

VISUG Community: Devices & Services App Contest

- Submit your app by May 27th 2012
- Top prizes: Windows 8 Ultrabook by Intel, 2 Lumia's and a consolation prize for every participant



Join the
Devices & Services
App Contest!

<http://bit.ly/Win8Visug>



Building a Windows 8 Metro Style UI

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Ordina

@gillcleeren

Agenda

- ▶ Built-in controls
- ▶ Presenting Data
- ▶ Layout and Views
- ▶ Touch
- ▶ Animations

You'll leave with examples of how to:

- ▶ Create Metro apps with the principles and personality

8 Traits of a Metro Style App

Metro style
design

Fast and fluid

Snap and scale
beautifully

Use the right
contracts

Invest in a
great Tile

Feel connected
and alive

Roam the
cloud

Embrace Metro
principles



demo

8 Traits of a Metro Style App

Built-in Controls

Built-in controls implement Metro UI principles and personality.

Designed for touch, mouse, and keyboard.

Native to HTML. Native to XAML.

Toggle Switch (XAML)

XAML:

```
<ToggleSwitch  
    Header="Wi-fi networking"  
    x:Name="MyToggle"  
/>
```

Wi-fi networking
On



C#:

```
MyToggle.Toggled += new RoutedEventHandler(ToggleWifi);
```

Toggle Switch (HTML)

HTML:

```
<div data-win-control="WinJS.UI.Toggle"  
    data-win-options="{title: 'Wi-fi networking'}"  
    id="myToggle"  
</div>
```

Wi-fi networking
On

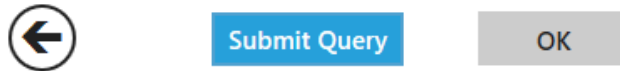


JavaScript:

```
WinJS.UI.getControl(myToggle).addEventListener("change", toggleWifi);
```

Everyday widgets

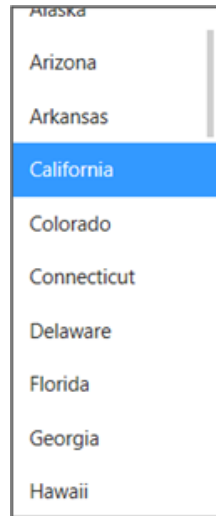
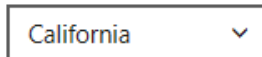
Button



Checkbox



Combo Box



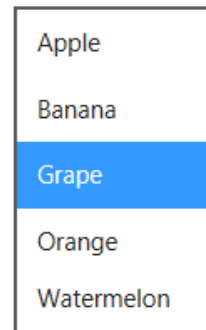
Date Picker



Hyperlink

<http://www.buildwindows.com>

ListBox



Progress Bar



Progress Ring



Radio Button



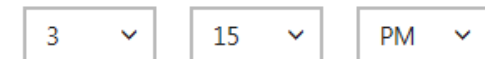
Ratings



Slider



Time Picker

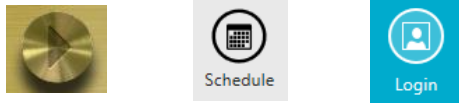


Toggle Switch



Everyday widgets - custom styled

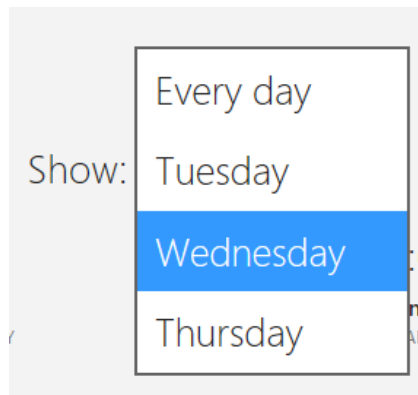
Button



Checkbox



Combo Box



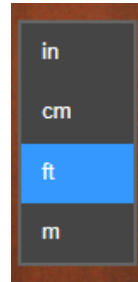
Date Picker



Hyperlink

<http://www.buildwindows.com>

ListBox



Progress Bar



Progress Ring



Radio Button



Ratings



Slider



Time Picker



Toggle Switch





demo

Everyday widgets

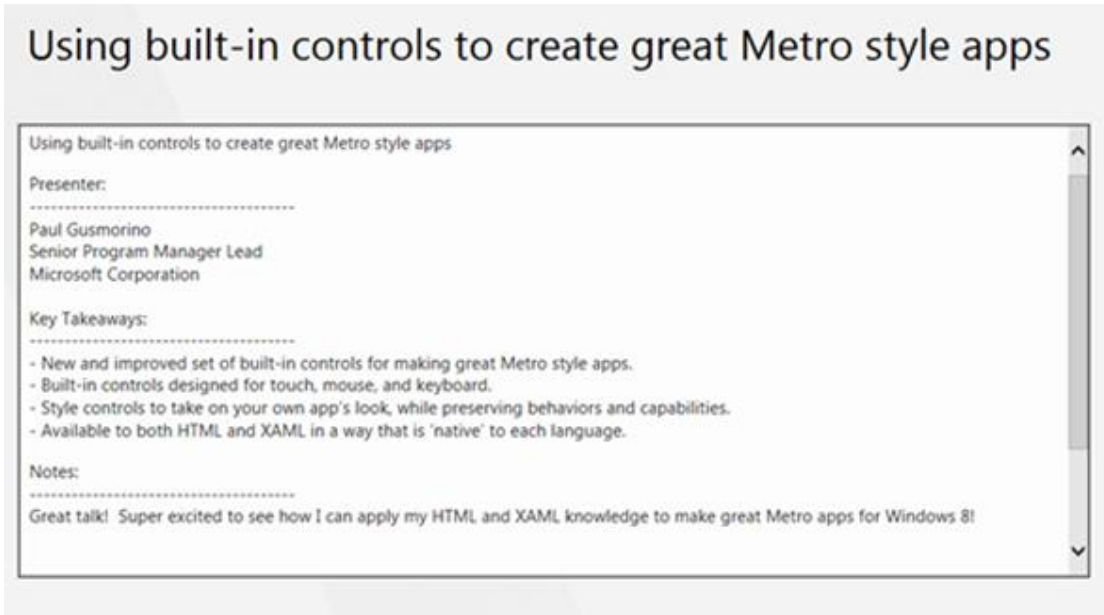
Text editing controls

Single-Line Text Box

A single-line text box containing the URL "http://www.microsoft.com". To the right of the text is a small square button with an 'x' icon, representing a clear button. A yellow line points from the text "Clear Button" to this button.

Clear Button

Multi-Line Text Box

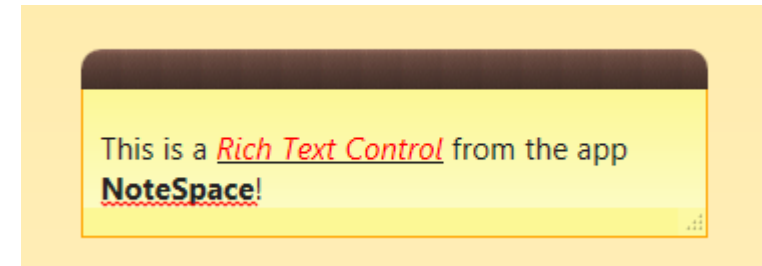


Password

A password field represented by a series of dots. To the right of the dots is a small square button with an eye icon, representing a reveal button. A yellow line points from the text "Reveal Button" to this button.

Reveal Button

Rich Text Box



Text editing controls - behaviors

Text Selection : Mouse and Keyboard

BUILD is a new event that shows modern hardware and software developers how to take advantage of the future of Windows. Learn how to work with the all new touch-centric user experience to create fast, fluid, and dynamic applications that leverage the

Touch

Tuesday, Sept 13

7:00am - 9:00am

Copy

9:00am - 11:00am

Keynote

11:30am - 6:00pm

Sessions

Cut, Copy, and Paste

Cut

Copy

Paste

<http://www.microsoft.com>

Spellchecking

attendees

attendee's

attendees'

Add to dictionary

Ignore

Hello BUILD attendies!

