windows azure step by step step by step developer Complete Guide

Visual Studio 2013 is a powerful integrated development environment (IDE) created by Microsoft, designed to streamline the software development process for programmers working with a variety of languages and platforms. Released in October 2013, Visual Studio 2013 introduced numerous features aimed at enhancing productivity, improving code quality, and supporting modern development workflows. As a key tool for developers, Visual Studio 2013 remains relevant for many legacy projects and serves as a foundation for understanding modern iterations of the Visual Studio family.

Overview of Visual Studio 2013

Visual Studio 2013 was built to support developers working across different device types, including desktops, tablets, and mobile devices. It provides a comprehensive environment for coding, debugging, testing, and deploying applications. Its support for multiple programming languages such as C, VB.NET, C++, and JavaScript, among others, makes it a versatile IDE suitable for various development needs.

Key Features of Visual Studio 2013

Some of the standout features introduced or improved in Visual Studio 2013 include:

- Enhanced User Interface: A more streamlined and customizable interface to improve developer productivity.
- Code Editor Improvements: Smarter code completion, improved syntax highlighting, and better navigation tools.
- Project and Solution Management: Simplified way to manage large solutions with better organization.
- Cloud Integration: Better integration with Microsoft Azure for cloud-based development and deployment.
- Debugging and Diagnostics: Advanced debugging tools, including IntelliTrace, which allows historical debugging.
- Performance and Testing Tools: Improved profiling tools to optimize application performance.
- Team Collaboration: Integration with Team Foundation Server (TFS) and Visual Studio Online for seamless team collaboration.

Installing and Setting Up Visual Studio 2013

Getting started with Visual Studio 2013 involves downloading the installer from Microsoft's official website or obtaining it through volume licensing for enterprise use.

System Requirements

Before installation, ensure your system meets the minimum requirements:

- Windows 7 SP1, Windows 8, or Windows 8.1
- At least 1 GB of RAM (2 GB recommended)
- 5 GB of available disk space
- 1.8 GHz or faster processor
- Supported display resolution

Installation Steps

- Download the Visual Studio 2013 installer from the official Microsoft site.
- Run the installer and choose the desired workloads, such as Web Development, Desktop Development, or Universal Windows Platform.
- Follow the on-screen prompts to complete setup.
- Once installed, launch Visual Studio 2013 and activate using your license key or sign in with your Microsoft account.

Core Components and Tools in Visual Studio 2013

Visual Studio 2013 comes with a suite of tools and components that facilitate different phases of development.

Development Languages Supported

- C (.NET Framework and Windows Runtime)
- Visual Basic .NET
- C++
- JavaScript
- HTML and CSS for web development
- F

Key Development Features

- Code Editor: Features IntelliSense, code snippets, and refactoring tools.
- Designer Tools: Visual designers for Windows Forms, WPF, and web applications.
- Source Control: Built-in support for Git, TFVC, and other version control systems.
- Testing Tools: Unit testing frameworks, code coverage, and load testing tools.
- Extensions and Plugins: Support for a wide range of extensions to customize and extend functionality.

Enhancements and Improvements Over Previous Versions

Compared to earlier editions, Visual Studio 2013 introduced several notable improvements:

- Refined User Interface: The dark theme and modernized UI elements reduce eye strain and improve usability.
- Better Performance: Faster startup times and more responsive code editing.
- Enhanced Debugging: Features like IntelliTrace allow developers to go back in time during debugging sessions.
- Support for Modern Standards: Improved support for HTML5, CSS3, and JavaScript frameworks.
- Cloud Development: Integrated tools for working with Microsoft Azure, enabling deployment to the cloud directly from the IDE.

Developing Applications with Visual Studio 2013

Visual Studio 2013 supports the development of various application types, including desktop, web, mobile, and cloud-based applications.

Desktop Applications

Using Windows Forms or WPF, developers can create rich desktop applications with drag-and-drop designers and extensive control libraries.

Web Applications

With ASP.NET and MVC frameworks, Visual Studio 2013 offers robust tools for building dynamic websites and web services.

Mobile Development

While not as advanced as later versions, Visual Studio 2013 provides support for developing Windows Store apps and cross-platform development via Xamarin and other third-party tools.

Cloud Integration

Developers can leverage Azure SDKs to build cloud-ready applications, including web apps, mobile backends, and storage solutions.

Debugging and Testing in Visual Studio 2013

Effective debugging is crucial for any development process, and Visual Studio 2013 offers several tools to facilitate this.

IntelliTrace

A revolutionary feature that captures historical debugging data, allowing developers to step back through previous states of the application without restarting.

Diagnostic Tools

Real-time performance profiling, memory usage analysis, and exception tracking help optimize applications and identify issues proactively.

Unit Testing

Support for various testing frameworks, such as MSTest, NUnit, and xUnit, enables developers to implement automated testing strategies.

Extending Visual Studio 2013

One of the strengths of Visual Studio 2013 is its extensibility. Developers can enhance their IDE experience through:

- Extensions: Available via the Visual Studio Gallery, including tools for code analysis, productivity, and UI enhancements.
- Custom Plugins: Build your own extensions using the Visual Studio SDK.
- Integration with Other Tools: Seamless connection with TFS, Azure DevOps, and third-party services.

Limitations and Challenges

While Visual Studio 2013 was a significant upgrade at its time, it does have limitations:

- Lack of Support for Latest Standards: Newer languages and frameworks, such as .NET Core and ASP.NET Core, are not supported.
- Compatibility: Limited support for contemporary operating systems and hardware.
- End of Support: Microsoft has phased out official support, making it less suitable for security-sensitive applications.

Transitioning to Newer Versions

For ongoing development, it is advisable to consider upgrading to newer versions of Visual Studio, such as Visual Studio 2022 or later, which offer better performance, modern features, and extended support.

However, Visual Studio 2013 remains a valuable tool for maintaining legacy systems and understanding the evolution of Microsoft's development environment.

Conclusion

Visual Studio 2013 marked a significant milestone in Microsoft's IDE offerings, emphasizing improved usability, cloud integration, and advanced debugging tools. Although newer versions have since superseded it, understanding Visual Studio 2013 provides insights into the evolution of development workflows and the foundational features that continue to influence modern IDEs. Whether maintaining legacy applications or exploring the history of development environments, Visual Studio 2013 holds an important place in the software developer?s toolkit.

Visual Studio 2013 stands as a pivotal release in Microsoft's integrated development environment (IDE) lineup, marking a significant milestone in the evolution of software development tools. Launched in October 2013, Visual Studio 2013 was designed to enhance developer productivity, support modern development practices, and streamline workflows across a variety of platforms. As a successor to Visual Studio 2012, it introduced a suite of new features, improvements, and integrations aimed at fostering rapid application development, better code management, and seamless collaboration. This article provides a comprehensive analysis of Visual Studio 2013, exploring its features, architecture, strengths, limitations, and its impact on the developer community.

Overview and Context

Historical Significance and Market Position

Visual Studio 2013 arrived during a period when cloud computing, mobile app development, and agile methodologies were transforming the software landscape. Microsoft aimed to position Visual Studio 2013 as a versatile, modern IDE capable of addressing these emerging trends. It was part of the broader Visual Studio family, designed to support Windows desktop, web, mobile, and cloud-based development. Its release was strategically aligned with updates to the Windows ecosystem, including Windows 8.1 and the development of Windows Store apps.

Target Audience and Use Cases

Visual Studio 2013 targeted a broad spectrum of developers:

- Enterprise developers building large-scale applications.
- Web developers creating ASP.NET and web-based solutions.
- Mobile developers targeting Windows Phone and cross-platform mobile apps.
- Independent software vendors (ISVs) seeking rapid deployment and debugging tools.
- Students and hobbyists interested in learning modern development practices.

The IDE's flexibility made it applicable for a variety of project types, from enterprise-grade software to lightweight web applications and mobile apps.

Core Features and Enhancements

Enhanced User Interface and Experience

One of the hallmark improvements in Visual Studio 2013 was its refined user interface. The IDE adopted a flatter, more modern aesthetic consistent with Windows 8 design principles, featuring:

- Simplified toolbars and menus for easier navigation.
- Improved icons and visual cues to enhance clarity.
- Customizable window layouts and themes, including a new "Dark" theme preferred by many developers.
- Improved IntelliSense with better code completion and parameter info.

These UI enhancements aimed to reduce cognitive load, enabling developers to focus more on coding rather than navigating the tool.

Code Editor and Productivity Tools

Visual Studio 2013 introduced several improvements to the code editing experience:

- Refactoring Tools: Enhanced support for code refactoring, including extracting methods, renaming variables, and reorganizing code structures.
- Code Snippets: Expanded library of code snippets and the ability to create custom snippets.
- IntelliSense Improvements: More intelligent suggestions, especially for dynamic languages like JavaScript.
- Code Map: Visual representation of code structure to assist in understanding complex projects.

Additionally, the editor integrated better with Git, Team Foundation Server (TFS), and other version control systems, facilitating smoother source code management.

Debugging and Diagnostics

Debugging is a critical aspect of any IDE, and Visual Studio 2013 made notable strides:

- Enhanced Debugging Tools: Support for live debugging on remote machines and improved visualization of data during debugging sessions.
- IntelliTrace: An advanced historical debugging feature that captures a trace of program execution, enabling developers to revisit previous states without restarting debugging sessions.
- Performance Profiling: Integrated tools for performance analysis, memory usage, and CPU profiling to optimize applications.

These tools collectively aimed to reduce development time and improve software quality.

