نام دوره : متخصص ارشد برنامه نویسی

MCPD(Microsoft Certified Professional Developer)

مشخصات دوره	**تعداد ساعت : ۲۳۰**	**پیش نیاز :** آشنايي با مقدمات برنامه نويسي	**تعداد ترم : ۶**
مخاطبین دوره	مهندسین و کارشناسان نرم افزار و فن آوری اطلاعات		
شرح دوره	مدرک متخصص برنامه نویسی مایکروسافت یا MCPD نشانگر مهارت فرد در به کارگیری Microsoft Visual Studio و Microsoft .NET Framework.در تولید برنامه های کاربردی و تخصصی جهت استفاده در صنعت و دنیای واقعي می باشد ، پس از گزراندن این دوره فرد مي تواند جهت محيط هاي ويندوز و محيط هاي وب برنامه نويسي انجام دهد.		
آنچه در این دوره می آموزیم:	آشنایی کامل با زبان برنامه نویسی C# ایجاد فرم ها و کنترل ها در محیط برنامه نویسي برنامه نويسي جهت محيط هاي ويندوز تکنولوژی ها و تکنیک های تولید برنامه های کاربردی تحت وب کسب دانش فنی لازم جهت طراحی و ساخت وب سایت با استفاده از تکنولوژی Asp.net 4 به صورت حرفه ای ساخت فرمهای ورود اطلاعات پایگاههای داده اتصال به پایگاههای داده مدیریت کلاسهای Dataset و Data view اتصال از طریق ADO.Net به سایر پایگاه داده ها		
ترم های دوره	**MCPD on Microsoft Visual Studio 2010 For Web Developer 4** 70-513 TS: Windows Communication Foundation Development with .NET Framework 4 70-515 TS: Web Applications Development with Microsoft .NET Framework 4 70-516 TS: Accessing Data with Microsoft .NET Framework 4 70-519 PRO: Designing and Developing Web Applications Using Microsoft .NET Framework 4 **MCPD on Microsoft Visual Studio 2010 For Windows Developer 4** 70-511 TS: Windows Applications Development with Microsoft .NET Framework 4 70-513 TS: Windows Communication Foundation Development with Microsoft .NET Framework 4 70-516 TS: Accessing Data with Microsoft .NET Framework 4 70-518 PRO: Designing and Developing Windows Applications Using .NET Framework 4		

70-511: TS: Windows Applications Development with Microsoft .NET Framework 4

Building a User Interface by Using Basic Techniques (23%)

- Choose the most appropriate control class.
- Implement screen layout by using nested control hierarchies.
- Create and apply styles and theming.
- Manage reusable resources.
- Implement an animation in WPF.

Enhancing a User Interface by Using Advanced Techniques (21%)

- Manage routed events in WPF.
- Configure WPF commanding.
- Modify the visual interface at run time.
- Implement user-defined controls.
- Create and display graphics.
- Add multimedia content to an application in WPF.
- Create and apply control templates in WPF.
- Create data, event, and property triggers in WPF.

Managing Data at the User Interface Layer (23%)

- Implement data binding.
- Implement value converters in WPF.
- Implement data validation.
- Implement and consume change notification interfaces.
- Prepare collections of data for display.
- Bind to hierarchical data.
- Implement data-bound controls.
- Create a data template in WPF.

Enhancing the Functionality and Usability of a Solution (17%)

- Integrate WinForms and WPF within an application.
- Implement asynchronous processes and threading.
- Incorporate globalization and localization features.
- Implement drag and drop operations within and across applications.
- Implement security features of an application.
- Manage user and application settings.
- Implement dependency properties.

Stabilizing and Releasing a Solution (16%)

- Implement a WPF test strategy.
- Debug XAML by using the WPF Visualizer.
- Debug WPF issues by using PresentationTraceSources.
- Configure a ClickOnce deployment.
- Create and configure a Windows Installer project.
- Configure deployment security settings.

70-513: TS: Windows Communication Foundation Development with Microsoft .NET Framework 4

Creating Services (20%)

- Create service and operation contracts.
- Create message contracts.
- Implement generic message handling.
- Implement RESTful services.
- Create and configure a Routing service.
- Create and configure a Discovery service.

Hosting and Configuring Services (18%)

- Create and configure endpoints.
- Configure Behaviors.
- Implement self hosting.
- Implement Web server hosting.

Consuming Services (18%)

- Create a service proxy.
- Configure client endpoints.
- Invoke a service.
- Consume RESTful services.
- Implement service Discovery.

Securing Services (17%)

- Configure secure Bindings.
- Configure message security.
- Implement Authentication.
- Implement Authorization.
- Implement Impersonation.
- Implement security auditing.