Text editing controls - touch keyboard

Registration

User Name
Build Attendee

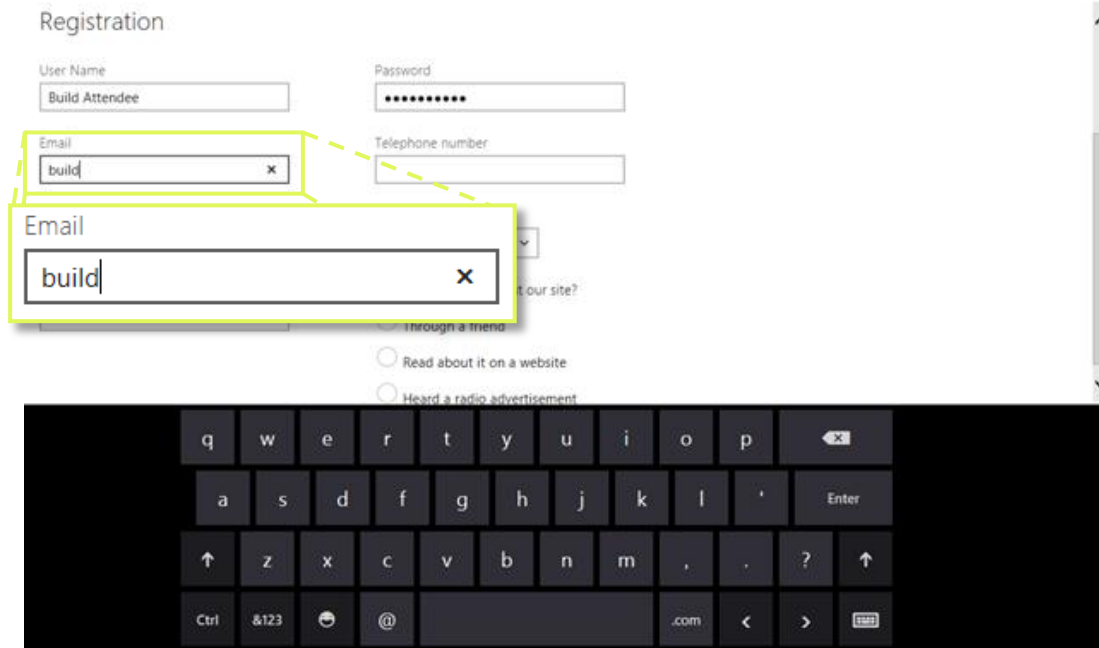
Password

Email
build

Telephone number

Email
build

☐ Through a friend
☐ Read about it on a website
☐ Heard a radio advertisement



Registration

User Name
Build Attendee

Password

Email
build@microsoft.com

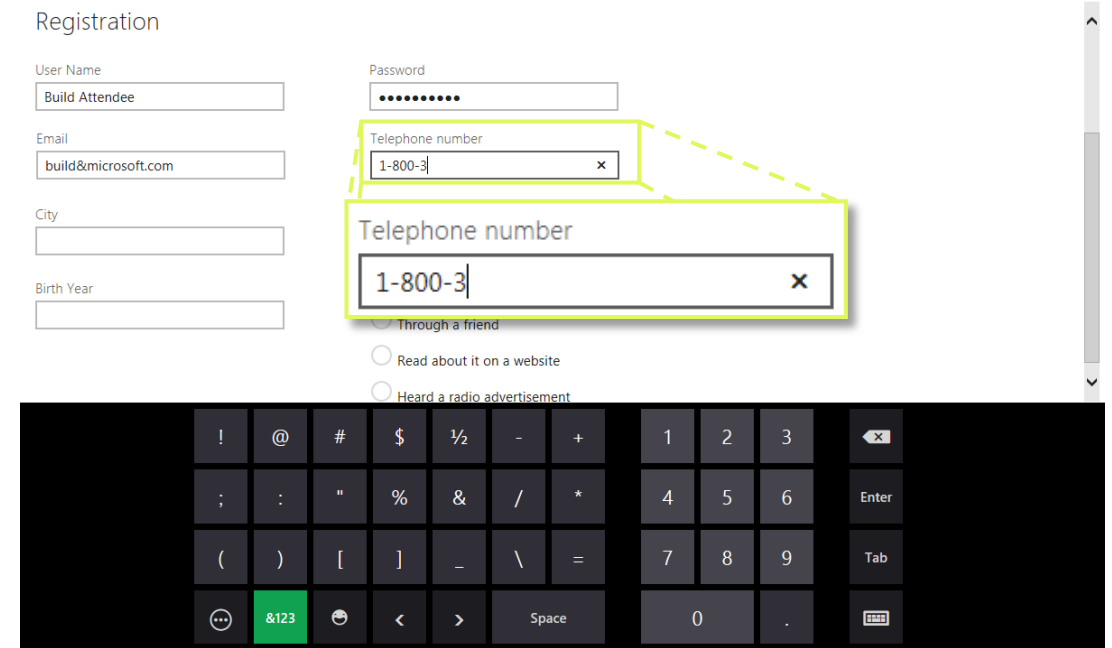
Telephone number
1-800-3

City

Birth Year

☐ Through a friend
☐ Read about it on a website
☐ Heard a radio advertisement

Telephone number
1-800-3





demo

Text editing

Commanding surfaces

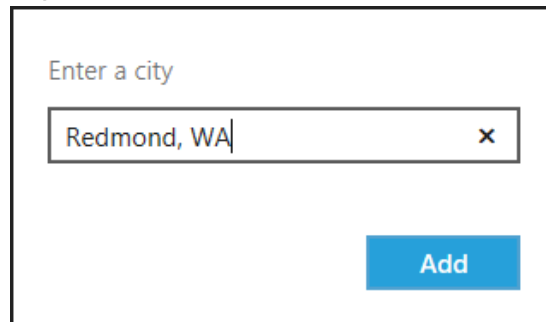
App Bar



Context Menu



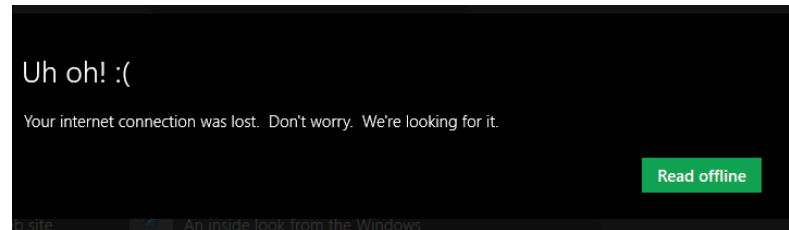
Flyout



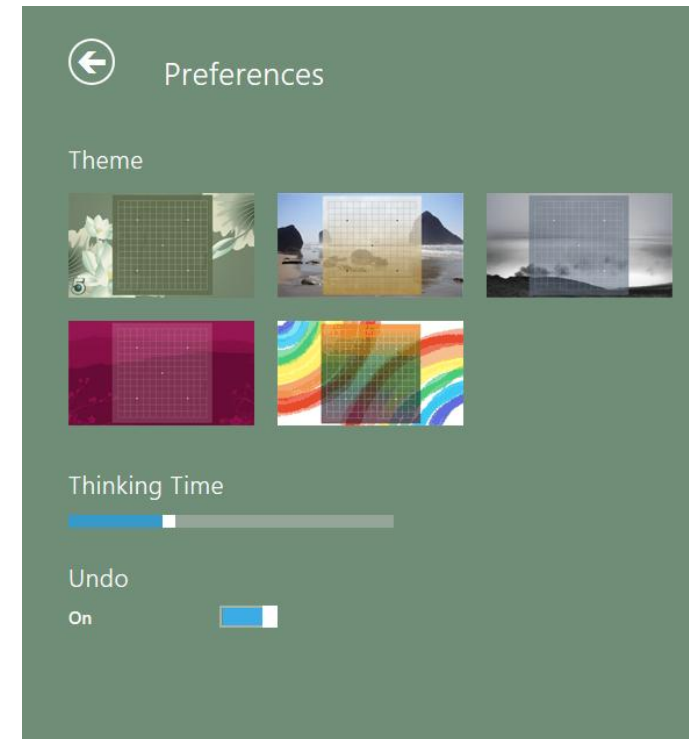
Tooltip



Message Dialog



Settings Pane





demo

Commanding surfaces

Presenting Data

Presenting data

List View



Marvelous Mint
Gelato



Creamy Orange
Sorbet

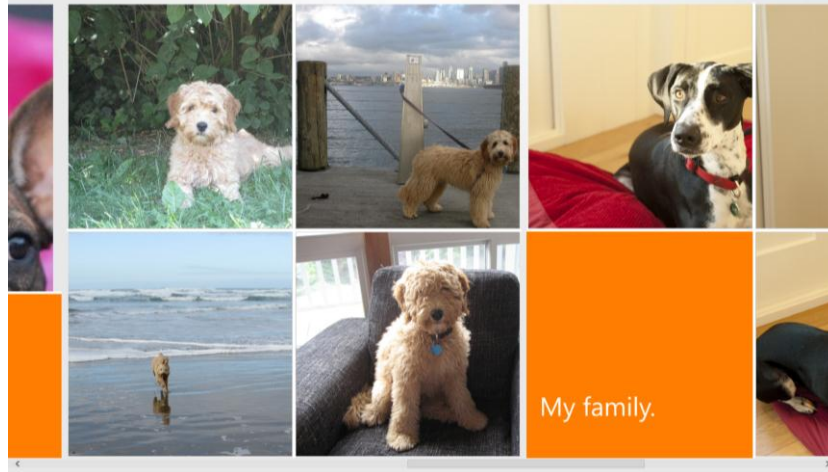


Succulent Strawberry
Sorbet



Very Vanilla
Ice Cream

Grid View



Flip View



Grouping, Selecting and Animating

Grouping

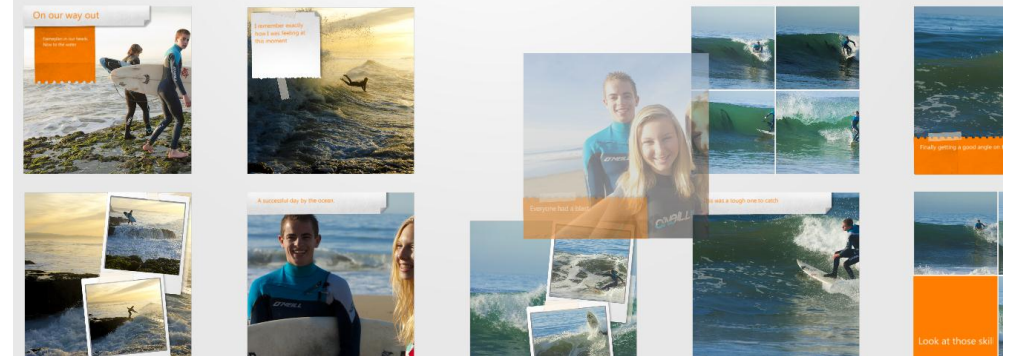


Single & Multi Select

Which is **Saturn** ?



