



Advanced Windows Store App Development Using HTML5 and JavaScript

Course 20482C - Five days - Instructor-led - Hands-on

Introduction

This course will teach you advanced programming practices and techniques that will help you develop Windows Store apps. In this course, you will learn how design and develop Windows Store apps, as well as implement advanced features, such as using location information, streaming media to external devices, and integrating with online services. You will also learn how to use Microsoft Visual Studio 2013 and Expression Blend tools.

This course maps to the 70-482 exam.

This course is intended for professional developers who have one or more years of experience creating applications for a production environment and who are comfortable programming in HTML5, JavaScript and CSS to create Windows Store apps.

At Course Completion

After completing this course, students will gain the knowledge and skills to be able to:

- Add animations and transitions in a Windows Store app to improve the user experience.
- Localize the Windows Store app UI.
- Brand the Windows Store app and improve the loading experience with a splash screen.
- Use various storage mechanisms, choose a suitable caching strategy for their Windows Store app, and use advanced file access methods.
- Create custom controls, extend templated controls, and create and consume WinMD components.
- Implement the Print and Settings contracts and the Play To API.
- Work with the Push Notification Service (WNS).
- Capture media with the camera and microphone.
- Create and consume background tasks.
- Discover device capabilities, interact with devices, and act upon sensor data.
- Implement Windows Store trial licensing and in-app purchasing and advertising.
- Understand how to manage Windows authentication and web authentication in Windows Store apps.
- Diagnose problems and monitor application behavior by using tracing and profiling tools and APIs

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Prerequisites

Before attending this course, students must have:

- 6 to 12 months experience programming in HTML5.
- 3 to 6 months experience using Visual Studio 2013 (including experience in using preview builds).
- Minimum one month of experience working on Windows Store apps.
- This course is intended for professional developers who have 1 or more years of experience creating applications for a production environment.

Student Materials

The student kit includes a comprehensive workbook and other necessary materials for this class.

Course Outline

Module 1: Windows Store App Essentials

This module provides an overview of the Windows 8.1 user experience and features, Windows Store apps, and the new user interface. You will review the process of developing apps using HTML to create the user interface, and the WinRT API to interact with the platform.

Lessons

- Review Windows Store App Essentials
- Review Windows Store App Essentials – Under the Hood

After completing this module, students will be able to:

- Describe the Windows 8.1 platform, architecture, and features.
- Outline the process of creating user interfaces with HTML.
- Explain the new WinRT API model.
- Describe the basics of working with files, implementing contracts, showing notifications, and deploying your app to the Windows Store.

Module 2: Implementing Animations and Transitions

This module covers the following techniques for creating animations in Windows Store apps:

- The built-in WinJS.UI.Animation namespace
- CSS3 @keyframes
- CSS3 transitions and transformations

In this module, you will learn about the WinJS.UI.Animation namespace and CSS3 animations. By using animations in Windows Store apps, you can improve the user experience. This module also introduces the limitations of animations, and explains best practices for using them.

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Lessons

- Implementing Animations
- Working with Transitions and Transformations

Lab : Implementing Animations, Transitions, and Transformations

- Creating Animations in a Windows Store App
- Creating Transitions and Transformations in a Windows Store App

After completing this module, students will be able to:

- Implement animations by using the WinJS.UI.Animation namespace and CSS3 @keyframes.
- Implement animations by using transitions and transformations.

Module 3: Implementing Globalization and Localization

Windows 8.1 supports over 100 languages, with a potential reach of 4.5 billion people. You can sell Windows Store apps in over 200 markets. When you design an app for globalization and localization, it can reach a wide audience.

Globalization prepares an app for a global audience. This involves changing culture-specific elements of the user interface, such as dates, times, currencies, languages, and more. Localization takes globalization further by supporting specific languages, cultures, and regions. You should always globalize an app before you localize it.

Lessons

- Working with Resource Files
- Implementing Culture-Specific Formatting

Lab : Implementing Globalization and Localization

- Create and Consume the Resource Files
- Apply Culture-Specific Formatting

After completing this module, students will be able to:

- Create and use resource files for localization.
- Implement culture-specific formatting.

Module 4: Implementing Branding and a Seamless UI for Windows Store Apps

This module explains how you can add branding to your app, and how to add a branded splash screen to it, which improves the user experience when they load the app.

Lessons

- Introduction to Branding
- Customizing the Splash Screen
- Branding the UI of Your App

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Lab : Branding and a Seamless UI

- Creating a Customized Splash Screen
- Branding a Windows Store App

After completing this module, students will be able to:

- Describe the purpose and functionality of branding.
- Customize a splash screen for a Windows Store app.
- Brand a Windows Store app.

Module 5: Advanced Data Scenarios in a Windows Store App

In this module, you will explore the new file storage capabilities of Windows 8.1 and learn how to use them in the apps that you build. You will also see how to design and implement more efficient data storage through caching and how to set up file extensions, associations, and compression.

Lessons

- Implementing Storage Options for a Windows Store App
- Implementing Data Caching
- Advanced File Functionality

Lab : Caching Data

- Caching Data

After completing this module, students will be able to:

- Use file storage in a Windows Store app.
- Explain what data caching is, and how to use it in a Windows Store app.
- Implement advanced file functionality by setting up file extensions and associations and compressing files in an app.