Support for Modern Development Frameworks

Visual Studio 2013 expanded support for contemporary frameworks and platforms:

- ASP.NET and Web Development: Improved tools for building responsive web applications with better JavaScript and HTML5 support.
- Windows Runtime (WinRT): Support for developing Windows Store apps with XAML and C.
- Cross-Platform Mobile Development: Through integrations with Xamarin and other third-party tools, developers could target iOS and Android alongside Windows.
- Cloud Integration: Native support for deploying applications to Azure, simplifying cloud-based development and deployment.

This broad framework support underscored Microsoft's strategic push into cross-device, cloud-enabled software.

Key Innovations and Unique Features

Lightweight Projects and Improved Performance

Visual Studio 2013 introduced the concept of "lightweight" projects, allowing developers to work on smaller, faster projects with minimal overhead. This was particularly beneficial for web development and rapid prototyping, significantly reducing startup times and improving responsiveness.

CodeLens for Enterprise Insights

While CodeLens was available in Visual Studio 2012, its capabilities were further refined in 2013. Developers could now see references, changes, and unit test status inline within the code editor, providing real-time insights without navigating away from the code.

Enhanced Localization and Accessibility

Microsoft enhanced localization support, making Visual Studio more accessible to global development teams. Accessibility improvements included better keyboard navigation, screen reader support, and high-contrast themes.

Team Collaboration and ALM Tools

Visual Studio 2013 integrated seamlessly with Team Foundation Server (TFS) and introduced Visual Studio Online (later Azure DevOps Services), facilitating:

- Agile planning with Kanban boards.
- Continuous integration and automated testing.
- Work item tracking and code reviews.
- Shared dashboards and reports.

These features reinforced Visual Studio's role not just as a coding tool but as a comprehensive Application Lifecycle Management (ALM) platform.

Limitations and Challenges

Learning Curve and Complexity

Despite its improvements, Visual Studio 2013?s extensive feature set could be overwhelming for newcomers. The plethora of tools and options sometimes led to a steep learning curve, especially for developers transitioning from simpler IDEs.

Performance Concerns

While optimized for speed in many areas, some users reported sluggishness with large solutions or on lower-end hardware. Memory consumption could be significant, necessitating hardware considerations.

Platform Limitations

Although supporting multiple project types, Visual Studio 2013 was primarily Windows-centric. Cross-platform development relied heavily on third-party tools and frameworks, which could introduce compatibility issues and additional complexity.

Limited Support for Non-Microsoft Languages

While improvements were made, support for languages outside of Microsoft?s ecosystem (e.g., Python, Ruby) remained limited compared to other IDEs specialized for those languages.

Impact and Legacy

Influence on Development Practices

Visual Studio 2013 reinforced Microsoft's commitment to supporting agile, cloud-enabled, and cross-device development. Its features encouraged best practices like continuous integration, code reuse, and collaborative development.

Transition to Modern Development Ecosystem

Many features introduced in Visual Studio 2013 laid the groundwork for subsequent versions, including Visual Studio 2015 and 2017. Its emphasis on performance, debugging, and cloud integration influenced the development of newer tools and workflows.

Community Reception and Adoption

The developer community appreciated the stability and feature enhancements but also highlighted areas for improvement, particularly around performance and usability. Nonetheless, Visual Studio 2013 remained a popular choice for enterprise and individual developers during its prime.

Conclusion

Visual Studio 2013 marked a significant step forward in Microsoft's IDE offerings, aligning with contemporary development paradigms and enterprise needs. Its blend of modern UI, robust debugging tools, and broad framework support made it a versatile platform for a wide array of projects. While not without its limitations, its innovations contributed to shaping the future of

development environments. As part of the evolutionary trajectory of Visual Studio, it laid a foundation for more integrated, efficient, and developer-friendly tools that continue to evolve in today's software development landscape.

QuestionAnswer What are the key features introduced in Visual Studio 2013? Visual Studio 2013 introduced features such as improved code navigation, a refined user interface, enhanced debugging and diagnostics tools, native support for Windows 8.1 development, and integrated cloud development with Azure. Is Visual Studio 2013 still supported and suitable for modern development? Microsoft officially ended mainstream support for Visual Studio 2013 in 2019. While it can still be used for legacy projects, for modern development and access to the latest features, newer versions like Visual Studio 2022 are recommended. How can I upgrade my projects from Visual Studio 2013 to a newer version? To upgrade projects, open the solution in the newer Visual Studio version, which will prompt for upgrade if necessary. It's advisable to back up your projects before upgrading and review deprecated features or breaking changes. Does Visual Studio 2013 support .NET Framework 4.5 and later? Yes, Visual Studio 2013 provides support for .NET Framework 4.5 and can also target later versions with updates. It allows developers to build applications using these frameworks. Can I develop cross-platform applications using Visual Studio 2013? While Visual Studio 2013 has limited support for cross-platform development, especially for mobile apps, full cross-platform development features became more robust in later versions. For extensive cross-platform development, newer Visual Studio versions or Xamarin tools are recommended. What are the common debugging features available in Visual Studio 2013? Visual Studio 2013 offers advanced debugging tools such as IntelliTrace, live code analysis, breakpoint management, performance profiling, and integrated diagnostics to streamline troubleshooting. Is Visual Studio 2013 compatible with Windows 10? Officially, Visual Studio 2013 is supported on Windows 8 and later, including Windows 10. However, some features may have limitations or require updates, so newer Visual Studio versions are preferable for full compatibility. Where can I find extensions and plugins for Visual Studio 2013? Extensions for Visual Studio 2013 can be found on the Visual Studio Gallery or Marketplace. However, since support has ended, some extensions may no longer be available or updated; consider upgrading to a newer version for access to the latest tools.

Related keywords: Visual Studio 2013, IDE, Microsoft, software development, programming, .NET Framework, C, debugging, code editor, application development

windows phone 8 in action manning publications

Windows Phone 8 in Action Manning Publications

Windows Phone 8 has long been recognized as a versatile and user-friendly mobile operating system, offering a seamless experience for both developers and users. Manning Publications, renowned for its comprehensive technical books and educational resources, has embraced Windows Phone 8 as a platform to educate developers and tech enthusiasts alike. This article explores how Manning Publications has integrated Windows Phone 8 into its offerings, the significance of this platform in the developer community, and how aspiring developers can leverage Manning?s resources to master Windows Phone 8 development.

Overview of Windows Phone 8

Windows Phone 8, released by Microsoft in October 2012, marked a significant upgrade over its predecessor, Windows Phone 7. It introduced several new features aimed at improving performance, user experience, and developer flexibility.

Key Features of Windows Phone 8

- Shared Core with Windows 8: Enables developers to create applications that can run seamlessly across Windows 8 and Windows Phone 8 devices.
- Improved Hardware Support: Support for multi-core processors, microSD cards, and larger screen sizes.
- Enhanced User Interface: Live Tiles, customizable start screens, and a more fluid design.
- New Development APIs: Support for NFC, Bluetooth 4.0, and background tasks.
- Integration with Microsoft Services: Deep integration with Xbox, OneDrive, and other Microsoft cloud services.

These features made Windows Phone 8 an appealing platform for developers aiming to build innovative and powerful applications.

Manning Publications and Windows Phone 8

Manning Publications has a well-established reputation for producing high-quality technical books, tutorials, and online courses. Recognizing the importance of mobile app development, Manning has dedicated resources to help developers learn Windows Phone 8 development effectively.

Why Manning Focuses on Windows Phone 8

- Market Opportunity: At the time of Windows Phone 8?s release, Microsoft was pushing for a competitive mobile ecosystem.
- Developer Empowerment: Providing comprehensive learning materials to enable developers to

leverage the platform's capabilities.

- Bridging Knowledge Gaps: Offering tutorials that help developers transition from other platforms like iOS and Android.

Manning?s approach combines practical, project-based learning with in-depth technical explanations, making it a preferred choice for aspiring Windows Phone developers.

Key Resources Offered by Manning for Windows Phone 8 Development

Manning Publications offers various resources tailored to Windows Phone 8 development, including books, online courses, and tutorials.

Popular Books on Windows Phone 8

- ?Programming Windows Phone 8?: A comprehensive guide covering the fundamentals of Windows Phone 8 development, including user interface design, application lifecycle, and data management.
- ?Mastering Windows Phone 8 Development?: Advanced techniques for building performance-optimized and feature-rich applications.
- ?Windows Phone 8 App Development Cookbook?: A collection of practical recipes for common development challenges.

Key Topics Covered

- Setting up the development environment
- Designing intuitive user interfaces with XAML
- Handling device hardware features
- Implementing navigation and app lifecycle management
- Integrating cloud services like Azure
- Publishing and distributing Windows Phone apps

Online Courses and Tutorials

Manning also offers online courses that complement their books, providing interactive learning experiences. These courses often include:

- Video lectures by industry experts

- Hands-on coding exercises
- Quizzes and assessments
- Community forums for peer support

Benefits of Learning Windows Phone 8 with Manning Publications

Using Manning?s resources to learn Windows Phone 8 development offers several advantages:

Structured Learning Path

Manning?s tutorials and books are designed to guide learners from beginner to advanced levels, ensuring a comprehensive understanding.

Practical, Project-Based Approach

Real-world projects and code samples help learners apply concepts directly, fostering practical skills.

Up-to-Date Content

Manning continually updates its materials to reflect the latest developments and best practices in Windows Phone 8 development.

Expert Instruction

Content is authored by experienced developers and industry professionals, providing reliable and insightful guidance.

