70-518 169 Q&S MCPD Pro: Designing and Developing Windows Applications Using Microsoft .NET Framework 4 by Lord Obsidian

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**Question 1**
You are designing a Windows Presentation Foundation (WPF) data entry application. The application uses data binding to bind controls in the user interface (UI) to business objects. The UI uses validation rules for each input control. The data validation rules change based on the state of the business object. You need to recommend a validation strategy that will allow changes to the validation rules without changes to the UI code.

What should you recommend?

A. Implement the IDataErrorInfo interface in the business objects and replace all ValidationRule elements with ExceptionValidationRule elements.
B. Set the ValidationStep attribute on ValidationRule elements to CommittedValue.
C. Set the ValidationStep attribute on ValidationRule elements to RawProposedValue.
D. Implement the IDataErrorInfo interface in the business objects and replace all ValidationRule elements with DataErrorValidationRule elements.

Correct Answer: D
Explanation/Reference:

**Question 2**
User will have a windows displayed which contains a stackpanel, text and image. Can only contain WPF elements and user HAS TO answer before closing the window. What would you choose for this?

A. System.Windows.MessageBox class
B. System.Windows.Forms.MessageBox class
C. a new class derived from Window class and call ShowDialog() method
D. a new class derived from Window class and call Show() method

Correct Answer: C
Explanation/Reference:

**Question 3**
Which technology allows gestures? (there were other requirements as well but this was the important one)

A. Windows Forms
B. WPF
C. Silverlight
D. WCF

Correct Answer: C
Explanation/Reference:

**Question 4**
There is a feature within a software that is causing performance issues. You want to log this after deploying the application to a file. What to use?
Question 5
WPF application, you want a behaviour where a button is automatically disabled if the DataContext setting changes.

A. RouterCommand
B. RoutedEventHandler
C. EventTrigger

Correct Answer: A
Explanation/Reference:

Question 6
You are reviewing an existing Windows application that uses .NET Framework 4. When the user clicks a button, the application sequentially processes thousands of image files contained in a directory. The user interface becomes unresponsive while the application processes the files. You have the following requirements:
- Modify the button’s click event.
- Increase application throughput by processing multiple image files concurrently.
- Ensure that the user interface remains responsive while the application processes the image files.

You need to recommend an approach for meeting the requirements. What should you recommend?

A. Iterate over the image files. For each image file, use the Process.Start() method to launch a console application that processes the image file.
B. Use the ThreadPool.QueueUserWorkItem() method to queue up a single work item that uses the Parallel.ForEach() method to process the image files concurrently.
C. Use the Parallel.ForEach() method to process the images concurrently.
D. Iterate over the image files by using the Parallel.ForEach() method. For each image file, start a separate thread that processes the image file, by using the Thread.Start() method.

Correct Answer: B
Explanation/Reference:

Question 7
You are designing an n-tier Windows solution that includes a data entry application. The solution uses Microsoft .NET Framework 4 and Microsoft SQL Server 2008. The data entry application sends customer orders to a middle-tier server. The middle-tier server sends orders to a set of services that perform operations on the orders. Business rules determine which services to call and whether to run them in sequence or in parallel. The business rules are complex and data dependent.

The Windows solution must meet the following requirements:
- Optimize application performance by using dynamic load balancing.
- Allow for business rules to be changed at runtime.

You need to recommend an approach that meets the requirements. What should you recommend?

A. Private message queues with a controller class on the middle-tier server
B. SQL Server stored procedures
C. A routed service that uses Windows Communication Foundation (WCF) messaging
D. A Windows Communication Foundation (WCF) service for each operation, with a controller class on the middle-tier server

Correct Answer: C
Explanation/Reference:

Question 8
You are designing an n-tier .NET Framework 4 solution that includes a Windows Presentation Foundation (WPF) application. You need to recommend an approach for ensuring that the solution can support 5,000 concurrent users. What should you recommend?

A. Buffer overflow testing
Question 9
You are designing a Windows Presentation Foundation (WPF) application. You have the following requirements:
. Run client-side validation tests on a large result set from a Microsoft SQL Server 2008 database.
. Validate each row of data without storing the entire result set in memory.
You need to recommend a data access technology. What should you recommend?
A. LINQ to SQL using the ElementAt() method
B. ADO.NET using SqlDataReader objects
C. LINQ to Entities using the ElementAt() method
D. ADO.NET using SqlDataAdapter objects and DataSet objects

Correct Answer: B
Explanation/Reference:

Question 10
You are designing updates to a Windows solution that processes complex scientific data. The solution extracts analyzed data from Microsoft Excel by using an application-level add-in. You have the following requirements:
. Deploy the Excel add-in to client machines with the application.
. Minimize the size of the deployment package.
You need to recommend an approach that meets the requirements. What should you recommend?
A. Include the primary interop assembly for Excel 2007.
B. Embed the Excel 2010 COM library
C. Include the primary interop assembly for Excel 2010
D. Embed the type information from the Excel 2010 COM library

Correct Answer: D
Explanation/Reference:

Question 11
You are designing a .NET Framework 4 solution that contains a Windows Presentation Foundation (WPF) application. The WPF application includes CPU-intensive calculations. The calculations can be run on a separate process and can effectively be isolated from the rest of the WPF application. You need to recommend a deployment strategy that maximizes the scalability of the calculations for each user. What should you recommend?
A. Deploy the calculation logic as a separate assembly along with the WPF application to each client computer. Invoke methods in the assembly asynchronously.
B. Deploy the calculation logic as a separate assembly along with the WPF application to each client computer. Invoke methods in the assembly synchronously.
C. Deploy the calculation logic as a Windows Communication Foundation (WCF) service to servers. Deploy the WPF application to each client computer.
D. Deploy the calculation logic as a Windows Communication Foundation (WCF) service to servers. Deploy the WPF application to the same servers.

Correct Answer: C
Explanation/Reference:

Question 12
You are designing a Windows Presentation Foundation (WPF) application that uses .NET Framework 4. The WPF application will be deployed to 5,000 users worldwide. You need to recommend an approach for identifying problems that users will experience. Which testing methodology should you recommend?
A. Acceptance testing
B. Integration testing
C. Functional testing  
D. Usability testing  

Correct Answer: A  
Explanation/Reference:  

Question 13  
You are designing a Windows Presentation Foundation (WPF) client application from which employees will access a Web service. Business partners will access the Web service by using proprietary client applications. You need to recommend a solution for ensuring the integrity of data in the system. What should you recommend? 

A. Secure the Web service by using SSL  
B. Implement data validation at the service layer and reject invalid data.  
C. Implement data validation on the client and reject invalid data.  
D. Encrypt data while storing it in the database.  

Correct Answer: B  
Explanation/Reference:  

Question 14  
You are designing a .NET Framework 4 solution that includes a Windows Presentation Foundation (WPF) application. The WPF application connects to a Microsoft SQL Server 2008 database. You plan to deploy the WPF application to millions of client computers. The SQL Server database will be hosted in a data center. The WPF application will query the database to provide type-ahead assistance as users enter data. The WPF application will send a query after each character is entered. Each query will access multiple joined tables. You need to recommend an approach for maximizing scalability of the solution. What should you recommend? 

A. Denormalize the data to fewer tables.  
B. Create stored procedures to abstract the tables.  
D. Create a separate data layer with caching.  

Correct Answer: D  
Explanation/Reference:  

Question 15  
You are evaluating an existing Windows Presentation Foundation (WPF) application. The WPF application runs in a Web browser as a XAML browser application (XBAP). The WPF application runs in the Intranet zone with Full Trust. A client certificate for the WPF application has been generated. Users are unable to access the WPF application. You locate the following message in the security log: "User has refused to grant required permissions to the application." Users state that they are clicking OK in all message boxes that appear. You need to recommend an approach for ensuring that the WPF application runs correctly on all client computers. Which two actions should you recommend? (Each correct answer presents part of the solution. Choose two.) 

A. Use the Code Access Security Policy Tool to grant the appropriate permissions.  
B. Sign the ClickOnce manifest for the WPF application.  
C. Modify the ClickOnce manifest for the WPF application to grant the appropriate permissions.  
D. Import the client certificate to the Trusted Root store.  

Correct Answer: AB  
Explanation/Reference:  

Question 16  
You are designing a Windows Presentation Foundation (WPF) application. The application will be localized into multiple languages. You need to recommend an approach for preparing the application for localization. Which two actions should you recommend? (Each correct answer presents part of the solution. Choose two.) 

A. Add UID attributes to language-specific elements in the XAML file.  
B. Define a UICulture element for each language in the project file.  
C. Add an application setting for each language to the App.config file.  
D. Translate the contents of the appropriate XAML elements into each localization language.
Correct Answer: AB
Explanation/Reference:

**Question 17**
What do you suggest for windows application that creates MS Word files:

A. dynamic types
B. TypeLibConverter
C. COM callable wrapper
D. The Assembly registration tool

Correct Answer: A
Explanation/Reference:

**Question 18**
How to navigate to Page3 when wpf frame shows Page2 for the first time:

A. Frame1.NavigationService.GoForward()
C. Frame1.Navigate(new Page3())
D. Frame1.NavigateService.Navigate("Page3");

Correct Answer: C
Explanation/Reference:

**Question 19**
Choose test strategy to make sure that Windows application supports Microsoft Narrator:

A. stress
B. regression
C. duration
D. accessibility

Correct Answer: D
Explanation/Reference:

**Question 20**
You are designing a Windows application by using Microsoft .NET Framework 4 and Microsoft Visual Studio 2010. You plan to add a feature to the application. The application will be used in several different locales. The application will send data to a centralized server and log the date and time information. You need to ensure that the date and time information includes the local Universal Time Coordinate (UTC) offset value. Which class should you use?

A. CultureInfo
B. DateTimeOffset
C. CultureInfoConverter
D. DateTimeOffsetConverter

Correct Answer: B
Explanation/Reference:

**Question 21**
You are designing a Windows Presentation Foundation (WPF) application that accesses a business tier. The business tier is implemented as a Windows Communication Foundation (WCF) service and stores data in a Microsoft SQL Server 2008 database. The WCF service will be accessed by external applications that do not use the .NET Framework. You need to recommend an approach for passing data between layers. What should you recommend?

A. Use custom .NET classes with XML serialization.
B. Use custom .NET classes with binary serialization.
C. Use the DiffGram XML format.
D. Use a DataSet object.
Correct Answer: A
Explanation/Reference:

**Question 22**
You are designing a Windows Presentation Foundation (WPF) application. The WPF application must run against either Microsoft SQL Server 2008 or a third-party database system without duplicating data access logic. You need to recommend a data access technology. What should you recommend?

A. ADO.NET using DataSet objects and SqlDataAdapter objects
B. LINQ to Entities
C. LINQ to SQL
D. ADO.NET using DataSet objects and SqlDataReader objects

Correct Answer: B
Explanation/Reference:

**Question 23**
You are designing a Windows Presentation Foundation (WPF) application. The main window of the WPF application includes two panels: panel1 and panel2. The WPF application must meet the following requirements:
1. Panel2 must be enabled only after users have entered values into multiple text boxes in panel1.
2. The background color of panel2 must be set to a specific color based on one of the text box values in panel1.
3. The background color of panel2 must be set at the same time the panel is enabled. You need to recommend an approach for meeting the requirements. What should you recommend?

A. MultiDataTrigger
B. DataTemplate
C. Dependency properties
D. Command

Correct Answer: A
Explanation/Reference:

**Question 24**
Preparing a component to be localized how to proceed? select 2

A. UID in xaml
B. CultureId
C. Project setting
D. Text Translation

Correct Answer: AB
Explanation/Reference:

**Question 25**
An existing Windows application uses a Windows Communication Foundation (WCF) Web service that is available only to employees. You have the following requirements:
1. Make the WCF Web service available to business partners.
2. Enable business partners to send a profile token.
3. Ensure that the currently deployed application continues to function. You need to recommend a solution that meets the requirements. What should you recommend?

A. Convert the WCF Web service to a Duplex service that implements a callback to accept the profile token.
B. Use SOAP headers to pass the profile token to the service operations.
C. Modify the WCF Web service operations to accept the profile token as an additional parameter.
D. Implement the WCF Web service as a REST service.

Correct Answer: B
Explanation/Reference:
**Question 26**
You design a Windows Presentation Foundation (WPF) application that interacts with a Windows Communication Foundation (WCF) Web service. The WCF Web service throws exceptions of type `Exception`. The WPF application crashes when the WCF Web service throws an exception. You need to recommend an error-handling strategy that allows users to submit updated data to the WCF Web service without restarting the WPF application. What should you recommend?

A. Modify the Web service to throw custom exceptions derived from the `Exception` class.
B. Modify the Web service to throw exceptions of type `FaultException`.
C. Modify the Web service to throw exceptions of type `InvalidOperationException`.
D. Modify the Web service to throw custom exceptions derived from the `ApplicationException` class.

Correct Answer: B
Explanation/Reference:

**Question 27**
You create a Console application using .NET Framework 2.0. The Console application utilizes a set of assemblies for business logic and the data layer. You want to convert the Console application to a Windows Forms application. Therefore, you need to design a conversion strategy by using the least amount of time and coding. What will you do? Each correct answer represents a part of the solution. Choose two.

A. Convert the Console application to Web application.
B. Convert the Console application to Windows Forms application.
C. Retain the business logic and data layer assemblies as .NET Framework 2.0 assemblies.
D. Convert the Console application and all data layer assemblies to .NET Framework 4.0.
E. Upgrade the business logic and data layer assemblies to .NET Framework 4.0.

Correct Answer: BC
Explanation/Reference:

**Question 28**
You are creating a Windows application using .NET Framework 4.0. All employees of the company will use that application. The local file of the application is stored on the local computers. The file is secure and cannot be accessed from remote places. You are required to design a remote monitoring strategy to monitor the usage time of the application by each user. What will you do? Each correct answer represents a part of the solution. Choose two.

A. Publish the events to Windows Event Log.
B. Publish the events to Microsoft Operations Manager.
C. Publish the application’s startup, shutdown, and user idle time events by using the System Management Instrumentation namespace.
D. Use Windows Management Instrumentation.
E. Add TraceSource for startup, shutdown, and user idle events.

Correct Answer: BC
Explanation/Reference:

Explanation:
- A is incorrect. Windows Event Log is the rewritten event tracing and logging architecture introduced with Windows Vista. Windows Event Log has been rewritten around a well-defined structured XML log format. It is a designated log type to allow applications to more precisely log events and make it easier for support technicians and developers to interpret the events.
- D is incorrect. Windows Management Instrumentation (WMI) is a set of extensions to the Windows Driver Model that provides an operating system interface through which instrumented components provide information and notification. WMI is Microsoft’s implementation of the Web-Based Enterprise Management (WBEM) and Common Information Model (CIM) standards from the Distributed Management Task Force (DMTF).
- E is incorrect. The TraceSource class provides a set of properties and methods to enable applications to trace the execution of code and connect trace messages with their source. It provides tracing methods that enable a user to easily trace events, trace data, and issue informational traces. The Trace output from TraceSource can be controlled by configuration file settings. The TraceSource class defines tracing methods but does not essentially offer any specific means for generating and storing tracing data. The tracing data is created by trace listeners.

**Question 29**
You are designing an n-tier .NET Framework 4 solution that includes a Windows Presentation Foundation (WPF) application and a
Windows Workflow Foundation (WF) component. The WF component contains functionality to incorporate frequently changing rules. You need to recommend a tier for the deployment of the WF component that will not degrade the performance of the WPF application. Which tier should you recommend?

A. business
B. data access
C. data
D. presentation

Correct Answer: A
Explanation/Reference:

**Question 30**
You are designing a Windows Presentation Foundation (WPF) application. The application data files have the file name extension.abc. The WPF application installer must meet the following requirements:
- Add a shortcut to the desktop.
- Install infrequently used assemblies on demand.
- Associate the .abc file name extension with the WPF application.
- Roll back the installation in the event of a failure.

You need to recommend a deployment method. What should you recommend?

A. ClickOnce
B. Background Intelligent Transfer Service (BITS)
C. Windows Installer
D. XCopy

Correct Answer: A
Explanation/Reference:

**Question 31**
LINQ to SQL defines which two core attributes?

A. [Row] and [Column]
B. [Table] and [Column]
C. [Expression] and [Table]
D. [Table] and [Cell]

Correct Answer: B
Explanation/Reference:

**Question 32**
Which of the following allows you to create data access applications by programming alongside a conceptual application model?

A. ADO.NET Entity Framework
B. Entity Framework
C. Language-Integrated Query
D. Conceptual Model

Correct Answer: B
Explanation/Reference:

**Question 33**
You create numerous WPF applications using .NET Framework 4.0. You are packaging updates for the WPF applications. The updates have the following features:
- The applications and third-party controls have access to the updates.
- The applications’ updates have dependencies upon the third-party controls’ updates.
- An update script is run at logon permitting a single command to be executed.

