



A Composite Solution With Just One Click

Microsoft

70-516 PRACTICE EXAM

TS: Accessing Data with Microsoft .NET Framework 4 (C# and VB)

70-516CSHARP Case Study>>>>>>>>Questions: 18

70-516VB Case Study >>>>>>>>>>>> Questions: 17

Total Questions: 349

70-516CSHARP

Question: 1

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application contains the following code segment. (Line numbers are included for reference only.)

```
01 class DataAccessLayer
02 {
03     private static string connString;
04
05     ...
06     public static DataTable GetDataTable(string command){
07
08         ...
09     }
10 }
```

You need to define the connection life cycle of the `DataAccessLayer` class. You also need to ensure that the application uses the minimum number of connections to the database. What should you do?

Insert the following code segment at line 04.

```
private static SqlConnection conn = new SqlConnection(connString);
```

```
public static void Open(){
```

```
conn.Open();
```

}

```
public static void Close(){
```

```
conn.Close();
```

}

B.Insert the following code segment at line 04.

```
private SqlConnection conn = new SqlConnection(connString);
```

```
public void Open(){
```

```
conn.Open(); }
```

public void Clos

```
conn.Close();
```

}

C. Replace line 01 with the following code segment.

```
class DataAccessLayer : IDisposable
```

Insert the following code segment to line 04.

```
private SqlConnection conn = new SqlConnection(connString);
public void Open(){
    conn.Open();
}
public void Dispose(){
    conn.Close();
}
}

D.Insert the following code segment at line 07.
using (SqlConnection conn = new SqlConnection(connString)){
    conn.Open();
}
```

Answer: D

Explanation:

One thing you should always do is to make sure your connections are always opened within a using statement. Using statements will ensure that even if your application raises an exception while the connection is open, it will always be closed (returned to the pool) before your request is complete. This is very important, otherwise there could be connection leaks.

Question: 2

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create a Windows Communication Foundation (WCF) Data Services service. You discover that when an application submits a PUT or DELETE request to the Data Services service, it receives an error. You need to ensure that the application can access the service. Which header and request type should you use in the application?

- A. an X-HTTP-Method header as part of a POST request
- B. an X-HTTP-Method header as part of a GET request
- C. an HTTP ContentType header as part of a POST request
- D. an HTTP ContentType header as part of a GET request

Answer: A

Explanation:

The X-HTTP-Method header can be added to a POST request that signals that the server MUST process the request not as a POST, but as if the HTTP verb specified as the value of the header was used as the method on the HTTP request's request line, as specified in [RFC2616] section 5.1. This technique is often referred to as "verb tunneling". This header is only valid when on HTTP POST requests.

X-HTTPMethod

([http://msdn.microsoft.com/en-us/library/dd541471\(v=prot.10\).aspx](http://msdn.microsoft.com/en-us/library/dd541471(v=prot.10).aspx))

Question: 3

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create a Windows Communication Foundation (WCF) Data Services service. The service connects to a Microsoft SQL Server 2008 database. The service is hosted by an Internet Information Services (IIS) 6.0 Web server. The application works correctly in the development environment. However, when you connect to the service on the production server, attempting to update or delete an entity results in an error. You need to ensure that you can update and delete entities on the production server. What should you do?

- A. Add the following line of code to the InitializeService method of the service. config.SetEntitySetAccessRule ("*", EntitySetRights.WriteDelete | EntitySetRights.WriteInsert);
- B. Add the following line of code to the InitializeService method of the service. config.SetEntitySetAccessRule ("*", EntitySetRights.WriteDelete | EntitySetRights.WriteMerge);
- C. Configure IIS to allow the PUT and DELETE verbs for the .svc Application Extension.
- D. Configure IIS to allow the POST and DELETE verbs for the .svc Application Extension.

Answer: C

Explanation:

An OData client accesses data provided by an OData service using standard HTTP. The OData protocol largely follows the conventions defined by REST, which define how HTTP verbs are used. The most important of these verbs are:

GET: Reads data from one or more entities.

PUT: Updates an existing entity, replacing all of its properties.

MERGE: Updates an existing entity, but replaces only specified properties[2].

POST: Creates a new entity.

DELETE: Removes an entity.