Built-in Animations



Semantic zoom

← Schedule
All schedule My schedule Show: Every day ▾

Wednesday, 3:30PM

2:00 PM

A lap around Visual Studio 11 Express...
Joanna Mason, Vikas Bhatia
TOOL-479T / WED / 2:00PM - 3:00PM / PLATIN...

2:00 PM

What's new in Visual Studio 11 for ap...
Brian Keller, Cameron Skinner
TOOL-833T / WED / 2:00PM - 3:00PM / 213 B

3:30 PM

Create Metro style apps quickly with b...
Paul Gusmorino, Sean Hume
APP-211T / WED / 3:30PM - 4:30PM / 303 B

3:30 PM

How to declare your app's capabilities
Jeff Johnson
APP-398T / WED / 3:30PM - 4:30PM / PLATINU...

3:30 PM

Stand out with styling and animation l...
John Papa
APP-494T / WED / 3:30PM - 4:30PM / PLATINU...

3:30 PM

Understanding Connected Standby
Pat Stemen, Stephen Berard
HW-456T / WED / 3:30PM - 4:30PM / ORANGE...

3:30 PM

Connecting Windows 8 to mobile broa...
Billy Anders, Khawar Zuberi
HW-732T / WED / 3:30PM - 4:30PM / 204 B

3:30 PM

Delivering great hardware solutions fo...
Kevin Miller
HW-733T / WED / 3:30PM - 4:30PM / ELITE BAL...

3:30 PM

Connecting and Sharing with Near Fiel...
Priya Dandawate
PLAT-270T / WED / 3:30PM - 4:30PM / 210 B



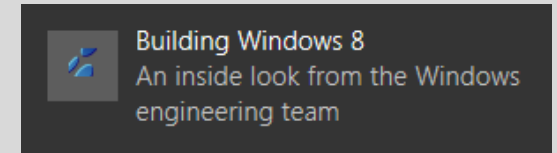
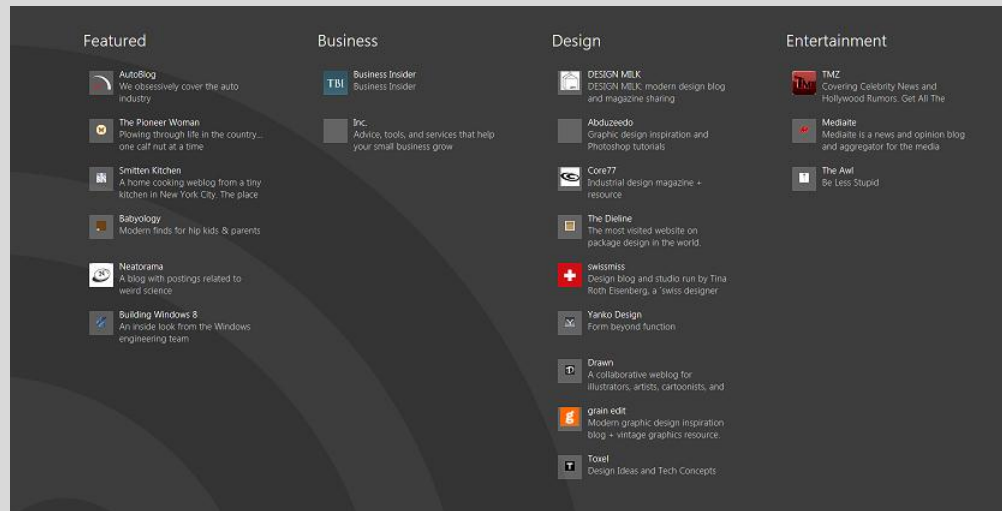
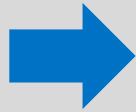
← Schedule
All schedule My schedule Show: Every day ▾

Tuesday	Wednesday	Thursday	Friday
4:30AM	4:30AM	2:00PM	9:00AM
7:00AM	5:30AM	3:30PM	1:00PM
8:30AM	7:00AM	5:00PM	1:00PM
9:00AM	7:35AM	7:30PM	2:00PM
11:00AM	8:00AM	9:00PM	
12:30PM	8:30AM		
5:00PM	9:00AM		
	10:00AM		
	11:00AM		
	11:30AM		
	12:30PM		
		2:00AM	
		3:30AM	
		5:00AM	
		6:30AM	
		8:00AM	
		9:00AM	
		10:00AM	
		10:30AM	
		11:30AM	
		1:00PM	
		2:30PM	

/b

How to get started with a ListView (HTML)

ListView = dataSource + itemRenderer + layout



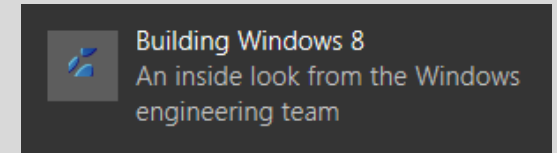
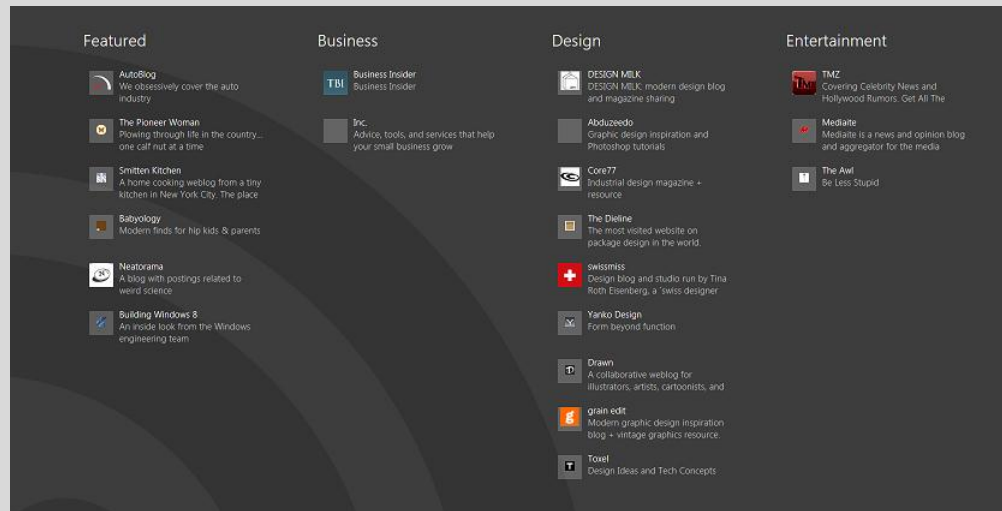
ListView data templating (HTML)

```
<div data-win-control="WinJS.Binding.Template" id="myTemplate" >
  <div style="width: 110px; margin: 10px">
    <img data-win-bind="src: picture" style="height: 60px; width: 60px" />
    <input type="button" data-win-bind="value: buttonText" />
  </div>
</div>
```

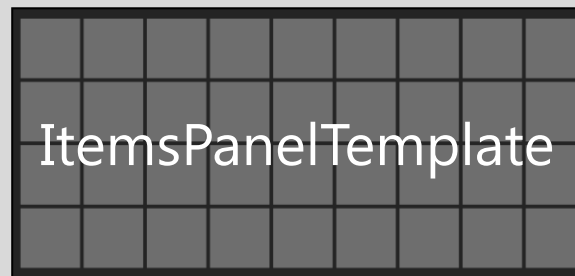
```
<div height="400"
  data-win-control="WinJS.UI.ListView" id="listview1"
  data-win-options="{dataSource: myData, itemRenderer: myTemplate}">
</div>
```

How to get started with GridView (XAML)

GridView = ItemsSource + ItemTemplate + ItemsPanel



ItemContainerStyle



GridView data templating (XAML)

```
<DataTemplate x:Key="MyTemplate">
    <Grid Width="110" Margin="10,10,10,10">
        <Image Source="{Binding Image}" Height="60" Width="60">
        <Button Content="{Binding ButtonText}" >
    </Grid>
</DataTemplate>

<ItemsPanelTemplate x:Key="MyGridItemsPanelTemplate">
    <WrapGrid MaximumRowsOrColumns="3" VerticalChildrenAlignment="Top"
        HorizontalChildrenAlignment="Left"/>
</ItemsPanelTemplate>

<Grid Height="400">
    <GridView x:Name="ListView1" Width="Auto" Height="Auto"
        ItemTemplate="{StaticResource MyTemplate}"
        ItemContainerStyle="{StaticResource MyTileStyle}"
        ItemsPanel="{StaticResource MyGridItemsPanelTemplate}"/>
</Grid>
```

ListView data templating (XAML)

```
<DataTemplate x:Key="MyTemplate">  
    <Grid Width="110" Margin="10,10,10,10">  
        <Image Source="{Binding Image}" Height="60" Width="60">  
        <Button Content="{Binding ButtonText}" >  
    </Grid>  
</DataTemplate>
```

```
<Grid Height="400">  
    <ListView x:Name="ListView1" Width="Auto" Height="Auto"  
        ItemTemplate="{StaticResource MyTemplate}" />  
</Grid>
```



demo

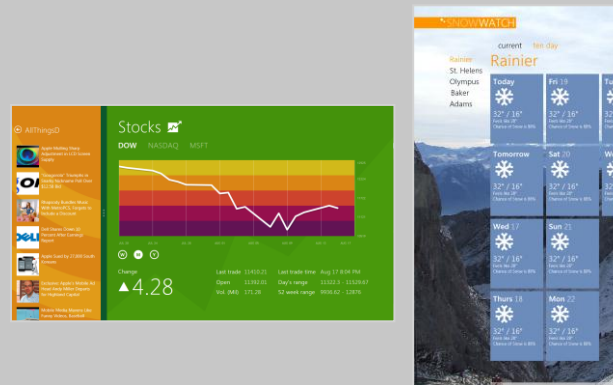
Presenting data

Screen sizes

4x4



Snap and portrait



Pixel density



Why you care

Screen sizes

Show the right amount of content, the right content detail for each screen size

Snap and portrait

A great snapped view invites users to keep your app on screen longer.