Developing Applications for Windows Phone 8 with Manning Resources

To successfully develop applications for Windows Phone 8 using Manning?s resources, developers should follow a structured approach:

Step 1: Set Up Your Development Environment

- Install Microsoft Visual Studio with the Windows Phone SDK
- Configure emulator and device testing setups
- Review Manning?s tutorials on environment setup

Step 2: Learn the Fundamentals

- Study ?Programming Windows Phone 8? for core concepts
- Understand XAML for UI design
- Explore app lifecycle management

Step 3: Build Sample Projects

- Follow recipes from the ?Windows Phone 8 App Development Cookbook?
- Implement features like navigation, data binding, and sensor integration

Step 4: Integrate Advanced Features

- Use NFC, Bluetooth, or background tasks APIs
- Connect to cloud services such as Azure

Step 5: Test and Optimize

- Use the Windows Phone emulator and physical devices
- Optimize performance and battery life

Step 6: Publish Your App

- Follow Manning?s guidelines for app submission
- Prepare marketing materials and app descriptions

Community and Support for Windows Phone 8 Developers

Manning Publications encourages a vibrant developer community. Developers using Manning?s resources can benefit from:

- Discussion Forums: Share ideas, ask questions, and get feedback
- Code Repositories: Access sample projects and templates
- Webinars and Live Sessions: Learn from experts in real-time
- Update Notifications: Stay informed of latest features and updates

Additionally, Microsoft?s official developer forums and Stack Overflow are valuable supplementary resources.

The Future of Windows Phone 8 Development and Manning?s Role

While Windows Phone 8 has transitioned into Windows 10 Mobile and beyond, many developers continue to maintain and update existing applications. Manning?s focus on Windows Phone 8 development remains relevant for legacy systems and developers seeking to understand mobile app development fundamentals.

Manning Publications plans to expand its offerings to include resources on newer versions and cross-platform development frameworks, ensuring that developers are well-equipped for future challenges.

Summary and Final Thoughts

Windows Phone 8 represented a significant step forward in mobile operating system design and developer capabilities. Manning Publications played an important role in equipping developers with the knowledge and skills needed to succeed on this platform. Their comprehensive books, practical tutorials, and online courses provide a solid foundation for anyone interested in Windows Phone 8 development.

Whether you are a beginner looking to learn the basics or an experienced developer aiming to deepen your expertise, Manning?s resources offer valuable guidance. As mobile technology continues to evolve, the skills gained through these resources will remain beneficial for developing versatile, high-quality applications.

Get Started Today

If you?re ready to dive into Windows Phone 8 development, explore Manning?s offerings:

- Choose a Book: Start with ?Programming Windows Phone 8? for a solid foundation.
- Enroll in Courses: Supplement your reading with interactive online courses.
- Join the Community: Engage with other developers through forums and events.
- Build and Publish: Apply your knowledge by creating and sharing your own apps.

By leveraging Manning Publications? expertise and resources, you can confidently develop compelling Windows Phone 8 applications and expand your mobile development skills.

Disclaimer: Windows Phone 8 is an older platform, and Microsoft has shifted focus to newer

operating systems like Windows 10 Mobile and cross-platform solutions. However, understanding Windows Phone 8 remains valuable for legacy system maintenance and foundational learning in mobile app development.

Windows Phone 8 in Action Manning Publications offers a comprehensive and insightful look into one of the most innovative yet often overlooked mobile operating systems of its time. As part of Manning Publications? esteemed "In Action" series, this book aims to guide developers, tech enthusiasts, and students through the intricacies of Windows Phone 8, providing practical examples, detailed explanations, and best practices. With the mobile landscape constantly evolving, understanding Windows Phone 8 has become a valuable asset for those interested in cross-platform development, app design, and Microsoft's ecosystem.

Overview of Windows Phone 8 in Manning?s "In Action" Series

The "In Action" series from Manning Publications is renowned for its clear, hands-on approach to teaching complex technical topics. The book on Windows Phone 8 continues this tradition by balancing theory with practical implementation. It is tailored for developers who want to deepen their understanding of the platform, whether they are new to Windows Phone development or seasoned programmers transitioning from other environments.

The book covers core concepts such as app architecture, user interface design, data management, and integration with cloud services. Its structured approach ensures that readers not only learn the technical details but also grasp how to create engaging, efficient, and modern Windows Phone 8 applications.

Content Breakdown and Key Topics

1. Introduction to Windows Phone 8

The book begins with an overview of Windows Phone 8, highlighting its position in the mobile OS market, core features, and development environment. It discusses the platform's unique design philosophy and how it differentiates itself from competitors like iOS and Android.

- Features:
- Seamless integration with Microsoft services
- Unique tile-based UI design
- Live tiles for real-time updates
- Deep integration with Windows ecosystem

- Pros:
- Consistent user experience
- Robust developer tools via Visual Studio
- Strong focus on performance and security

- Cons:
- Smaller market share compared to competitors
- Limited hardware variety during its prime

2. Development Environment and Tools

A significant portion is dedicated to setting up and using Visual Studio for Windows Phone 8 development. The book walks through installing SDKs, emulators, and configuring the development environment.

- Key features covered:
- Visual Studio integration
- Emulator setup for testing
- XAML for UI design
- C for programming logic

- Pros:
- Rich tooling support
- Intuitive debugging and testing
- Strong community and documentation

- Cons:
- Steep learning curve for newcomers
- Emulator performance can sometimes be sluggish

3. Building User Interfaces with XAML

Windows Phone 8's UI is primarily built with XAML, a declarative XML-based language. The book offers in-depth tutorials on designing responsive, attractive interfaces.

- Topics include:

- Layout controls (Grid, StackPanel, Pivot, Panorama)
- Data binding and MVVM pattern
- Handling touch gestures
- Custom controls and styles

- Pros:
- Modular and reusable UI components
- Supports complex animations and transitions
- Encourages best practices like MVVM

- Cons:
- XAML syntax can be verbose
- Debugging UI issues requires experience

4. Application Architecture and Data Management

An essential part of the book focuses on structuring apps effectively. It discusses data storage options, networking, and working with local and cloud data.

- Features covered:
- Isolated storage
- Live Tiles and notifications
- RESTful API consumption
- Background tasks and push notifications

- Pros:
- Robust data handling capabilities
- Easy integration with cloud services like Windows Azure
- Supports offline scenarios

- Cons:
- Managing asynchronous operations can be complex
- Limited storage compared to desktop environments

5. Advanced Topics and Best Practices

The book doesn't shy away from complex topics such as performance optimization, security, and app certification.

- Highlights include:
- Performance profiling
- Secure data storage
- App lifecycle management
- Monetization strategies

- Pros:
- Ensures apps are efficient and secure
- Prepares developers for app submission process

- Cons:
- Some topics require prior knowledge in related areas

Practical Examples and Code Samples

One of the strengths of the Manning "In Action" series is the abundance of real-world examples. This book provides numerous code snippets illustrating key concepts, such as:

- Creating a simple to-do list app
- Implementing data binding with MVVM
- Integrating live tiles for real-time updates
- Consuming web APIs to fetch data

These examples are accompanied by detailed explanations, making complex topics accessible.

Strengths of the Book

- Comprehensive Coverage: The book touches on all essential aspects of Windows Phone 8 development, from UI design to backend integration.
- Practical Focus: With hands-on examples, readers can learn by doing, which reinforces understanding.
- Clear Explanations: Complex topics are broken down into digestible sections, suitable even for developers new to the platform.

- Best Practices: Emphasis on designing scalable, maintainable, and secure applications.
- Resourceful Appendices: Additional resources, API references, and troubleshooting tips are provided.

Limitations and Considerations

- Platform Specificity: As Windows Phone 8 is now a legacy platform, the book?s relevance is primarily historical or for legacy app maintenance.
- Market Reach: Limited market share during its prime means fewer opportunities for new app deployments.
- Learning Curve: The depth of technical detail may be daunting for absolute beginners.
- Ecosystem Shift: With Microsoft shifting focus to Universal Windows Platform (UWP), some concepts may be outdated for current development practices.

Who Should Read This Book?

- Developers interested in legacy Windows Phone 8 apps: For maintaining or updating existing applications.
- Students and educators: Who want a well-structured introduction to Windows Phone development.
- Cross-platform developers: Seeking insights into Windows-specific UI and architecture paradigms.
- Enthusiasts of Microsoft?s ecosystem: Curious about the platform?s design and development approach.

Conclusion

Windows Phone 8 in Action Manning Publications stands out as a detailed, well-structured resource that demystifies the platform?s development landscape. While the platform itself has been phased out in favor of newer technologies like UWP and Windows 10 apps, the book remains a valuable educational tool for understanding Windows-specific design principles, app architecture, and development workflows. Its practical approach, comprehensive coverage, and clear explanations make it suitable for developers seeking a thorough grounding in Windows Phone 8 development, whether for legacy app support or historical understanding of Microsoft?s mobile ecosystem.

For those interested in mobile development history, or working with existing Windows Phone 8 applications, this book offers a solid foundation. However, aspiring developers should also explore current platforms and frameworks to stay aligned with modern development trends. Overall, Manning?s "In Action" series on Windows Phone 8 is a noteworthy addition that combines theory

with practice, making it a recommended read for dedicated learners and seasoned professionals alike.

