

Developing Web Applications Using Microsoft Visual Studio 2008 5

Course OutlineModule 1: Overview of the Microsoft .NET Framework

This module describes the key features of the Microsoft .NET Framework and ASP.NET.

Lessons

Introduction to the .NET Framework

Overview of ASP.NET

Overview of the Lab Application

Resources

After completing this module, students will be able to:

Explain the advantages of using the .NET Framework.

Describe the key functionality and purpose of ASP.NET in developing Web applications.

Describe the basic functionality of the Web site that students will build in the labs in Course 2310C.

List resources for Web application development with Visual Studio 2008.

Module 2: Creating Web Applications by Using Microsoft Visual Studio 2008 and Microsoft .NET-Based Languages

This module explains how to create a Web application by using Visual Studio 2008. It also describes how to create a component by using Visual Basic or C#.

Lessons

Overview of Visual Studio 2008

Creating an ASP.NET Web Application Project

Overview of the Microsoft .NET-Based Languages

Creating a Component by Using Visual Studio 2008

Lab : Creating Web Applications by Using Microsoft Visual Studio 2008 and Microsoft .NET-Based Languages

Creating an ASP.NET Web Site

Creating a Class

Calling the Component

After completing this module, students will be able to:

Navigate the Visual Studio 2008 integrated development environment (IDE).

Create, build, and view an ASP.NET Web application project.

Identify the languages that support the .NET Framework and choose an appropriate development language for your needs.

Create a component by using Microsoft Visual Basic or Microsoft Visual C#.

Module 3: Creating a Microsoft ASP.NET Web Form

This module describes how to create a Microsoft ASP.NET Web Form that contains server controls and uses a master page.

Lessons

Creating Web Forms

Adding Server Controls to a Web Form

Creating Master Pages

Lab : Creating a Microsoft ASP.NET Web Form

Creating the Default.aspx Web Form

Creating the benefitsMaster Master Page

Creating the Life.aspx Web Form

After completing this module, students will be able to:

Add a Web Form to an ASP.NET Web application project.

Add server controls to a Web Form by using the Microsoft Visual Studio 2008 toolbox.

Create a Web Form that uses a master page.

Module 4: Adding Code to a Microsoft ASP.NET Web Form

This module explains how to add functionality to server controls that are on an ASP.NET Web form.

Lessons

Implementing Code-Behind Pages

Adding Event Procedures to Web Server Controls

Handling Page Events

Lab : Adding Functionality to a Web Application

Creating a Page_Load Event Procedure

Creating a Click Event Procedure

(If Time Permits): Implementing a Component in a User Control

After completing this module, students will be able to:

Implement code-behind pages in a Web application.

Create event procedures for Web server controls.

Handle Page events in a Web application.

Module 5: Tracing in Microsoft ASP.NET Web Applications

This module explains how to view runtime information about a Web application by using the Trace and Debug objects.

Lessons

Tracing and the Trace Object

Remote Debugging

Lab : Tracing in Microsoft ASP.NET Web Applications

Implementing Trace Statements

Tracing into a Component

After completing this module, students will be able to:

View runtime information about a Web application by using the Trace object.

View runtime information about a Web application by using the Debug object.

Module 6: Validating User Input

This module explains how to validate user input by using validation controls.

Lessons

Overview of User Input Validation

Validation Controls

Page Validation

Lab : Validating User Input

Implementing RequiredFieldValidator Controls

Implementing the ValidationSummary Control

Implementing the CompareValidator Control

Implementing the RegularExpressionValidator Control

After completing this module, students will be able to:

Identify when input validation is appropriate in Web Forms.

Verify user input on a Web Form by using input validation controls.

Verify that all validation controls on a page are valid.

Module 7: Creating and Implementing User Controls

This module explains how to create and implement a user control.

Lessons

Adding User Controls to an ASP.NET Web Form

Creating User Controls

Lab : Creating and Implementing User Controls

Creating a User Control

Implementing a User Control

After completing this module, students will be able to:

Add a user control to a Microsoft ASP.NET Web Form.

Create a user control.

Module 8: Accessing Data with Microsoft ADO.NET and Visual Studio 2008

This module explains how to access data by using Microsoft ADO.NET 3.5 and the built-in data access tools available in Visual Studio 2008.

Lessons

Overview of ADO.NET

Connecting to a Database

Accessing Data

Accessing Multiple Tables

Lab : Accessing Data with Microsoft ADO.NET and Visual Studio 2008

Connecting to the Doctors Database

Paging and Selection in a GridView Control

Implementing a SqlDataReader

(If Time Permits) Viewing Doctors from All Cities

After completing this module, students will be able to:

Describe the key features of ADO.NET.

Create a connection to a database by using ADO.NET.

Access data from a SQL Server database by using a DataSet and DataReader.

Store multiple tables of data in a DataSet object and then display that data in GridView controls.

Module 9: Accomplishing Complex Data Access Tasks

This module explains how to call stored procedures from an ASP.NET Web application. It also covers how to access data from a database by using LINQ to SQL.

Lessons

Overview of Stored Procedures

Calling Stored Procedures

Data Access with LINQ to SQL

Lab : Accomplishing Complex Data Access Tasks

Get Unique City Names

Get Doctor Specialties

Get Doctor Specialties by Using LINQ to SQL

After completing this module, students will be able to:

Explain what a stored procedure is and the reasons for using stored procedures when accessing a database.