A great portrait allows users to use your app in more postures.

Pixel density

Supporting different pixel densities will assure your app always looks crisp and clear.

Screen sizes

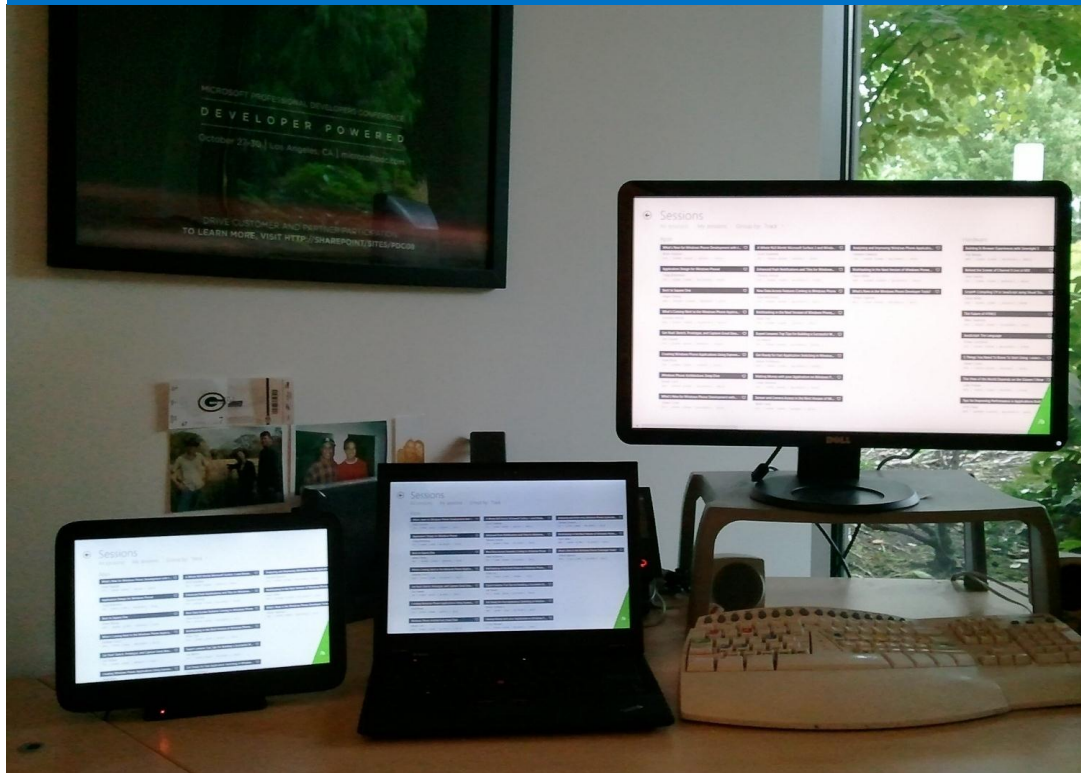
User experience

- ▶ Apps are as immersive as possible
- ▶ The minimum app resolution is 1024x768
- ▶ A good place to start designing your app is 1366x768
- ▶ Apps take advantage of added screen real-estate

Building for screen size

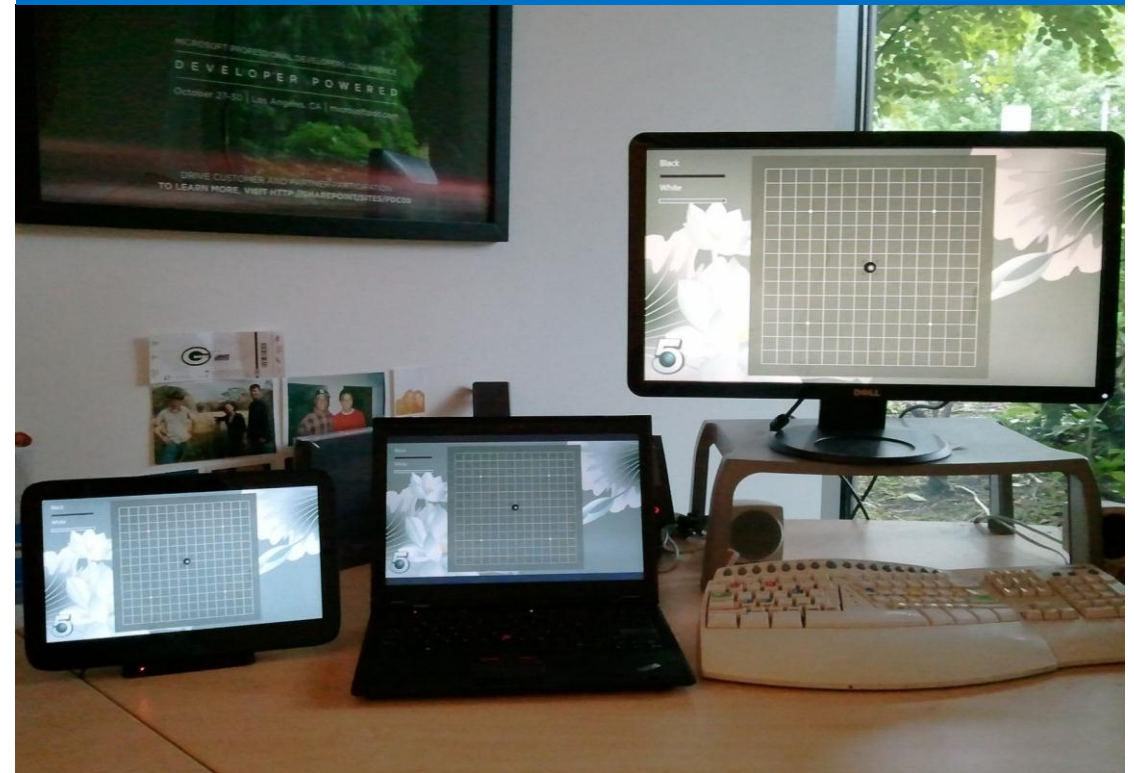
Adaptive

Consider the proportions of your app, build adaptive zones as your content allows. Use adaptive controls to make use of the space.



Fixed

Scale your layout up to fit any screen size with the ViewBox control. Consider the impact of letterboxing behavior and image scaling.



Use adaptive controls

Screen size

ListView Control

Adaptive in nature (fits as many items as it can, provides automatic scrolling/panning experience)

Supports list and grid layouts

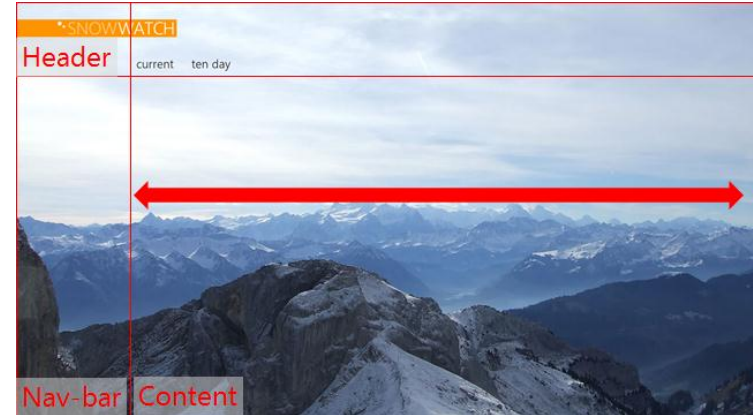


Manage the wireframe (HTML5)

Screen size

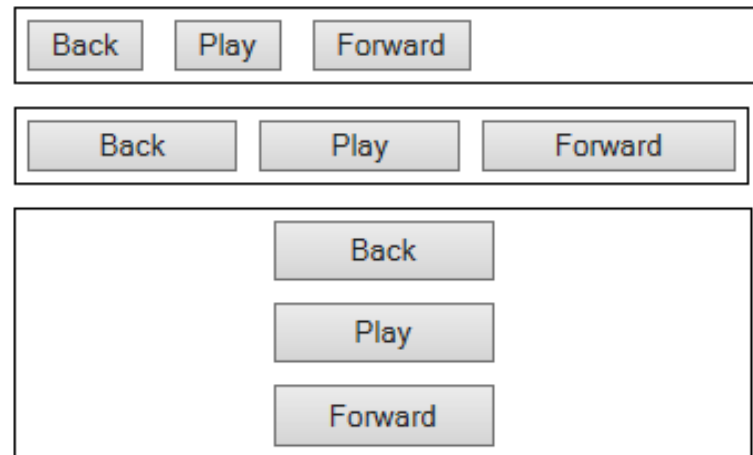
CSS Grid

Grid divides space into rows and columns
Introduces fractional units for proportions
Source independent for media query