Module 6: Creating Reusable Controls and Components

In this module, you will learn how the Windows Library for JavaScript (WinJS) provides a rich set of controls, such as the ListView, FlipView, and AppBar controls. You can use these controls to create functional apps. If the built-in controls do not provide the functionality you need, you can create your own custom controls and reuse them in any other apps, like a built-in control.

You will also learn how to extend the Windows Runtime (WinRT) by exposing existing or new libraries to Windows Store apps. You can create custom WinRT components that can be used from any other supported programming language (C#, VB.NET, C++, or JavaScript).

Lessons

- Working with Custom Controls
- Creating and Using WinRT Components

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Lab : Creating Reusable Controls and Components

- Create and Use a Custom Control
- Use a WinRT Component

After completing this module, students will be able to:

- Create and use custom controls.
- Use custom WinRT components.

Module 7: Implementing Advanced Contract Scenarios

This module describes how to use two new contracts:

- The Print contract enables interaction with printing devices.
- The Play To contract enables media sharing with other devices, such as television sets.

This module also describes how to integrate the contacts and calendar appointments managed by the operating system with a Windows Store app, creating new contacts and calendar appointments, updating and deleting existing ones.

Lastly, you will learn how to take advantage of several convenient Windows 8.1 APIs to provide exciting, user-friendly features in your apps. Windows RT has native APIs for working with PDF files, creating screenshots of your app, and generating speech from text through speech synthesis.

Lessons

- Implementing the Print Contract
- The Play To Contract
- Integrating Contacts and Calendars
- Integrating speech synthesis
- Support PDF files and screenshots

Lab : Integrating the Print Contract Into the App

- Printing Content
- Integrating the Printing Functionality
- Adding PDF Support

After completing this module, students will be able to:

- Implement the Print contract.
- Implement the Play To contract.
- Display PDF documents in your app.
- Create snapshots of your app.

Module 8: The Windows Push Notification Service

This module describes and explains Windows Push Notifications design concepts.

Lessons

- Introduction to the Push Notification Service

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- Communicating with the WNS

Lab : The Windows Push Notification Service

- Manage a Windows Notification Service (WNS) Channel

After completing this module, students will be able to:

- Explain how Windows Push Notifications work.
- Use Windows Push Notifications in a Windows Store app.

Module 9: Capturing Media

In this module, you will learn how to include media capturing functionality in your app. Learning to use the media capturing APIs of Windows 8.1 can be a key element in creating an exciting and successful app.

Lessons

- Using CameraCaptureUI to Capture Pictures, Videos or Audio
- Using MediaCapture to Capture Pictures, Video, or Audio

Lab : Capturing Media

- Capture video using the CameraCaptureUI API
- Capture image using the MediaCapture API

After completing this module, students will be able to:

- Use the CameraCaptureUI API to capture pictures, videos and audio.
- Use the MediaCapture API to capture pictures, videos and audio.

Module 10: Background Tasks

This module explains how to create, register, and use background tasks for Windows Store apps.

Lessons

- Creating Background Tasks
- Consuming Background Tasks in a Windows Store App

Lab : Background Tasks

- Transfer Files in the Background
- Create and Consume a Background Task

After completing this module, students will be able to:

- Create background tasks for your Windows Store app.
- Use background tasks in your Windows Store app.

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Module 11: Working with Sensors and Devices

This module describes some of the sensors and devices available to a Windows Store app and explains how to access them from your Windows Store app

Lessons

- Working with Sensors
- Working with Devices

Lab : Working with Sensors and Devices

- Using the SimpleOrientationSensor
- Using Location Services

After completing this module, students will be able to:

- Discover and access sensors and act upon sensor data from a Windows Store app.
- Discover and interact with devices from a Windows Store app.

Module 12: Generating Revenue with your App

This module will introduce you to the options you have, as a developer, to increase revenue with your Windows Store apps

Lessons

- Implementing Trial Functionality in a Windows Store App
- Implement In-App Purchases
- Advertising in a Windows Store App

Lab : Generating Revenue with your App

- Using the Windows.ApplicationModel.Store Namespace to Support Trial App Conversion
- Implementing In-App Purchasing

After completing this module, students will be able to:

- Implement trial functionality in your Windows Store app.
- Implement in-app purchases in your Windows Store app.
- Incorporate advertising in your Windows Store app.

Module 13: Securing Windows Store App Data

In this module, you will learn how to create a secure application that is secure at the client and server side, and how to protect data.

Lessons

- Managing Windows Authentication
- Managing Web Authentication
- Encryption in Windows Store Apps

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Lab : Securing Windows Store App Data

- Using ACS Authentication
- Encrypting User Information

After completing this module, students will be able to:

- Manage Windows authentication.
- Manage web authentication.
- Encrypt data.

Module 14: Tracing and Profiling Windows Store Apps

In this module, you will learn the techniques that will help you analyze your code for potential issues, create run time logs efficiently, and diagnose various types of performance problems in your Windows Store app.

Lessons

- Tracing and Profiling a Windows Store App

Lab : Tracing and Profiling Windows Store Apps

- Profile Performance
- Profile Memory Usage

After completing this module, students will be able to:

- Trace the run time flow of your Windows Store app.
- Diagnose CPU and memory performance problems in your Windows Store app.