Http Header Verbs Enumeration

([http://msdn.microsoft.com/en-us/library/windows/desktop/aa364664\(v=vs.85\).aspx](http://msdn.microsoft.com/en-us/library/windows/desktop/aa364664(v=vs.85).aspx))

WCF Data Services Overview

(<http://msdn.microsoft.com/en-us/library/cc668794.aspx>)

Introduction to OData Protocol

(<http://msdn.microsoft.com/en-us/data/hh237663>)

Question: 4

You use Microsoft .NET Framework 4 to develop an application that connects to a Microsoft SQL Server 2008 database by using SQL Server authentication. The application contains the following connection string. SERVER=DBSERVER-01; DATABASE=pubs; uid=sa; pwd=secret; You need to ensure that the password value in the connection string property of a SqlConnection object does not exist after the Open method is called. What should you add to the connection string?

- A. Persist Security Info=True
- B. Trusted_Connection=True
- C. Persist Security Info=False
- D. Trusted_Connection=False

Answer: C

Explanation:

The Persist Security Info property specifies whether the data source can persist sensitive authentication information such as a password.

Persist Security Info Property

([http://msdn.microsoft.com/en-us/library/aa214039\(v=sql.80\).aspx](http://msdn.microsoft.com/en-us/library/aa214039(v=sql.80).aspx))

Question: 5

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server database. The application uses the ADO.NET Entity Framework to manage order data. The application makes a Web service call to obtain orders from an order-tracking system. You need to ensure that the orders are added to the local data store. Which method should you call on the ObjectContext?

- A. Attach
- B. AttachTo
- C. AddObject
- D. ApplyCurrentValues

Answer: C

Explanation:

ObjectContext.AddObject() Call AddObject on the ObjectContext to add the object to the object context.

Do this when the object is a new object that does not yet exist in the data source.

ObjectContext.Attach() Call Attach on the ObjectContext to attach the object to the object context.

Do this when the object already exists in the data source but is currently not attached to the context.

If the object being attached has related objects, those objects will also be attached to the object context.

Objects are added to the object context in an unchanged state.

The object that is passed to the Attach method must have a valid EntityKey value.

If the object does not have a valid EntityKey value, use the AttachTo method to specify the name of the entity set.

ObjectContext.AttachTo() Call AttachTo on the ObjectContext to attach the object to a specific entity set in the object context or if the object has a null (Nothing in Visual Basic) EntityKey value.

The object being attached is not required to have an EntityKey associated with it. If the object does not have an entity key, then entitySetName cannot be an empty string.

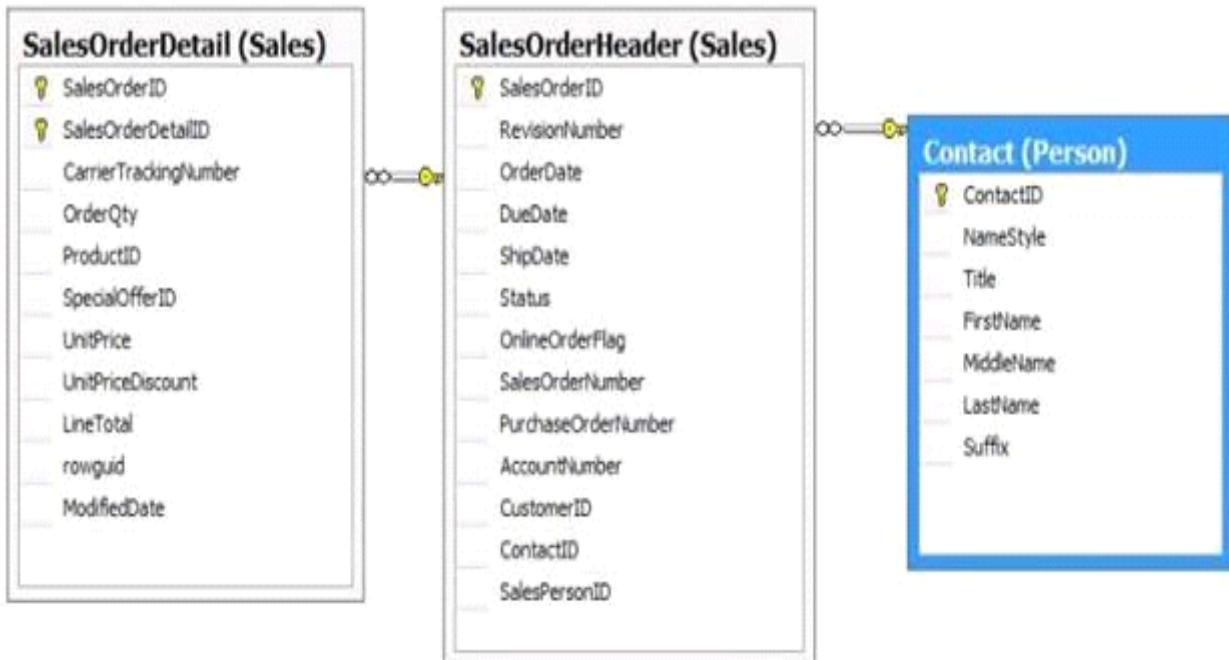
ApplyCurrentValues< TEntity >() method is used to apply changes that were made to objects outside the ObjectContext, such as detached objects that are received by a Web service.

