

# **Module 10: Deploying Applications**

# Overview

- Describing Assemblies
- Choosing a Deployment Strategy
- Deploying Applications

# ◆ Describing Assemblies

- Assemblies Overview
- Benefits of Strong-Named Assemblies
- Creating Strong-Named Assemblies
- Versioning Strong-Named Assemblies
- Using the Global Assembly Cache

# Assemblies Overview

- Contains code, resources, and metadata
- Provides security, type, and reference scope
- Forms a deployment unit
- Versionable
- Side-by-side execution allows multiple installed versions
- Global assembly cache allows assembly sharing

# Benefits of Strong-Named Assemblies

- **Guaranteed uniqueness**
  - No two strong names can be the same
- **Protected version lineage**
  - Only legitimate assembly versions can be loaded
- **Enforced assembly integrity**
  - Assemblies are tested for unauthorized modification before loading

# Creating Strong-Named Assemblies

- Requires identity, public key, and digital signature
- Generating the public-private key pair
  - Create a .snk file
  - Modify AssemblyInfo.vb

```
<Assembly: AssemblyKeyFile("KeyFile.snk")>
```

# Versioning Strong-Named Assemblies

- When a client makes a binding request, the runtime checks:
  - The original binding information inside the assembly
  - Configuration files for version policy instructions
- Use a publisher policy file to redirect the binding request

```
<bindingRedirect oldVersion="1.0.0.0"  
                newVersion="1.0.1.0"/>
```

# Using the Global Assembly Cache

- **Performance**
  - Quicker binding
  - Only one instance ever loaded
- **Shared location**
  - Can use machine configuration file to redirect bindings
- **File security**
  - Only administrators can delete files
- **Side-by-side versioning**
  - Can install multiple copies using different version information

# ◆ Choosing a Deployment Strategy

- Deployment Overview
- Copying Projects
- Deploying Projects
- Types of Deployment Projects

# Deployment Overview

- No-impact applications
- Private components
- Side-by-side versioning
- XCOPY deployment
- On-the-fly updates
- Global assembly cache

# Copying Projects

- Copying a project
  - There is an extra menu command for Web applications
  - You can copy a project directly to a Web server
- Using the XCOPY command
  - Use the DOS command
  - You can use it for any type of application

# Deploying Projects

## ■ Windows Installer

- Is used for Windows-based and Web-based deployment
- Copies all required files and registers components
- Configures IIS for Web-based applications

## ■ Merge modules

- Are used for reusable components
- Are included in an .msi file

# Types of Deployment Projects

- Cab Project – for downloading from Web server
- Merge Module Project – for shared components
- Setup Project – for Windows-based applications
- Setup Wizard – to walk through deployment project creation
- Web Setup Project – for Web-based applications