Managing the Service Instance Life Cycle (13%)

- Manage service instances.
- Manage sessions.
- Implement transactions.
- Manage concurrency.
- Manage consistency between instances, sessions, transactions, and concurrency.

Monitoring and Troubleshooting Distributed Systems (13%)

- Configure message logging.
- Configure diagnostics.
- Debug client-service interactions.

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Developing Web Forms Pages (19%)

- Configure Web Forms pages.
- Implement master pages and themes.
- Implement globalization.
- Handle page life cycle events.
- Implement caching.
- Manage state.

Developing and Using Web Forms Controls (18%)

- Validate user input.
- Create page layout.
- Implement user controls.
- Implement server controls.
- Manipulate user interface controls from code-behind.

Implementing Client-Side Scripting and AJAX (16%)

- Add dynamic features to a page by using JavaScript.
- Alter a page dynamically by manipulating the DOM.
- Handle JavaScript events.
- Implement ASP.NET AJAX.
- Implement AJAX by using jQuery.

Configuring and Extending a Web Application (15%)

- Configure authentication and authorization.
- Configure providers.
- Create and configure HttpHandlers and HttpModules.
- Configure initialization and error handling.
- Reference and configure ASMX and WCF services.
- Configure projects and solutions, and reference assemblies.
- Debug a Web application.
- Deploy a Web application.

Displaying and Manipulating Data (19%)

- Implement data-bound controls.
- Implement DataSource controls.
- Query and manipulate data by using LINQ.
- Create and consume a data service.
- Create and configure a Dynamic Data project.

Developing a Web Application by Using ASP.NET MVC 2 (13%)

- Create custom routes.
- Create controllers and actions.
- Structure an ASP.NET MVC application.

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Modeling Data (20%)

- Map entities and relationships by using the Entity Data Model.
- Map entities and relationships by using LINQ to SQL.
- Create and customize entity objects.
- Connect a POCO model to the Entity Framework.
- Create the database from the Entity Framework model.
- Create model-defined functions.

Managing Connections and Context (18%)

- Configure connection strings and providers
- reate and manage a data connection.
- Secure a connection.
- Manage the DataContext and ObjectContext.
- Implement eager loading.
- Cache data.
- Configure ADO.NET Data Services.

Querying Data (22%)

- Execute a SQL query.
- Create a LINQ query.
- Create an Entity SQL (ESQL) query.
- Handle special data types.
- Query XML.
- Query data by using WCF.NET Data Services.

Manipulating Data (22%)

- Create, update, or delete data by using SQL statements.
- Create, update, or delete data by using DataContext.
- Create, update, or delete data by using ObjectContext.
- Manage transactions.
- Create disconnected objects.

Developing and Deploying Reliable Applications (18%)

- Monitor and collect performance data.
- Handle exceptions.
- Protect data.
- Synchronize data.

Deploy ADO.NET components.

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Designing the Layers of a Solution (22%)

- Design a loosely coupled layered architecture.
- Design service interaction.
- Design the security implementation.
- Design for interoperability with external systems.
- Design for optimal processing.
- Design for globalization and localization.

Designing the Presentation Layer (21%)

- Choose the appropriate Windows Client technology.
- Design the UI layout and structure.
- Design application workflow.
- Design data presentation and input.
- Design presentation behavior.
- Design for UI responsiveness.

Designing the Data Access Layer (21%)

- Choose the appropriate data access strategy.
- Design the data object model.
- Design data caching.
- Design offline storage and data synchronization.
- Design for a concurrent multi-user environment.
- Analyze data services for optimization.

Planning a Solution Deployment (17%)

- Define a client deployment strategy.
- Plan a database deployment.
- Design a solution update strategy.
- Plan for n-tier deployment.

Designing for Stability and Maintenance (19%)

- Design for error handling.
- Evaluate and recommend a test strategy.

Design a diagnostics and monitoring strategy.

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Designing the Application Architecture (19%)

- Plan the division of application logic.
- Analyze requirements and recommend a system topology.
- Choose appropriate client-side technologies.
- Choose appropriate server-side technologies.

Designing the User Experience (17%)

- Design the site structure.
- Plan for cross-browser and/or form factors.
- Plan for globalization.

Designing Data Strategies and Structures (18%)

- Design data access.
- Design data presentation and interaction.
- Plan for data validation.

Designing Security Architecture and Implementation (17%)

- Plan for operational security.
- Design an authentication and authorization model.
- Plan for minimizing attack surfaces.

Preparing For and Investigating Application Issues (15%)

- Choose a testing methodology.
- Design an exception handling strategy.
- Recommend an approach to debugging.

  This objective does not include: basic breakpoints
- Recommend an approach to performance issues.

Designing a Deployment Strategy (14%)

- Design a deployment process.
- Design configuration management.
- Plan for scalability and reliability.
- Design a health monitoring strategy.