You are required to package the applications’ and third-party controls’ updates to ensure that they are successfully installed. What will you do? Each correct answer represents a part of the solution. Choose two.
A. Package third-party controls as a merge module.
B. Package third-party controls as an ActiveX Installer Service.
C. Package third-party controls as an XCOPY deployment.
D. Package application updates as a single Installer.
E. Package application updates as a Windows Installer package.

Correct Answer: AD
Explanation/Reference:

Question 34
Question. You are developing a Windows Presentation Foundation (WPF) application.
You need to ensure that when the user attempts to run the application, the user cannot use the application if a new version of the application is available.
What should you do?

A. Deploy the application using the XCopy technology
B. Create a custom action within the MSI package to check for updates
C. Use the ClickOnce technology along with the Search for updates during application startup setting
D. Use a Background Worker object on an application load to connect to a Background Intelligent Transfer Service (BITS)

Correct Answer: C
Explanation/Reference:

Question 35
You are creating a Windows application in an application domain named DomainX using .NET Framework 4.0. DomainX builds an application domain named DomainY. Code in DomainY throws ApplicationException. However, code in DomainX throws an unhandled FileNotFoundException.
You are required to ensure that the exception thrown in DomainY is correctly handled in DomainX.
What will you do? Each correct answer represents a part of the solution. Choose two.

A. Use the Gacutil.exe tool to sign the assembly holding the exception.
B. Deploy the assembly to the Global Assembly Cache.
C. Use the primary interop assembly to handle the exception.
D. Sign the assembly holding the exception by using a strong name.
E. Use a publisher policy to deploy the assembly.
Correct Answer: BD
Explanation/Reference:

**Question 36**
You are developing a Windows Presentation Foundation (WPF) application. You need to recommend a testing strategy that will identify the following for the application:
- Bottlenecks and their causes
- Baseline for future regression testing
- Response time
- CPU utilization
- Behavior under various workload patterns
Which testing strategy should you recommend?

- A. Load testing
- B. Stress testing
- C. Capacity testing
- D. Performance testing

Correct Answer: A
Explanation/Reference:

**Question 37**
Which event of the Application class is used to occur when an untrapped thread exception is thrown?

- A. ThreadExit
- B. ThreadException
- C. ApplicationExit
- D. IdleExit

Correct Answer: B
Explanation/Reference:

**Question 38**
You create a Windows application using .NET Framework 4.0. The application contains a set of WCF services to authorize and clear up credit card transactions. A separate service is implemented for each credit card provider. However, the same service contracts and data contracts are used across all implementations. The incoming requests to the service must conform to the contracts. You want to implement a validation strategy to meet the requirements by using the least amount of development efforts. What will you do?

- A. Use a message inspector.
- B. Implement IDispatchMessageInspector interface.
- C. Implement a custom class that inherits from SoapExtensionAttribute.
- D. Use the CustomValidator class.

Correct Answer: B
Explanation/Reference:

In the given scenario, you will use the IDispatchMessageInspector interface. The IDispatchMessageInspector interface is used to define the methods that permit custom inspection or modification of inbound and outbound application messages in service applications. There are a large number of situations that require intercepting messages before invoking the operation for which it is designed. Typically, message inspectors are inserted by a service behavior, an endpoint behavior, or a contract behavior. The behavior then adds the message inspector to the DispatchRuntime.MessageInspectors collection.

Note: IDispatchMessageInspector objects are always invoked at the identical point.
Note: despite its name, implementing this interface allows us to both inspect and modify inbound and outbound messages.

**Question 39**
Which deployment method will you use to create an application installer file and distribute the file?

- A. Windows Installer
- B. Windows Setup Wizard
C. XCOPY
D. Mixed Mode

Correct Answer: A
Explanation/Reference:

**Question 40**
Which deployment method will you use to publish an application to a centralized location?

A. Windows Installer
B. UNC
C. XCOPY
D. ClickOnce

Correct Answer: D
Explanation/Reference:

**Question 41**
You create a Windows application using .NET Framework 4.0. The application is deployed by using the XCOPY command. The application updates are provided through a Web site. The application’s users increase eventually. You are required to ensure that all users make use of the same version of the application. What will you do?

A. Change the application to use the ClickOnce deployment.
B. Use the Windows Installer package for the application.
C. Use a deployment manifest for the application.
D. Write a bootstrap code to ensure the availability of a new version of the application.

Correct Answer: A
Explanation/Reference:

**Explanation others:**
As given in the question, the application’s users increase eventually and you are required to ensure that all users make use of the same version of the application. Therefore, you change the application to use the ClickOnce deployment. ClickOnce is a deployment technology that allows a user to create self-updating Windows-based applications.

It can be used to create applications that are installed and executed with minimal user interaction. It can also be used to create applications that are easily deployed from a Web site, a file share, or a CD-ROM. ClickOnce technology overcomes three major deployment issues as follows:

- Difficulties in updating Windows-based applications
- Dependence of multiple application programs on shared components
- Allowing permissions only to administrative users for application installations

**Question 42**
You are creating a Windows application using .NET Framework 4.0. The application has the following requirements:
- It will access the data files that are installed together with the application.
- It must be able to locate these data files.
You are required to record the location of the installed data files. You are also required to ensure that the application can be accessed by roaming users. What will you do? Each correct answer represents a part of the solution. Choose two.

A. Ensure that the Known Folder is introduced by using FOLDERID together with the application’s installed location.
B. Create an application-specific Known Folder.
C. Append your application name to IKnownFolder.
D. Change the Known Folder FOLDERID_Profile to the application installed location.
E. Write the value to the HKLM registry key.

Correct Answer: AB
Explanation/Reference:

IKnownFolderManager.RegisterFolder() registers a KNOWNFOLDER_DEFINITION by a KNOWNFOLDERID

Explanation others:
The Known folders are used to abstract the actual physical location of a file on a particular system. The Known folders permit an application to query the system for the actual configuration of the system. The appropriate Windows Vista and application-specific
locations can be used to determine where to store the files and registry information. This keeps an application from conflicting
with the other applications, and makes it easier to move around an application or make it reachable to the roaming users. Use of the
known folders replaces the use of the predefined "special folders" known by CSIDL constants.
Each known folder is recognized by GUID/KNOWNFOLDERID, which by principle has a name of FOLDERID_XXX. These
extensible KNOWNFOLDERID values supersede the permanent CSIDLs existing in the earlier releases of the OS. A known folder is
used to store data about the directories it handles under the HKEY_LOCAL_MACHINE sub-tree in the registry:
HKEY_LOCAL_MACHINESoftwareMicrosoftWindowsCurrentVersionExplorerFolderDescriptions

IKnownFolder is the primary COM interface for the Known folders functionality. It developed from IFolderInformation.
IKnownFolder is used to define methods that get information regarding the type, properties, and location of a special folder.

Applications that are accessible to all users must be placed in the directory that is recognized by a KNOWNFOLDERID along with
the value of FOLDERID_ProgramFiles. The physical path is acquired by invoking
SHGetKnownFolderPath/SHGetKnownFolderIDList function.

The Special Folders are presented to the user through an interface as an abstract concept, rather than an absolute folder path.
These folders allow an application to ask the OS where an

**Question 43**

You are creating a Windows Web service application using .NET Framework 4.0. The application has the following requirements:
- The user settings have to be retained between application executions.
- The application will be executed without any administrative privileges.

You must ensure that the application meets the requirements by using the least amount of development effort.

What will you do?

A. Create a Windows service to store session state.
B. Use a WPF Standalone application to store session state.
C. Use the CookieContainer class to store session state.
D. Use temporary cookie to store session state.

Correct Answer: C

Explanation/Reference:

You will use the CookieContainer class to store session state. The CookieContainer class is used to represent a container for a
collection of CookieCollection objects. It is a data structure that provides storage space for the Cookie class instances. It has a
capacity limit that is set as soon as the container is created or altered by a property. The CookieContainer class has three
properties that direct the volume of the content of the container, which are as follows: Capacity MaxCookieSize
PerDomainCapacity

A is incorrect:
A Windows service is a process that executes in the background and in its own process space, with a specific user identity. Usually,
it does not involve any user interaction. A Windows service is required to conform to the interface provided by the Windows Service
Control Manager (SCM).

**Question 44**

You use Microsoft .NET Framework 4 to create a Windows Presentation Foundation (WPF) application. The application uses the
background worker process (BWP). When the user clicks a button, the background worker executes a method named
DoCalculations asynchronously. You need to implement a progress bar on the user interface (UI) that informs the user of the
progress of DoCalculations. Which two actions should you perform? (Each correct answer presents part of the solution. Choose
two.)

A. Modify the Value property of the progress bar in DoCalculations.
B. Modify the Value property of the progress bar in the ProgressChanged event handler of the background worker.
C. Modify the Value property of the progress bar in the RunWorkerCompleted event handler of the background worker.
D. Call the ReportProgress method of the background worker in DoCalculations.
E. Call the ReportProgress method of the background worker in the DoWork event handler of the background worker.

Correct Answer: BD

Explanation/Reference:

**Question 45**

You create a Windows application using .NET Framework 4.0. The application contains a function that makes use of a COM+
object written in C++. The function is used to get data from an isolated Web service application. You find that resources used by the
application increase sooner or later. You also realize that in the list of processes in Task Manager, three instances of the Web service application exist. Therefore, you are required to ensure that the application releases resources properly. Which of the following actions will you take?

A. Invoke the ReleaseComObject method of the Marshal class after the function calls.
B. Invoke the Release method of the Marshal class after the function calls.
C. Invoke the Finalize method of the GC class after the function calls.
D. Invoke the SuppressFinalize method of the GC class after the function calls.

Correct Answer: A

Explanation/Reference:

**Question 46**

Which statement in C# is used to provide a declarative syntax for iteration over the IEnumerable/IEnumerator methods of the .NET Framework?

A. while
B. for
C. foreach
D. enum

Correct Answer: C

Explanation/Reference:

**Question 47**

You are creating a Windows application using .NET Framework 4.0. The application is used to browse all the way through the sales orders. A file on the local computer is used to store the sales order data. A Web service is used by the application to synchronize sales order data with the central database. You notice that other applications on the computer can access the sales order data. Therefore, you are required to ensure that the sales order data can be accessed only by the Windows application. Which of the following actions will you take?

A. Use the IsolatedStorageFile class to store the sales order data.
B. Use the IsolatedStorageFileStream class to store the sales order data.
C. Use the PrincipalPermission class to read the sales order data.
D. Use the RijndaelManaged class to encrypt the sales order data.

Correct Answer: D

Explanation/Reference:

**Question 48**

You use Microsoft .NET Framework 4 to create a Windows Presentation Foundation (WPF) application. You add a ListBox control to the application. The ListBox control is data-bound to an instance of a custom collection class of the Product objects named ProductList. You need to ensure that changes to ProductList are automatically reflected in the ListBox control. What should you do?

A. Implement the INotifyPropertyChanged interface in the Product class.
B. Implement the IQueryable<Product> interface in the ProductList class.
C. Extend the DependencyObject class in the Product class.
D. Extend the ObservableCollection<Product> class in the ProductList class.

Correct Answer: D

Explanation/Reference:

**Question 49**

You use Microsoft .NET Framework 4 to create a Windows Presentation Foundation (WPF) application. You want to localize the application to use the German locale settings. You need to allow the ResourceManager class to retrieve a neutral German locale version of the text to be displayed in the user interface (UI). Which file should you add to the project?

A. Resources.de.xml
B. Resources.de-DE .xml
Question 50
You use Microsoft .NET Framework 4 to create a Windows Forms application. The application includes a RichTextBox control and a ListBox control. The ListBox control is populated with a list of valid file names. The application allows users to drag a ListBox item to the RichTextBox control.

You need to provide a visual indication that a file that is dragged can be dropped on the RichTextBox control. What should you do?

A. Use a DoubleAnimation class.
B. Use a Storyboard animation class.
C. Use the DragDropEffects enumeration.
D. Use the DragAction enumeration.

Correct Answer: C
Explaination/Reference:

Question 51
You use Microsoft .NET Framework 4 to create a custom Windows Presentation Foundation (WPF) application. Your environment includes several WPF applications. The applications use the same logo and style configuration as part of a corporate standard. You need to ensure that the existing applications can be updated to use the same logo and style settings without recompiling. Which two actions should you perform? (Each correct answer presents part of the solution. Choose two.)

A. Mark the resource as an embedded resource in each application.
B. Create a resource in an XAML file that contains the logo and style configurations.
C. Create a resource in a custom control that contains the logo and style configurations.
D. Add the resource as a ResourceDictionary in the MergedDictionaries collection of each application.
E. Use ResourceManager to read the content of the resource. Manually assign the style configurations included in the resource file to the appropriate control in each application.

Correct Answer: BD
Explanation/Reference:

Question 52

You plan to create a Windows Communication Foundation (WCF) service. The service will query a SQL Server database. The database will be replicated to four geographically separated database instances.

You need to ensure that the WCF service meets the following requirements:
"I"It allows additional database instances to be added
"It routes users to the closest database server.

What should you do?

A. Implement context-based filtered routing
B. Implement content-based filtered routing
C. Store each database connection string in a local database instance.
D. Add each database server connection string to the Web config

Correct Answer: A
Explanation/Reference:

Question 53
You are designing a Windows desktop application for your company by using Microsoft .NET Framework 4 and Microsoft SQL Server 2008.

The middle tier of the application uses several Data Adapter objects that query a SQL Server database. The user interface (UI) tier of the application uses controls that are bound to Typed Data Set objects.

The database schema frequently changes.

You need to ensure that changes in the database schema do not impact the UI tier.
What should you do?

A. Replace the Data Adapter objects with Data Reader objects.
B. Replace the Data Set objects with Language Integrated Natural Query (LINQ) objects.
C. Encapsulate the Data Set objects in a custom Data Transfer Object (DTO) class.
D. Encapsulate the Data Adapter objects in a custom Data Transfer Object (DTO) class.

Correct Answer: C
Explanation/Reference:

Question 54
You are creating a Windows application by using Microsoft .NET Framework 4 and Microsoft Visual Studio 2010. The business logic layer of the application is implemented by using Windows Communication Foundation (WCF). The application must provide maximum availability. It must be able to run in a reliable manner even when network connectivity is not available. You need to design the WCF service interaction for the business layer of the application. What should you do?

A. Create a WCF queued service.
B. Create a WCF proxy class that uses synchronous operations.
C. Create a WCF proxy class that uses asynchronous operations.
D. Create a WCF service that uses the Ws20071-IttpBinding binding.

Correct Answer: A
Explanation/Reference:

Question 55
You are designing a Windows Presentation Foundation (WPF) application for your company by using Microsoft .NET Framework 4 and Microsoft Visual Studio 2010. The user interface (UI) tier of the application will be developed by using Windows Presentation Foundation (WPF). The middle tier of the application will be developed by using Windows Communication Foundation (WCF). You plan to use several legacy third-party COM components. You do not have access to the source code of these components. You need to ensure that the following requirements are met:

* "The middle tier can use the COM components.
* "Application developers can debug the application.
* "The application must allow for a gradual migration away from the COM components.

What should you do?

A. Add references to the COM components in the UI tier.
B. Design a thin interface layer assembly that uses COM Callable Wrappers (CCWs) to dynamically access the COM components.
C. Design a new Primary Interpol Assembly (PIA) by using appropriate source attenuates for the COM components. In the PIA, expose selected elements of the components that can be used by developers.
D. Design a custom wrapper assembly that uses the methods of the Type Lib Converter class to load and interface to the COM components. Expose managed .NET methods that dynamically access the corresponding COM methods.

Correct Answer: C
Explanation/Reference:

Question 56
You are designing a Windows Presentation Foundation (WPF) application for your company by using Microsoft .NET Framework 4 and Microsoft Visual Studio 2010. The middle tier of the application will use an existing WIN32 dll that requires elevated privilege. You need to ensure that the middle tier can be implemented as a Windows Communication Foundation (WCF) service. What should you do?

A. Use full-trust Level 1 Security-Transparent code.
B. Use full-trust Level 2 Security-Transparent code.
C. Use partial-trust Level 1 Security-Transparent code.
D. Use partial-trust Level 2 Security-Transparent code.

Correct Answer: A
Explanation/Reference:
Question 57
You are designing an application by using Windows Presentation Foundation (WPF) and Microsoft .NET Framework 4. You design a wizard for the application. The wizard contains many screens. You need to ensure that users can move backward and forward through the screens. You also need to ensure that users can navigate to the previous screen stored in history. What should you do?

A. Create all the screens in the wizard by using the Window object. Then, use the Show method of the Window object.
B. Create all the screens in the wizard by using the Window object. Then, use the Show Dialog method of the Window object.
C. Create all the screens in the wizard by using the Page object. Then, use the Go Back method of the Navigation Service object.
D. Create all the screens in the wizard by using the Page object. Then, use the Navigate method of the Navigation Service object.

