



# 20484: Essentials of Developing Windows® Store Apps Using C#

## About this course

In this course students will learn essential programming skills and techniques that are required to develop Windows Store apps. This includes a combination of both design and development skills, as well as ensuring that students are comfortable using and making the most of the Microsoft Visual Studio and Expression Blend tools.

This course maps to the [70-484](#) exam.

## Audience profile

This course is intended for professional developers who have 1 to 2 years of experience creating client applications and who are comfortable programming in C# and have done some XAML-based programming.



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## At course completion

After completing this course, students will be able to:

- Describe the Windows 8.1 platform and features, and explore the basics of a Windows app interface.
- Create the User Interface layout and structure by using XAML.
- Use data binding to present data in the UI.
- Implement the AppBar and layout controls.
- Handle files and streams.
- Respond to application lifecycle events using Process Lifetime Management and the PLM extensibility points provided by the Visual Studio 2013 templates.
- Use templates to create the UI.
- Handle navigation scenarios in a Windows Store app.
- Design and implement contracts such as Search, Share and Settings.
- Implement tiles and toast notifications in a Windows Store app.
- Respond to mouse, keyboard and touch events, including gestures.
- Deploy a Windows Store app to the Windows Store or an enterprise store.



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## Course Outline

### Module

#### 1: Overview of the Windows 8.1 Platform and Windows StoreApps

This module introduces you to the Windows 8.1 user experience and features, Windows Store apps, and the new user interface. Understanding how Windows Store apps look and operate is key to understanding the principles you will use to develop your own Windows Store apps, and thus making your apps more intuitive, compelling, and useful.

#### Lessons

- Introduction to the Windows 8.1 Platform
- Windows 8.1 UI Principles
- WinRT and Language Projections

Lab : Overview of the Windows 8.1 Platform and Windows Store Apps

After completing this module, students will be able to:

- Describe the Windows 8.1 platform, architecture, and features.
- Explain the basics of the Windows 8.1 UI and Windows Store app experience and how the experience differs from Windows desktop apps.
- Explain the new API model, how it supports building Windows Store apps, and how it supports multiple language-specific projections.

#### Module 2: Creating User Interfaces Using XAML

In this module you will learn about the basic principles behind XAML, you will learn how to use XAML and the corresponding code-behind to create a responsive UI. you will also learn how dynamic and complex user interfaces are developed by using advanced features of XAML.

#### Lessons

- XAML Basics
- XAML Code-Behind
- Advanced XAML

Lab : Creating User Interfaces by Using XAML

After completing this module, students will be able to:

- Describe the basic principles behind XAML.



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- Use XAML and the corresponding code-behind to create a responsive UI.
- Understand how dynamic and complex UIs are developed by using advanced features of XAML.

## Module 3: Presenting Data

This module explains how to ensure that your app supports various devices and screen orientations.

### Lessons

- Working with Data Presentation Controls
- The GridView Control

### Lab : Presenting Data

After completing this module, students will be able to:

- Explain the different ways in which data can be displayed in Windows Store apps.
- Use the **GridView** control to present groups of data in a dynamic and flexible view.

## Module 4: Implementing Layout Using Windows 8.1 Built-In Controls

In this module, you will learn how by using the built-in controls and recommended methods, you can create intuitive apps that employ the common Windows 8.1 UI patterns across a variety of devices, with different form factors, and different input methods.

### Lessons

- WinRT Controls
- AppBar Control
- Windowing Modes

### Lab : Implementing Layout by Using Built-In Controls in Windows 8.1

After completing this module, students will be able to:

- Describe the WinRT library and controls.
- Describe the app bar and explain the app bar functionality.
- Describe how to create views with an adaptive layout, and explain the best practices.



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## Module 5: Handling Files in Windows Store Apps

In this module you will learn how to use files, streams, and pickers so that the user can store and retrieve information managed by your app.

### Lessons

- Handling Files and Streams in Windows Store Apps
- Working with File User Interface Components

Lab : Handling Files in Windows Store Apps

After completing this module, students will be able to:

- Work with files and streams by using WinRT.
- Use WinRT pickers to display a UI that lets the user select an item, such as a file or a contract.