CSS FlexBox

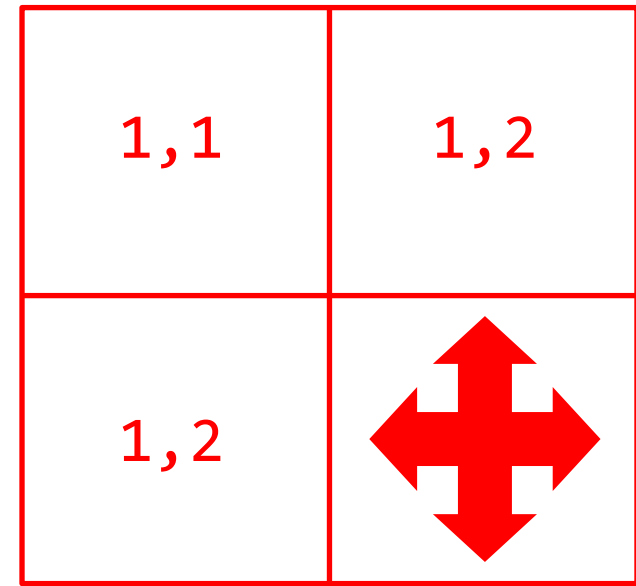
Enables control over stacking in a single dimension
Allows elements or margins to smoothly scale to fill space
Source independent for media query



Grid layout control: Screen size

Set up your grid structure and assign content to grid cells

```
.appGrid
{
    display: grid;
    grid-columns: 120px 1fr;
    grid-rows: 120px 1fr;
}
.adaptiveCell
{
    grid-column: 2;
    grid-row: 2;
}
```



current ten day more info

Rainier
St. Helens
Olympus
Baker
Adams

Rainier

Mount Rainier[7] is a massive stratovolcano located 54 miles (87 km) southeast of Seattle in the state of Washington, United States. It is the most topographically prominent mountain in the contiguous United States and the Cascade Volcanic Arc, with a summit elevation of 14,411 feet (4,392 m).[1][2] Mt. Rainier is considered one of the most dangerous volcanoes in the world, and it is on the Decade Volcano list.[8] Because of its large amount of glacial ice, Mt. Rainier could potentially produce massive lahars that would threaten the whole Puyallup River valley.[9]

Geographical setting

Mount Rainier is the highest mountain in Washington and the Cascade Range, with a summit elevation of 14,411 feet (4,392 m), greater than that of K2 (13,189 feet (4,020 m)). [3] On clear days it dominates the southeastern horizon in most of the Seattle-Tacoma metropolitan area to such an extent that locals sometimes refer to it simply as "the Mountain." [11] On days of excep-

tional clarity, it can also be seen from as far away as Portland, Oregon, and Victoria, British Columbia.[12]

With 26 major glaciers[13] and 36 square miles (93 km²) of permanent snowfields and glaciers,[14] Mount Rainier is the most heavily glaciated peak in the lower 48 states. The summit is topped by two volcanic craters, each more than 1,000 feet (300 m) in diameter with the larger east crater overlapping the west crater. Geothermal heat from the volcano keeps areas of both crater rims free of snow and ice, and has formed the world's largest volcanic glacier cave network within the ice-filled craters,[15] with nearly 2 miles (3.2 km) of passages.[16] A small crater lake about 130 by 30 feet (40 by 9.1 m) in size and 16 feet (5 m) deep, the highest in North America with a surface elevation of 14,203 feet (4,329 m), occupies the lowest portion of the west crater below more than 100 feet (30 m) of ice and is accessible only via the caves.[17][18]

The Carbon, Puyallup, Mowich, Nisqually, and Cowlitz Rivers begin at eponymous glaciers of Mount Rainier. The sources of the White River are Winthrop, Emmons, and Fryingpan Glaciers. The White, Carbon, and Mowich join the Puyallup River, which discharges into Commencement Bay at Tacoma; the Nisqually empties into Puget Sound

Use adaptive controls

Screen size

HTML adaptive by nature

All sizes can be defined in %

Controls: watch aspect ratio

Image tags: set height or width 100%

CSS Multi-column

Column-count

Column-width

Mount Rainier^[7] is a massive stratovolcano located 54 miles (87 km) southeast of Seattle in the state of Washington, United States. It is the most topographically prominent mountain in the contiguous United States and the Cascade Volcanic Arc, with a summit elevation of 14,411 feet (4,392 m).^{[1][2]} Mt. Rainier is considered one of the most dangerous volcanoes in the world, and it is on the Decade Volcano list.^[8] Because of its large amount of glacial ice, Mt. Rainier could potentially produce massive lahars that would threaten the whole Puyallup River valley.^[9]

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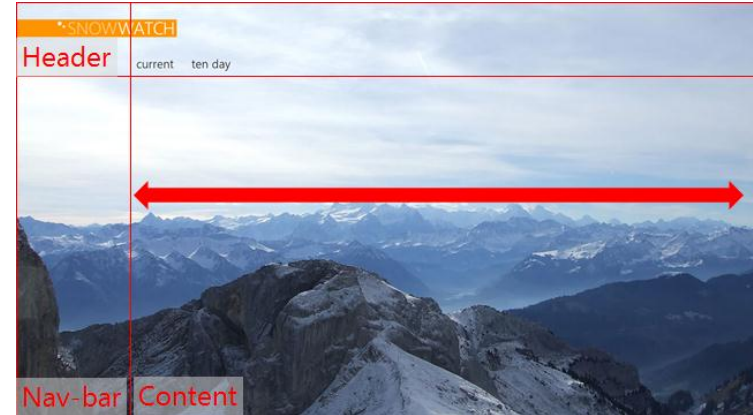
Manage the wireframe (XAML)

Screen size

Grid

Fixed sizing for headers/margins

Star (*) sizing for fluid layout

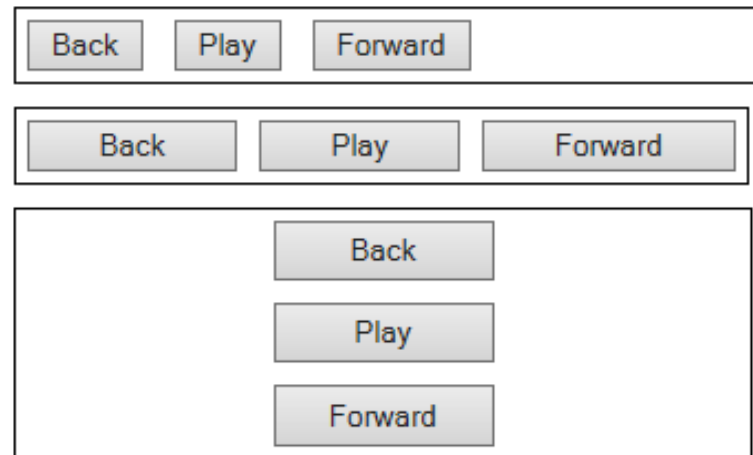


StackPanel

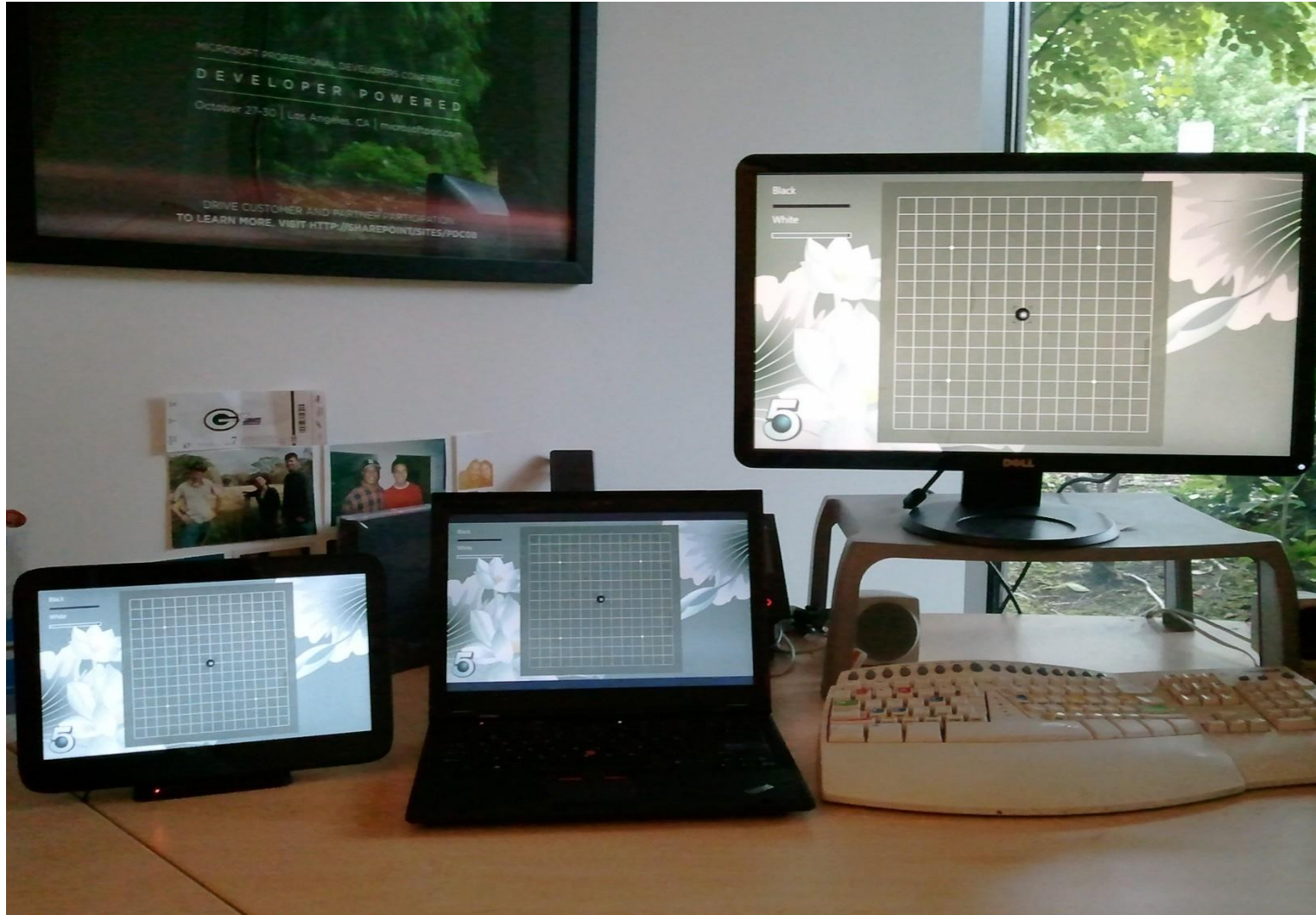
Enables control over stacking in a single dimension