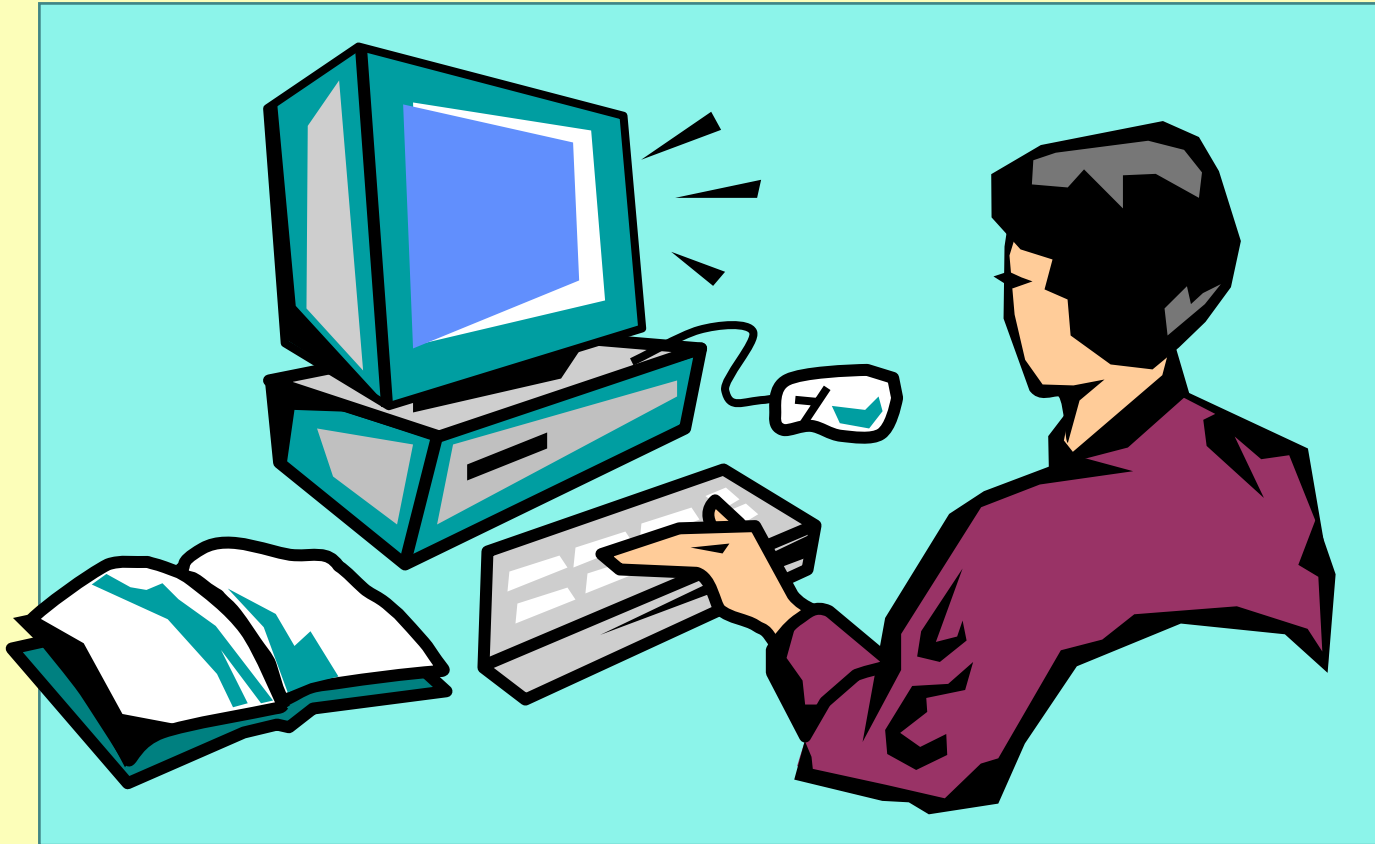
# ◆ Deploying Applications

- Creating a Merge Module Project
- Creating a Setup Project
- Using the Editors
- Creating Installation Components
- Deploying the Application

# Creating a Merge Module Project

- Never installed directly – included in client application deployment project
- Contains
  - DLL
  - Any dependencies and resources
  - Information for the Windows Installer
- Store one component only in one merge module
- If component changes, create a new merge module

# Lab 10.1: Packaging a Component Assembly



# Creating a Setup Project

- Creates a blank setup project with relevant folders in File System Editor
- Windows-based application
  - Application Folder
  - User's Desktop
  - User's Programs Menu
- Web-based application
  - Web Application Folder