The method copies the scalar values from the supplied object into the object in the ObjectContext that has the same key.

You can use the EntityKey of the detached object to retrieve an instance of this object from the data source.

Question: 6

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server database. The application uses the ADO.NET Entity Framework to model entities. The database includes objects based on the exhibit. (Click the Exhibit button.)



The application includes the following code segment. (Line numbers are included for reference only.)

```

01 using (AdventureWorksEntities advWorksContext = new AdventureWorksEntities()){
02
03 }
  
```

You need to retrieve a list of all Products from todays sales orders for a specified customer. You also need to ensure that the application uses the minimum amount of memory when retrieving the list. Which code segment should you insert at line 02?

A. Contact customer = context.Contact.Where("it.ContactID = @customerId", new ObjectParameter("customerId", customerId)).First();
 customer.SalesOrderHeader.Load();
 foreach (SalesOrderHeader order in customer.SalesOrderHeader)
 {
 order.SalesOrderDetail.Load();
 if (order.OrderDate.Date == DateTime.Today.Date)
 {
 foreach (SalesOrderDetail item in order.SalesOrderDetail)
 {
 Console.WriteLine(String.Format("Product: {0} ", item.ProductID));
 }
 }
 }
 }

B. Contact customer = context.Contact.Where("it.ContactID = @customerId", new ObjectParameter("customerId", customerId)).First();
 customer.SalesOrderHeader.Load();
 foreach (SalesOrderHeader order in customer.SalesOrderHeader){
 if (order.OrderDate.Date == DateTime.Today.Date)
 {
 order.SalesOrderDetail.Load();
 foreach (SalesOrderDetail item in order.SalesOrderDetail)
 {
 Console.WriteLine(String.Format("Product: {0} ", item.ProductID));

```
    }
}
}

C.Contact customer = (from contact in context.Contact.Include("SalesOrderHeader")
    select contact).FirstOrDefault();
foreach (SalesOrderHeader order in customer.SalesOrderHeader)
{
    order.SalesOrderDetail.Load();
    if (order.OrderDate.Date == DateTime.Today.Date){
        foreach (SalesOrderDetail item in order.SalesOrderDetail)
    {
        Console.WriteLine(String.Format("Product: {0} ", item.ProductID));
    }
    }
}

D.Contact customer = (from contact in context.Contact.Include("SalesOrderHeader.SalesOrderDetail")
    select contact).FirstOrDefault();
foreach (SalesOrderHeader order in customer.SalesOrderHeader)
{
    if (order.OrderDate.Date == DateTime.Today.Date)
    {
        foreach (SalesOrderDetail item in order.SalesOrderDetail)
    {
        Console.WriteLine(String.Format("Product: {0} ", item.ProductID));
    }
    }
}
```

Answer: B

Explanation:

A & C check the Order date after Order Detail, so we are retrieving more Order details than necessary
D is calling a Function (using eager loading) for the First Contact record only, so does not meet the requirements.

Question: 7

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create a Microsoft ASP.NET application. You want to connect the application to a Microsoft SQL Server Express 2008 database named MyDatabase. The primary database file is named MyDatabase.mdf and it is stored in the App_Data folder. You need to define the connection string. Which connection string should you add to the Web.config file?