QuestionAnswer What are the key topics covered in 'Windows Phone 8 in Action' by Manning Publications? The book covers core Windows Phone 8 development concepts, user interface design, app lifecycle management, sensor integration, and best practices for building robust, user-friendly apps. Is 'Windows Phone 8 in Action' suitable for beginners or experienced developers? The book is suitable for both beginners and experienced developers, providing foundational concepts as well as advanced techniques for creating Windows Phone 8 applications. Does the book include practical coding examples for Windows Phone 8 development? Yes, 'Windows Phone 8 in Action' features numerous practical examples, code snippets, and exercises to help readers apply concepts and build functional apps. How does 'Windows Phone 8 in Action' address app design and user experience? The book emphasizes designing intuitive, engaging interfaces aligned with Windows Phone 8 guidelines, including tips on using live tiles, gestures, and smooth animations. Are there any updates or editions of 'Windows Phone 8 in Action' that cover newer Windows Phone versions? As of now, 'Windows Phone 8 in Action' focuses specifically on Windows Phone 8. For newer versions like Windows 10 Mobile, additional resources or updated editions may be needed. What tools and technologies does the book recommend for Windows Phone 8 development? The book primarily uses Microsoft Visual Studio, Silverlight, XAML, and C as development tools and frameworks for building Windows Phone 8 apps. Can developers learn about publishing and monetizing Windows Phone 8 apps from this book? While the main focus is on development techniques, the book also touches on app deployment, publishing to the Windows Store, and monetization strategies. Is 'Windows Phone 8 in Action' still relevant for current mobile app development trends? While it provides valuable insights into Windows Phone 8 development, the platform is now largely deprecated. However, the concepts of app design and development remain useful for understanding mobile app fundamentals.

Related keywords: Windows Phone 8, mobile app development, Manning Publications, Windows Phone development, Windows Phone SDK, Windows Phone 8 tutorials, mobile UI design, app programming, Windows Phone features, Windows Phone 8 guide

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mastering visual studio 2019 become proficient in

Mastering Visual Studio 2019: Become Proficient In

Visual Studio 2019 is a powerful integrated development environment (IDE) developed by Microsoft,

designed to streamline and enhance the development experience for programmers working with a variety of languages, including C, Visual Basic, C++, and more. Whether you're a beginner seeking to understand the basics or an experienced developer aiming to optimize your workflow, mastering Visual Studio 2019 can significantly boost your productivity and coding efficiency. In this comprehensive guide, we will explore the essential skills, features, and best practices to help you become proficient in Visual Studio 2019.

Understanding the Core Features of Visual Studio 2019

Before diving into advanced techniques, it's crucial to familiarize yourself with the core features that make Visual Studio 2019 a formidable tool for software development.

1. User Interface Overview

- Solution Explorer: Manage your projects and files efficiently.
- Editor Window: Write and edit your code with intelligent features like syntax highlighting and IntelliSense.
- Toolbars and Menus: Access commands, debugging tools, and options quickly.
- Status Bar: View information about your current project and environment.

2. Supported Languages and Platforms

Visual Studio 2019 supports multiple programming languages:

- C
- Visual Basic
- C++
- F
- Python (via extensions)
- JavaScript, TypeScript, and more

It also supports developing for various platforms:

- Windows Desktop
- Web Applications
- Mobile Apps (Xamarin)
- Cloud-based solutions (Azure)
- Game development (Unity, Unreal)

3. Extensibility and Customization

- Install extensions from the Visual Studio Marketplace to enhance functionality.
- Customize themes, layouts, and keyboard shortcuts to suit your workflow.

Setting Up Your Development Environment

A well-configured environment is key to mastering Visual Studio 2019.

1. Installing Visual Studio 2019

- Choose the appropriate workload during installation:
- .NET desktop development
- ASP.NET and web development
- Mobile development with Xamarin
- C++ desktop development
- Add optional components based on your project needs.

2. Configuring Your IDE

- Customize themes (Dark, Light, Blue) for comfort.
- Set up keyboard shortcuts for common actions.
- Enable extensions like ReSharper, Visual Assist, or GitHub integration.

3. Managing Extensions and Plugins

- Explore the Visual Studio Marketplace.
- Popular extensions:
- GitHub Extension for Visual Studio
- Visual Studio IntelliCode
- Productivity Power Tools
- CodeMaid

Mastering Coding and Debugging Techniques

Becoming proficient involves mastering the core development tasks within Visual Studio.

1. Writing Efficient Code

- Use IntelliSense for code completion and suggestions.
- Leverage code snippets for repetitive code patterns.
- Refactor code easily with built-in tools.
- Utilize code analysis and warnings for cleaner code.

2. Debugging and Diagnostics

- Set breakpoints to pause execution.
- Use Watch, Locals, and Autos windows to monitor variables.
- Step through code line-by-line.
- Use the Immediate Window for testing expressions.
- Profile your application to identify performance bottlenecks.

3. Using the Live Share Extension

- Collaborate with teammates in real-time.
- Share debugging sessions or code editing in progress.

Leveraging Advanced Features of Visual Studio 2019

To truly master Visual Studio 2019, explore its advanced capabilities.

1. Version Control Integration

- Connect with Git, Azure DevOps, or other version control systems.
- Manage branches, commits, and pull requests directly within the IDE.
- Use the built-in Git tools for seamless source control management.

2. Unit Testing and Test Explorer

- Write and run unit tests using frameworks like MSTest, NUnit, or xUnit.
- Use Test Explorer for managing and executing tests.
- Automate testing as part of your build process.

3. Code Analysis and Static Analysis Tools

- Enable code metrics and code smells detection.
- Integrate tools like SonarLint for real-time code quality feedback.

4. Customizing and Automating with Macros and Extensions

- Use Visual Studio extensions and macros to automate repetitive tasks.
- Customize code snippets, templates, and commands for efficiency.

Managing Projects and Solutions Effectively

Efficient project management is vital to mastering Visual Studio.

1. Creating and Organizing Solutions

- Use solution folders to organize multiple projects.
- Manage dependencies and project references.
- Use solution configurations for different build profiles.

2. Navigating Large Codebases

- Use Solution Explorer filters and search.
- Implement class view and object browser for quick navigation.
- Use bookmarks and task lists to track important sections.

3. Utilizing Code Cleanup and Formatting Tools

- Automate code formatting with predefined styles.
- Use Code Cleanup to enforce standards across your codebase.

Utilizing Testing and Deployment Capabilities

Testing and deployment are integral parts of development mastery.

1. Building and Publishing Applications

- Use the built-in publish tools for web apps and services.
- Deploy to Azure, IIS, or other hosting platforms.

2. Continuous Integration and Continuous Deployment (CI/CD)

- Integrate with Azure DevOps pipelines.
- Automate builds, tests, and deployments.

3. Debugging Deployment and Runtime Issues

- Use remote debugging for cloud applications.
- Analyze logs and exceptions for troubleshooting.

Learning Resources and Community Support

Becoming proficient involves continuous learning and community engagement.

1. Official Documentation and Tutorials

- Explore Microsoft?s official docs.
- Follow tutorials on the Visual Studio website.

2. Online Courses and Video Tutorials

- Platforms like Udemy, Coursera, and Pluralsight offer comprehensive courses.
- YouTube channels dedicated to Visual Studio tips.

3. Community Forums and Support

- Stack Overflow for troubleshooting.
- Microsoft Developer Community forums.
- Local user groups and meetups.

Best Practices for Mastering Visual Studio 2019

To maximize your proficiency, adhere to these best practices:

- Regularly update Visual Studio to access new features and improvements.
- Customize your workspace for comfort and efficiency.
- Practice debugging and testing frequently.
- Automate repetitive tasks with extensions and scripts.
- Engage with the developer community for tips and support.

Conclusion: Embarking on Your Mastery Journey

Mastering Visual Studio 2019 is a continuous process that involves understanding its features, adopting best practices, and staying updated with new tools and extensions. By systematically learning and applying these skills, you can become a proficient developer capable of building high-quality applications efficiently. Remember, the key to mastery is consistent practice, exploring new features, and engaging with the vibrant developer community. Start today, and unlock the full potential of Visual Studio 2019 to elevate your development projects to new heights.

Mastering Visual Studio 2019: Become Proficient in the Ultimate Development Environment

Visual Studio 2019 stands as one of the most robust and versatile integrated development environments (IDEs) available today. Whether you're a seasoned developer or just starting your coding journey, mastering Visual Studio 2019 can significantly accelerate your productivity, streamline your workflows, and deepen your understanding of software development. This comprehensive guide aims to help you become proficient in Visual Studio 2019 by exploring its features, tools, best practices, and tips to elevate your coding experience.

Understanding the Core of Visual Studio 2019

Before diving into advanced features, it's essential to grasp the foundational aspects of Visual Studio 2019.

What is Visual Studio 2019?

Visual Studio 2019 is a powerful IDE developed by Microsoft, supporting multiple programming languages such as C, Visual Basic, C++, F, Python, and more. It provides a comprehensive suite of tools for designing, coding, debugging, testing, and deploying applications across various platforms including Windows, web, mobile, and cloud.

Key Features Overview

- Intelligent Code Completion (IntelliSense): Offers suggestions, parameter info, quick info, and member lists.

- Debugging and Diagnostics: Advanced debugging tools, live debugging, performance profiling.
- Code Navigation: Easy navigation through code files, classes, methods, and symbols.
- Extensions and Customization: Supports a rich ecosystem of extensions to tailor your environment.
- Version Control Integration: Seamless integration with Git, Azure DevOps, and other VCS tools.
- Live Share: Real-time collaboration with teammates.
- Azure Integration: Simplifies cloud deployment and management.