Correct Answer: C
Explanation/Reference:
*D*

Question 58
You are designing an application by using Windows Presentation Foundation (WPF) and Microsoft .NET Framework 4. You plan to create a wizard by using a Window, a Frame, and several Page objects. The wizard will use the Navigation Service. The Navigation Service will be invoked by buttons on the user interface (UI). You need to ensure that prior-page navigation can be disabled. What should you do?

A. In the button On Click event, remove the previous wizard page from the journal.
B. In the button On Click event, remove the previous wizard page from the Window.
C. In the button On Mouse Down event, remove the previous wizard page from the Frame.
D. In the button On Mouse Down event, remove the previous wizard page from the Window.

Correct Answer: A
Explanation/Reference:

Question 59
You are designing an application by using Windows Presentation Foundation (WPF) and Microsoft .NET Framework 4. The application retrieves customer data from an enterprise resource planning (ERP) system. You need to ensure that the following requirements are met:
* "Customer data is retrieved only once.
* "Customer data is available on multiple forms within the application.
* "Forms can implement Two-Way binding to the customer data.
What should you do?

A. Store the results of the query in a static Data Table object that is used by all the forms.
B. Store the results of the query in a local XML file. Bind all forms to an XML Data Adapter object that references the local XML file.
C. Design a static class for the data that implements the IObservable interface.
D. Design a static class for the data that implements the INotifyPropertyChanged interface. Raise the PropertyChanged event to notify the forms when data is changed.

Correct Answer: D
Explanation/Reference:

Question 60
You are creating a Windows Presentation Foundation (WPF) application by using Microsoft .NET Framework 4 and Microsoft SQL Server 2008. You create a window that allows users to search for products that match a given name. Search results are displayed when the user types each letter of the product name. Users report that when they type a letter of the product name, the window stops responding for a varying amount of time. While the window stops responding, users cannot type more letters. The window stops responding even when the search generates few results. You need to ensure that the window responds while users type a name. What should you do?

A. Cache the results returned by the Find Products method for each set of catena.
B. Use a Vitalizing Stack Panel class to display the list of client applications that match the given name
C. Create a delegate for the Find Products method. Pass the delegate to the Invoke method of the Dispatcher property of the window.
D. Before you call the Find Products method, call the Freeze method on the Brush object that is used as the Background property of the window.

Correct Answer: C

Explanation/Reference:

**Question 61**
You are designing a Windows Presentation Foundation (WPF) application by using Microsoft .NET Framework 4 and Microsoft Visual Studio 2010.
You plan to create an Author object that contains a Books property. The Books property contains a large array of Books objects.
When users browse through author data in the application, they must be able to view all information related to books written by that author without additional queries. You need to design a data access strategy that meets the requirement.
Which strategy should you use?

A. lazy loading
B. eager loading
C. optimistic locking
D. pessimistic locking

Correct Answer: B

Explanation/Reference:

**Question 62**
You are designing an application by using Microsoft .NET Framework 4, Microsoft Visual Studio 2010, and Microsoft SQL Server 2008.
The application will be used by a sales team to enter sales orders and update customer information. You need to ensure that the application meets the following requirements:
* Allows users to enter sales orders while their computers are disconnected from the network.
* Uploads sales orders to the server database when connected to the network.
* Compiles against the .NET Framework 4 client profile.
What should you use?

A. XML files
B. WCF services
C. Microsoft Sync Framework
D. the System.Web.Caching namespace classes

Correct Answer: C

Explanation/Reference:

**Question 63**
You are developing an application by using Microsoft .NET Framework 4 and Microsoft Visual Studio 2010.
The application accesses customer data stored on both Microsoft and non-Microsoft database servers.
You need to combine data from the multiple databases to display customer information.
Which data access technology should you use?

A. LINQ to SQL
B. ADO.NET Data Reader
C. ADO.NET Entity Framework
D. Microsoft Sync Framework

Correct Answer: C

Explanation/Reference:

**Question 64**
You need to design a data access strategy that meets the following requirements:
* Automatically tracks changes
* Maps the database data model to the object model.
Which data access technology should you use?

A. LINQ to SQL  
B. LINQ to XML  
C. ADO.NET Data Set  
D. ADO.NET Data Reader

Correct Answer: A  
Explanation/Reference:

**Question 65**
You are developing a Windows application to manage customer data by using Microsoft .NET Framework 4 and Microsoft Visual Studio 2010. Data is stored in several geographically separated SQL Server databases. Modifications to the database schema have caused the application to fail. You need to ensure that schema modifications will not cause application failure. Which data access methodology should you use?

A. LINQ to SQL  
B. ADO.NET Entity Framework  
C. ADO.NET Data Table objects  
D. ADO.NET Data Reader objects

Correct Answer: B  
Explanation/Reference:

**Question 66**
You are designing a Windows client application by using Microsoft .NET Framework 4. You create a Global Positioning System (GPS) navigation application. Routing data is stored on a server. A wireless data connection that has limited bandwidth allows the application to download data from the server. The application continuously shows a perspective view of the route ahead as a user sees it, based on the position and direction of the vehicle. Prior to navigation, a user types their destination and selects a route they will follow. You need to ensure that when the position or direction of the vehicle changes, the perspective view is updated immediately. What should you do?

A. Download perspective views asynchronously as JPEG images when the user moves toward the route.  
B. Compute the best route on the server. Download the selected routing data as geographic coordinates before the routing begins.  
C. Compute all possible perspective views on the server, compress them as JPEG images, and download the images before the routing begins.  
D. When a wireless connection is available, compute potential routes from the current position of the car and store the corresponding routing data on the client application.

Correct Answer: B  
Explanation/Reference:

**Question 67**
You are deploying an application on Windows client computer by using Microsoft .NET Framework 4 and Microsoft Visual Studio 2010. You need to ensure that the deployment package meets the following requirements: Grants only the necessary permissions  
Adds a shortcut to the Windows Start menu  
Registers the application within Programs and Features  
Can be published to a Web site. Which deployment strategy should you use?

A. XCopy  
B. ClickOnce  
C. Merge module  
D. Windows Installer

Correct Answer: B  
Explanation/Reference:
**Question 68**
You are designing a Windows Presentation Foundation (WPF) application by using Microsoft .NET Framework 4 and Microsoft Visual Studio 2010. You plan to create a Customer object that contains an Orders property. The Orders property contains an array of Orders objects. When users browse Customer objects, they must be able to optionally view Orders objects you need to design a data access strategy that retrieves data only when necessary. Which strategy should you use:
A. lazy loading
B. eager loading
C. file streaming
D. pessimistic locking
Correct Answer: A

**Explanation/Reference:**

**Question 69**
You deploy an n-tier Windows client application by using Microsoft .NET Framework 4. The middle tier of the application will generate an XML file. The XML file will be stored on a shared network drive and will be used by the user interface (UI) tier. The UI tier will contain a method that accesses the Windows clipboard on client computers. You plan to use Code Access Security (CAS) to secure the application. You need to ensure that the application can run on Windows 7 client computers that have User Access Control (UAC) enabled. Which two permission sets should you apply to the application during deployment? (Each correct answer presents part of the solution. Choose two.)
A. File IO
B. User Interface
C. Directory Services
D. Isolated Storage File
Correct Answer: AB

**Explanation/Reference:**

**Question 70**
You have deployed an application by using Microsoft .NET Framework 4. You are designing an application update strategy to check for updates. You need to ensure that the design meets the following requirements:
- "Uses Click Once deployment"
- Supports high bandwidth networks
- "Updates by using a background thread"
- Updates without user intervention"
- Ensures that the old version of the application does not run when a new version is available
When should you check for updates?
A. after application startup
B. before application startup
C. after the Bootstrapper package startup
D. before the Bootstrapper package startup

Correct Answer: B

**Explanation/Reference:**

*B*
From http://msdn.microsoft.com/library/s22azw1e.aspx:
Although you can require updates by using the other update strategies, checking Before the application starts is the only way to guarantee that an older version cannot be run. When the mandatory update is detected on startup, the user must either accept the update or close the application.

**Question 71**
You are deploying a Windows Presentation Foundation (WPF) application that uses Microsoft .NET Framework 4 and Microsoft SQL Server 2008. Your company is consolidating database servers. Your application uses a database and stored procedures. The application stores a large amount of data in the tempdb file. The database must be allocated two central processing units. The stored procedures employ three-pail naming. You need to deploy the database. Where should you deploy the database?
A. on a shared server on a shared instance
B. on a shared server on a stand-alone instance
C. on a stand-alone server on a shared instance  
D. on a stand-alone server on a stand-alone instance  

Correct Answer: B  
Explanation/Reference:

Question 72  
You are designing a Windows Presentation Foundation (WPF) application by using Microsoft .NET Framework 4 and Microsoft SQL Server 2008. The application runs successfully on a local client computer by using your user account. You deploy the database of the application to the production server. You configure the application connection string to use the Windows Authentication mode. You deploy the application to several client computers that use other applications on the network. The client computers access different databases on the production server by using the Windows Authentication mode. Users report that the application is not working and that they receive a database connection exception. You need to identify the source of the problem.  
What is the source of the problem?  
A. The database is currently blocked due to locks  
B. The users do not have the correct database permissions  
C. The users do not have valid SQL Server 2008 database logins  
D. The client computers are not configured to use the network  

Correct Answer: B  
Explanation/Reference:

Question 73  
You are deploying a Windows Presentation Foundation (WPF) application that uses Microsoft .NET Framework 4 and Microsoft SQL Server 2008. The installation program for the application will create a new database. Corporate policy does not allow storage of user names and passwords in any software program. You need to ensure that users who do not have administrative rights can install the application.  
What should you do?  
A. Require the installation to use the current Windows user  
B. Require the installation to include the SQL Server sa account  
C. Require the installation to include a SQL Server username and password  
D. Require the installation to prompt for a Windows username and password  

Correct Answer: D  
Explanation/Reference:

Question 74  
You have developed a Windows application by using Microsoft .NET Framework 4, Windows Presentation Foundation (WPF), and Microsoft SQL Server 2008. The application is deployed as an XAML Browser Application (XBAP) and executes in the Internet Zone in Internet Explorer. The application updates data in a SQL Server 2008 database. Users report that a Security Exception occurs when the application attempts to save data to the database. You need to design a solution to resolve the problem.  
What should you do?  
A. Redesign the XBAP application by using partial trust.  
B. Redesign the XBAP code to utilize stored procedures  
C. Design a WCF Service tier to provide database access.  
D. Design a data access layer that uses ASP.NET Entity Framework to communicate with the database by using the System.Data.SqlClient class.  

Correct Answer: C  
Explanation/Reference:

Question 75  
You are designing a Windows Presentation Foundation (WPF) application by using Microsoft .NET Framework 4 and Microsoft Visual Studio 2010. The application will use multiple worker threads and a single user interface (UI) thread.  
You plan to design the exception-handling strategy for the application. You need to ensure that all exceptions that occur can be handled.  
What should you do?  
A. Use a DispatcherUnhandledExceptionEvent handler on the main UI thread
B. Use a DispatcherUnhandledExceptionEvent handler on each worker thread
C. Write an AppDomain UnhandledExceptionEvent handler
D. Write a general catch block for the System Exception types after any specific catch statements on the main user interface thread

Correct Answer: C

Question 76
You are designing an application by using Microsoft .NET Framework 4 and Microsoft VisualStudio 2010. You are creating an application in Domain A that creates an application domain named Domain B. Code in Domain B throws an Application Exception Code and Domain A throws an unhandled File Not Found Exception. You need to ensure that the exception thrown in Domain B is properly handled in Domain A.

What should you do?

A. Create a separate thread in Domain B to handle exceptions in Domain A
B. Sign the assembly and register *
C. Sign the assembly and place * in the application folder
D. Sign the assembly that contains the exception by using a strong name and deploy the assembly to the Global Assembly Cache (GAC).

Correct Answer: D

Question 77
You are creating a Windows Presentation Foundation (WPF) client application by using Microsoft .NET Framework 4 and Microsoft Visual Studio 2010. You plan to create two application domains named AppDom1 and AppDom2. AppDom1 will be hosted by a Shell host. AppDom2 will be hosted by a custom-designed host. AppDom2 will access unmanaged application programming interfaces (APIs). AppDom2 contains user-defined custom exceptions. You need to ensure that exceptions thrown in AppDom2 can be handled by AppDom1.

What should you do?

A. Add a DispatcherUnhandledException event handler to AppDom1.
B. Add the assembly that defines the user-defined custom exception class to the application base for AppDom1
C. Derive the user-defined custom exception class from the System ApplicationException class,
D. Use a strong name for the assembly to contain the user-defined custom exception class

Correct Answer: B

Question 78
You are designing an application by using Windows Presentation Foundation (WPF) and Microsoft .NET Framework 4. You create a control named Help Viewer to view the Help documentation of the application. The Help Viewer control must be available to all windows in the application. You need to ensure that the application allows users to perform the following tasks:
- Bookmark their location in the documentation and return to the bookmark from any window
- Hide the Help Viewer control
- Dock the Help Viewer control
You create a main window as a base class.

What should you do next?
A. – Add the Help Viewer control to the window at runtime.
   - Inherit all other window classes in the application from the main window base class.
B. – Add the Help Viewer control to a Dock Panel control at runtime.
   - Inherit all other window classes in the application from the main window base class.
C. – Add the Help Viewer control and a Frame control to a Dock Panel control to the window at runtime.
   - Create all other windows in the application as pages and host them in the Frame control.
D. – Add the Help Viewer control and a Frame control to a Stack Panel control to the window at runtime.
   - Create all other windows in the application as pages and host them in the Frame control.

Correct Answer: C
Explanation/Reference:

**Question 79**
You are designing an application by using Windows Presentation Foundation (WPF) and Microsoft .NET Framework 4. The application consists of multiple data entry screens. You need to ensure that users can return to previous screens. You also need to ensure that users can view a history of screens. What should you do?

A. Create buttons to allow a user to open a new Window for the data entry screens.
B. Create buttons to allow a user to open a new Window as an MDI child window for the data entry screens.
C. Create hyperlinks to allow a user to move between data entry screens. Use the Navigation Service class to manage navigation history.
D. Create hyperlinks to allow a user to move between data entry screens. Use the Navigation Progress Event Rags class to manage navigation history.

Correct Answer: C
Explanation/Reference:

**Question 80**
You are creating a Windows Presentation Foundation (WPF) application by using Microsoft .NET Framework 4 and Microsoft Visual Studio 2010. The application will consist of several data entry forms. Each data entry form requires a user to enter phone numbers and addresses. You need to design a solution that promotes code reusability. What should you do?

A. Add multiple text boxes for each data entry form.
B. Use the same style resource for each data entry form.
C. Create a new user control and reference it on each data entry form.
D. Create a new merged resource dictionary and reference it from each data entry form.

Correct Answer: C
Explanation/Reference:

**Question 81**
You are reviewing multiple Windows Presentation Foundation (WPF) applications that capture postal addresses. The WPF applications have different appearances and functionality. Each WPF application uses a different control to visualize the captured addresses. You plan to modify all WPF applications to allow developers to visualize addresses by using a common template. You need to recommend an approach for standardizing the visualization of captured addresses. What should you recommend?

A. ControlTemplate
B. DataTemplate
C. HierarchicalDataTemplate
D. ItemsPanelTemplate

Correct Answer: A
Explanation/Reference:

**Question 82**
You are designing a new feature for an existing Windows Forms application by using Microsoft .NET Framework 4. The application contains multiple forms that are loaded into a parent Multiple Document Interface (MDI) form.
Your company policy does not allow the use of third-party controls. 
You need to ensure that the new feature meets the following requirements:
- It provides a three-dimensional scale model.
- It allows users to change the colors of the model and communicates the color selections back to the application.
- It allows the model to scale, based on the user’s client computer display resolution.
- It is a child form in the MDI application.

What should you do?

A. – Design the new feature in the existing Windows Forms application as a Windows form.
   - Add the form as a child form to the MDI window.
B. – Design the new feature in a new application by using Windows Presentation Foundation (WPF).
   - Invoke the new WPF application from the existing Windows Forms application.
C. – Design the new feature in a new Windows Presentation Foundation (WPF) application.
   - Host the existing application inside the new WPF application by using the Windows Forms Host class.
D. – Design the new feature by using a Windows Presentation Foundation (WPF) user control.
   - Use the Element Host class to host the WPF user control in the existing Windows Forms application.

Correct Answer: D

Explanation/Reference:

Question 83
You are designing an application by using Windows Presentation Foundation (WPF), Microsoft .NET Framework 4, and Microsoft SQL Server 2008.
The application will contain several forms that include custom data validators.
You need to ensure that data is validated before the database updates occur. You also need to ensure that the validation logic can be reused.
How should you design the validation?

