Introduction to Windows 8 Development
HTML5 Objectives

• Introduction to Windows 8 Operation System
• Windows 8 Platform
• Windows Store Apps Design Guidelines
• Developing a Windows Store App Using HTML5 and JavaScript
• The WinJS Library
• Q&A
• PART 1: Introduction to Windows 8 Platform
• PART 2: Metro Style App Principles
• PART 3: Developing Metro Style Apps with HTML5 and JavaScript
• PART 4: Integrating with Windows 8 Experiences
• PART 5: Implementing Tiles and Notifications
• PART 6: Deploying to the Windows Store
Introduction to Windows 8 Platform
Lesson 1: Introduction to Windows 8 Operating System

• Windows 8 Platform Investments
Windows 8 Platform Investments

- New Windows Runtime (WinRT) APIs
- New App Execution Environment
- New Windows 8 User Experience
- Windows Store
Lesson 2: Windows 8 Platform

- Windows 8 Platform
- Metro Style App APIs
- WinRT Language Projections
Metro Style App APIs

User Interface
- HTML5/CSS
- XAML
- DirectX
- Controls
- Data Binding
- SVG
- Tiles
- Input
- Accessibility
- Printing

Devices
- Geolocation
- Portable
- Sensors
- NFC

Media
- Playback
- Capture
- PlayTo
- Visual Effects

Communications & Data
- Contracts
- Local & Cloud Storage
- Web
- Notifications
- Streams
- Memory Management
- XML
- Networking
- SMS

Fundamentals
- Application Services
- Threading/Timers
- Memory Management
- Authentication
- Cryptography
- Globalization

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WinRT Language Projections

Windows Runtime Object (or Component)
Written in C++, C#, VB

Windows Metadata

Projection

C++ App

Projection

C#/VB App

Projection

CLR

Projection

Chakra

HTML App

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• Metro Style App Principles
Metro Style App Principles

• Metro Style App Principles
• Fast and Fluid
• Snap and Scale Beautifully
• Contracts, Tiles, Notifications and Other Guidelines
Metro Style App Principles

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Follow the Windows 8 touch language and use only the prescribed gesture set:

- **Tap** for primary action
- **Swipe** to select
- **Slide** to drag
- **Swipe from edge** for app and system UI
- **Pinch** to zoom
- **Press and hold** to learn
- **Rotate** to rotate

See BUILD talk APP-391T: Designing Metro Style apps that are touch-optimized

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Snap and Scale Beautifully

People multi-task. An application can be displayed any one of these layouts:

- Minimum (1024x768)
- Widescreen (1366x768+)
- Snap view (required)
- Portrait

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Contracts, Tiles, Notifications and Other Guidelines

- **Charms** provide a consistent invocation model that users can always confidently rely on
  - Share, Search and Settings

- **Tiles** are the “front door” to your app.
  - Treat it as an extension of your app

- **Toast notifications** deliver transient messages outside the context of the app
  - Show toast when your app is in the background
  - Use it for real-time, personal content such as IM, Call, or Mail
  - Provides quick navigation to contextually relevant location in your app
Module Overview

• Developing a Metro Style App Using HTML5 and JavaScript
• The WinJS Library
Lesson 1:
Developing a Metro Style App Using HTML5 and JavaScript

• Creating Metro Style Apps with HTML5 and JavaScript
Creating Metro Style Apps with HTML5 and JavaScript

Metro style Apps

- XAML
  - C
  - C++

- HTML / CSS
- JavaScript (Chakra)

Desktop Apps

- HTML
- JS

System Services

- Communication & Data
- Graphics & Media
- Devices & Printing
- Application Model

Core

Windows Core OS Services

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Lesson 2: The WinJS Library

- WinJS
- Everyday Controls
- How to Get Started with ListView
- ListView Data Templating
- AppBar
WinJS

- Helpers for Namespaces, Constructor Definition
- Promises
- App Model
- Navigation
- Page & User controls
- Data binding
- Controls
- Animations
- Templates
- Utilities
- Default CSS Styles
Everyday Controls

- Button
  - Submit Query
  - OK
- Checkbox
  - On
  - Off
- Combo Box
  - California
- ListBox
  - Apple
  - Banana
  - Grape
  - Orange
  - Watermelon
- Button
  - California
  - Alaska
  - Arizona
  - Arkansas
- Button
  - Florida
  - Georgia
  - Hawaii
- Hyperlink
  - http://www.buildwindows.com
- Ratings
- Slider
  - 71
- Time Picker
  - 3
  - 15
  - PM
- Progress Bar
- Progress Ring
- Radio Button
- Toggle Switch
  - On
  - Off

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How to Get Started with ListView