Setting Up and Customizing Your Environment

Proficiency begins with an optimized environment tailored to your workflow.

Installation and Workload Selection

- Choose the right workloads during installation, such as:
- .NET desktop development
- ASP.NET and web development
- Universal Windows Platform (UWP) development
- Azure development
- Data storage and processing
- Install essential extensions like ReSharper, Visual Assist, or GitHub Extension for Visual Studio.

Customization Tips

- Themes: Switch between light/dark themes based on preference.
- Fonts and Colors: Adjust editor font size, style, and color schemes to improve readability.
- Keyboard Shortcuts: Customize shortcuts for faster access to commands.
- Window Layouts: Save and switch between different window arrangements for various tasks.

Mastering the Code Editor

The code editor is at the heart of Visual Studio. Mastery here boosts coding speed and accuracy.

IntelliSense and Code Completion

- Use IntelliSense for code suggestions, reducing typos and learning APIs.
- Enable parameter info to understand method signatures quickly.
- Use Quick Info tooltips for documentation on hover.

Code Snippets and Templates

- Utilize built-in snippets for common code patterns.
- Create custom snippets for repetitive code blocks.
- Use file and project templates to scaffold new components rapidly.

Navigation and Search

- Use Go to Definition (F12) to jump to method/class definitions.
- Use Go to Implementation (Ctrl+F12) to find actual implementations.
- Use Find All References (Shift+F12) to locate all usages.
- Search across solutions with Solution Explorer or Quick Find (Ctrl+;).

Refactoring Tools

- Rename symbols globally with Refactor > Rename.
- Extract methods or variables to improve readability.
- Use Code Cleanup to apply formatting and code standards automatically.

Effective Debugging and Diagnostics

Debugging skills are crucial for becoming proficient.

Debugging Techniques

- Set breakpoints strategically; use conditional breakpoints for specific scenarios.
- Use Watch Windows to monitor variables.
- Use Immediate Window to evaluate expressions at runtime.
- Leverage Call Stack window to trace execution flow.

Advanced Debugging Features

- Live Debugging: Edit code during debugging without restarting.
- Diagnostic Tools: Analyze performance, memory usage, and CPU profiling.
- IntelliTrace: Step through historical execution points to diagnose issues.

Unit Testing Integration

- Use built-in testing tools or extensions like NUnit, xUnit.
- Run tests directly from Visual Studio.
- Debug failing tests with breakpoints and inspection.

Working with Version Control Systems

Version control is vital for collaborative development and code management.

Git Integration

- Clone repositories directly within Visual Studio.
- Use the Team Explorer window for commit, push, pull, and branch management.
- Resolve merge conflicts within the IDE.
- Use GitHub extension for seamless GitHub repository management.

Azure DevOps

- Connect projects to Azure Repos, Pipelines, and Boards.
- Automate builds and deployments.
- Track work items and bugs efficiently.

Building and Deploying Applications

Proficiency extends beyond coding into deployment.

Build Configurations and Solutions

- Manage multiple build configurations (Debug/Release).
- Use solution configurations for different deployment targets.

Publishing and Deployment

- Publish web applications using built-in publish profiles.
- Deploy desktop apps with ClickOnce or MSI installers.

- Use Azure DevOps pipelines for CI/CD.

Containerization and Cloud Integration

- Develop Docker containers directly from Visual Studio.
- Use Azure SDKs for deploying to cloud services.
- Debug cloud-hosted applications locally.

Leveraging Extensions and Tools

Extensions enhance functionality and streamline workflows.

Popular Extensions

- ReSharper: Advanced refactoring, code analysis, and navigation.
- Visual Assist: Improved code completion and navigation.
- GitHub Extension: Simplifies GitHub workflows.
- Azure Tools: Simplify cloud development.
- Power Tools: Additional productivity features.

Managing Extensions

- Use Extensions > Manage Extensions.
- Keep extensions updated.
- Disable or uninstall unused extensions to optimize performance.

Advanced Features and Techniques

To become truly proficient, explore advanced capabilities.

Code Analysis and Live Unit Testing

- Use Code Analysis tools to enforce coding standards.
- Enable Live Unit Testing to see test results in real-time as you code.

Debugging Multithreaded Applications

- Use Threads Window to inspect thread states.
- Use Tasks Window for async operations.
- Detect deadlocks and race conditions with diagnostic tools.

Customizing Build and Run Configurations

- Create custom build configurations for different environments.
- Use Solution Configurations for conditional compilation.

Integrating with Continuous Integration

- Set up CI/CD pipelines using Azure DevOps or other services.
- Automate testing, building, and deployment processes.

Best Practices for Effective Use

- Keep Visual Studio Updated: Regular updates provide new features and bug fixes.
- Use Shortcuts: Memorize commonly used shortcuts to speed up workflows.
- Organize Projects: Maintain a clean solution structure.
- Document Your Code: Use comments and XML documentation.
- Backup Settings: Export your environment settings for portability.
- Participate in Community: Engage with forums, blogs, and official documentation.

Conclusion: Your Path to Proficiency

Mastering Visual Studio 2019 requires consistent practice, exploration, and staying updated with new features. By understanding its core functionalities, customizing your environment, mastering code editing and debugging, leveraging version control, and exploring advanced tools, you position yourself as a competent developer capable of efficiently tackling complex projects. Remember, proficiency isn't achieved overnight?it's built through continual learning and hands-on experience. Embrace the vast ecosystem of extensions and community resources, and you'll unlock the full potential of Visual Studio 2019 to accelerate your development career.

QuestionAnswer What are the essential features of Visual Studio 2019 to become proficient in software development? Key features include the integrated debugger, IntelliSense code completion, Git integration, live share for collaboration, and powerful debugging and profiling tools. Mastering these will significantly enhance your development efficiency in Visual Studio 2019. How can I improve my productivity while working with Visual Studio 2019? To boost productivity, learn to

customize the IDE with extensions, utilize keyboard shortcuts, leverage code snippets, use the Solution Explorer effectively, and take advantage of debugging and testing tools to streamline your development workflow. What are best practices for debugging and troubleshooting in Visual Studio 2019? Best practices include setting breakpoints strategically, using the watch and immediate windows, employing diagnostic tools and performance profilers, and understanding exception handling to efficiently identify and fix issues. How can I leverage Visual Studio 2019 for advanced code management and version control? Visual Studio 2019 offers built-in Git and Team Foundation Server integration. Mastering source control operations, branch management, and pull requests within the IDE will help you efficiently manage your codebase and collaborate with teams. What resources and tutorials are recommended for mastering Visual Studio 2019? Microsoft's official documentation, Visual Studio YouTube tutorials, online courses on platforms like Pluralsight and Udemy, and community forums like Stack Overflow are excellent resources to deepen your understanding and become proficient in Visual Studio 2019.

Related keywords: Visual Studio 2019, C development, debugging techniques, code navigation, project setup, extension tools, version control integration, UI design, performance optimization, troubleshooting skills

Read the full article online: MASTERING VISUAL STUDIO 2019 BECOME PROFICIENT IN

EXAM REF 70 487

Exam ref 70-487: Mastering Developing Windows Azure and Web Services

If you're aiming to advance your career in software development, particularly in building cloud-based applications and web services, understanding the content and requirements of the Exam ref 70-487 is crucial. This exam, officially titled "Developing Microsoft Azure and Web Services," is designed for developers who want to demonstrate their proficiency in creating, deploying, and maintaining scalable and reliable cloud solutions using Microsoft technologies. In this comprehensive guide, we'll explore everything you need to know about the 70-487 exam, including its objectives, preparation strategies, key topics, and tips to succeed.

Overview of Exam ref 70-487

What is the 70-487 Exam?

The 70-487 exam is a certification test offered by Microsoft that validates your ability to develop modern applications using Microsoft Azure, web services, and related technologies. Passing this

exam earns you the Microsoft Certified: Developing Microsoft Azure and Web Services certification, which is highly valued in the software development industry.

Target Audience

This exam is tailored for developers who:

- Create scalable, reliable applications and services
- Use Azure services and tools for cloud development
- Work with RESTful services and web APIs
- Implement security, caching, and data handling in web applications
- Use Visual Studio, Azure SDKs, and other Microsoft tools for development

Prerequisites

While there are no formal prerequisites, Microsoft recommends candidates have:

- Experience with developing applications using C and .NET
- Familiarity with Azure cloud services
- Knowledge of web services, REST, and web API development
- Understanding of security principles and data access technologies

Exam Structure and Format

Number of Questions and Duration

The exam typically comprises 40-60 questions, with a time limit of approximately 120 minutes. Question formats include multiple-choice, case studies, drag-and-drop, and simulations.

Scoring and Passing Criteria

Microsoft scores exams on a scale of 100-1000 points, with a passing score generally set at 700 points. The exam results are provided immediately after completion, indicating whether you've passed or failed.

Core Topics Covered in the 70-487 Exam

Understanding the exam objectives is vital for effective preparation. The exam assesses your skills across several key areas:

1. Developing Azure Compute Solutions (25-30%)

This domain focuses on creating, configuring, and deploying Azure compute resources.

Key skills include:

- Creating and deploying cloud services and web apps
- Implementing Azure functions and background jobs
- Managing scalability and availability
- Using Azure SDKs and PowerShell for automation

2. Developing for Azure Storage (15-20%)

This area covers designing and implementing scalable storage solutions.

Key skills include:

- Working with Blob, Queue, Table, and File storage
- Implementing data access and security
- Managing data consistency and replication

3. Implementing Azure Security (15-20%)

Security is critical in cloud applications.