A. Implement the IErrorInfo interface in the data class of the application
B. Implement the INotifyPropertyChanged interface in the data class of the application
C. Subscribe to the MouseLeave event for all user interface (UI) components of the application.
   Perform data validation in the event handler and alert users when a data entry error occurs
D. Subscribe to the TextChanged event for all user interface (UI) components of the application.
   Perform data validation in the event handler and alert users when a data entry error occurs

Correct Answer: A

Explanation/Reference:

Question 84
You are designing a .NET Framework 4 solution. The solution contains a Windows Presentation Foundation (WPF) application and a Windows Service, Both Applications using a common assembly and both store data in a Compact MSSQL Database.
You need to install the applications with the following requirement Must be possible to update the WPF without stop the Windows Service
A. Deploy the Windows Service in a separate folder from the WPF application
B. Store the connection string in a environment variable.
C. Store the connection string in a key in registry.
D. Deploy the Windows Service in the same folder as the WPF application.

Correct Answer: AC

Explanation/Reference:

AC instead of CD – because both apps use the same assemblies updating WPF will be not possible when one of its assembly is uses by WS when they are both in the same folder. It will be possible only when they are installed in different folders which will prevent situation that updated file is in use by another application

Question 85
You are designing a .NET Framework 4 solution. The solution contains a Windows Presentation Foundation (WPF) application that read from a MSSQL Database, The application run very slowly. You note that the memory consume of the application is round 80 to 90% of the total system memory. You need yo investigate the memory usage of the application.
Which tool do you recommend to investigate the problem?

A. Application Center Test ACT
B. Trace and logging information.
C. SQL Profiler
Question 86
You are designing a Windows Presentation Foundation (WPF) application by using Microsoft .NET Framework 4 and Microsoft Visual Studio 2010. The application accesses a Windows Communication Service (WCF) service on a middle-tier server to retrieve sales invoice information. The information consists of a master record and several detail records that are displayed by the application. The source data frequently changes. You need to ensure that the design meets the following requirements:
- Memorizes the amount of network traffic.
- Ensures that UI responsiveness is not impacted by WCF calls.
- Ensures that data is always up-to-date.
What should you do?
A. Use multi-thread in the application.
B. Use data caching the client placement.
C. Use the Dispatcher. Invoke method when making WCF calls.
D. Use the Dispatcher. Begin invoke method when making WCF calls.
Correct Answer: A
Explanation/Reference:

Question 87
You are developing a Windows application by using Microsoft .NET Framework 4, Microsoft Visual Studio 2010, and Microsoft SQL Server 2008. The application will store data in a SQL Server database instance. You plan to use the Code Generation technology to develop data entities. You need to ensure that the following requirements are met:
When the application runs, a database must be created if it does not already exist.
When the database schema changes, data entities must be added dynamically.
Which data access technology should you use?
A. LINQ to SQL
B. ADO.NET Data View
C. ADO.NET Typed DataSets
D. ADO.NET Entity Framework
Correct Answer: D
Explanation/Reference:
Direct access to the DB with no provider and works only with Microsoft SQL Server. Entity FW works with everything but Microsoft SQL Server.

Question 88
You are developing a Windows application by using Microsoft .NET Framework 4. You plan to design a diagnostic logging strategy that will be used in a production environment. You need to ensure that the strategy meets the following requirements:
Enables or disables diagnostic messages by using an application configuration option. Changes the level of detail in the diagnostic messages without recompiling the application.
Which class should you use?
A. Trace
B. Debug
C. Contract
D. EventLog
Correct Answer: A
Explanation/Reference:
**Question 89**
You are updating a Windows desktop client application that was created by using Microsoft .NET Framework 4 and Microsoft Visual Studio 2010. The application displays data derived from several database queries. The display takes a long time to update. The application currently uses a BackgroundWorker thread and a Parallel.ForEach statement on that thread. Users have requested a modification to the program that would allow them to interrupt the display of data and begin processing a new and different query. You decide to provide a new Stop button on the user interface (UI) to allow the user to terminate the current data display and initiate the new query. The main UI thread must be notified when the current data processing is terminated so that the new query can be started. You need to implement the Stop button event handler.

What should you do?

A. Use the DoWork handler of the worker thread and test a shared status value.
B. Use a break statement to terminate the Parallel.ForEach loop.
C. Use the DoWork handler of the worker thread and test a shared status value.
D. Use the Thread.AbortQ statement to terminate the worker thread.
E. Start a new BackgroundWorker thread from the main UI thread.
F. Use a CancelAsync() function to cancel the worker thread.
G. In the Parallel.ForEach loop, test the CancellationPending property.
H. If the property is set to true, perform the following tasks:
   - Write a loopStatus.Stop() statement.
   - Set the DoWorkEventArgs.Cancel property to true.
   - Use a return statement to exit from the loop.

Correct Answer: D
Explanation/Reference:

**Question 90**
You are designing a Windows client application by using Microsoft .NET Framework 4 and Microsoft Visual Studio 2010. The application will read and write data that is stored in a mainframe application. A hardware device that is located between the application and the mainframe removes all XML-formatted messages. You need to ensure that the application can request and receive data from the mainframe application. What should you create?

A. A RSS-based WCF service
B. A REST-based WCF service
C. A NET Removing service that uses the SOAP formatter
D. A .NET Web Service that uses the wsHttp Binding

Correct Answer: B
Explanation/Reference:

Reference:
Representational State Transfer (REST) service quickly. OData and REST are Hypertext Transfer Protocol (HTTP)-based open standards for exposing data across the web, where they can be consumed by clients built on a wide variety of platforms, including .NET, Microsoft Silverlight, jQuery, PHP, and JavaScript.

**Question 91**
You are designing a Windows Presentation Foundation (WPF) application by using Microsoft .NET Framework 4 and Microsoft Visual Studio 2010. The application contains a COM component. You plan to deploy the application to several client computers by using read-only media. You need to ensure that the COM component is registered during deployment of the application. Which deployment technology should you use?

A. XCopy
B. Microsoft Windows Installer (MSI)
C. ClickOnce along with full trust
D. ClickOnce along with partial trust

Correct Answer: B
**Question 92**
You are developing an application by using Microsoft .NET Framework 4 and Microsoft Visual Studio 2010. You plan to use Microsoft Sync Framework to synchronize the data stored in a local Microsoft SQL Server Compact Edition database with the data stored in a centralized SQL Server 2008 database. Four columns are added to each table involved in the synchronization process to track changes to the database. You add the following four columns to the database table.

<table>
<thead>
<tr>
<th>Column Name</th>
<th>Data Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>CreatedUser</td>
<td>int</td>
</tr>
<tr>
<td>UpdatedUser</td>
<td>int</td>
</tr>
<tr>
<td>CreatedTime</td>
<td>DateTime</td>
</tr>
<tr>
<td>UpdatedTime</td>
<td>DateTime</td>
</tr>
</tbody>
</table>

Users report that the synchronization process is not always successful. You need to ensure that the application synchronizes data successfully. What should you do?

Option A:
- Replace the UpdatedTime and CreatedTime with the updated columns and data types as shown in the following table.

*Original Column Name | Updated Column Name | Rowversion |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CreatedTime</td>
<td>CreatedTimeStamp</td>
<td>Rowversion</td>
</tr>
<tr>
<td>UpdatedTime</td>
<td>UpdatedTimeStamp</td>
<td>Binary(A)</td>
</tr>
</tbody>
</table>

- Modify the synchronization anchor to use the min_active_rowversion() function.

Option B:
- Replace the UpdatedTime and CreatedTime with the updated columns and data types as shown in the following table.

*Original Column Name | Updated Column Name | CreatedCounter |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CreatedTime</td>
<td>CreatedCounter</td>
<td>int</td>
</tr>
<tr>
<td>UpdatedTime</td>
<td>UpdatedCounter</td>
<td>int</td>
</tr>
</tbody>
</table>

- Modify the application to update the counter before and after synchronization.

Option C:
- Replace the UpdatedTime and CreatedTime with the updated columns and data types as shown in the following table.

*Original Column Name | Updated Column Name | CreatedCounter |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CreatedTime</td>
<td>CreatedCounter</td>
<td>int</td>
</tr>
<tr>
<td>UpdatedTime</td>
<td>UpdatedCounter</td>
<td>int</td>
</tr>
</tbody>
</table>

- Modify the synchronization anchor to use the getdate() function.

Option D:
- Replace the UpdatedTime and CreatedTime with the updated columns and data types as shown in the following table.

*Original Column Name | Updated Column Name | CreatedCounter |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>CreatedTime</td>
<td>CreatedCounter</td>
<td>int</td>
</tr>
<tr>
<td>UpdatedTime</td>
<td>UpdatedCounter</td>
<td>int</td>
</tr>
</tbody>
</table>

- Modify the synchronization anchor to obtain the maximum value of the UpdateCounter or CreatedCounter columns across the database.
- Add one to the value obtained from the UpdateCounter or CreatedCounter columns and use that as the new value of the of the UpdateCounter or CreatedCounter column based on the operation performed

A. Option A  
B. Option B  
C. Option C  
D. Option D

Correct Answer: A

**Explanation/Reference:**

**Question 93**
You are designing a Windows Presentation Foundation (WPF) application by using Microsoft .NET Framework 4 and Microsoft Visual Studio 2010. The application will be deployed on Windows 7 computers in the United States and Europe. You need to ensure that array data is sorted based on the culture of the operating system.
What should you do?

A. Add a configuration setting to the appSettings section of the App.config file.
B. Use a comparison method to compare ASCII values.
C. Use the Resource Manager to create culture-sorted lists
D. Use a comparison method that specifies a CultureInfo class or the CompareOptions enumeration parameter

Correct Answer: D
Explanation/Reference:

**Question 94**
You are designing an application by using Windows Presentation Foundation (WPF) and Microsoft .NET Framework 4. The user interface (UI) tier of the application will be implemented in WPF. The middle tier of the application is implemented by using an existing COM component. The middle tier contains a long-running method named ProcessData. You need to ensure that users can continue to use the UI while ProcessData is running. What should you do?

A. Use an asynchronous worker thread to call Process Data.
B. Use the Invoke method of the Dispatcher class to call Process Data.
C. Call the Run method of the Dispatcher class before invoking Process Data.
D. Call the DoEvents method of the Application class before invoking Process Data

Correct Answer: A
Explanation/Reference:

**Question 95**
You are designing a Windows application by using Microsoft .NET Framework 4 and Microsoft Visual Studio 2010. The application retrieves data from multiple heterogeneous data sources. The retrieved data is aggregated into a single record set. You need to ensure that the application takes advantage of new multi-core server processors. Which technology should you use?

A. LINQ
B. PLINQ
C. ADO.NET DataSet
D. ADO.NET Typed DataSet

Correct Answer: B
Explanation/Reference:

**Question 96**
You are designing a complex and critical Windows desktop application by using Microsoft .NET Framework 4 and Microsoft Visual Studio 2010. You plan to implement a logging strategy for the application. You need to record all unexpected errors that occur in the application. What should you do?

A. Subscribe to the unhandled exception event handler for the AppDomain object. Record relevant application-specific information to an external log.
B. Subscribe to the unhandled exception event handler for the application’s dispatcher on the main application thread. Record relevant application-specific information to an external log.
C. Create a generic catch (Exception e) block in the Main method of the application. Record relevant application-specific information to a log in the Main method.
D. Create a global WIN 32 unhandled exception filter. Record relevant application-specific information to an external log from within the filter.

Correct Answer: A
Explanation/Reference:

* Asterisk (If you believe that since the app is described a critical and complex and we can assume that the application has background threads). References:
There are two events you can handle to process unhandled exceptions:
|| Application.DispatcherUnhandledException The right choice for catching most unhandled exceptions. You should not use DispatcherUnhandledException to dismiss events by setting DispatcherUnhandledExceptionEventArgs.Handled to True.
Instead, set DispatcherUnhandledExceptionEventArgs.Handled to False and allow the application to crash. If you dismiss an exception that your application is unable to handle, application behavior could be unpredictable, and data might become corrupted.

`AppDomain.UnhandledException` The right choice for catching unhandled exceptions in background threads. You cannot use this event to mark an exception as handled; it will continue to propagate automatically.

If you do not use background threads, you can simply handle ApplicationDispatcherUnhandled Exception. If you do create a background thread, handle both events with the same event handler.

**Question 97**
You are designing a Windows client application by using Microsoft .NET Framework 4 and Microsoft Visual Studio 2010. The business logic layer of the application is implemented by using Windows Communication Foundation (WCF). You write the following code segment in the middle tier:

```csharp
< ServiceContract>

public interface IWcfService

<OperationContract>
<OperationContract>
<FaultContract(GetType(ApplicationException))>

void ProcessData(Data)

End Interface

The Process Data service method is a long-running operation. You need to ensure that the application meets the following requirements:

- Users can continue to use the user interface while the Process Data service method is running.
- Message delivery is reliable.

What should you use?

A. A Session full One-Way operation on Process Data with a proxy-based synchronous class invocation
B. A Session full Request-Reply operation on Process Data with a proxy-based asynchronous invocation
C. A Session less One-Way operation of Process Data with a proxy-based synchronous class invocation
D. A Session less Request-Reply operation on Process Data with a proxy-based asynchronous invocation

Correct Answer: D

Explanation/Reference:
Because you want to continue to use the interface, the Session Full is not an option (throw A,B) because you want a reliable delivery you use request/reply to catch possible exceptions, this work because the invocation was async. See under... local memory Reference (from http://msdn.microsoft.com/en-us/library/ms733070.aspx) ONE WAY

One-way
If the client of a WCF service application should not wait for the operation to complete and does not process SOAP faults, the operation can specify a one-way message pattern. A one-way operation is one in which a client invokes an operation and continues processing after WCF writes the message to the network. Typically this means that unless the data being sent in the outbound message is extremely large the client continues running almost immediately (unless there is an error sending the data). This type of message exchange pattern supports event-like behavior from a client to a service application.

A message exchange in which one message is sent and none are received cannot support a service operation that specifies a return value other than void; in this case an `InvalidOperation`Exception exception is thrown.

No return message also means that there can be no SOAP fault returned to indicate any errors in processing or communication. (Communicating error information when operations are one-way operations requires a duplex message exchange pattern.)

To specify a one-way message exchange for an operation that returns void, set the `IsOneWay` property to true, as in the following C# code example.

```csharp
[OperationContractAttribute(IsOneWay=true)]
void Hello(string greeting);
```

Request/Reply
A request/reply pattern is one in which a request sender (a client application) receives a reply with which the request is correlated. This is the default MEP because it supports an operation in which one or more parameters are passed to the operation and a return value is passed back to the caller. For example, the following C# code example shows a basic service operation that takes one string and returns a string.

```csharp
[OperationContractAttribute]
string Hello(string greeting);
```

This operation signature dictates the form of underlying message exchange. If no correlation existed, WCF cannot determine for which operation the return value is intended.

Note that unless you specify a different underlying message pattern, even service operations that return void (Nothing in Visual Basic) are request/reply message exchanges. The result for your operation is that unless a client invokes the operation asynchronously, the client stops processing until the return message is received, even though that message is empty in the normal case. The following C# code example shows an operation that does not return until the client has received an empty message in response.