Allows elements or margins to smoothly scale to fill space

Use stretch to have control fill area

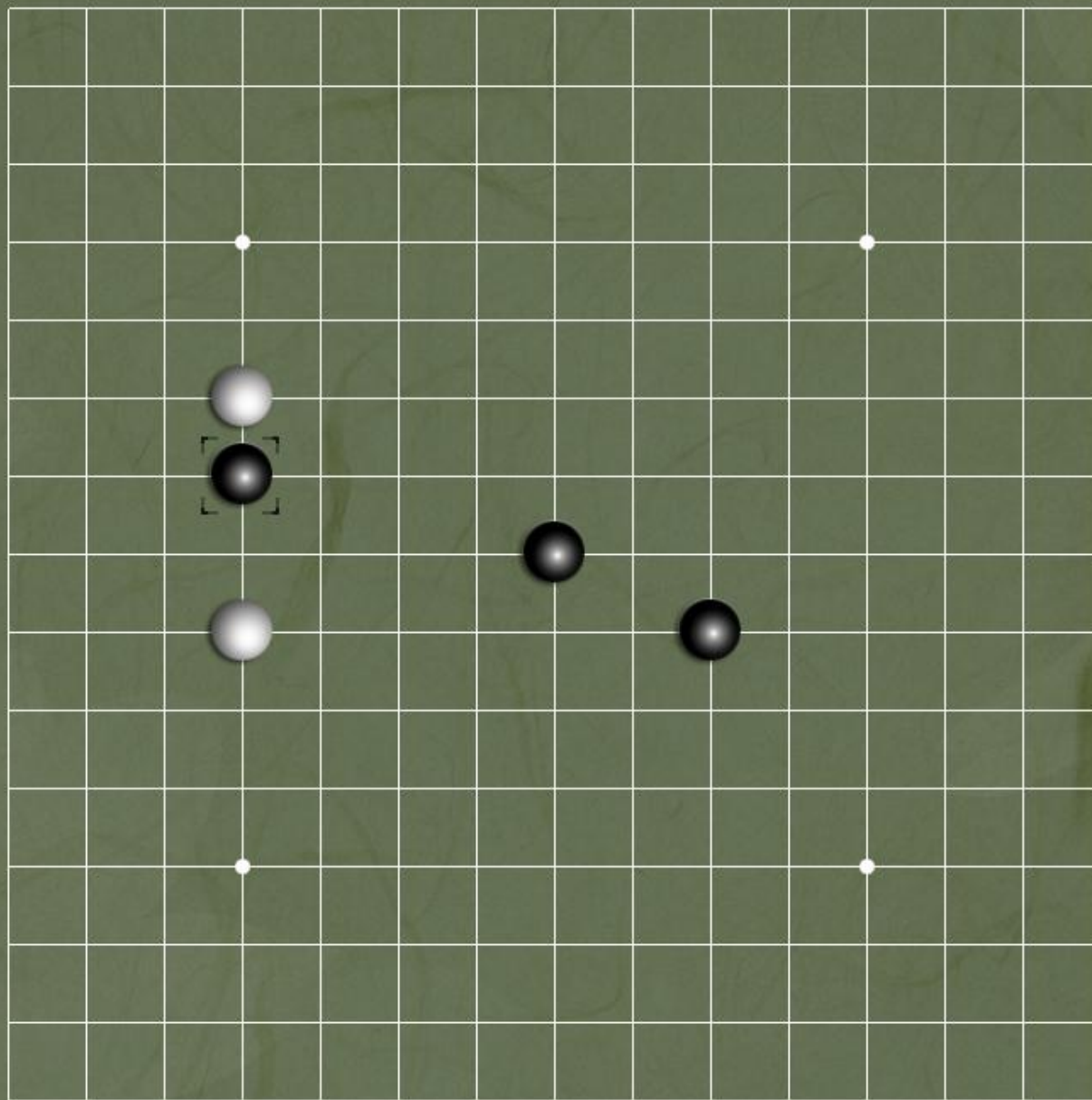


Fixed: Scale to fit



Black

White



5

Fixed app

Screen size

Viewbox enables
"Scale to Fit"

Apps can set a fixed width
and height

Scales all children to fit to
the available space

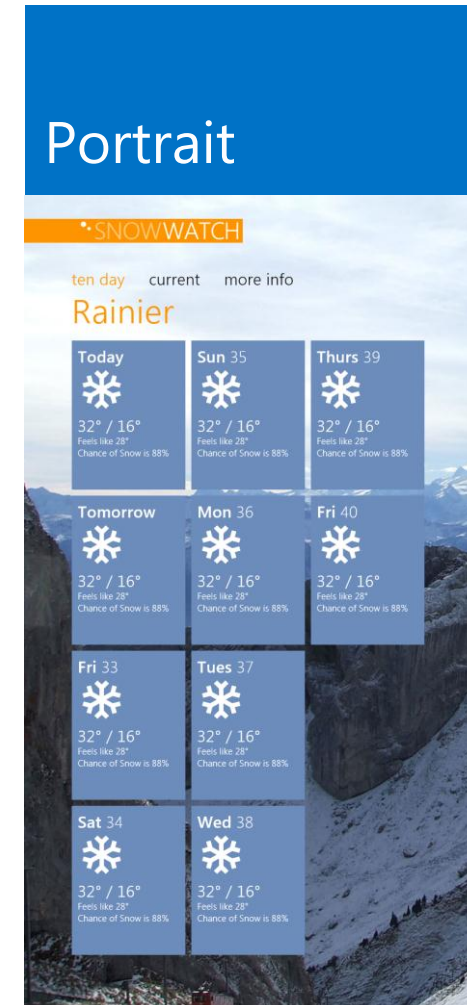
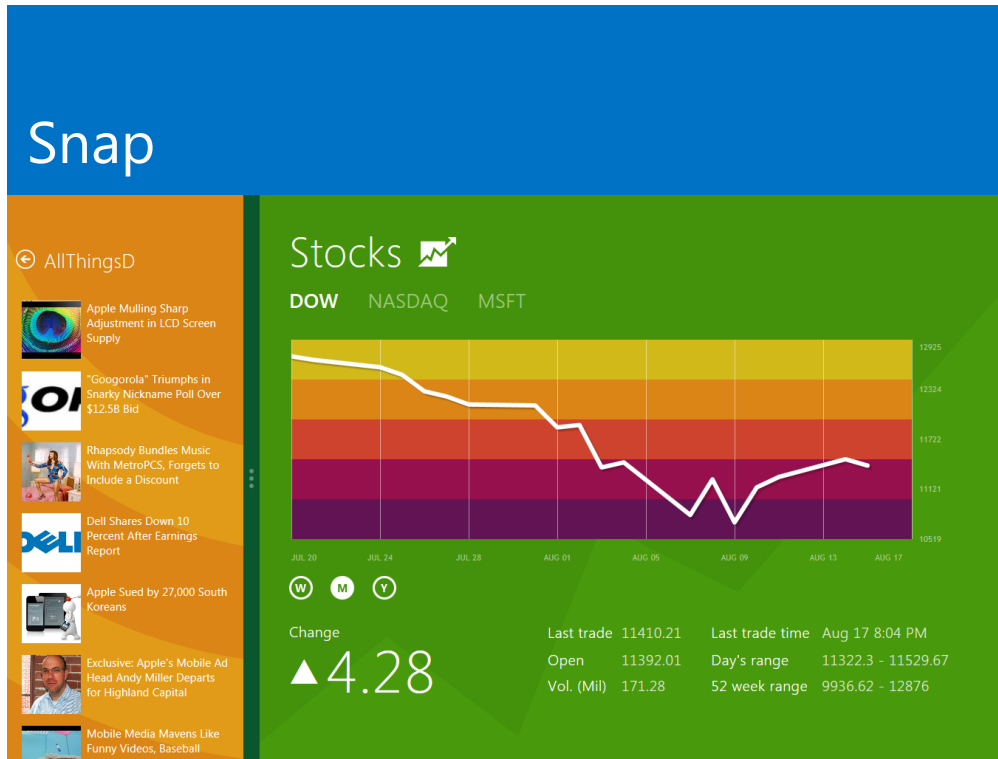
Centers its content

Supports letterboxing
based on app
background when
aspect ratio should be
maintained