# Using the Editors

- Registry
- File types
- User interface
- Custom actions
- Launch conditions

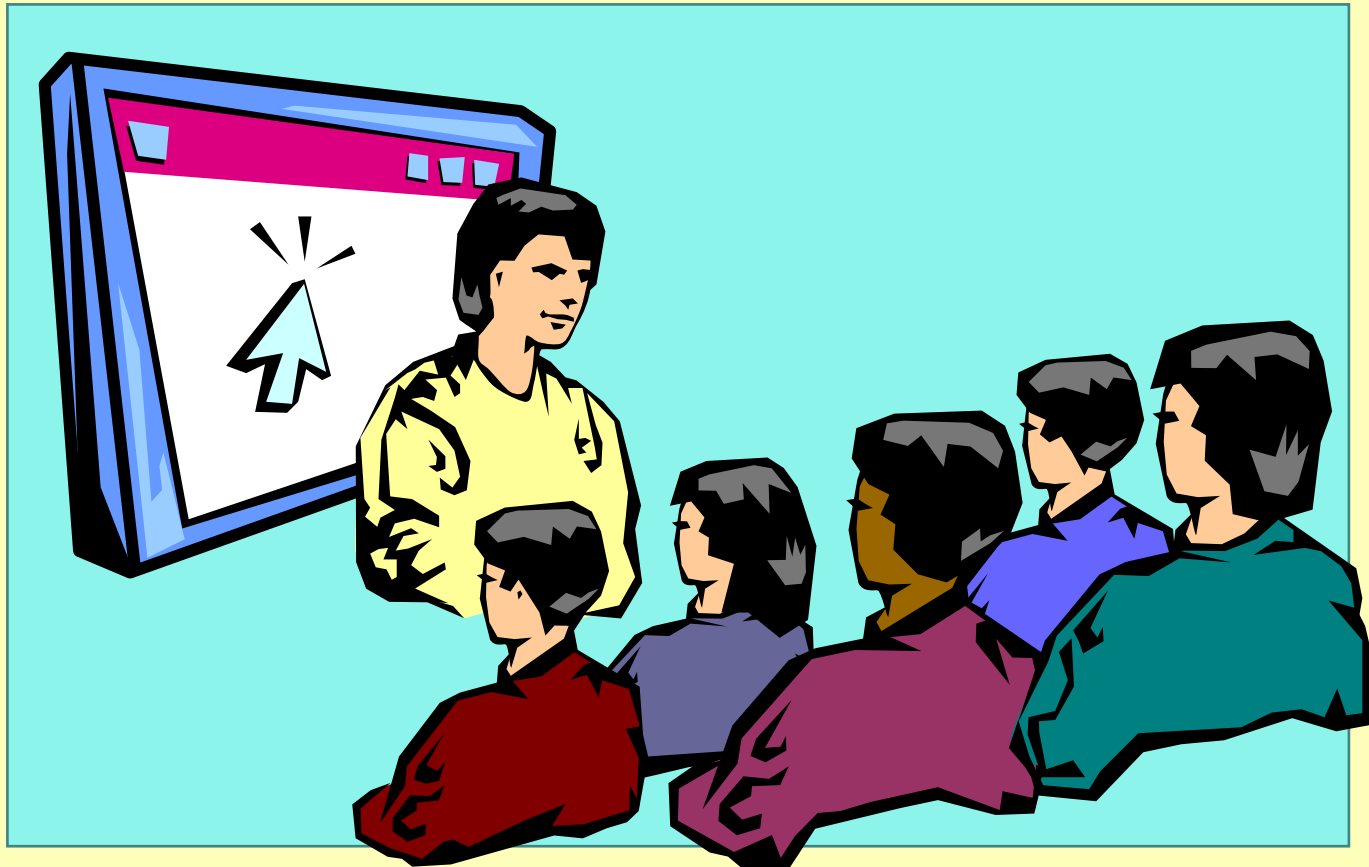
# Creating Installation Components

- EventLog
- MessageQueue
- PerformanceCounter
- Service
- ServiceProcess

# Deploying the Application

- **Windows-based setup project**
  - Copies all files
  - Registers components
  - Performs other installation tasks
  
- **Web setup project**
  - Copies all files
  - Registers components
  - Creates a Web application

# Demonstration: Deploying a Web-Based Application



# Lab 10.2: Deploying a Windows-Based Application



# Review

- Describing Assemblies
- Choosing a Deployment Strategy
- Deploying Applications