```csharp
[OperationContractAttribute]
void Hello(string greeting);
```

Duplex
A duplex pattern is characterized by the ability of both the service and the client to send messages to each other independently whether using one-way or request/reply messaging. This form of two-way communication is useful for services that must communicate directly to the client or for providing an asynchronous experience to either side of a message exchange; including...
event-like behavior. The duplex pattern is slightly more complex than the request/reply or one-way patterns because of the additional mechanism for communicating with the client. To design a duplex contract, you must also design a callback contract and assign the type of that callback contract to the CallbackContract property of the ServiceContractAttribute attribute that marks your service contract. To implement a duplex pattern, you must create a second interface that contains the method declarations that are called on the client.

For an example of creating a service, and a client that accesses that service, see How to: Create a Duplex Contract and How to: Access Services with a Duplex Contract. For a working sample, see Duplex. For more information about issues using duplex contracts, see Duplex Services.

**Question 98**
You are designing an application by using Microsoft .NET Framework Visual Studio 2010. You plan to design an instrumentation strategy for the application. You need to ensure that the strategy meets following requirements:
Captures detailed performance information.
Enables or disables diagnostic messages by using an application configuration option without requiring the application to restart.
What should you design?
A. a custom trace listener
B. a custom performance counter
C. an override to the Debug class
D. an override to the EventLog class
Correct Answer: B
Explanation/Reference:
The question is about performance information, in this case think always in Performance Counter.

**Question 99**
You are making a Windows software by employing Microsoft .Net Framework 4 and Microsoft Visual Studio 2010. The business logic layer of the software is applied by using Windows Communication Groundwork (WCF). You produce a WCF services that consists of a single operation to upload big binary information files. You configure the binding of the WCF support to allow information streaming. You need to guarantee that the WCF service operation gets binary info files along with a string parameter that contains the description of each file. You create a service operation that gets a single parameter. What should you do following?
A. Implement the service parameter as a Serializable class that contains a property for the description of the file and another property for the content of the data file
B. Implement the service parameter as a DataContract class that contains a DataMember property for the description of the file and another DataMember property for the content of the data file.
C. Implement the service parameter as a MessageContract class that contains a MessageHeader property for the description of the file and a MessageBodyMember property for the content of the data file.
D. Implement the service parameter as a MessageContract class that contains a MessageBodyMember property for the description of the file and another MessageBodyMember property for the content of the data file.
Correct Answer: C
Explanation/Reference:
You can add a custom header with the text property and send the binary data as message Body, it is the best approach.

**Question 100**
You are planning a Windows Presentation Basis (WPF) application for your organization by making use of Microsoft .Web Framework 4 and Microsoft Visual Studio 2010. The organization layer of the software is implemented by using Windows Communication Groundwork (WCF).
You plan to assistance non-repudiation and data integrity for WCF messages.
You need to style the security method for the software.
What really should you do?
A. Attach a digital signature to the WCF messages.
B. Encrypt the WCF messages by employing the Secure Sockets Layer (SSL) protocol.
C. Encrypt the WCF messages by employing the Internet Protocol Protection (IPSec) protocol.
D. Implement message-level security by using digital certificates as client computer credentials.
Correct Answer: A
Explanation/Reference:
Question 101
You are developing an application by using Microsoft .NET Framework 4. The application will be used by all employees of your company. Local file stores on the computers are secure and inaccessible remotely.
You need to design a remote monitoring strategy to monitor the usage time of the application by each user.
What should you do?

A. Create a TraceLog object and the Trace object by using the System.Diagnostics element to trace startup, shutdown, and user idle time events throughout the application
B. Create a TraceLog object by using the System.Diagnostics element in the application configuration file. Add the TraceSource element for startup, shutdown, and user idle time events
C. Use the System.Management.Instrumentation namespace to publish startup, shutdown, and user idle time events of the application. Publish the events to Microsoft Operations Manager
D. Use the System.Management.Instrumentation namespace to issue event queries against methods that pass ProgressEvent and StoppedEvent arguments. Publish the events to the Event Log

Correct Answer: C
Explanation/Reference:
Microsoft Operations Manager (MOM) is an event and performance management tool for Windows Server System. MOM improves the manageability of your infrastructure by providing:
- Comprehensive event management.
- Proactive monitoring and alerting.
- Reporting and trend analysis.
- System and application-specific knowledge from the experts

Question 102
You are designing a Windows Presentation Foundation (WPF) application by using Microsoft .NET Framework 4 and Microsoft Visual Studio 2010.
The application will consist of a user interface (UI) tier and a middle tier. The middle tier will be implemented by using Windows Communication Foundation (WCF). You plan to design the exception handling strategy for the application. Each method in the middle tier will contain the following catch block.

```
Catch e As Argument Null Exception
    Throw
```

When testing the application, you discover that all Argument Null Exceptions that occur in the middle tier do not contain accurate stack trace information.
What should you do?

A. Create an ArgumentNullException handler in the UI tier.
B. Use a Dispatcher UnhandledExceptionEvent handler in the UI tier.
C. Use a Dispatcher UnhandledExceptionEvent handler in the middle tier.
D. Remove the exception parameter from the ArgumentNullException handler

Correct Answer: D
Explanation/Reference:
if you rethrow the exception with the e Argument Null exception, your loose the stack trace.) This in C# is...

```
Catch (ArgumentNullException e)
    { throw e; }
```

You should substitute for:

```
Catch (ArgumentNullException e)
    { throw; }
```

From Book:
If you catch an exception and determine that you cannot respond to it, add context information to the exception that is not already available within the stack trace, and then rethrow the exception by including the original exception using the new exception’s Inner Exception property. This will pass the exception to a higher-level component or tier. If you cannot add any useful context information to the exception, simply call throw, rather than throw new <exception_object>, to avoid resetting the stack trace.

Question 103
You are designing an n-tier Windows application by using Microsoft .NET Framework 4, Microsoft Visual Studio 2010, and Microsoft SQL Server 2008. The application will replace an existing client/server application. The existing application was created by using Microsoft Visual Basic 6.0 and consists of a series of COM components that access a SQL Server database.
You plan to move the existing COM components into a Windows Communication Foundation (WCF) tier. You need to ensure that the COM components can be replaced without impacting the existing user interface (UI) tier.
You also need to ensure that the COM components can be replaced separately. What should you do?

A. Create a common assembly on the UI tier of the new application to interface with the COM components.
B. Create a common assembly on the WCF tier of the new application to interface with the COM components.
C. Use NET COM Interop on the client tier to interact directly with the COM components until they are replaced by the managed code.
D. Convert the Visual Basic 6.0 source code to managed code by using the Visual Studio converters. Use these code components on the client/server application until they are replaced individually with the new permanent managed code functionality.

Correct Answer: B
Explanation/Reference:
You can create a provisional assembly in the WCF tier, to manage the COM component, then you can change the COM component progressively without touch the UI interface, because you don't need to change the WCF service interface.

**Question 104**
You are designing an application by using Microsoft .NET Framework 4 and Microsoft Visual Studio 2010. Your development team consists of designers and C# developers. You need to ensure that the application meets the following requirements: Kit allows separation of user interface (UI) code and business logic. It allows the UI to be data-bound without requiring a code-behind file. Which technology should you use?

A. Windows Forms along with Model View Presenter (MVP)
B. Windows Forms without Model View Presenter (MVP)
C. Windows Presentation Foundation (WPF) along with Model-View-View Model (M-V-VM)
D. Windows Presentation Foundation (WPF) without Model-View-View Model (M-V-VM)

Correct Answer: C
Explanation/Reference:

**Question 105**
You are upgrading a stand-alone Windows Presentation Foundation (WPF) application and an XAML browser application (XBAP) to Microsoft .NET Framework 4. You plan to add .NET 4 types and members to both applications. Both applications consume a common utility assembly that modifies files on a local file system. The utility assembly requires full trust. You need to ensure that both applications can use the common utility assembly without any security-related exceptions. What should you do?

A. Change the <supported Runtime> element for the WPF application to the .NET Framework 35.
B. Change the <supported Runtime> element for the XBAP application to the .NET Framework 35.
C. Apply the Allow Partially Trusted Callers attribute to the utility assembly.
D. Apply the Allow Partially Trusted Callers Attribute to the XBAP application.

Correct Answer: C
Explanation/Reference:
From MSDN...
AllowPartiallyTrustedCallersAttribute Class
Allows an assembly to be called by partially trusted code. Without this declaration, only fully trusted callers are able to use the assembly. This class cannot be inherited.

**Question 106**
You are developing an application by using Windows Forms and Microsoft .NET Framework 4. The user interface (UI) of the application can be resized. You need to ensure that the images in the application scale to the entire height and width of the UI without degradation. What should you do?

A. Convert the images to PNG format.
B. Use a PictureBox control. Set the Size Mode property to use auto-sizing.
C. Use an Element Host control. Convert the images to XAML-based images.
D. Use a PictureBox control. Add events to resize the control based on the size of the main UI form.
Correct Answer: C
Explanation/Reference:
If you using SVG (two dimensional vector graphic in XML), you can get image without degradation when you resize it.
Reference:
Definitions:
SVG stands for Scalable Vector Graphics.
SVG defines graphics in XML format.
SVG stands for Scalable Vector Graphics
SVG is used to define vector-based graphics for the Web
SVG defines the graphics in XML format
SVG graphics do NOT lose any quality if they are zoomed or resized
Every element and every attribute in SVG files can be animated
SVG is a W3C recommendation
SVG integrates with other W3C standards such as the DOM and XSL

Question 107
You are designing an application by using Windows Presentation Foundation (WPF) and Microsoft NET Framework 4.
The user interface (UI) tier of the application will be implemented by using WPF. The middle tier of the application will be
implemented by using Windows Communication Foundation (WCF).
The middle tier will contain several methods that update data in a remote database. The middle tier will also contain a long-running
method named Process Data. The Process Data method performs database operations and can take several minutes to complete. You
need to ensure that the UI of the application can continue to call other methods while the Process Data method is running
What should you do?

A. Implement the Process Data method by using Windows Workflow Foundation (WF).
B. Implement the Process Data method by using the Invoke method on the Dispatcher class.
C. Call the Run method of the Dispatcher class before invoking the Process Data method
D. Call the Do Events method of the Application class before invoking the Process Data method

Correct Answer: A
Explanation/Reference:

Question 108
You are designing an application by using Windows Presentation Foundation (WPF) and Microsoft NET Framework 4.
The application is designed to allow novice users to enter data into a form. If a user enters invalid data into an input control, the
control blinks between two colors. You need to ensure that the blinking visual feature can be applied to other controls without
writing any additional code
What should you do?

A. Create a timer.
B. Create a shared style.
C. Create a WPF behavior
D. Use a merged resource dictionary.

Correct Answer: C
Explanation/Reference:
See in another question how to create and use behaviours.

Question 109
You are creating a Windows Presentation Foundation (WPF) application by using Microsoft NET Framework 4.
You create a photo album-browsing application.
When the user opens an album, pictures in the album are displayed in sets of 10. Pictures are obtained from a Windows
Communication Foundation (WCF) service. Most of the memory of the application is allocated in the native heap. The memory
usage of the application increases when new albums are opened. You need to ensure that the memory usage of the application
remains within a specific range.
What should you do?

A. Use a reduced colour palette to render pictures
B. Use the Net Top Binding to communicate with the WCF service.
C. Load the pictures from the WCF service on a background thread Implement the IDisposable interface
D. Assign the null value to every variable pointing to a picture that is not displayed Implement the IDisposable interface

Correct Answer: D
Explanation/Reference:
If the picture implements IDisposable, it is collected for the garbage collection when none point to it. For that, assign null to the pointer.

**Question 110**

You are debugging a Windows application that uses Windows Presentation Framework (WPF) and Microsoft Visual Studio 2010. The application is deployed as an XAML browser application (XBAP). Some users report that they are not able to use the drag-and-drop functionality. You need to ensure that all users can use the drag-and-drop functionality.

What should you do?

A. Use loose XAML.
B. Require the Full Trust permission on the XBAP application.
C. Add the URL for the application to the browser’s trusted sites list.
D. Register the assembly that contains the Data Object objects to the GAG on all client computers.

Correct Answer: C

Explanation/Reference:

*Trusted site work as Full Trust and Drag and drop is only present in full trusted applications.*

**Question 111**

You are designing an application in the .NET framework 4.0. The application is used mostly in a disconnected scenario. The application requires offline data from a Microsoft SQL Server 2008 database. When the application connects to the network, data will be modified and synchronized. You need to ensure that the application does not access the database server directly to synchronize data when online.

Which technology should you use?

A. WCF Data Service
B. Remote Data Access
C. ADO.NET Sync Services
D. SQL Server Merge Replication

Correct Answer: C

Explanation/Reference:

ADO.NET Sync services also known as Microsoft Sync Framework.

Microsoft Sync Framework is a data synchronization platform from Microsoft that can be used to synchronize data across multiple data stores. Sync Framework includes a transport-agnostic architecture, into which data store-specific synchronization providers, modelled on the ADO.NET data provider API, can be plugged in. Sync Framework can be used for offline access to data, by working against a cached set of data and submitting the changes to a master database in a batch, as well as to synchronize changes to a data source across all consumers (publish/subscribe sync) and peer-to-peer synchronization of multiple data sources. Sync Framework features built-in capabilities for conflict detection — whether data to be changed has already been updated — and can flag them for manual inspection or use defined policies to try to resolve the conflict. Sync Services includes an embedded SQL Server Compact database to store metadata about the synchronization relationships as well as about each sync attempt. The Sync Framework API are surfaced both in managed code, for use with .NET Framework applications, as well as unmanaged code, for use with COM applications. It was scheduled to ship with Visual Studio 2008.

**Question 112**

You are developing a Windows Application.

New features that require changes to be made to the database schema are added to the application every week.

You need to ensure that the changes made to the database schema do not require the application to be recompiled.

Which 2 actions should you perform?

A. Modify the XML mapping file when the schema changes occur
B. Modify the conceptual schema XML file when the schema changes occur
C. Build a storage model and use it to access data from the business entities
D. Build a conceptual model and use it to access data from the business entities

Correct Answer: AD

Explanation/Reference:

If you use the Entity Framework and might need to update the database structure without recompiling your application, choose to copy the model and mapping schemas to the build output directory rather than embedding them in the output assembly by selecting your model and setting Metadata Artifact Process to Copy To Output Directory. These three schemas work together to map a relational database to .NET classes. Within your project, they are defined within the .edmx file. When you build your project with Copy To Output Directory selected, the schemas will be created as three separate XML files as follows:

- **Store Schema Definition Language (SSDL)** Describes the tables and fields in a database.
Conceptual Schema Definition Language (CSDL) Describes your .NET Framework classes
Mapping Schema Language (MSL) Describes how the Common Language Runtime (CLR) will convert between the database described in the SSDL file and the classes described in the CSDL file.

By not compiling them into the assembly, you can update these files later and restart the application to adapt to changes in the underlying database. While you could update the files manually, it is easier to use the Visual Studio wizards to update the model, build the project, and use the updates files generated by Visual Studio.

Question 113
The Windows application will consume a Windows Communication Foundation (WCF) service. The WCF service will provide data to the application. You plan to use the ADO.NET Entity Framework to create a data model that will be used by the application. Other development team members make changes to the WCF service data contract. You need to ensure that changes made to the WCF service data contract do not require the application to be recompiled.
What should you do?

A. Create a conceptual model and a storage model based on the existing version of the WCF service
B. Create a storage model based on the business model.
Use a class generated from the storage model for programming
C. Create a storage model based on the schema of the existing WCF service.
Update the mapping file when the new version of the WCF service is available
D. Create a conceptual model based on the business model.
Use a class generated from the conceptual model for programming.
Update the mapping file when the new version of the WCF service is available

Correct Answer: D
Explanation/Reference:

Question 114
You are developing a Windows application. The application will process data that is stored on the user’s computer. You plan to design a data storage strategy. You need to ensure that the following requirements are met:
Local data can be accessed only by the application
Local data can be encrypted and compressed
Local data can be shared between multiple users by sending them the data file by email
Users must be able to open the data file directly from the email message
Which local data storage technology should you use?

A. XML File
B. Microsoft Access
C. Microsoft SQL Server Express Edition database
D. Microsoft SQL Server Compact Edition database

Correct Answer: B
Explanation/Reference:
B instead of D
Sql server Compact does not support data compression access db is more convenient to open directly from email than SQL server compact

Question 115
You are developing a Windows Presentation Foundation (WPF) application. The application will run in a partially trusted sandbox. You plan to deploy the application on client computers by using the Click Once deployment technology. You plan to sign the deployment and application manifest by using a trusted publisher certificate. You need to ensure that the following requirements are met:
Users are not prompted for elevated permissions during application deployment The application can request elevated permissions at runtime Where should you install the trusted publisher certificate?

A. In the trusted root store on the deployment server
B. In the trusted publisher store on the deployment server
C. In the trusted root store on each client computer
D. In the trusted publisher store on each client computer

Correct Answer: D
Question 116
You are designing a data access layer (DAL) for an application. Conflicts are occurring in the SQL Server database due to concurrent updates. You need to design a database locking strategy that meets the following requirements:
Resolves concurrent update conflicts without loss of data
Ensures that data conflicts can be resolved by users
Locks only the necessary data for updates
What should you do?
A. Use optimistic locking.
Terminate the update when a DB Concurrency Exception occurs
B. Use pessimistic locking.
Terminate the update when a DB Concurrency Exception occurs
C. Use pessimistic locking.
Retry the failing update operation in the DB Concurrency Exception handler until it succeeds.
D. Use optimistic locking.
In the DB Concurrency Exception handler, display the data of both original and updated records to the user. Allow the user to resolve the conflicts.
Correct Answer: D
Explanation/Reference:

Question 117
You have developed a Windows Forms server application. Client applications connect to the server application to receive streaming media on demand on a single server. Each incoming connection is launched on a separate thread. As the number of client applications increases, users report that connection attempts fail. You need to ensure that users can connect to the server application even when the number of clients increase.
What should you do?
A. Add additional RAM to the server
Increase the size of the thread pool
B. Add additional RAM to the server.
Decrease the size of the thread pool
C. Install a network load balancer
Increase the size of the connection pool
D. Install a network load balancer
Decrease the size of the connection pool
Correct Answer: A
Explanation/Reference:

Question 118
You are packaging updates for multiple Windows Presentation Foundation (WPF) applications. Updates to the applications and to third-party control files are available. Updates to the applications have dependencies upon updates to the third-party control files. An update script is run at logon that allows only a single command to be executed. You need to package the application updates and updates to the third-party controls to ensure that they are successfully installed.
What should you do?
A. Package application updates as a single Installer.
Package third-party control files as a merge module
B. Package application updates as a single Installer.
Package third-party control files as a separate installer
C. Prepare the installers for individual application updates and include the third-party control files as individual Ides
D. Prepare the installers for individual application updates and include the third-party control files as a merge module
Correct Answer: A
Explanation/Reference:

Question 119
The application includes multiple Windows Workflow Foundation (WF) hosts along with thousands of instances.
The application will continue to execute over extended periods of time. You need to ensure that the performance of the application does not degrade over extended periods of time.

Which type of testing should you perform on the application?

A. Stress testing  
B. Duration testing  
C. Functional testing  
D. Scalability testing

Correct Answer: B
Explanation/Reference:
Page 283:
Performance tests include capacity testing (which determines the maximum load an application can handle), scalability testing (which determines how performance characteristics change as load increases), performance testing (which measures the time to process requests), and duration testing (which measures performance and stability over a longer period of time).

**Question 120**
You are developing a Windows Presentation Foundation (WPF) application. You need to recommend a testing strategy to identify the additional hardware resources that are necessary to support future projected growth.
Which testing strategy should you recommend?

A. Load testing  
B. Stress testing  
C. Capacity testing  
D. Integration testing

Correct Answer: C
Explanation/Reference:
Page 283:
Performance tests include capacity testing (which determines the maximum load an application can handle), scalability testing (which determines how performance characteristics change as load increases), performance testing (which measures the time to process requests), and duration testing (which measures performance and stability over a longer period of time).

**Question 121**
You are developing a Windows Presentation Foundation (WPF) application. You need to ensure that the following requirements are met:
All UI elements are labeled
All property values are exposed
Keyboard navigation contains tab stops for all controls
The application functions on high-contrast displays
Which testing strategy should you recommend?

A. Stress testing  
B. Stability testing  
C. Usability testing  
D. Accessibility testing

Correct Answer: D
Explanation/Reference:

**Question 122**
You are developing a Windows Presentation Foundation (WPF) application. During unit testing you identify several bottlenecks by using Windows Task Manager and Windows performance Monitor.
You need to recommend a system test strategy that will meet the following requirements:
- identify major application workloads
- identify the functions of the application that are most impacted
Which testing strategy should you recommend?

A. Usability testing  
B. Security testing  
C. Stability testing  
D. Scalability testing

Correct Answer: D
Explanation/Reference:
Performance tests include capacity testing (which determines the maximum load an application can handle), scalability testing (which determines how performance characteristics change as load increases), performance testing (which measures the time to process requests), and duration testing (which measures performance and stability over a longer period of time).

**Question 123**
Remote users have limited connectivity.
Users will not have write permissions to the local file system.
You plan to design the error logging strategy for the application.
You need to ensure that the application can collect error information.
You also need to ensure that the errors can be analyzed from a centralized location.
What should you do?

A. Use the local log file
B. Use the Microsoft Sync Framework
C. Log the errors to a Web service
D. Log the errors to the Windows System event log

Correct Answer: D
Explanation/Reference:
If the user has limited connectivity and has not right to write in the file system, the log system is the opportunity.
Client-side events are typically logged in two ways:
- Distributed Events are stored on individual clients, which minimizes network traffic and allows events to be logged even if the connection to the server is lost.
- Centralized Events are stored on a central server. This simplifies monitoring important events but increases network traffic and load on the server.
While each approach has its own advantages, the ideal event-logging scenario provides a combination of both by logging events locally and then remotely collecting and analyzing them. In fact, if you use Event Logging, performance counters, and event tracing, Windows provides that capability with no additional coding required.
For example, Windows Vista, Windows 7, Windows Server 2008, and Windows Server 2008 R2 can log events to the local Event Log and then use Event Forwarding to copy events to a central server for analysis.

**Question 124**
You are designing a sales and inventory tracking system by using Microsoft Visual Studio 2010 and Microsoft SQL Server 2008. The sales, inventory, and shipping tables will reside in different databases on different database servers.
You need to ensure that the tables are updated simultaneously.
What should you do?

A. Use LINQ to SQL
B. Use Distributed transactions
C. Use Microsoft Sync Framework
D. Use the ADO.NET Entity Framework

Correct Answer: B
Explanation/Reference:
You must implement a Transaction.

**Question 125**
You are designing a Windows application by using Microsoft .NET Framework 4 and Microsoft Visual Studio 2010.
You plan to implement control caching to improve the loading time of a control. It is not required to refresh the content of the control after the application loads. The application will be compiled by using the .NET 4 client profile.
You need to ensure that the following requirements are met:
The control is reusable in multiple forms.
Data in the control is cached when the application is loaded.
What should you do?

A. In the Load event of the application window, add code to load the control. Save the control to an instance variable.
B. In the Load event of the application window, add code to load the control. Save the control to the cache by using objects in the System.Web.Caching namespace
C. In the constructor of the application window, add code to load the control. Save the control to a static variable
D. In the constructor of the application window, add code to load the control. Save the control to the cache by using objects in the System.Web.Caching namespace
Question 126
You are designing a distributed Windows Presentation Foundation (WPF) application.
You have the following requirements:
Ensure that all errors are logged in a central location. Ensure that the WPF application logs related errors within a single transaction. Secure error information during transmission.
You need to recommend a strategy for collecting error information.
What should you recommend?

A. Write the information to the Windows Application log on each client system. Use Windows Error Reporting to collect the results.
B. Write the information to the Windows Application log on each client system. Use Windows Management Instrumentation (WMI) to collect the results.
C. Create a Windows Communication Foundation (WCF) service. Use the basicHttpBinding protocol to transport the information.
D. Create a Windows Communication Foundation (WCF) service. Use the wsHttpBinding protocol to transport the information.

Correct Answer: A
Explanation/Reference:
Windows Error Reporting also secure the data transmission with https. Encryption: All report data that could include personally identifiable information is encrypted (HTTPS) during transmission. The software "parameters" information, which includes such information as the application name and version, module name and version, and exception code, is not encrypted.

Question 127
You are designing an n-tier solution that connects to a Microsoft SQL Server 2008 database.
You plan to deploy the database to development machines and to a staging database server from within Microsoft Visual Studio 2010. You plan to set up separate build configurations for development and staging. You also plan to deploy to multiple production database servers managed by an outside vendor.
You must not allow the outside vendor to access the Visual Studio projects.
You need to recommend an approach for configuring and deploying the production database servers.
Which two actions should you recommend? (Each correct answer presents part of the solution. Choose two.)

A. Use SQL Server 2008 Management Studio to deploy the production databases.
B. Use VSDBCMD to deploy the production databases.
C. Use a Visual C# SQL CLR Database Project.
D. Use a SQL Server 2008 Database Project.

Correct Answer: BD
Explanation/Reference:
Answer: BD
A: With the file created with VSDBCMD you can install in production the DBs without the necessity of give access to VS to outside vendor.
D: use SQL Server database project to install in development and staging.
References:
You can use the Vsdbcmd.exe tool to copy a database schema from a database in your development environment and then deploy that same database schema to a production server.
Vsdbcmd.exe creates a .dbschema file that describes the structure of a database. Then you can choose to configure the database directly using the .dbschema file or use the .dbschema file to create a script that you can run to build the database. If you create a script, you do not need to have the Vsdbcmd.exe tool installed on the database server.
You also can use Vsdbcmd.exe to synchronize the schema of two databases. For example, consider an environment with separate development and production databases. As developers work on the next version of an application, they might add columns to tables on the development server. When they are ready to update the application in the production environment, they would need to update the schema on the production server to match that of the development server. The developers could use Vsdbcmd.exe to create .dbschema files for both the development and production databases and then generate a deployment script by comparing the two schemas.
Like a DAC, you can deploy a SQL Server Database project directly to the target server, and you can generate an incremental deployment script to update an existing database to match a specified schema. The Add New Project dialog box in Visual Studio displays SQL Server Database project templates in the DatabaseSQL ServerAdvanced folder.
**Question 128**
You are designing an update to an existing Windows Presentation Foundation (WPF) application. Users can purchase and download photographs from the company’s Web server by using the WPF application. Photographs must be viewable only when logged in as the user who purchased the photographs.
You need to recommend a download location for the photographs.
Which location should you recommend?

A. the application’s IsolatedStorage folder  
B. the user’s IsolatedStorage folder  
C. the application’s installation folder  
D. the user’s local Temp folder

Correct Answer: B
Explanation/Reference:

**Question 129**
You are designing an update to an existing Windows Presentation Foundation (WPF) application. You plan to use Microsoft Visual Studio 2010. The updated WPF application will require a specific version of a third-party component.
You have the following requirements:
- Deploy the update by using Windows Installer.
- Update the WPF application only if the required version of the third-party component is present on the client computer.
You need to recommend configuration settings for the application installer.
Which property should you recommend be set?

A. the Version property of the .NET Launch Condition  
B. the Condition property of a new Launch Condition  
C. the RemovePreviousVersions property of the Setup Project  
D. the Version property of the Setup Project

Correct Answer: B
Explanation/Reference:
Set the launch condition of installer to exists the third party component.

**Question 130**
You are designing updates to an existing Windows Presentation Foundation (WPF) application that connects to a Microsoft SQL Server 2008 database. The application updates will require updates to the database.
You have the following requirements:
- Prevent data loss.
- Recover the database if the database update fails.
You need to recommend a database deployment strategy.
Which two actions should you recommend? (Each correct answer presents part of the solution. Choose two.)

A. Place the database in single-user mode before deploying the changes  
B. Specify the simple recovery model for the database  
C. Specify the full recovery model for the database  
D. Place the database in restricted user mode before deploying the changes.

Correct Answer: AC
Explanation/Reference:
In a complete database restore, the goal is to restore the whole database. The whole database is offline for the duration of the restore. Before any part of the database can come online, all data is recovered to a consistent point in which all parts of the database are at the same point in time and no uncommitted transactions exist.

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single-user mode:
SINGLE-USER
Besides security, you might also run into multiuser conflicts when updating an existing database.
For example, if your database update script adds a column to a table and another user currently has a row locked for updating, your deployment script will not be able to continue.
You can work around this problem by disconnecting other users during the upgrade process and switching the database to single-user mode.
Restricted user mode:
RESTRICTED_USER provides for only members of the db_owner fixed database role, dbcreator and sysadmin fixed server roles to connect to the database in one or more connections:
**Question 131**
You are designing a .NET Framework 4 solution that contains a Windows Presentation Foundation (WPF) application and a Windows Communication Framework (WCF) Web service. The WPF application will be deployed to users’ desktops located in the company’s corporate network. The WCF Web service will be deployed to a Web farm located in the company’s perimeter network. The firewall between the perimeter network and the Internet allows only HTTP and HTTPS traffic.
You need to recommend an approach for minimizing the attack surface of the WCF Web service.
What should you recommend?

A. Add a load-balancing router to the Web farm configuration.
B. Configure a WCF endpoint to use the basicHttpBinding binding.
C. Configure a WCF endpoint to use the NetTcpBinding binding.
D. Set up an SSL certificate on the server.

Correct Answer: D
Explanation/Reference:
Certificate is better for security and the firewall permit https protocol.

**Question 132**
You are preparing to deploy a solution that includes a Windows Forms application and several COM components. Unsigned interop assemblies have been created for each of the COM components.
You need to recommend an approach for deploying the solution.
What should you recommend?

A. Deploy the windows Forms application and interop assemblies to a folder on the client computer. Sign the interop assemblies.
B. Deploy the Windows Forms application and COM components to a folder on the client computer. Deploy the interop assemblies to the Global Assembly Cache (GAC).
C. Deploy the Windows Forms application, COM components, and interop assemblies to a folder on the client computer. Register the COM components.
D. Deploy the Windows Forms application to a folder on the client computer. Deploy the COM components and interop assemblies to the Global Assembly Cache (GAC). Register the COM components.

Correct Answer: C
Explanation/Reference:
It is the best option, the COM with the application avoid to use a wrong COM. also you must register the assemblies.

**Question 133**
You are designing a multi-tenant Windows Presentation Foundation (WPF) application that will connect to a Microsoft SQL Server 2008 database. The WPF application will change the structure of database tables and views at runtime based on the tenant’s configuration.
The WPF application must meet the following requirements:
- Keep each tenant’s data separate.
- Allow changes to the structure of the tables and views for each tenant without interfering with other tenants’ data.
You need to recommend an approach for managing the database structure.
What should you recommend?

A. Create a Partition Scheme for each tenant.
B. Create an Application Role for each tenant.
C. Create a Schema for each tenant.
D. Create a Synonym for each tenant.

Correct Answer: C
Explanation/Reference:

**Question 134**
You are designing Windows Presentation Foundation (WPF) applications by using Microsoft .NET Framework 4. You need to maintain a common appearance and behavior across all applications in your company. You also need to ensure that the look and feel of the applications can be modified without recompiling them.
What should you create?

A. a merged resource dictionary
B. user controls in a shared assembly
C. an instance of the System.Windows.Media.StyleSimulations class
D. custom controls in a shared assembly
Correct Answer: A
Explanation/Reference:
Explanation Correct A
Windows Presentation Foundation (WPF) resources support a merged resource dictionary feature. This feature provides a way to define the resources portion of a WPF application outside of the compiled XAML application. Resources can then be shared across applications and are also more conveniently isolated for localization.