Key skills include:

- Securing web services and APIs
- Managing authentication and authorization with Azure AD
- Implementing data encryption and secure access controls

4. Monitoring, Troubleshooting, and Optimizing Azure Solutions (10-15%)

Ensuring applications run smoothly is essential.

Key skills include:

- Using Application Insights and Azure Monitor
- Diagnosing issues and debugging
- Optimizing performance and resource utilization

5. Developing for Web Services and APIs (20-25%)

This domain emphasizes building and consuming web services.

Key skills include:

- Creating RESTful APIs with ASP.NET Web API
- Consuming external web services
- Implementing security and data serialization

Preparation Strategies for the 70-487 Exam

Achieving success requires strategic preparation. Here are some recommended approaches:

1. Review Official Microsoft Learning Paths and Resources

Microsoft offers comprehensive learning paths, modules, and documentation that align with the exam objectives. Key resources include:

- Microsoft Learn modules for Azure development
- Official exam skills outline
- Practice labs and tutorials

2. Use Practice Exams and Sample Questions

Practicing with mock exams helps familiarize you with the question format and timing. Many third-party vendors offer practice tests that simulate the real exam environment.

3. Gain Hands-On Experience

Practical experience is invaluable. Set up Azure accounts and experiment with creating web apps, deploying APIs, configuring storage, and implementing security features.

4. Focus on Key Technologies and Tools

Ensure you're comfortable with:

- Visual Studio and Visual Studio Code
- Azure SDKs and CLI
- Azure Portal and Resource Manager templates
- RESTful web API development with ASP.NET

5. Join Study Groups and Forums

Engaging with online communities can provide support, clarify doubts, and share valuable resources.

Tips for Exam Success

- Read each question carefully and understand what is being asked before selecting an answer.
- Manage your exam time efficiently, allocating more time to complex questions.
- Use process of elimination to narrow down multiple-choice options.
- Review your answers if time permits, especially for questions you're unsure about.
- Stay calm and focused; confidence can significantly impact your performance.

Post-Exam Steps and Certification Benefits

After passing the 70-487 exam, you earn the Microsoft Certified: Developing Microsoft Azure and Web Services certification. This credential can enhance your professional profile, open doors to advanced roles, and demonstrate your expertise in modern cloud development.

Benefits include:

- Validation of your skills in Azure and web services development
- Increased job opportunities and career advancement
- Access to exclusive Microsoft certifications and community events
- Staying updated with the latest industry standards

Conclusion

The Exam ref 70-487 is a vital certification for developers looking to establish or strengthen their expertise in Azure cloud development and web services. With a thorough understanding of its structure, core topics, and preparation strategies, you can approach the exam with confidence.

Focus on gaining practical experience, leverage official resources, and practice diligently. Successfully passing this exam can significantly boost your career, positioning you as a proficient developer in the rapidly growing cloud industry.

Embark on your certification journey today and take a significant step toward becoming a cloud-savvy developer equipped to build scalable, secure, and efficient applications on Microsoft Azure.

Exam Ref 70-487: Developing Windows Azure and Web Services is a comprehensive certification exam designed for developers aiming to validate their expertise in building, deploying, and maintaining cloud-based and web services using Microsoft technologies. This exam, part of the Microsoft Certified Solutions Developer (MCSD) track, emphasizes practical skills for designing scalable, secure, and efficient solutions leveraging Windows Azure, Windows Communication Foundation (WCF), Windows Presentation Foundation (WPF), and related technologies. Preparing thoroughly for exam ref 70-487 requires understanding core concepts, hands-on experience, and familiarity with best practices in cloud and service development.

Introduction to Exam Ref 70-487

The exam ref 70-487 is targeted at developers who work with Microsoft development tools and cloud platforms, particularly those involved in creating modern, cloud-enabled applications and services. The exam covers a broad range of topics, from designing and implementing services to deploying and maintaining solutions in a cloud environment. Mastery of these areas ensures that candidates can develop robust, scalable, and secure solutions aligned with enterprise needs.

Key Areas Covered in the Exam

The exam is structured into several domains, each representing critical skills and knowledge areas:

- Design and Implement a Service-Oriented Application (SOA)
- Design and Implement a Cloud Service
- Develop and Deploy a Web Service
- Develop and Deploy a Windows Communication Foundation (WCF) Service
- Design and Implement a Client Application

Understanding these domains in depth is essential for success.

Deep Dive into Core Topics

- Designing and Implementing Service-Oriented Applications

This section focuses on the principles of SOA, including designing loosely coupled services, defining service contracts, and implementing service interfaces.

Key concepts include:

- Service contracts and data contracts
- WCF service configuration
- Message exchange patterns (request/reply, one-way)
- Service discovery and versioning
- Security considerations such as authentication, authorization, and message confidentiality

- Designing and Implementing Cloud Services

Cloud services are central to modern application development. The exam emphasizes designing solutions for scalability, reliability, and security in a cloud environment.

Topics include:

- Cloud service deployment models (IaaS, PaaS, SaaS)
- Managing cloud resources via Azure
- Using Azure App Service and Azure Cloud Services
- Leveraging Azure Storage options (Blob, Table, Queue)
- Implementing cloud scalability patterns (auto-scaling, load balancing)
- Securing cloud services with Azure Active Directory and OAuth

- Developing and Deploying Web Services

Web services enable communication over a network using standards like HTTP, SOAP, and REST. The exam tests skills in creating, deploying, and consuming web services.

Main points:

- Building RESTful services with ASP.NET Web API
- Creating SOAP-based web services with WCF

- Serialization and deserialization of data
- Versioning web services
- Securing web services with SSL/TLS, message security, and token-based authentication

- Developing and Deploying WCF Services

WCF remains a vital technology for building interoperable, secure, and reliable services.

Key topics:

- Configuring WCF services for different bindings (BasicHttpBinding, WSHttpBinding, NetTcpBinding)
- Implementing custom behaviors and message inspectors
- Handling concurrency and instance management
- Error handling and fault contracts
- Deploying WCF services in IIS or self-hosted environments

- Designing and Implementing Client Applications

Client applications consume web and WCF services and are often built using WPF, Windows Forms, or Universal Windows Platform (UWP).

Focus areas:

- Generating service proxies
- Handling asynchronous communication
- Managing service state and session
- Implementing MVVM patterns for WPF clients
- Securing client-service communication

Practical Skills and Best Practices

Achieving certification success requires more than theoretical knowledge; hands-on experience and familiarity with best practices are crucial.

Building Secure Services

Security is a cornerstone of enterprise solutions. Candidates should understand:

- Implementing message security with WS-Security standards
- Using token-based authentication (JWT, OAuth)
- Configuring SSL/TLS for transport security
- Managing certificates and keys securely

Designing for Scalability and Reliability

Services should be designed to handle growth and ensure availability:

- Implementing load balancing
- Using caching strategies
- Handling exceptions gracefully
- Designing for idempotency and statelessness

Deployment and Maintenance

Deploying services in production environments involves:

- Automating deployment processes (CI/CD pipelines)
- Monitoring service health and performance
- Logging and diagnostics
- Versioning and updating services with minimal disruption

Study Tips for Passing Exam Ref 70-487

- Hands-On Practice: Set up a development environment with Visual Studio, Azure SDK, and relevant tools. Build sample services and clients.
- Understand Architecture Patterns: Familiarize yourself with common patterns like service-oriented architecture, microservices, and layered application design.
- Review Microsoft's Official Documentation: Microsoft provides extensive resources, tutorials, and best practice guides.
- Use Practice Exams: Simulate exam conditions with practice tests to identify weak areas.
- Join Community Forums: Engage with developer communities for tips, troubleshooting, and collaborative learning.

Resources for Preparation

- Microsoft Official Curriculum: Detailed course materials aligned with the exam objectives.
- Microsoft Learn Modules: Free, interactive tutorials on Azure and web services.
- Books and Guides: Titles specifically covering exam ref 70-487.
- Online Courses: Platforms like Pluralsight, Udemy, and LinkedIn Learning offer targeted courses.
- Practice Labs: Virtual labs that simulate real-world scenarios.

Conclusion

Preparing for exam ref 70-487 demands a balanced approach of theoretical understanding and practical experience. By mastering service design principles, cloud deployment strategies, security best practices, and client development techniques, candidates can confidently demonstrate their ability to develop robust, scalable, and secure web services and cloud solutions. Passing this exam not only advances your professional credentials but also equips you with the skills to tackle modern enterprise development challenges in a cloud-first world.

Embark on your journey to certification success in developing Windows Azure and Web Services today, and position yourself as a proficient architect of cloud-enabled solutions.

QuestionAnswer What are the main topics covered in the Exam Ref 70-487 book? The Exam Ref 70-487 book covers designing and developing Windows Store apps using HTML5 and JavaScript, including topics like application lifecycle, UI design, data access, and app deployment. How does the Exam Ref 70-487 help in preparing for the certification? It provides focused content aligned with the exam objectives, practical exercises, and review questions to reinforce understanding and boost confidence for the Microsoft 70-487 certification exam. What are the key skills tested in the 70-487 exam related to Windows Store app development? Key skills include designing Windows Store apps, implementing app lifecycle management, developing user interfaces with HTML5, integrating data storage, and deploying and maintaining apps. Is the Exam Ref 70-487 suitable for developers new to Windows Store app development? While it is primarily targeted at developers with some experience, beginners can benefit from the book by gradually building their knowledge of Windows Store app development concepts. Are there practice exams available specifically for the 70-487 exam in the Exam Ref 70-487 book? Yes, the book includes review questions and practice exercises designed to simulate the exam environment and test your understanding of key concepts. What are the recommended prerequisites before studying the Exam Ref 70-487? Candidates should have a basic understanding of HTML5, JavaScript, and Windows app development principles, along with some experience working with Visual Studio. How does the Exam Ref 70-487 address recent updates in Windows Store app development? The book is regularly updated to reflect the latest features and best practices in Windows Store app

development, ensuring candidates are studying current and relevant material.

