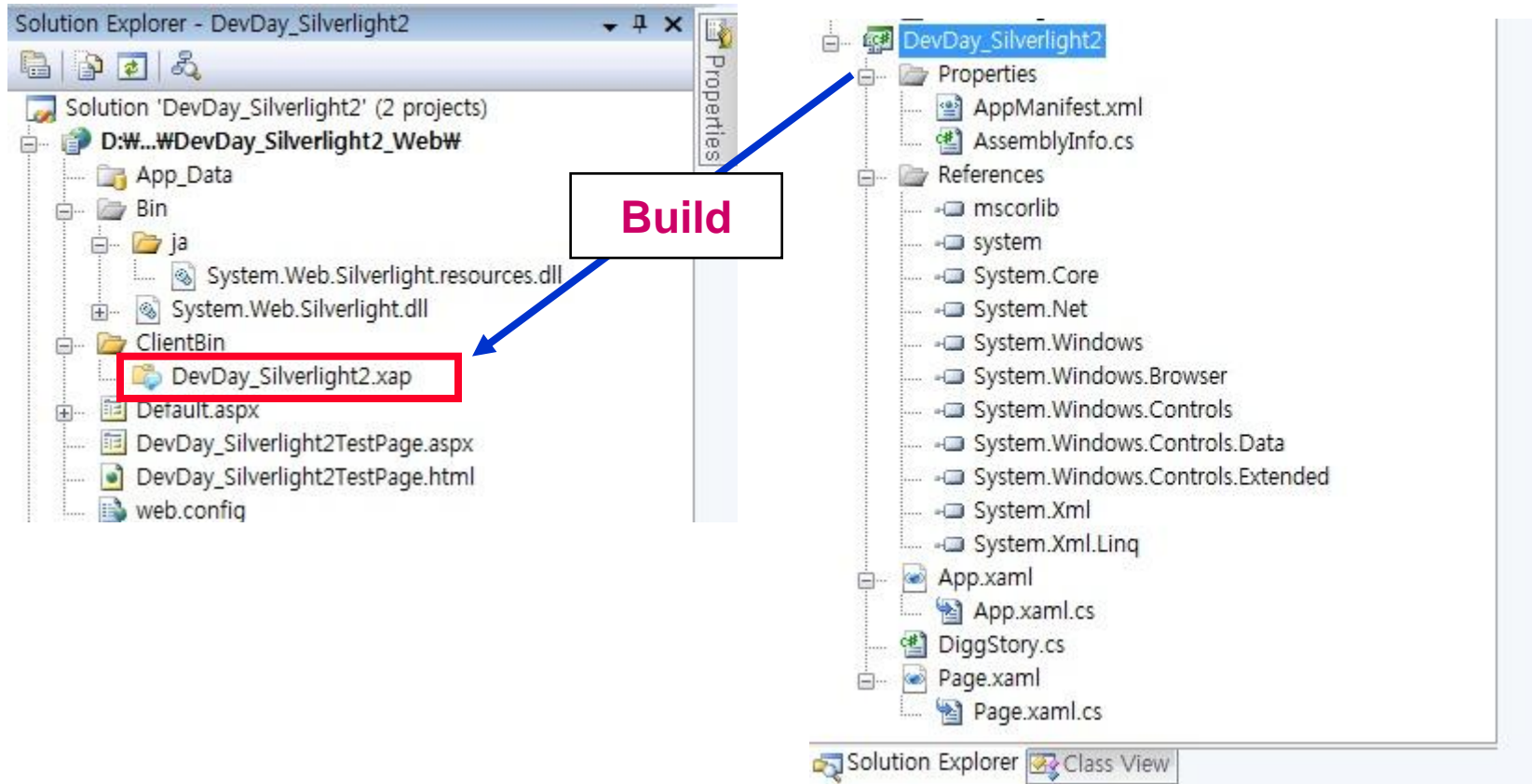


- Visual Studio 2008을 이용한 Silverlight Application 생성





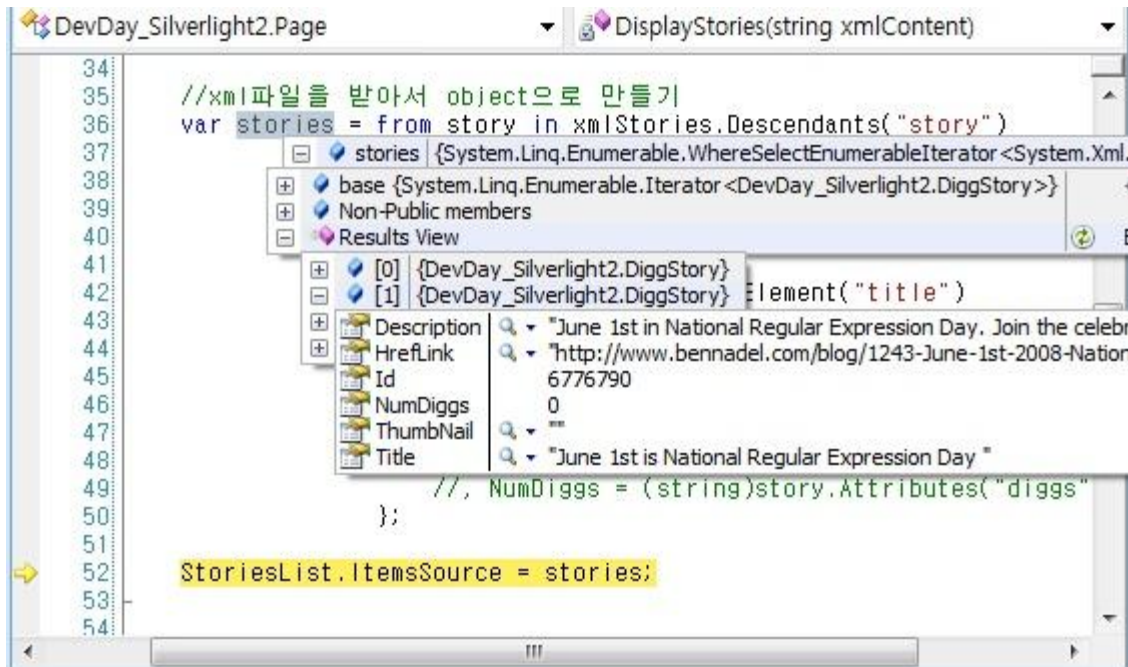
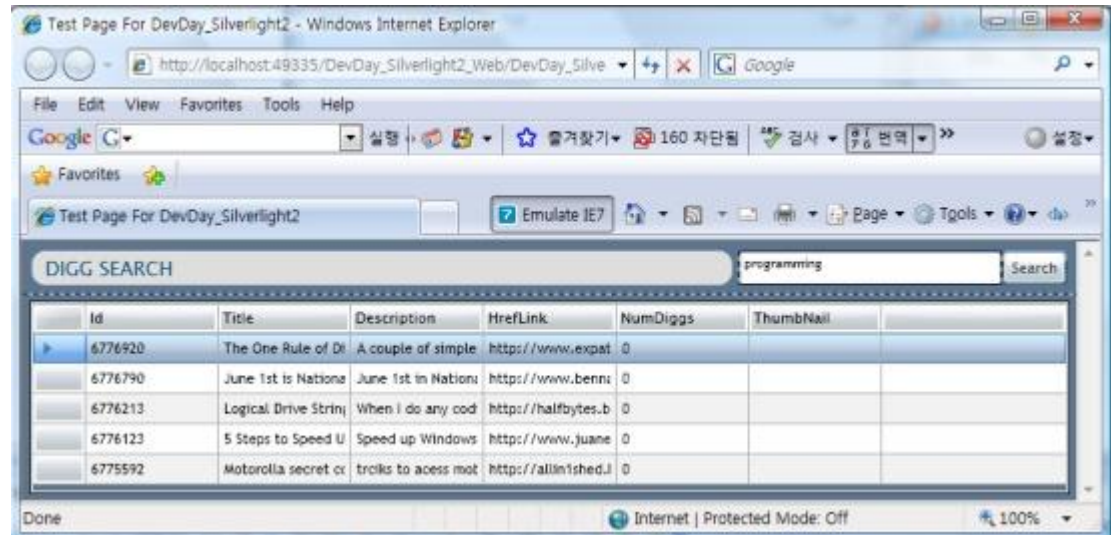
- Visual Studio 2008을 이용한 Silverlight Application 생성







## Silverlight Application



LINQ for XML



## • Silverlight 적용 시나리오

### • Media Support

- <http://silverlight.net/fox/>

### • Interactive Content Experiences

- <http://www.zlgam.com> (Movie)
- <http://badoo.com/> (SNS)