Call stored procedures.

Query and update data in a SQL Server database by using LINQ to SQL.

Module 10: Reading and Writing XML Data

This module explains how to access and manipulate data that was stored by using Extensible Markup Language (XML).

Lessons

Overview of XML Architecture in ASP.NET

XML and the DataSet Object

Managing XML Data

Accessing XML Data by Using the XML Web Server Control

Lab : Reading XML Data

Reading a List of Mutual Funds from an XML File

Reading, Transforming, and Displaying XML

(If Time Permits): Nested Data

After completing this module, students will be able to:

Describe XML architecture in Microsoft ASP.NET.

Read and write XML data into a DataSet object.

Store, retrieve, and transform XML data by using XmlDataDocument and XsltTransform objects.

Display, load, and save XML data by using the XML Web server control.

Module 11: Creating an ASP.NET AJAX Application

This module explains how to create and extend an ASP.NET AJAX application.

Lessons

Introduction to ASP.NET AJAX

Creating an ASP.NET AJAX Application by Using the ASP.NET AJAX Extensions

Extending an Application by Using the ASP.NET AJAX Control Toolkit

Lab : Creating an ASP.NET AJAX Application

Implementing Partial Page Rendering with the UpdatePanel Control

Installing and Using the AJAX Control Toolkit

After completing this module, students will be able to:

Explain the purpose of ASP.NET AJAX and list its key components.

Create an ASP.NET AJAX application by using the ASP.NET AJAX extensions.

Extend an ASP.NET AJAX application by using the ASP.NET AJAX control toolkit.

Module 12: Delivering Dynamic Content with Microsoft Silverlight

This module explains how to create a Microsoft Silverlight-based application that delivers dynamic content.

Lessons

Overview of Microsoft Silverlight

Creating Silverlight-Based Applications with Visual Studio 2008

Lab : Delivering Dynamic Content with Microsoft Silverlight

Creating a Microsoft Silverlight-Based Application

Adding Dynamic Content to a Microsoft Silverlight Application

After completing this module, students will be able to:

Describe the purpose and features of Microsoft Silverlight.

Create a Silverlight-based application by using Visual Studio 2008.

Module 13: Consuming and Creating XML Web Services

This module explains how to call a Web service from an ASP.NET Web application and incorporate the returned data into a Web application.

Lessons

Overview of Using XML Web Services

Calling an XML Web Service

Creating an XML Web Service

Lab : Consuming and Creating XML Web Services

Creating the Dentist XML Web Service and the GetAllDentists XML Web Service Method

Creating the GetDentistsByPostalCode XML Web Service Method

Consuming the GetAllDentists XML Web Service Method

Consuming the GetDentistsByPostalCode XML Web Service Method

After completing this module, students will be able to:

Describe the purpose and process behind calling an XML Web Service from a Web Form.

Call an XML Web service directly from a browser by using HTTP and call a Web method from a Web Form.

Create an XML Web service by using the templates in Visual Studio 2008.

Module 14: Managing State

This module explains how to store ASP.NET Web application and session data by using a variety of methods.

Lessons

State Management

Application and Session Variables

Cookies and Cookieless Sessions

Lab : Storing Application and Session Data

Implementing Session Variables

Implementing Cookies

Implementing Application Variables

Storing Session Variables in a Database

After completing this module, students will be able to:

Describe state management and the options that are available to manage state in an ASP.NET Web application.

Manage state in an ASP.NET Web application by using application and session variables.

Manage state in an ASP.NET Web application by using cookies and cookieless sessions.

Module 15: Configuring, Optimizing, and Deploying a Microsoft ASP.NET Web Application

This module explains how to configure and deploy an ASP.NET Web application.

Lessons

Implementing the Cache Object

ASP.NET Output Caching

Configuring an ASP.NET Web Application

Deploying an ASP.NET Web Application

Lab : Configuring, Optimizing, and Deploying a Microsoft ASP.NET Web Application

Caching a DataSet by Using the Cache Object

Reducing Response Times by Using the Page Output Cache

Partial Page Caching

Implementing Dynamic Properties

Deploying Your Site

After completing this module, students will be able to:

Store information by using the Cache object.

Store Web pages and Web page fragments by using ASP.NET output caching.

Configure an ASP.NET Web application by using the Machine.config and Web.config files.

Deploy an ASP.NET Web application.

Module 16: Securing a Microsoft ASP.NET Web Application

This module explains how to secure an ASP.NET Web application by using a variety of technologies, including authentication and authorization.

Lessons

Web Application Security Overview

Windows-Based Authentication

Forms-Based Authentication

Lab : Securing a Microsoft ASP.NET Web Application

Securing Your Web Site by Using Windows-Based Authentication

Securing Your Web Site by Using Forms-Based Authentication

Registering New Users

After completing this module, students will be able to:

Describe the ASP.NET and IIS authentication methods.

Secure an ASP.NET Web application by using Windows-based authentication.

Secure an ASP.NET Web application by using Forms-based authentication.

Before attending this course, students must have:

Knowledge of HTML or DHTML, including:

Tables

Images

Forms

Programming experience using Microsoft Visual Basic or Microsoft Visual C# , including:

Declaring variables

Using loops

Using conditional statements

The completion of Course 4994, Introduction to Programming Microsoft .NET Framework Applications with Microsoft Visual Studio 2005, satisfies the preceding prerequisite skills requirements for Visual Basic and Visual C#.