Provide 2x images

```
<div data-win-control="Win.UI.Controls.Viewbox"  
data-win-options="{width: 1024, height: 768}">  
    /* Fixed content area goes inside here,  
       scaling will maintain aspect ratio */  
</div>
```


Building for snap and portrait



Adding a snapped view

Snap and portrait

Layout 320px list based layouts

Change control from
Grid to List View

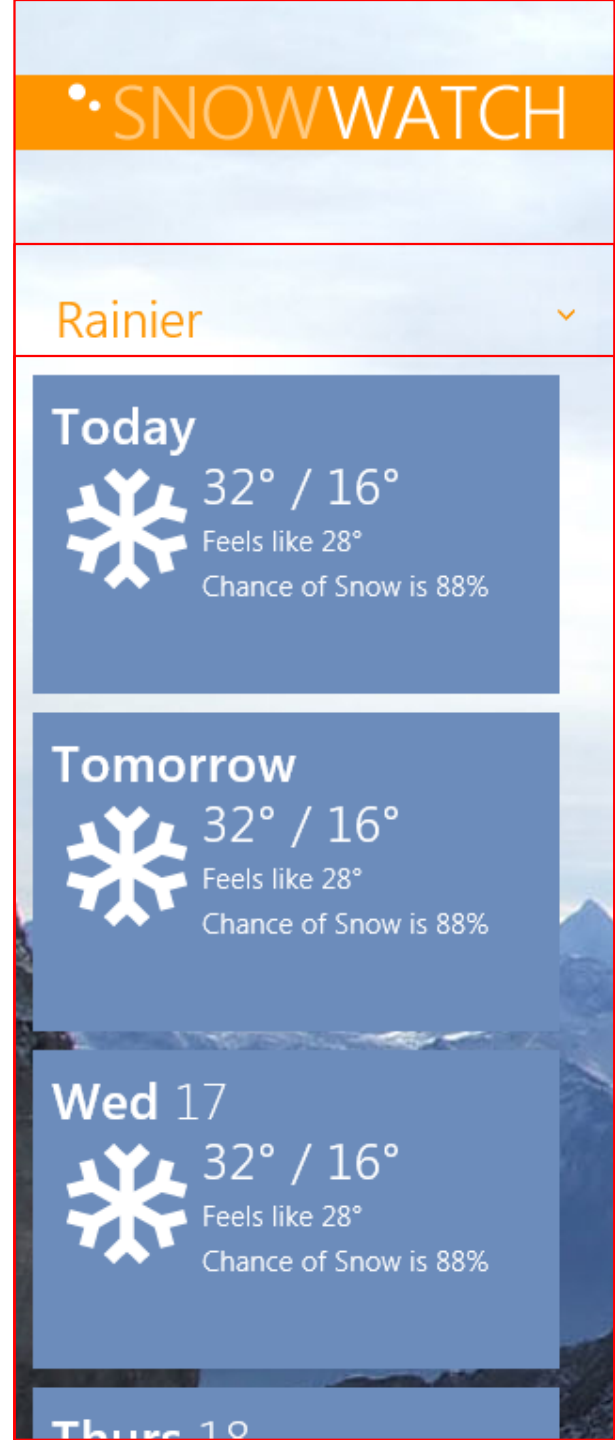
Items are laid out vertically

Wire frame still intact

Non-list based layouts

Use single column layouts

Layout and scroll vertically



Adding a portrait view

Snap and portrait

Layout optimized to 9:16

Decrease margins

List-based layouts

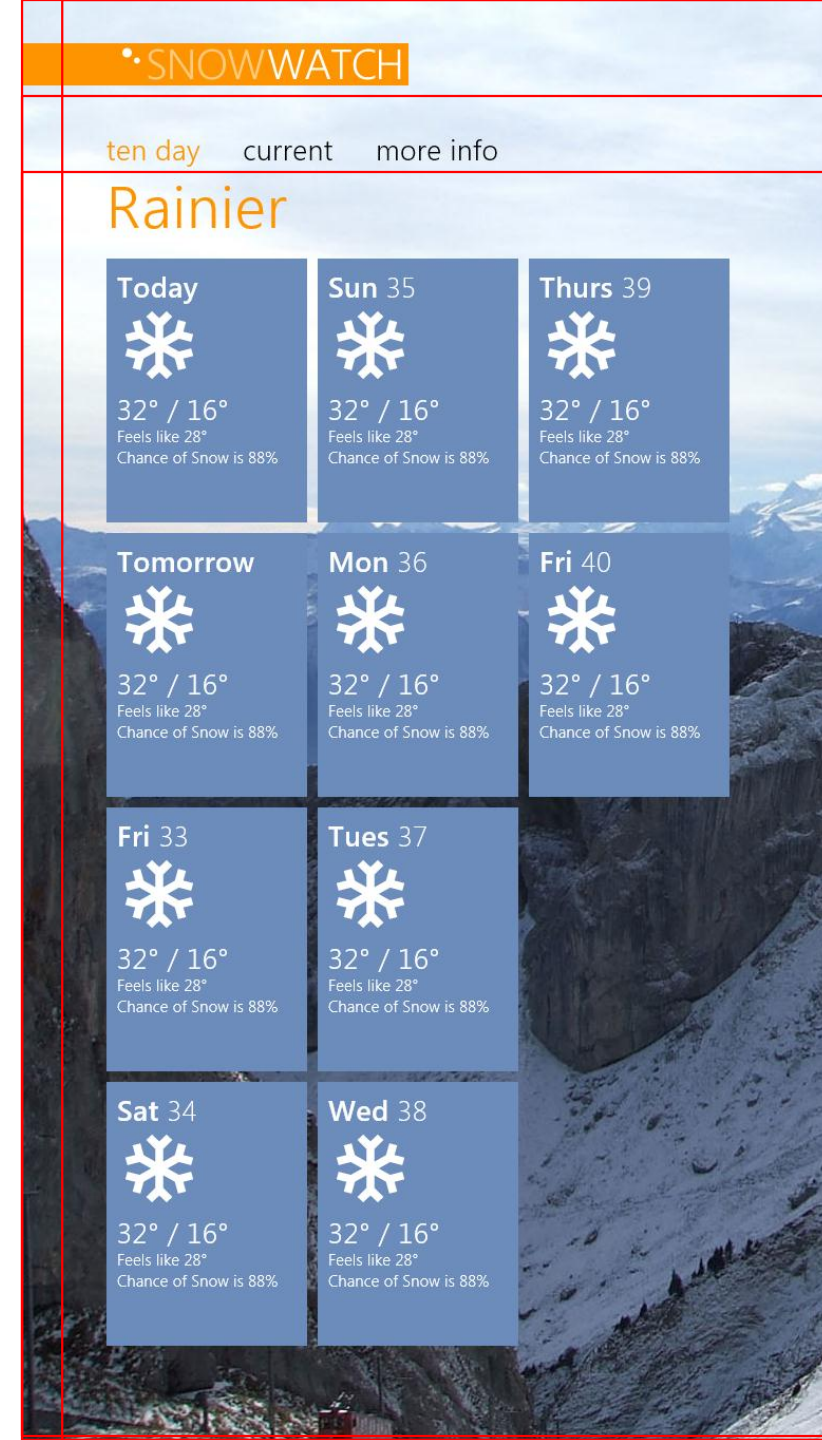
List fills out item based on available space

Verify similar to horizontal layout

Panning and scrolling stays horizontal

Non-list based layouts

2 column layouts (+margins) work best



CSS media queries: Snap and portrait

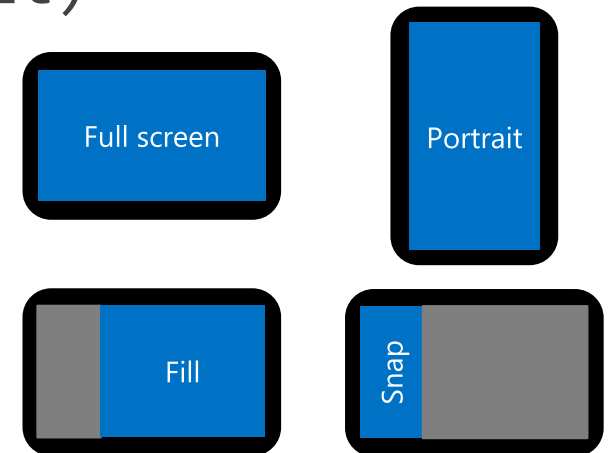
The view state media queries allow you easily to target portrait and snap views

```
@media screen and (-ms-view-state: snapped)
{
    /* Re-arrange and hide/show content */
}
```

```
@media screen and (-ms-view-state: device-portrait)
```

```
@media screen and (-ms-view-state: fill)
```

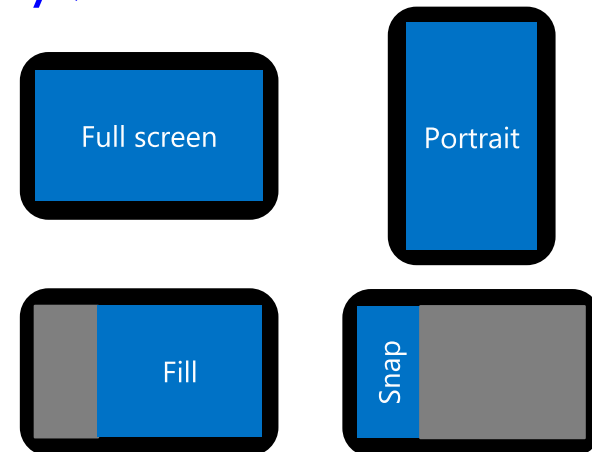
```
@media screen and (-ms-view-state: full-screen)
```



XAML: VisualStateManager

Create a Visual State for each view/orientation:

```
<Grid x:Name="LayoutRoot">  
    <VisualStateManager.VisualStateGroups>  
        <VisualStateGroup x:Name="OrientationStates">  
            <VisualState x:Name="FullScreen" />  
            <VisualState x:Name="Filled" />  
            <VisualState x:Name="Snapped" />  
            <VisualState x:Name="Portrait" />  
        </VisualStateGroup>  
    </VisualStateManager.VisualStateGroups>  
</Grid>
```





demo

Layout and Orientation: Built In Templates

Pixel Density

User experience

Problem

As pixel density increases, things get too small to touch.