### • Rich Interactive Applications



### • Drag and Drop 방식의 투표 기능 제공

### • 투표하기, 드라마 보기, 하이라이트 보기 등의 기능이 모두 한 페이지 안에서 이루어짐





## • Silverlight 국내 적용 사례

경원대학교 Rich e-Learning Platform  
Silverlight 상용 개발

경원대학교 사이버 인터넷방송  
Silverlight 홈페이지 개발

SK텔레콤(주) 유무선 RIA 기반  
UCC 사이트(I's Box) 상용 개발

CJ미디어 올리브 TV 홈페이지  
Silverlight 상용 개발

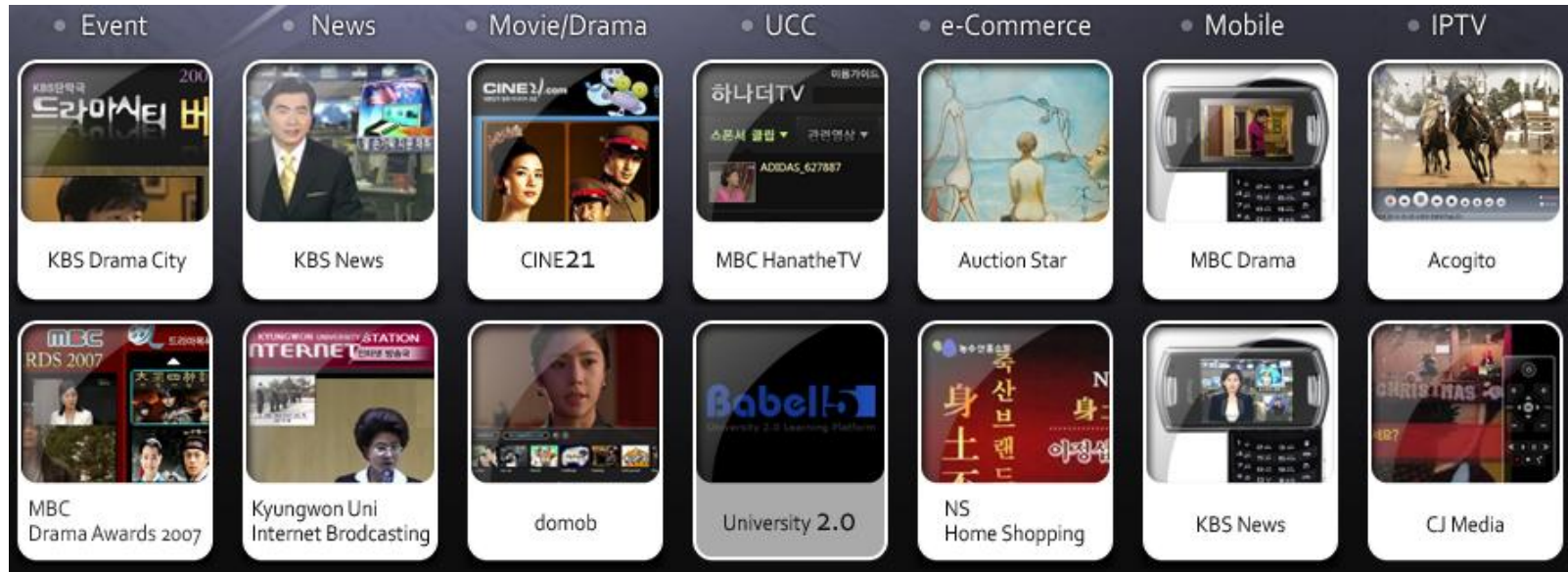
씨네21 온라인 영화관 Zlgam  
Silverlight 개발 및 서비스

MBC 하나더 TV  
Silverlight Prototype 개발

KBS Global eXchange Network  
홈페이지 Silverlight 상용 개발

KBS 드라마시티 베스트 어워즈  
이벤트 Silverlight 상용 개발

OBS 경인방송  
Silverlight 홈페이지 개발



자료제공 : 보체웹



- 경원대 인터넷 방송국



KYUNGWON UNIVERSITY  
INTERNET Broadcasting

지성학 - 연기자 이순재



00:00:01 / 01:27:39

댓글 0 | 조회 2


댓글달기 ▲

세미나

지성학강의

취업정보광장

경원뉴스





- 즐감닷컴





# Scenarios for applying Silverlight



## • OBS(경인방송)



The screenshot displays the OBS (경인방송) website interface. At the top, there's a navigation bar with links like '홈', '회원 가입', '회사 사이트', '시청자 센터', '아이디/비밀찾기', and 'My OBS'. Below this, a green banner reads 'OBS 편성정보 보기'. The main content area features a large video player showing a scene from the TV show 'CEO' (최진실의 진실과 구라). To the left of the player are navigation buttons: '뉴스', '프로그램', 'VOD 다시보기', and 'Schedule 편성정보'. To the right, there's a clock showing 'On Air' at 14:05, with the current program '타이틀 : Music & Movi...' and a link to 'OBS Live 방송 바로보기'. Below the clock, it lists the next program '다음방송 14:35 굿바이 매염방'. Further down, a pink banner for 'OBS Today' mentions '김혜자의 희망을 찾아서' airing every Friday at 10:50 PM. At the bottom, there's a section for '전체 프로그램 바로가기' with 'OBS HOT 뉴스' and '찾이슈 클립'. The 'OBS HOT 뉴스' section includes items like '특별한 결혼잔치', '경기지역 대형병원 물려온다.과일경쟁', and '고유가, 무너지는 민생'. The '찾이슈 클립' section shows thumbnails for '불타는 그', 'Music', '4회예고', '맛술의 활', and '뛰어야 산'. On the left side of the bottom section, there's a video player for 'OBS highlight' and 'OBS Premium' with a video titled '어제보다 나은 오늘, 오늘보다 나은 내일 OBS에 오신걸 환영합니다'.



- CJ 미디어 올리브 TV 홈페이지





- UX 전문가의 부족
- 개발자, 디자이너 모두에게 변화를 요구
- 개념, 코드, 콘텐츠의 이동이 쉽다. (웹 <-> 데스크 탑)
- Silverlight와 Flex(Flash)는 경쟁관계 이지만 당분간은 상호의존적 관계가 될 것이다.
- Silverlight의 이점을 포털에서 주목

감사합니다