Related keywords: Microsoft Certification, MCSD, Visual Studio, .NET Framework, Application Development, Coding Standards, Testing, Debugging, Deployment, Programming Languages

Read the full article online: Exam ref 70 487

Start Here Learn The Kinect Api

Start here learn the Kinect API: Your comprehensive guide to mastering Kinect development

The Kinect sensor revolutionized the way developers and enthusiasts interact with computers by enabling natural motion tracking, voice recognition, and gesture control. If you're interested in building innovative applications or exploring the full potential of the Kinect hardware, understanding the Kinect API is essential. This guide aims to provide a detailed, structured overview of the Kinect API, from the basics to advanced techniques, so you can start your journey confidently. Whether you're a beginner or an experienced developer, this article will equip you with the knowledge needed to harness the power of Kinect.

What is the Kinect API?

The Kinect API refers to the set of programming interfaces provided by Microsoft that allow developers to integrate Kinect sensor data into their applications. It provides access to various features of the Kinect hardware, including depth sensing, skeletal tracking, facial recognition, and voice commands.

Key Features of the Kinect API:

- Depth data acquisition
- Skeletal and body tracking
- Face detection and recognition
- Voice recognition and command processing
- Gesture recognition
- Audio input and processing

Understanding these core features is crucial for creating interactive applications that respond to user movements, gestures, and voice commands.

Versions of the Kinect API

Microsoft has released different versions of the Kinect hardware and corresponding APIs, each with unique capabilities:

Kinect for Xbox 360 (Kinect SDK 1.8)

- Supports basic skeletal tracking
- Limited gesture recognition
- Compatible primarily with Windows via SDK

Kinect for Windows v2 (Kinect for Xbox One)

- Improved depth sensing and skeletal tracking
- Higher resolution and frame rate
- Supports more complex gestures and facial recognition
- SDK version 2.x

Azure Kinect DK

- Advanced depth sensing with higher accuracy
- Additional sensors, including a color camera and microphone array
- Uses Azure Kinect SDK

Choosing the right API version depends on your target hardware and application requirements.

Prerequisites for Using the Kinect API

Before diving into development, ensure you have the following:

- Compatible Hardware: Kinect sensor (Xbox 360, Xbox One, or Azure Kinect DK)
- Development Environment:
- Windows OS (Windows 8 or later recommended)
- Visual Studio (2015 or later)
- SDK Installation:
- Kinect SDK (version matching your hardware)
- Optional: Kinect for Windows SDK, SDK extensions

- Additional Tools:
- Kinect SDK Samples
- NuGet packages for easier integration

Setting Up Your Development Environment

Installing the Kinect SDK

- Download the correct SDK version from Microsoft's official website.
- Run the installer and follow the prompts.
- Connect your Kinect sensor to your PC.
- Verify the installation by opening the Kinect Configuration Verifier tool.

Configuring Visual Studio

- Create a new C or C++ project.
- Add references to the Kinect SDK assemblies or DLLs.
- Install necessary NuGet packages if available (e.g., Kinect SDK for .NET).

Testing the Setup

- Run sample applications provided with the SDK.
- Ensure the sensor is recognized and data streams are functioning.

Understanding the Kinect API Architecture

The Kinect API architecture revolves around several key components:

- Sensor Data Streams

- Color Stream: RGB video feed.
- Depth Stream: Distance data from sensor to objects.
- Infrared Stream: IR data useful in low-light conditions.
- Body Frame: Skeletal tracking data.

- Data Processing Pipelines

- Data is captured asynchronously.
- Developers can subscribe to data events.
- Data is processed to interpret gestures, gestures, or facial features.

- Coordinate Mapping

- Converts between depth, color, and camera space.
- Essential for overlaying skeletal data onto video feeds or integrating multiple sensors.

Understanding these components helps in designing efficient applications.

Core Features of the Kinect API

Skeletal Tracking

One of the most popular features, skeletal tracking enables applications to recognize and interpret user movements.

- Tracks up to six users simultaneously (depending on hardware).
- Provides joint positions, orientations, and tracking states.
- Enables gesture-based controls and interactive experiences.

Facial Recognition and Tracking

- Detects faces within the frame.
- Tracks facial features.
- Recognizes expressions and identities (requires additional processing).

Voice Recognition

- Captures audio input.
- Uses speech-to-text processing.
- Recognizes predefined commands for hands-free operation.

Gesture Recognition

- Detects predefined gestures (e.g., wave, thumbs up).
- Can be customized for specific applications.

Developing with the Kinect API: Step-by-Step

- Initialize the Kinect Sensor

```csharp
using Microsoft.Kinect;

KinectSensor sensor = KinectSensor.GetDefault();

sensor.Open();
```

- Enable Data Streams

```csharp
// Color stream

sensor.OpenColorFrameReader();

// Depth stream

sensor.OpenDepthFrameReader();

// Body (skeletal) stream

BodyFrameReader bodyFrameReader = sensor.BodyFrameSource.OpenReader();
```

- Handle Frame Data

Register event handlers or polling mechanisms:

```csharp
bodyFrameReader.FrameArrived += BodyFrameArrived;
private void BodyFrameArrived(object sender, BodyFrameArrivedEventArgs e)
{
using (var frame = e.FrameReference.AcquireFrame())
{
if (frame != null)
{
Body[] bodies = new Body[frame.BodyFrameSource.BodyCount];
frame.GetAndRefreshBodyData(bodies);
// Process body data
}
}
}
```

- Process Skeletal Data

Loop through bodies to find tracked users and extract joint data:

```csharp
```

```
foreach (var body in bodies)

{

if (body.IsTracked)

{

var handRight = body.Joints[JointType.HandRight];

// Use joint data to control application

}

}
```

- Map Coordinates

Convert depth points to color space for overlay:

```csharp
ColorSpacePoint colorPoint =
sensor.CoordinateMapper.MapCameraPointToColorSpace(depthPoint);
```

- Implement Gesture and Voice Recognition

Use built-in recognizers or develop custom algorithms:

```csharp
// Example: Recognize a waving gesture based on hand movement
```

Best Practices for Kinect API Development

- Optimize Data Handling: Process frames asynchronously to prevent UI blocking.
- Manage Sensor Resources: Properly open and close sensor streams.
- Use SDK Samples: Leverage sample projects for rapid prototyping.
- Implement Error Handling: Detect and handle sensor disconnections or errors.
- Test in Various Environments: Ensure robustness under different lighting and user conditions.

Applications Built Using the Kinect API

The versatility of the Kinect API has enabled diverse applications, including:

- Interactive Gaming: Motion-controlled games like Kinect Sports.
- Physical Therapy: Monitoring exercises and providing real-time feedback.
- Virtual Reality & Augmented Reality: Gesture-based navigation.
- Sign Language Recognition: Translating gestures into text.
- Retail & Advertising: Interactive displays responding to user gestures.
- Robotics: Enhancing robot perception and interaction.

Challenges and Limitations of the Kinect API

While powerful, working with the Kinect API presents some challenges:

- Lighting Dependence: Infrared sensors can be affected by ambient light.
- Sensor Range: Limited to certain distances (e.g., 0.8m to 4m).
- Occlusion Issues: Obstructed joints or gestures may not be detected reliably.
- Hardware Compatibility: Requires specific Kinect hardware versions.
- Processing Power: High data processing demands can impact performance.

Being aware of these limitations helps in designing more robust applications.

Future of Kinect Development

With the advent of Azure Kinect DK and AI-powered solutions, Kinect development is evolving. Microsoft emphasizes cloud integration, machine learning, and more accurate sensors, opening new possibilities for immersive and intelligent applications.

Emerging trends include:

- Integration with Azure AI services
- Enhanced gesture and emotion recognition
- Use in smart environments and IoT applications
- Combining Kinect with other sensors for richer data

Summary and Resources

Mastering the Kinect API unlocks a world of interactive possibilities, from gaming to healthcare. To get started:

- Install the appropriate SDK for your hardware
- Explore official documentation and sample projects
- Experiment with skeletal, facial, and voice data
- Join developer communities for support and inspiration

Useful Resources:

- [Microsoft Kinect SDK Documentation](https://docs.microsoft.com/en-us/azure/kinect-dk/)
- [Kinect SDK Samples](https://github.com/Microsoft/KinectSDK)
- [Community Forums and Support](https://social.msdn.microsoft.com/Forums/en-US/home)

By understanding the core components and capabilities of the Kinect API, you can develop innovative applications that leverage natural user interactions, making technology more accessible and engaging.

Start here learn the Kinect API is the first step towards creating compelling, gesture-based, and voice-controlled experiences. Embrace the technology, explore its features, and innovate beyond traditional input methods. Happy coding!

Start Here: Learn the Kinect API

The Kinect API has been a game-changer in the realm of motion sensing and interactive applications since its debut. Originally developed for the Xbox 360 and later adapted for Windows, the Kinect API unlocks a world of possibilities for developers, researchers, and hobbyists eager to harness gesture recognition, depth sensing, and body tracking technologies. If you're new to the Kinect API or looking to deepen your understanding, this comprehensive guide offers an in-depth exploration of what it entails, how to get started, and the potential it holds for innovative projects.