```
<Page.Resources>
  <ResourceDictionary>
    <ResourceDictionary.MergedDictionaries>
      <ResourceDictionary Source="myresourcedictionary.xaml"/>
      <ResourceDictionary Source="myresourcedictionary2.xaml"/>
    </ResourceDictionary.MergedDictionaries>
  </ResourceDictionary>
</Page.Resources>
```

Question 135
You are designing a mission-critical Windows Presentation Foundation (WPF) application that uses .NET Framework 4. You need to recommend an approach for identifying repair and recovery time. What should you recommend?

A. Test for buffer overflows.
B. Use component stress testing.
C. Test the failover technologies.
D. Use integration stress testing.

Correct Answer: C
Explanation/Reference:
The goal is recovery time and repair time.

Question 136
You are working with a Windows Presentation Foundation (WPF) application that uses .NET Framework 4. Your team is responsible for making significant changes to the application functionality. You need to recommend an approach for identifying features that no longer work properly as a result of code changes. Which testing methodology should you recommend?

A. stress testing
B. integration testing
C. stability testing
D. regression testing

Correct Answer: D
Explanation/Reference:

Question 137
You are designing a Windows Forms application. The application connects to a Microsoft SQL Server 2008 database. You need to recommend an approach for retrieving and logging all informational messages and error messages reported by the database. What should you recommend?

A. Retrieve informational messages in a SqlException object. Retrieve error messages by creating a handler for the InfoMessage event.
B. Retrieve informational messages by creating a handler for the InfoMessage event. Retrieve error messages in a SqlException object.
C. Retrieve informational messages and error messages by creating a handler for the InfoMessage event.
D. Retrieve informational messages and error messages in a SqlException object.

Correct Answer: B
Explanation/Reference:
You create a handler to gInfoMessage and SqlException and you can logg all informations (informational or critical).

Question 138
You are designing a Windows Presentation Foundation (WPF) application that connects to a data access layer on a server. You have the following requirements for all security-related exceptions:
Exceptions that occur in the data access layer must be handled in a single exception handler in the WPF application. Exceptions must pass customized messages back to the WPF application. You need to recommend an approach for creating new exception classes in the data access layer. From which class should you inherit?

A. System.ApplicationException  
B. System.AccessViolationException  
C. System.InvalidOperationException  

Correct Answer: D  
Explanation/Reference:  
Two different exceptions, it is recommended to be specific  
System.Object  
System.Exception  
System.ApplicationException  
System.Exception  
System.SystemException  

Question 139  
You are designing a distributed application that will be deployed to 5,000 users worldwide. Servers on five continents will host the Web services and the Microsoft SQL Server 2008 databases that support the application. You have the following requirements:  
- Collect information about all errors associated with the application. Store and view all error information in a centralized location.  
- Minimize the network bandwidth required for the transfer of error information.  
You need to recommend a strategy for reporting error information. Which strategy should you recommend?

A. Write error messages to the SQL Server databases. Synchronize the databases by using merge replication.  
B. Write error messages to the event logs on the local computers. Use Windows Error Reporting to view the error information.  
C. Write error messages to the SQL Server databases. Synchronize the databases by using transactional replication.  
D. Write error messages to the event logs on the local computers. Use Windows Management Instrumentation (WMI) to view the error information.  

Correct Answer: B  
Explanation/Reference:  
Correct: B Windows Error report offer a solution to centralize and view the error information.  
Reference:  
Windows Error Reporting (WER) (codenamed Watson) is a crash reporting technology introduced by Microsoft with Windows XP [1] and included in later Windows versions and Windows Mobile 5.0 and 6.0. Not to be confused with the Dr. Watson debugging tool which left the memory dump on the user’s local machine, Windows Error Reporting collects and offers to send post-error debug information (a memory dump) using the Internet to the developer of an application that crashes or stops responding on a user’s desktop. No data is sent without the user’s consent. When a dump (or other error signature information) reaches the Microsoft server, it is analyzed and a solution is sent back to the user when one is available. Solutions are served using Windows Error Reporting Responses. Windows Error Reporting runs as a Windows service and can optionally be entirely disabled. If Windows Error Reporting itself crashes, then an error reports that the original crashed process cannot be sent at all
Question 140
You are designing a Windows Presentation Foundation (WPF) application. Business entity objects are bound to controls on each data entry window.
The WPF application must meet the following requirements:
Display a watermark in each empty text box.
Display watermarks in a lighter color than user entries.
The watermark code must be reusable with other user interface controls. You need to recommend an approach for creating the watermarks.
What should you recommend?
A. Modify each business entity object to return the watermark text if the property has no data.
B. Attach a custom attached property and an Adorner to each text box.
C. Create a value converter to format the bound value of the business entity objects.
D. Create handlers for the OnFocus and OnFocusLost events of the text boxes in the code-behind.
Correct Answer: B
Explanation:
You can create a Adorner decorator and use it as attached property. See http://stackoverflow.com/questions/833943/watermark-textbox-in-wpf to see a implementation of this code (for watermark).
The declaration is AXML but you must constructer in code de decorator class.

<AdornerDecorator>
<TextBox x:Name="SearchTextBox"">
<controls:WatermarkService.Watermark>
<TextBlock>
Type here to search text
</TextBlock>
</controls:WatermarkService.Watermark>
</TextBox>
</AdornerDecorator>
In this question in the only option that can be reusable in each Control.
Question 141
You are designing a Windows Presentation Foundation (WPF) application that displays thumbnail images of photographs. The thumbnails are arranged in rows and columns. The number of columns must automatically update based on the size of the application window. You need to recommend a container for displaying all the thumbnail images at the same size. Which container should you recommend?

A. a WrapPanel control  
B. a StackPanel control  
C. a Canvas control  
D. a DockPanel control

Correct Answer: A
Explanation/Reference:

Question 142
You are designing an application by using Windows Presentation Foundation (WPF) and Microsoft .NET Framework 4. The application will run on Windows 7-based kiosks that are located indoors and outdoors. The kiosk displays have a photo sensor that will update the application with the current ambient luminosity. You need to ensure that the user interface (UI) of the application dynamically changes the application theme based on the ambient luminosity. What should you use?

A. a visual state manager to add VisualStateGroup objects  
B. a VisualBrush control to paint the UI  
C. a RenderTransform control applied to the root canvas  
D. an attached behavior to change a merged resource dictionary

Correct Answer: D
Explanation/Reference: Correct D
It is the more clean solution. You can apply a style as resource dictionary for each ambient luminosity, then attach a behaviour to change it in luminity functions. To attach a behaviour use this

<TextBox x:Name="tbWhere" local:TextBoxFocusBehavior.IsWatermarkEnabled="true" local:TextBoxFocusBehavior.WatermarkText="Where." Style="{StaticResource InputBox}" Width="150" Margin="5"></TextBox>

You need to implement in code the behaviour code.  

Question 143
You are designing a Windows Presentation Foundation (WPF) application. The WPF application must always display real-time status information while the user is working in the WPF application. You need to recommend a container for displaying the status information. Which container should you recommend?

A. a modeless window  
B. a console window  
C. a message box  
D. a modal window

Correct Answer: A
Explanation/Reference:

Question 144
You are designing a Windows Forms application that allows users to search a product catalog and place orders. You have the following requirements: Display a progress indicator while the application is searching the catalog. Ensure that users can cancel search operations. You need to recommend an approach that meets the requirements. What should you recommend?

A. Use a BackgroundWorker component to perform the search.  
B. Implement the search as a Windows Communication Foundation (WCF) service by using the AsyncPattern property of the OperationContract attribute.  
C. Implement the search as a duplex service.
D. Execute the search on the user interface thread. Provide a Cancel button to cancel the search.

Correct Answer: A
Explanation/Reference:
Correct A
Is the most clean solution for the question requirements.

Question 145
You are designing a Windows Forms application. You intend to display graphics on a form in the application by using a third-party Windows Presentation Foundation (WPF) control. You need to recommend a control for hosting the third-party WPF control. What should you recommend?

A. a Panel control
B. an ElementHost control
C. a WindowsFormsHost control
D. a Canvas control

Correct Answer: B
Explanation/Reference:
Element Host control is specific control in windows application to show a WPF control. A,D does not work. C this control is a WPF control that can hold a windows applications control. that is the inverse situation.

Question 146
You are designing an application by using Windows Presentation Foundation (WPF) and Microsoft .NET Framework 4. The application allows users to view product details. Product managers can modify the product details for the products that they manage. You plan to design the application by using the Model-View-ViewModel (M-V-VM) pattern. You need to ensure that the product details can be viewed by all users and modified only by product managers. What should you do?

A. Create a separate StackPanel in the window to modify data.
B. In the ViewModel, disable all input controls if the user’s role is not a Product Manager.
C. Create a separate window to modify data.
D. In the ViewModel, hide all input controls if the user’s role is a Product Manager.

Correct Answer: B
Explanation/Reference:
The user role is the better solution.

Question 147
You are designing a Windows Presentation Foundation (WPF) application. The application calls methods that perform long-running computational tasks. You need to recommend an approach for ensuring that the application remains responsive while the tasks are executing. What are two possible ways to achieve this goal? (Each correct answer presents a complete solution. Choose two.)

A. Use synchronous method calls from a thread other than the thread on which the user interface runs.
B. Run the user interface from a new multi-threaded apartment (MTA) thread.
C. Use synchronous method calls from the user interface thread.
D. Use asynchronous method calls from the user interface thread.

Correct Answer: AD
Explanation/Reference:
Explanation:

Question 148
You are designing a Windows Presentation Foundation (WPF) client application that requests reports from a Windows Communication Foundation (WCF) Web service. Users must be able to perform other tasks while the WCF Web service generates the report. You need to recommend a message exchange pattern for the communication between the WPF application and the WCF Web service.
service.

What are two possible message exchange patterns that will meet the requirements? (Each correct answer presents a complete solution. Choose two.)

A. Datagram with session
B. Request-Response
C. Duplex
D. Datagram without session

Correct Answer: CD
Explanation/Reference:
Explanation:
C,D are asynchronous protocols.
A – need to maintain the session.
B. Request response wait for the answer.

Question 149
You are designing an n-tier solution that includes a Windows Presentation Foundation (WPF) client application. The WPF application connects to a middle-tier server that runs the data access layer. The data access layer connects to a Microsoft SQL Server 2008 database and to a mainframe-based database.
The mainframe-based database will be replaced in one year. You have the following requirements:
Centrally manage all database connections.
Minimize changes to the code base when the database is replaced.
Ensure that the WPF application will not need to be redeployed when the database is replaced.
You need to recommend an approach for designing the data access layer.
What should you recommend?

A. Create a data access layer class that uses a database factory class to access all databases. Add the connection string information for the databases to the configuration file for the WPF application
B. Add the connection string information for the databases to the configuration file for the WPF application. Implement one class in the WPF application for each data source.
C. Create a data access layer class that uses a database factory class to access all databases. Add the connection string information for the databases to the configuration file for the data access layer class.
D. Add the connection string information for the databases to the configuration file for the WPF application. Implement a database factory class from within the WPF application.

Correct Answer: A
Explanation/Reference:
Explanation:
A
The database factory must be in the data layer, and the configuration file must be in the root of calling application, that is the WPF application.

Explanation/Reference:

Question 150
You are designing a Windows application by using Microsoft .NET Framework 4 and Microsoft Visual Studio 2010.
You need to use a replacement culture for the application at runtime. You also need to ensure that the information in the custom culture will be available to the application.
Which two tasks should you perform? (Each correct answer presents part of the solution. Choose two.)

A. Restart the process that is displaying the user interface,
B. Register the replacement culture by using the CultureAndRegionInfoBuilder class.
C. Register the replacement culture by using the CultureInfo class.
D. Call the Save method of the CultureAndRegionInfoBuilder class instance.

Correct Answer: AB
Explanation/Reference:
Explanation: A,B
You should register the replacement culture with CultureAndRegionInfoBuilder and then restart the process to be available the new culture to the application.

Explanation/Reference:
CultureAndRegionInfoBuilder:
Defines a custom culture that is new or based on another culture and country/region. The custom culture can be installed on a computer and subsequently used by any application that is running on that computer. This class cannot be inherited.
Question 151
You are designing a Windows Presentation Foundation (WPF) application that will be used to display real-time data from a Microsoft SQL Server 2008 database. You need to recommend an approach for displaying the data. Which two actions should you recommend? (Each correct answer presents part of the solution. Choose two.)

A. Implement Oneway binding between the controls in the WPF application and objects in the data layer.
B. Implement OneWayToSource binding between the controls in the WPF application and objects in the data layer.
C. Use a SqlCacheDependency object in the data layer to query the database when a change is detected.
D. Use a System.Runtime.Caching object in the data layer with a sliding expiration, and query the database when the Cache object expires.

Correct Answer: AC
Explanation/Reference:
One way change the data in the UI when the bound data change. You must use the SqlCacheDependency because you want see the data in real time. Sliding expiration depends of the user access and does not depend over the data change in DB.

Question 152
You are designing a Windows application. The application must meet the following requirements:
Provide three-dimensional views of data.
Display images, text, graphs, and videos.
Support porting to a browser-based application.
You need to recommend a technology that meets the requirements. Which technology should you recommend?

A. Windows Presentation Foundation (WPF)
B. Direct3D
C. GDI+
D. Windows Forms

Correct Answer: A
Explanation/Reference:

Question 153
You are working with an existing Windows Presentation Foundation (WPF) application in Microsoft Visual Studio 2010. The WPF application requires approximately one minute to initialize before displaying its main window. You have the following requirements:
Immediately display a splash screen when the WPF application launches. Allow for the display of an initialization progress bar on the splash screen. Close the splash screen when the WPF application is ready to display the main window. You need to recommend an approach for meeting the requirements. What should you recommend?

A. Launch a custom splash screen by using a Window object. When the initialization completes, launch the main window from the splash screen.
B. Create a SplashScreen object. Display the object in the code-behind of the App.xaml file.
C. Move the initialization code to the code-behind of the main window.
D. Compile an image into the WPF application with a Build Action value of SplashScreen.

Correct Answer: A
Explanation/Reference:
Really the only option is A for the conditions. Maybe it is a error in this question and the main windows is not launch from the splash screen.
B The splashScreen object exists, in NET 4.0 and 4.5, but you can only load a image in it. The option D give the easily option to create and load it. C This does not show a splash screen. D is possible, but you would need to add a progress bar in the splash screen and not a fixed image.

Question 154
You are designing a Windows Presentation Foundation (WPF) application. The WPF application contains code that will be executed by both full trust callers and partial trust callers. The WPF application code does not have the AllowPartialTmstCallers attribute set. You have the following requirements:
The application security settings must allow partial trust callers to create and write to a file. Users must have access only to files that they create and not to files created by other users. You need to recommend a location for storing each user’s files. Which location should you recommend?

A. the user’s Roaming folder
B. the user’s LocalSettings folder
C. the user’s IsolatedStorage folder
D. the user’s My Documents folder

Correct Answer: C
Explanation/Reference:

Question 155
You are designing an application by using Microsoft .NET Framework 4 and Microsoft Visual Studio 2010. The application will store data that includes a time and date stamp. The middle tier of the application is implemented by using Windows Communication Foundation (WCF). The middle tier connects to geographically separated database servers. You need to ensure that the application meets the following requirements:

Data stored contains time and date information local to the database server.
Data stored contains Universal Coordinated Time (UTC).

Which class should you use?

A. DateTime
B. DateTime Offset
C. TimeZoneInfo
D. TimeZone

Correct Answer: B
Explanation/Reference:

Question 156
You are designing a Windows Presentation Foundation (WPF) application that uses .NET Framework 4. The application uses a subset of the functionality provided by a third-party COM component that will be replaced later. The application developers must have access to only the required subset of functionality. You need to recommend a solution that meets the requirements.

Which two actions should you recommend? (Each correct answer presents part of the solution. Choose two.)

A. Create an adapter assembly that exposes the entire functionality of the COM component.
B. In the adapter assembly, use an embedded interop reference.
C. In the adapter assembly, use a standard interop reference.
D. Create an adapter assembly that exposes the required subset of the COM component functionality.

Correct Answer: CD
Explanation/Reference:

If you plan to replace a COM object with a managed assembly at some point in the future and you want to avoid updating your application, create a wrapper assembly. Within the wrapper assembly, create a method for each method within the COM object that you require, and simply pass the parameters to the underlying COM object. Later, you can add complete functionality to the wrapper assembly by adding code to each method, and applications referencing the wrapper assembly will not need to be updated.

Question 157
You are designing an n-tier solution for use by multiple groups of users. The solution consists of a client application that collects information from users and transmits it to a business layer for processing. The business layer sends the information to a service layer by using Windows Communication Foundation (WCF). The service layer exists on multiple servers. The solution must send the collected information to a specific server in the service layer based on the user’s group. You need to recommend an approach that will allow the information to be sent to the correct server. What should you recommend?

A. Impersonate the client in the business layer.
B. Implement a duplex contract on the service layer.
C. Create a Windows Workflow Foundation (WF) activity on the client.
D. Implement the WCF 4 Routing Service.
Correct Answer: D
Explanation/Reference:
Routing service in context mode can give you what you want: see explanation. Routing Service can also be context or content.

You can use WCF routing to create a layer of abstraction between service layers. With WCF routing, you can create a single interface that sends requests to one of several different web services. You also can use routing to convert between different communication standards and data formats and to provide an Internet interface for intranet services. Figure 1-2 illustrates WCF routing.

Just like every website is identified by a unique URL, all web services use context-based routing. When you use context-based routing, you identify a service endpoint using a unique host name/IP address, Transfer Control Protocol (TCP) or User Datagram Protocol (UDP) port. For example, identifying a service with the URL http://contoso.com/myservice.asmx is context-based routing, and Microsoft Internet Information Services (IIS) would use the URL to distinguish requests from web services located at http://contoso.com/mynotherservice.asmx or http://contoso.com:8080/myservice.asmx.

Content-based routing identifies a service by looking within a message. When you use content-based routing, you identify a service endpoint using specific method and parameter values. For example, imagine a web service that processes transactions for three different credit card companies. The content-based router could examine the message to determine which credit card company should process the transaction, and then forward the message to the appropriate service. Responses would be routed through the routing service as well.

Content-based routing is typically transparent to the client.

Question 158
You are designing a Windows application by using Microsoft .NET Framework 4 and Microsoft Visual Studio 2010. The business logic layer of the application is implemented by using Windows Communication Foundation (WCF).
You create a duplex bidirectional WCF service that contains a single operation. The service operation sends the result back to the client application by using a two-way callback operation.
You plan to design a service interaction strategy.
You need to ensure that deadlocks are prevented.
What should you do?

A. Configure the CallbackBehaviorAttribute attribute to use the Reentrant or Multiple concurrency mode in the callback class.
B. Configure the ServiceBehaviorAttribute attribute to use the Reentrant or Multiple concurrency mode in the service class.
C. Configure the ServiceBehaviorAttribute attribute to use the Synchronization context in the service class.
D. Configure the CallbackBehaviorAttribute attribute to use the Synchronization context in the callback class.

Correct Answer: B
Explanation/Reference:
Designing Concurrency for Web Services
You can control whether WCF Web Services are single-threaded or multithreaded. If they are multithreaded, you have to plan to write code to perform locking and to work around deadlock conflicts.
Two factors determine whether a WCF web service is single-threaded or multithreaded: instancing and concurrency. Instancing
(defined by the ServiceBehavior attribute’s Instance ContextMode property) defines the conditions in which WCF creates a new process:

Single WCF uses a single instance for the web service, regardless of the number of calls or users.

PerSession WCF uses a separate instance for each user session, which means that each user gets his own instance unless a user creates multiple sessions.

PerCall WCF uses a separate instance for each call, which might mean that multiple instances are created for a single user.

For each instance mode, WCF Web Services support three different concurrency modes (defined by the ServiceBehavior attribute’s ConcurrencyMode property for inbound connections, or the CallbackBehavior attribute’s ConcurrencyMode property for callbacks):

Single Each instance context is allowed to have a maximum of one thread processing messages in the instance context at a time. Other threads will be blocked until they time out or the thread completes, but you do not have to write code to deal with threading issues.

Multiple Each service instance can have multiple threads processing messages concurrently. You must create a thread-safe service to use the Multiple concurrency mode.

Reentrant Each service instance processes one message at a time, but accepts re-entrant operation calls. The service accepts these calls only when it is calling out through a WCF client object. The Reentrant concurrency mode is only relevant for PerSession instancing.

If you set InstanceContextMode to Single and ConcurrencyMode to Single, the web service always will be single-threaded, messages always will be processed in the order that they are received, and there never will be any risk of concurrency problems. However, there could be performance problems because the web service will wait until one request is complete before processing another request.

**Question 159**

You are designing a Windows Presentation Foundation (WPF) application that accesses a Microsoft SQL Server 2008 database. You must ensure that database administrators can change the structure of database tables without requiring redeployment of the WPF application.

You need to recommend a data modeling and data access strategy. What should you recommend?

A. Model the data layer by using DataSet objects with automatically generated Create, Read, Update, and Delete (CRUD) statements.
B. Model the data layer by using custom data access objects. Access the database by using stored procedures.
C. Model the data layer by using LINQ to SQL with attribute-based mapping of objects to tables.
D. Model the data layer by using typed DataSet objects with automatically generated Create, Read, Update, and Delete (CRUD) statements.

Correct Answer: B

Explanation/Reference:

If you don’t change the output of the store procedures, you don’t need to recompile the application, because the change in schema are managed inside the stored procedure.

**Question 160**

You are designing an application by using Microsoft .NET Framework 4 and Microsoft Visual Studio 2010. The application includes Windows Workflow Foundation (WF) hosts that run thousands of workflow instances. Workflows usually take 2 hours of time to complete. The application also includes a Windows Communication Foundation (WCF) service that contains a method to check the completion status of a workflow stored in a database.

External applications that use the WCF service to check the status of workflows every minute causes performance degradation of the workflow that hosts the application.

You need to eliminate the performance degradation caused by workflow status checks. What should you do?

A. Cache the status of the workflow.
   - Assign a callback function based on a SqlDependencyobject.
   - Reload the cache in the callback function.
B. Cache the status of the workflow.
   - Set the expiry time of the Cache object to 30 minutes.
C. Create a status checking workflow.
   - Return the status of the original workflow to the external application in 30 minute intervals.
D. Create a status checking workflow.
   - Return the status of the original workflow to the external application after 10 requests have been made.

Correct Answer: A

Explanation/Reference:

Correct A
With this you avoid that the WEB service query the DB and guarantee that the cache is always with updated information because the SqlDependentObject advice to reload the information when the DB change.

Question 161
You are designing a Windows Presentation Foundation (WPF) application. The WPF application displays indicators to compare your company’s past performance to the current day’s operations data. The WPF application accesses historic data from your company’s data warehouse through a Web service, and accesses current data directly from a Microsoft SQL Server 2008 database. The WPF application must meet the following requirements:
Retrieve historic data from the data warehouse at application startup and then once per day. Retrieve current data from the database every five minutes, and then update the indicators. Cache all retrieved data.
Target the .NET Framework 4 Client Profile.
You need to recommend an approach to data caching. What should you recommend?
Correct Answer: D
Explanation/Reference:
Correct D,
Original was B, but it is not possible because the application target .NET Framework 4 Client Profile and System.Runtime.Caching is not possible. then B,C are OUT
The time interval is fixed (5 minutes) then sliding that work with the user page access is not correct (A OUT) then D.
.NET Framework 4 adds the System.Runtime.Caching namespace. If you are familiar with the System.Web.Caching namespace, System.Runtime.Caching is very similar, although the class names have changed. Microsoft moved it out of the System.Web namespace so that non-web developers did not have to create a dependency on .NET classes.
To use the namespace from a WPF application, you must target .NET Framework 4 instead of the default .NET Framework 4 Client Profile. In Visual Basic.NET, change the target framework by clicking the Advanced Compile Options button on the Compile tab of your project properties dialog box. In C#, change the target framework from the Application tab of your project properties dialog box. In either language, you will need to use the .NET tab of the Add Reference dialog box to reference the System.Runtime.Caching namespace.

Question 162
You are analyzing a Windows client application that uses Microsoft Visual Studio 2010 and Microsoft SQL Server 2008. The application updates two database tables from the main user interface (UI) thread. You need to ensure that the following requirements are met:
The database tables are either updated simultaneously or not updated at all.
Users are notified of the success or failure of the updates.
Users are able to perform other tasks during the update process.
What should you do?
A. Use TransactionScope in a using block on the UI thread.
B. Move the database update logic to a BackgroundWorker thread.
C. Ensure that the thread is enclosed in a TransactionScope using block in the BackgroundWorker DoWork method.
D. Use TransactionScope in a using block on the UI thread.
D. Create a BackgroundWorker thread within the block.
C. Move the database updates to the BackgroundWorker DoWork method.
D. Use TransactionScope in a using block on the UI thread.
D. Create a TransactionScope in a using block on the main thread.
D. Create a BackgroundWorker thread within the block.
D. Move the database updates to the BackgroundWorker DoWork method.
D. Create a TransactionScope in a using block on the UI thread.
D. Use the object in the ReportProgress method to create a new TransactionScope block.
Correct Answer: B
Explanation/Reference:
Explanation
You should create a Background Worker component to ensure that the user can work, and enclose in a Transaction the Table update method. That is doing in the DoWork method in the background worker component.
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We need a background worker process => A out.
Users are able to perform other tasks during the update process. => Users are notified of the success or failure of the updates. => yes for B,C,D (whether because the process is completed or because the process is cancelled, the RunWorkerCompleted event is raised) The DependentTransaction is a clone of a Transaction object created using the DependentClone method.
Its sole purpose is to allow the application to come to rest and guarantee that the transaction cannot commit while work is still...
Users are able to perform other tasks during the update process. The DoWork event handler is executed on a separate, dedicated thread, allowing the UI to remain responsive.