## Module 6: Windows Store App Process Lifetime Management

This module covers the app life cycle, app state management, and various app activation states. Understanding PLM is important for properly persisting data across suspensions, recovering from termination, and sharing settings between app installations on multiple devices.

### Lessons

- Process Lifetime Management
- Windows Store App Activation and Background Tasks
- Implementing a State Management Strategy

Lab : Windows Store App Process Lifetime Management

After completing this module, students will be able to:

- Describe the various states of a Windows Store app.
- Describe app activation modes.
- Implement app state management.



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## Module 7: Working with Resources, Styles, and Templates

In this module you will learn how to use resources, styles and templates.

### Lessons

- Creating Shared Resources
- Creating Styles and Templates

Lab : Working with Styles and Templates

After completing this module, students will be able to:

- Create shared resources, which can be reused across multiple UI elements.
- Create custom styles and templates, to provide a consistent look for your app.

## Module 8: Designing and Implementing Navigation in a Windows Store app

In this module you will learn how to design and implement navigation in a Windows Store app. you will also learn how to implement semantic zoom in a Windows Store app.

### Lessons

- Handling Navigation in Windows Store apps
- Semantic Zoom

Lab : Designing and Implementing Navigation in a Windows Store App

After completing this module, students will be able to:

- Implement navigation and pass data between pages in your apps.
- Explain the purpose and functionality of Semantic Zoom in a Windows Store app.

## Module 9: Implementing Windows 8.1 Contracts

This module introduces contracts and charms. These are two new Windows 8.1 features you can use to create a consistent and unified experience across Windows Store apps. By using contracts, you can make it easier for users to search for the content of your app, to discover and modify common settings, and to share data with other apps.

### Lessons

- Designing for Charms and Contracts
- The Search Contract and the SearchBox Control
- The Share Contract
- Managing App Settings



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Lab : Implementing Windows 8.1 Contracts

After completing this module, students will be able to:

- Design apps to use charms and contracts.
- Implement the Search contract.
- Implement the Share Target and Share Source contracts.
- Describe the Settings pane and add settings commands.

## Module 10: Implementing Tiles and User Notifications

In this module you will learn how to implement tiles and user notifications.

### Lessons

- Implementing Tiles, Live Tiles, Secondary Tiles, and Badge Notifications
- Implementing Toast Notifications

Lab : Implementing Tiles and User Notifications

After completing this module, students will be able to:

- Implement tiles, live tiles, and secondary tiles that draw the user back to your app.
- Implement toast notifications to display important information.

## Module 11: Designing and Implementing a Data Access Strategy

This module describes the various data access strategies that you can use in app development, and it specifically focuses on the best practices for remote storage.

### Lessons

- Evaluating Data Access Strategies
- Working with Remote Data

Lab : Designing and Implementing a Data Access Strategy

After completing this module, students will be able to:

- Describe various data access strategies and when to apply them.
- Describe common use cases that occur while working with remote data.



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## Module 12: Responding to Mouse and Touch

In this module, you will learn how to successfully include all the three interaction types in Windows Store apps

### Lessons

- Working with Pointer Events
- Working with Gesture Events

Lab : Responding to Mouse and Touch

After completing this module, students will be able to:

- Describe mouse events and touch gestures in Windows 8.1.
- Identify the best practices for handling gestures.

## Module 13: Planning for Windows Store App Deployment

In this module, you will learn about the process of preparing and submitting a Windows Store app to the Windows Store. This includes changes to the app manifest, passing app certification, meeting Windows Store app certification requirements, and using Windows Store-related tools in Visual Studio 2013. Finally, you will learn how to submit apps to the Windows Store and a private enterprise store.

### Lessons

- The Windows Store App Manifest
- Windows Store App Certification

After completing this module, students will be able to:

- Change the package manifest of an app to meet the requirements for deploying to the Windows Store.

Deploy an app to the Windows Store and prepare an app for enterprise deployment.





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## Prerequisites

Before attending this course, students must have:

- 1 or more years of experience creating applications
- 1 to 3 months experience creating Windows client applications
- 1 to 3 months experience using Visual Studio 2010 or 2012
- Attended Course 20483C: Programming in C#, or equivalent knowledge