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>
```
AppBar

- Most apps will use a transient app bar
- Bottom app bar is for commanding
  - Global commands on right, contextual commands on left
  - Can be programmatically invoked when an item is selected for contextual commands (Ex: Demo Start)
  - If there is a single, frequently used command, it can be placed on canvas
  - Menu Flyout can be used to show groups of related commands (Ex: Demo PaintPlay)
- Top app bar is for navigation in immersive views (Ex: Back button & title)
Integrating with Windows 8 Experiences
Module Overview

- Windows 8 Contracts
- Implementing the Search and Share Contracts
Lesson 3: Windows 8 Contracts

- The Charms Bar
- Windows 8 Contracts
The Charms Bar
Windows 8 Contracts

• 1+1=3. Leverage other apps to complete scenarios

• **Charms** provide a consistent invocation model that users can always confidently rely on

• Start with the VS **Item Template** (available for Search, Share, File Picker extension)

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Lesson 4:
Implementing the Search and Share Contracts

• Search Anatomy
• Search Settings & Events
• Sharing From Source to Target
• Adding Settings Flyout to Settings Charm
• Demonstration: Implementing Windows 8 Contracts
Search Anatomy

1. Search box is scoped to the main app on screen
2. Query suggestions provided by the main app on screen
   • Autocompletes to terms for which the app has search results
3. List of installed Metro style apps that have implemented the search contract
4. Result suggestions provided by the main app on screen
   • Must include a thumbnail and title
   • Indicates a strong or exact match result
   • Takes users directly to the details of the result
Search Settings & Events

Manifest Declaration

Search Pane Settings

- Search Registration
- File Access Capability
- Search History (on by default)
- Local Content Suggestions
- Set placeholder text

Search Pane Events

- Search Activation
- Query Submitted
- Suggestions Requested
Sharing From Source to Target

Source App

- Registers with the DataTransfer Manager
- Receives event and fills DataPackage
- Completes Async calls and returns

DataPackage lives in source application

Share Broker

- User selects “Share”, active app is sent event
- Filters list of Target Apps and Quicklinks
- User selects Target App or Quicklink
- Activate Target as kind shareTarget

Activated for sharing

- Processes DataPackage contents
- Reports Complete

Share Target App

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function scenario2AddSettingsFlyout() {
    WinJS.Application.onsettings = function (e) {
        e.detail.applicationcommands = {
            "helpDiv": {
                title: "Help",
                href: "/html/2-SettingsFlyout-Help.html"
            }
        }; 
        WinJS.UI.SettingsFlyout.populateSettings(e);
    }
}
Implementing Tiles and Notifications
Module Overview

• Using App Tiles in Windows 8 Metro Style apps
• Using Notifications in Metro Style apps
Lesson 5:
Using App Tiles in Windows 8 Metro Style apps

- App Tiles
- Basic App Tiles
- Live App Tiles
- Secondary App Tiles
App Tiles

- Represent your app to the user
- Rich and engaging view into your app
- Alive with activity and continually updated
- Draw users back into your app over and over

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Basic App Tiles

- Tap on tile to launch or switch to an app
- Static default tile specified in app manifest
- Two sizes:
  - Square (1x1)
  - Wide (2x1)
- Both sizes can have live updates

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<table>
<thead>
<tr>
<th>Feature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tiles update</td>
<td>Using pre-defined templates</td>
</tr>
<tr>
<td>Templates</td>
<td>Templates provide rich rendering options</td>
</tr>
<tr>
<td>JPEG or PNG</td>
<td>JPEG or PNG only, max size 150 KB</td>
</tr>
<tr>
<td>Optional “peek” animation</td>
<td>Optional “peek” animation</td>
</tr>
<tr>
<td>Text-only, image-only or combination</td>
<td>Text-only, image-only or combination</td>
</tr>
<tr>
<td>Local or cloud updates</td>
<td>Local or cloud updates</td>
</tr>
</tbody>
</table>

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Secondary App Tiles

- Tiles created by “pinning” content from app
- Pin initiated by app via simple runtime call
- User confirms pin operation via system UI
- Exposes a personalized surface for app
- Same capabilities as app tiles
- Launch leads to relevant content
Lesson 6:
Using Notifications in Metro Style apps

• Toast Notifications
• Toast Templates
Toast Notifications

Toast notifications deliver transient messages outside the context of the app.

Use toast notifications to get user’s attention immediately.

User is in control and can permanently turn off toast notifications from your app.

Allows quick navigation to a contextually relevant location in your app.

Toast notifications are easy to invoke from your app or from the cloud.
Toast Templates

Toast notifications use the same template architecture as Live Tiles

Rich set of rendering options available
Deploying to the Windows Store
Module Overview

• The Windows Store
• Monetizing Using the Windows Store
Lesson 7:
The Windows Store

• The Store
# The Store

<table>
<thead>
<tr>
<th>Designed for Discovery</th>
<th>Unprecedented reach</th>
<th>Flexible business models</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metro style app, displayed on Start Spotlight, Recommend, Browse/Filter, Search IE10 &amp; Deep links</td>
<td>Global reach: 200+ markets, 100+ languages Enterprise distribution</td>
<td>Free, paid, in-app, trials 3rd party in-app and advertising support</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Transparent terms</th>
<th>Best economics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Key documents published WACK, track progress, actionable feedback</td>
<td>Developers control pricing Up to 80% revenue share</td>
</tr>
</tbody>
</table>
Lesson 8:
Monetizing Using the Windows Store

• Trial apps in Windows 8
• In-App Purchase
• Adding advertising to Windows 8 Apps
Trial apps in Windows 8

- Time based trials

- Feature differentiated
In-App Purchase

```javascript
// can’t do in-app purchase in trial mode, must convert first
if (!licenceInformation.IsTrial)
{//load the listings with all the products
    var listing =
    if (!licenceInformation.ProductLicenses["product1"].IsActive)
    {
        try
        {
            // The customer doesn't own this feature, so show the purchase dialog.
                RequestProductPurchaseAsync("product1");
            // the in-app purchase was successful
        }
        catch (Exception) { // The in-app purchase was not completed because the
            // customer canceled it or an error occurred.}
    }
}
```
Adding advertising to Windows 8 Apps

1. Download Ad SDK
   - Download Ad SDK
   - Add few lines of code to add Ads
   - Support for Metro HTML/XAML

2. Activate Live Ads
   - Sign in to PubCenter
   - Register your app at PubCenter
   - Generate App ID and Ad Unit IDs

3. Publish App to Store
   - Set Ad Unit/App IDs in your App
   - Submit Ad-enabled App to Store
   - Track your success at PubCenter

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Essentials of Developing Windows Store Apps using HTML5 and JavaScript

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