```csharp
private void backgroundWorker1_DoWork(object sender, DoWorkEventArgs e) {
    for (int i = 1; i < 11; i++)
        RuntimeConsumingProcess();
        // Calls the Report Progress method, indicating the percentage
        backgroundWorker1.ReportProgress(i*10);
}
```

**Question 163**

You are modifying an existing Windows Presentation Foundation (WPF) application that uses .NET Framework 4. The WPF application uses a wizard to capture data and insert the data into a database. The database includes one parent table and many child tables.

Inserting captured data in the database locks many database tables and delays application access.

You have the following requirements:

1. Reduce delays when saving data.
2. Ensure that other application users are not blocked from reading data.
3. Ensure that captured data is available only after all child tables are updated. You need to recommend an approach for inserting captured data into the database.

What should you recommend?

A. Insert all captured data in a single transaction when the user completes the wizard.
B. Insert captured data by using a single transaction as the user completes each wizard page.
C. Insert captured data by using non-transactional operations when the user completes the wizard.
D. Insert captured data by using optimistic concurrency as the user completes each wizard page.

**Correct Answer:** A

**Explanation/Reference:**

- A. one transaction in the end => Yes
- B. Works but to many transactions => out
- C. non-transactional operations: users should not blocked from reading data => out
- D. optimistic concurrency for each page– we need one operation for all pages => out

**Pessimistic:** In Pessimistic concurrency control a transaction blocks data access operations of other non-materialized until blocking is removed. This to transactions upon conflicts, and conflicts are ensure that operations that may violate serializability (and in practice also recoverability) do not occur.

**Optimistic:** In Optimistic concurrency control data access operations of other transactions are not materialized. When the transaction reaches the blocked upon conflicts, and conflicts are immediately ready state, i.e., its running state has been completed, possible serializability (and in practice also recoverability) violation by the transaction’s operations (relatively to other running transactions) is checked:

aborted (sometimes aborting another transaction to if violation has occurred, the transaction is typically committed.

handle serializability violation is preferred). Otherwise it is

**Question 164**

You are developing an application by using Microsoft .NET Framework 4 and Microsoft Visual Studio 2010. The application contains a grid that displays customer data stored in a database table. Users report that the grid takes a long time to display.

You plan to implement data caching to improve loading time for the grid.

You need to ensure that the cached data expires when the customer data is updated. What should you do?

C. Use the ADO.NET Entity Framework.
D. Use a static variable to store the Grid object.

**Correct Answer:** B

**Explanation/Reference:**

- Requirements:
  - Improve loading time for the grid. You need to ensure that the cached data expires when the customer data is updated.
  - CacheDependency class: it’s a filewatcher one => out
  - Runtime.Caching.SqlChangeMonitor: class Monitors changes to a database. You can use the CacheItemPolicy to specify expiration policies, page 190 => Yes
  - Use the ADO.NET Entity Framework: I wouldn’t advise it (caching Entity). TheObjectContext needs to be active to observe changes to any entities you are actively working with or you’d need to disconnect any active entities prior to caching the ObjectContext. Detaching could work provided the original context is disposed properly => out
  - Use a static variable to store the Grid object: Won’t help to improve loading time => out
**Question 165**

You are designing a Windows Presentation Foundation (WPF) application that will process data. The data is stored in a Microsoft SQL Server 2008 database. You plan to access the data by using ADO.NET Entity Framework 4.

You need to recommend an approach that minimizes the number of calls to the database server.

What should you recommend?

A. Use lazy loading.
B. Use SqlDependency objects.
C. Use change tracking in the ObjectContext object.
D. Use eager loading.

**Correct Answer:** D

**Explanation/Reference:**

If we only consider number of calls it has to be D. since eager loading loads all related entities.

SqlDependency objects. (If we had to query the database for the entitlements on every single alert that flows through our system, we would take a tremendous hit in performance. Therefore, we cache the entitlements in memory and cache the result sets.)


**Change Tracking**

Once the View Generation cost is eliminated, the most expensive operation is Object Materialization. This operation eats up 75% of your query time because it has to read from the DbDataReader object and create an object. When you are using the Entity Framework, you have objects that represent the tables in your database. These objects are created by an internal process called object materialization. This process takes the returned data and builds the relevant objects for you. The object can be EntityObject derived objects, anonymous types, or DbDataRecord DbDataRecord.

The ObjectContext object will create an ObjectStateEntry object to help track changes made to related entities. Objects are tracked when queried, added, or attached to the cached references inside this class.

The tracking behavior is specified using the MergeOption enumeration. When updates to properties of the tracked objects occur, the properties are marked as modified and the original values are kept for performing updates back to the database. This enables users to write code against the objects themselves and call SaveChanges.

We can minimize the overhead of change tracking by using the MergeOption.NoTracking option. Doing so will increase the performance of your system in most situations. The loss of change tracking is irrelevant if you are sending your data across the network via a web service because this feature will not work in a “disconnected” mode. Even if you are not disconnected, you can use this option in a page where there are no updates to the database. Take a look at the code snippet below for one example of how to disable change tracking:

Eager loading returns all related entities together with the queried entities in a single query. This means that, while there is only one connection made to the data source, a larger amount of data is returned in the initial query. Also, query paths result in a more complex query because of the additional joins that are required in the query that is executed against the data source.

Explicit and lazy loading enables you to postpone the request for related object data until that data is actually needed. This yields a less complex initial query that returns less total data. However, each successive loading of a related object makes a connection to the data source and executes a query. In the case of lazy loading, this connection occurs whenever a navigation property is accessed and the related entity is not already loaded. If you are concerned about which related entities are returned by the initial query or with managing the timing of when related entities are loaded from the data source, you should consider disabling lazy loading. Lazy loading is enabled in the constructor of the Entity Framework-generated object context.

Lazy loading

In this type of loading, related entities are automatically loaded from the data source when you access a navigation property. With this type of loading, be aware that each navigation property that you access results in a separate query executing against the data source if the entity is not already in the ObjectContext.

Eager loading

When you know the exact shape of the graph of related entities that your application requires, you can use the Include method on the ObjectQuery to define a query path that controls which related entities to return as part of the initial query.

When you define a query path, only a single request against the database is required to return all entities defined by the path in a single result set, and all related entities of the type specified in the path are loaded with each object that the query returns.

**Question 166**

You are analyzing an application that uses Microsoft .NET Framework 4 and Microsoft SQL Server 2008.

The application is used to maintain an inventory database and is accessed from several remote Windows client applications. The application frequently updates multiple rows in a database table by using a DbDotoAdopter object.

Users report that the application runs slowly during peak business hours.

When large number of records are changed by multiple users, you discover the following:

The CPU utilization of the client applications is normal.

The network utilization increases slightly.

The CPU utilization of the database server remains close to the normal average for a day.

You need to resolve the performance issue.

What should you do?

A. Disable batch updates. Modify the client application to perform a single update.
B. Insert a random time interval between updates.
C. Move the update method calls to a separate BackgroundWorker thread.
D. Remove any limit on batch update sizes. Modify the client application to perform a single update.

Correct Answer: D

Explanation/Reference:
Requirements
several remote Windows client applications. The application frequently updates multiple rows in a database table by using a DbDataAdapter object. (The DbDataAdapter class inherits from the DataAdapter class and helps a class implement a DataAdapter designed for use with a relational database. An application does not create an instance of the DbDataAdapter interface directly, but creates an instance of a class that inherits IDbDataAdapter and DbDataAdapter.) The BackgroundWorker component is designed to allow you to execute time-consuming operations on a separate, dedicated thread. This allows you to run operations that take a lot of time, such as file downloads and database transactions asynchronously and allow the UI to remain responsive.

Question 167
You are designing a .NET Framework 4 solution. The solution contains a Windows Presentation Foundation (WPF) application and a Windows Communication Foundation (WCF) Web service. The WPF application uses the WCF Web service to store data in a Microsoft SQL Server 2008 database.

You have the following requirements:
Ensure that the WPF application functions while users’ computers are offline. Minimize the time spent sending data to the WCF Web service.
Minimize disk space requirements for data storage.

You need to recommend an approach for synchronizing data between the WPF application and the database. Which two actions should you recommend? (Each correct answer presents part of the solution. Choose two.)

A. Store data in custom business objects. Serialize data locally by using custom serialization.
B. Create a local caching solution that periodically checks for Internet connectivity and writes directly to the local data store and to the WCF Web service.
C. Create a local caching solution that periodically checks for Internet connectivity, uses local memory, and batches changes to the WCF Web service.
D. Store data in DataSet objects. Serialize data locally by using XML serialization.

Correct Answer: AC

Explanation/Reference:
Answer: A,C
Explanation: minimizes the use of data storage by using the local memory which is also faster to access

Question 168
You are designing an n-tier .NET Framework 4 solution that includes a Windows Presentation Foundation (WPF) application. The WPF application will access data stored in a Microsoft SQL Server 2008 database by using the solution’s data access tier. The data access tier must also be available from within Microsoft Excel 2010.

You need to recommend a technology for accessing the data access tier. Which technology should you recommend?

A. ADO.NET Entity Framework 4
B. LINQ to SQL
C. WCF Data Services
D. LINQ to XML

Correct Answer: C

Explanation/Reference:
The parts of ADO.NET Data Services that were focused on the Windows implementation of OData are now WCF Data Services. known as
Question 169

You are designing a Windows Presentation Foundation (WPF) application by using Microsoft .NET Framework 4, Microsoft Visual Studio 2010, and Microsoft SQL Server 2008. You have designed the application to use the ADO.NET Entity Framework for the Data Access Layer (DAL). You have designed the user interface (UI) of the application by using the Model-View-ViewModel (M-V-VM) pattern. The middle tier of the application is designed by using Windows Communication Foundation (WCF). The database schema changes often. The DAL entity objects are required to be referenced from the middle tier and the ViewModel layer of the UI.

You need to ensure that the DAL entity objects are updated when the database schema changes. What should you do?

A. Create an observable collection of objects.
B. Create typed DataSets.
C. Create persistent-aware objects.
D. Create persistent-ignorant objects.

Correct Answer: C

Explanation/Reference:
This gives us:
- Entity objects are being used. => A, B out

The DAL always have to be updated not only when you are retrieving the data. => D out This will be achieved by non-POCO i.e. persistent aware objects or an observable collection of objects.
Since it’s specified we are using Entity Objects we will not have to use an observable collection. My answer is therefore C.
Some features don’t work unless classes are unsealed and all members are virtual Object identity doesn’t work properly unless you abuse Equals/GetHashCode (Aside: Before anybody gets upset, I don’t mean to pick on NHibernate here, it’s just a frequently quoted example of a framework that supposedly permits persistence ignorance. I’m sure similar arguments could be applied to other ORMs that claim the same.)

Now although the class in itself does not have any persistence-framework-specific attributes or base classes etc., to me it is not really "persistence ignorant" because it must follow a set of design guidelines to facilitate use by the chosen persistence framework.