Understanding the Kinect API: An Overview

The Kinect API is a set of programming interfaces that allow developers to access and manipulate the hardware capabilities of the Kinect sensor. It offers tools for capturing depth data, color images, audio, and skeletal tracking information. This API is integral to creating applications that respond to human gestures, recognize poses, or analyze movement patterns.

Key Features of the Kinect API:

- Depth Sensing: Provides real-time depth maps of the environment, enabling applications to perceive 3D space.
- Skeleton Tracking: Detects and tracks human body joints, allowing for detailed motion analysis.
- Color Stream: Access to high-resolution color images from the RGB camera.
- Audio Processing: Captures and processes audio input, including voice commands and sound localization.
- Facial Recognition: (Available in later SDK versions) Enables face detection and recognition.

The API is designed to be accessible for developers with varying levels of experience, offering both high-level abstractions and low-level controls.

Getting Started with the Kinect API

Embarking on your Kinect development journey involves understanding the prerequisites, setting up your environment, and familiarizing yourself with the SDK components.

Prerequisites and Hardware Compatibility

Before diving into coding, ensure you have:

- A compatible Kinect sensor (Kinect for Xbox 360, Kinect for Xbox One with adapter, or Kinect for Windows v2).
- A Windows PC with appropriate specifications:
- For Kinect v1: Windows 7 or later.
- For Kinect v2: Windows 8.1 or later.
- An available USB 3.0 port (for Kinect v2).
- The latest Kinect SDK installed.

Note: The Kinect SDKs are platform-specific, with separate versions for v1 and v2. Verify compatibility based on your sensor.

Installing the Kinect SDK

- Download the SDK: Visit the official Microsoft download page for the Kinect SDK v1 or v2.
- Follow installation instructions: Run the installer and complete the setup.
- Test the sensor: Use the provided tools to verify the sensor functions correctly before starting development.

Development Environment Setup

Most Kinect projects are developed using Visual Studio (2012, 2013, or later). Set up your environment:

- Install Visual Studio with the necessary workloads.
- Add references to Kinect SDK assemblies:
- `Microsoft.Kinect.dll` is the primary assembly used for development.
- Create a new project (Console App, WPF, or UWP depending on your target application).

Exploring the Kinect SDK Components

The Kinect SDK provides several core classes and namespaces that facilitate interaction with the sensor.

The Main Classes

- KinectSensor: Represents the physical sensor device. It manages data streams and provides access to sensor properties.
- SkeletonFrameReader / BodyFrameReader: Reads skeletal tracking data, including joint positions.
- ColorFrameReader: Accesses color image data.
- DepthFrameReader: Retrieves depth maps.
- AudioSource / AudioBeamFrameReader: Handles audio input and processing.

Sample Workflow Overview

A typical Kinect application follows these steps:

- Initialize the sensor.
- Open data streams (color, depth, skeleton, audio).
- Register event handlers or polling mechanisms.
- Process incoming frames to extract meaningful data.

- Use this data to drive application logic (e.g., gesture recognition).
- Properly dispose of resources upon termination.

Developing with the Kinect API: A Step-by-Step Guide

Let's walk through creating a simple application that tracks a person's skeleton and displays joint positions.

1. Initialize the Kinect Sensor

```csharp

// Import necessary namespaces

using Microsoft.Kinect;

KinectSensor sensor = KinectSensor.GetDefault();

sensor.Open();

```

This code initializes the default sensor and starts it.

2. Set Up Skeleton Tracking

```csharp

var bodyFrameReader = sensor.BodyFrameSource.OpenReader();

bodyFrameReader.FrameArrived += BodyFrameArrived;

void BodyFrameArrived(object sender, BodyFrameArrivedEventArgs e)

{

using (var frame = e.FrameReference.AcquireFrame())

{

if (frame != null)
```

```
{

Body[] bodies = new Body[frame.BodyFrameSource.BodyCount];

frame.GetAndRefreshBodyData(bodies);

foreach (var body in bodies)

{

if (body != null && body.IsTracked)

{

// Access joint data

var handRight = body.Joints[JointType.HandRight];

Console.WriteLine($"Right Hand Position: {handRight.Position}");

}

}

}

}

}
```

This snippet demonstrates capturing body data and retrieving joint positions in real-time.

3. Accessing Color and Depth Data

```csharp
var colorFrameReader = sensor.ColorFrameSource.OpenReader();

colorFrameReader.FrameArrived += ColorFrameArrived;
```

```
void ColorFrameArrived(object sender, ColorFrameArrivedEventArgs e)

{

using (var frame = e.FrameReference.AcquireFrame())

{

if (frame != null)

{

byte[] pixels = new byte[frame.FrameDescription.Width frame.FrameDescription.Height 4];

frame.CopyConvertedFrameDataToArray(pixels, ColorImageFormat.Bgra);

// Process or display the color data

}

}

}
```

Similarly, depth data can be accessed via `DepthFrameSource`.

Advanced Features and Use Cases

Beyond basic skeleton tracking, the Kinect API enables a multitude of advanced applications:

Gesture Recognition

Developing gesture-based controls involves detecting specific body movements. By analyzing joint trajectories and thresholds, applications can interpret gestures such as wave, thumbs-up, or complex sequences.

Implementation Tips:

- Use state machines to track gesture phases.
- Apply smoothing filters to reduce jitter.
- Combine multiple joint data for robust recognition.

Facial and Expression Analysis

While not as sophisticated as dedicated facial recognition systems, the Kinect SDK offers facial detection and tracking. This can be utilized in applications like emotion recognition or user identification.

Interactive Installations and Gaming

The real-time body tracking and gesture detection capabilities make Kinect ideal for immersive experiences, interactive art installations, and innovative gaming controls.

Research and Rehabilitation

Healthcare professionals leverage Kinect's depth and skeletal data for physical therapy, movement analysis, and remote monitoring.

Limitations and Considerations

While the Kinect API is powerful, it's essential to understand its limitations:

- Sensor Range and Accuracy: Works optimally within specific distances (~1.2m to 3.5m for v2). Accuracy diminishes at the edges.
- Lighting Conditions: Depth sensing can be affected by environmental lighting or reflective surfaces.
- Processing Power: Real-time processing of high data volume requires sufficient hardware resources.
- Platform Support: SDKs are Windows-centric; cross-platform development requires additional layers or alternative libraries.

Community Resources and Further Learning

The Kinect developer community is vibrant, offering numerous tutorials, open-source projects, and forums:

- Official Microsoft Documentation: Comprehensive guides and API references.

- Open-Source Libraries: Projects like Nuitrack, OpenNI, or libfreenect extend Kinect capabilities.
- Community Forums: Stack Overflow, Kinect for Windows forums, Reddit communities.
- Sample Projects: GitHub repositories demonstrating gesture recognition, skeletal tracking, and more.

Conclusion: Embrace the Kinect API for Innovation

Learning the Kinect API opens a gateway to creating interactive, immersive, and intelligent applications. From gesture controls to physical therapy, the possibilities span entertainment, research, and beyond. While initial setup and understanding require effort, the richness of the SDK and community support make it a worthwhile endeavor.

Starting with foundational knowledge?understanding sensor initialization, data streams, and skeletal tracking?sets the stage for more complex projects. As you explore further, experimenting with real-time data processing, integrating AI models, and customizing interaction paradigms will elevate your applications to new heights.

Whether you're a hobbyist eager to experiment or a developer aiming to revolutionize user interaction, mastering the Kinect API offers a powerful toolkit to turn vision into reality. Dive in, explore the depths of the SDK, and start building the future of human-computer interaction today.

QuestionAnswer What is the Kinect API and how can I start learning it? The Kinect API allows developers to access data from the Kinect sensor, such as skeletal tracking, gestures, and depth information. To start learning it, begin with official Microsoft documentation, set up the SDK, and explore tutorials on basic sensor data processing. Which programming languages are supported for developing with the Kinect API? The Kinect API primarily supports C and C++ through the SDK. Some community-developed wrappers also enable use with other languages like Python or Java, but C and C++ are the most straightforward options. What are the basic steps to set up the Kinect SDK for development? First, ensure your Kinect sensor is compatible and connected to your PC. Download and install the Kinect for Windows SDK from Microsoft's official website. Then, connect your device, verify device drivers are installed, and start exploring sample projects or tutorials to familiarize yourself with the API. Can I use the Kinect API for developing games or interactive applications? Yes, the Kinect API is widely used for creating interactive applications and games that utilize body tracking, gestures, and voice commands. Many developers use it with game engines like Unity or Unreal Engine to build immersive experiences. What are some common challenges when starting with the Kinect API? Common challenges include dealing with sensor calibration, optimizing performance for real-time tracking, understanding skeletal data structure, and handling various lighting or environment conditions that affect sensor accuracy. Starting with official samples and community forums can help overcome these issues. Are there alternative libraries or tools to learn the Kinect API more easily? Yes, tools like OpenKinect libfreenect or third-party wrappers can simplify development and provide cross-platform support. Additionally, platforms like Unity have

dedicated plugins and assets that make integrating Kinect data easier for interactive and game development.

Related keywords: Kinect SDK, Kinect development, Kinect programming, Kinect API tutorial, Kinect sensor integration, Kinect motion tracking, Kinect body tracking, Kinect SDK setup, Kinect app development, Kinect programming guide

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