With scaling, touch targets are maintained and things get crisper on screen



Pixel Density

User experience

- ▶ Windows scales to pixel density to maintain touchability
- ▶ Layouts, text and images are crisper on higher pixel densities
- ▶ Three scale percentages

11.6" 1366x768
135 dpi

100%

11.6" 1920x1080
190 dpi

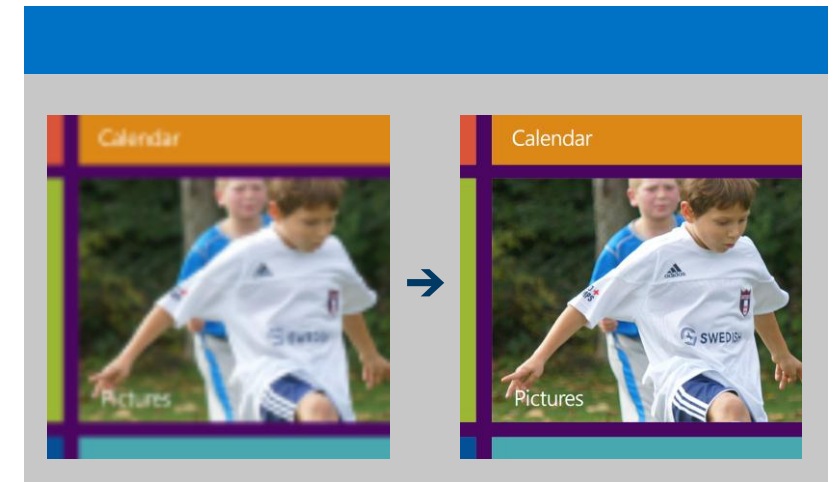
140%

11.6" 2560x1440
253 dpi

180%

Building for pixel density

- ▶ Layouts are scaled automatically based on pixel density
- ▶ Ensure image rendering is crisp
- ▶ Use CSS primitives or SVG
- ▶ For bitmaps use resource loading
Automatically swaps in resources based on pixel density



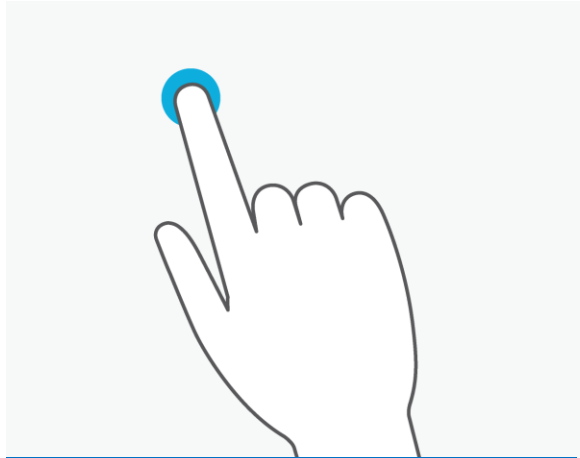


demo

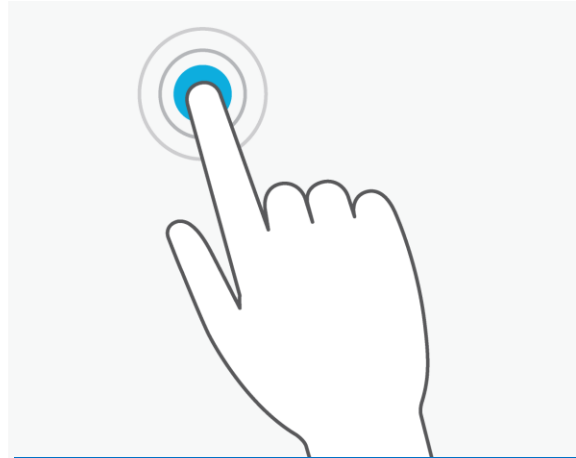
Scaling

Built-in Controls:
Designed for touch, mouse, and keyboard.

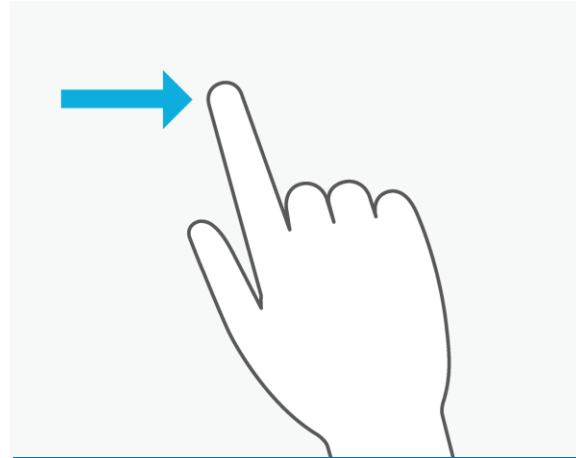
Windows 8 Touch Interactions



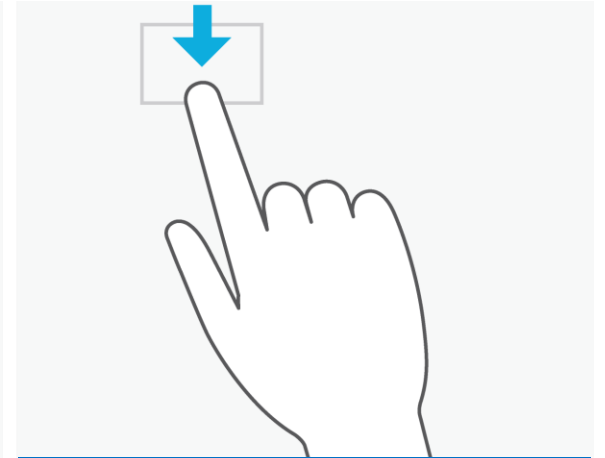
Press and hold to learn



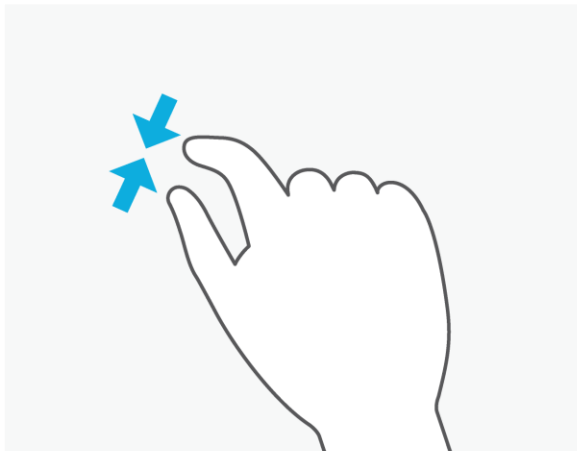
Tap for primary action



Slide to drag



Swipe to select



Pinch to zoom



Swipe from edge for
app and system UI



Rotate to rotate

Building Great Touch Apps

- ▶ Use MSPointer events to code for touch, mouse, and pen in a unified way
- ▶ Use MSGesture events to get easy access to the Windows 8 touch language



demo

Touch

Animations add beauty, energy, motion, and personality to your app

Built-in controls provide Metro style
animation for free

Adding custom Metro style animations is easy using Windows 8 Animation Library

Windows 8 Animation Library

- ▶ Part of Windows Library for Javascript (WinJS)
- ▶ Contains key Metro style app animations
- ▶ Has the same storyboard values, curves, and even the same API that we use
- ▶ Easily aligns your app to the Windows 8 personality



demo

Animations

The background is a solid dark green color. It is decorated with several light green circles of varying sizes, some of which are partially cut off by the edges of the frame. These circles are scattered across the page, with a higher concentration in the upper right and lower right areas.

Recap

Built-in controls implement Metro UI principles and personality

Build UI that handles screen size and orientation via layout and views

Designed for touch, mouse, and keyboard

Touch is easy with Built-in controls,
Pointer Events and Gestures

Animations add beauty, energy, motion,
and personality to your app

Related sessions

- ▶ APP-185T Make great Metro style apps that are touch-optimized using HTML5
- ▶ APP-209T Build polished collection and list apps in HTML5
- ▶ APP-210T Build data-driven collection and list apps using ListView in HTML5
- ▶ APP-212T Stand out with styling in your HTML app
- ▶ APP-503T Make great touch apps using XAML
- ▶ APP-517T Build polished collection and list apps using XAML
- ▶ APP-912T Build data-driven collection and list apps using XAML
- ▶ APP-737T Metro style apps using XAML: what you need to know

Further reading and documentation

SDK Samples

HTML

[Adding controls and content](#)

[Adding app bars and commands](#)

[Adding flyouts](#)

XAML

[Adding controls and content](#)

[Adding app bars and commands](#)