- A. Data Source=localhost; Initial Catalog=MyDataBase; Integrated Security=SSPI; User Instance=True
- B. Data Source=.\SQLEXPRESS; Initial Catalog=MyDataBase; Integrated Security=True; User Instance=True
- C. Data Source=.\SQLEXPRESS; AttachDbFilename=|DataDirectory|\MyDatabase.mdf; Integrated Security=True; User Instance=True
- D. Data Source=SQLEXPRESS; AttachDbFilename=|DataDirectory|\App_Data\MyDatabase.mdf; Integrated Security=SSPI; User Instance=True

Answer: C

Explanation:

CHAPTER 2 ADO.NET Connected Classes

Lesson 1: Connecting to the Data Store

Attaching to a Local SQL Database File with SQL Express (page 73)

Question: 8

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. You use the ADO.NET Entity Framework to model entities. You write the following code segment. (Line numbers are included for reference only.)

```
01 AdventureWorks Entities context = new AdventureWorksEntities (
02   " http://localhost:1234/AdventureWorks.svc "
03 );
04
05 var q = from c in context.Customers
06 where c.City == "London"
07 orderby c.CompanyName
08 select c;
```

You need to ensure that the application meets the following requirements:

- Compares the current values of unmodified properties with values returned from the data source.
- Marks the property as modified when the properties are not the same

Which code segment should you insert at line 04?

- A. context.MergeOption = MergeOption.AppendOnly;
- B. context.MergeOption = MergeOption.PreserveChanges;
- C. context.MergeOption = MergeOption.OverwriteChanges;
- D. context.MergeOption = MergeOption.NoTracking;

Answer: B

Explanation:

PreserveChanges - Objects that do not exist in the object context are attached to the context.

If the state of the entity is Unchanged, the current and original values in the entry are overwritten with data source values.

The state of the entity remains Unchanged and no properties are marked as modified.

If the state of the entity is Modified, the current values of modified properties are not overwritten with data source values.

The original values of unmodified properties are overwritten with the values from the data source.

In the .NET Framework version 4, the Entity Framework compares the current values of unmodified properties with the values that were returned from the data source. If the values are not the same, the property is marked as modified.

MergeOption Enumeration

(<http://msdn.microsoft.com/en-us/library/system.data.objects.mergeoption.aspx>)

Question: 9

You use Microsoft .NET Framework 4 to develop an application. The configuration file contains the following code segment.

```
<configuration>
  <connectionStrings>
    <add name="AdventureWorksLT"
```

```
connectionString="Data Source=SQL01;
Initial Catalog=AdventureWorksLT;
Integrated Security=True;" 
providerName="System.Data.SqlClient"/>
</connectionStrings>
</configuration>
```

You need to retrieve the connection string named AdventureWorksLT from the configuration file.

Which line of code should you use?

- A. var connectionString = ConfigurationManager.ConnectionStrings["AdventureWorksLT"].ConnectionString;
- B.var connectionString = ConfigurationManager.ConnectionStrings["AdventureWorksLT"].Name;
- C.var connectionString = ConfigurationManager.AppSettings["AdventureWorksLT"];
- D.var connectionString = ConfigurationSettings.AppSettings["AdventureWorksLT"];

Answer: A

Question: 10

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application that connects to a Microsoft SQL Server 2008 database. The application includes a SqlConnection named conn and a SqlCommand named cmd. You need to create a transaction so that database changes will be reverted in the event that an exception is thrown. Which code segment should you use?

- A. var transaction = conn.BeginTransaction();
cmd.Transaction = transaction;
try
{
...
 transaction.Commit();
}
catch
{
 transaction.Rollback();
}
- B.var transaction = conn.BeginTransaction();
cmd.Transaction = transaction;
try
{
...
 transaction.Commit();
}
catch
{
 transaction.Dispose();
}
- C.var transaction = conn.BeginTransaction();
cmd.Transaction = transaction;
try
{

```
...
}
catch
{
    transaction.Commit();
}
D.var transaction = conn.BeginTransaction();
cmd.Transaction = transaction;
try
{
...
    transaction.Rollback();
}
catch
{
    transaction.Dispose ();
}
```

Answer: A

Question: 11

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server database and contains a LINQ to SQL data model. The data model contains a function named `createCustomer` that calls a stored procedure. The stored procedure is also named `createCustomer`. The `createCustomer` function has the following signature.

`createCustomer (Guid customerId, String customerName, String address1)`

The application contains the following code segment. (Line numbers are included for reference only.)

```
01 CustomDataContext context = new CustomDataContext();
02 Guid userID = Guid.NewGuid();
03 String address1 = "1 Main Street";
04 String name = "Marc";
05
```

You need to use the `createCustomer` stored procedure to add a customer to the database. Which code segment should you insert at line 05?

- A. `context.createCustomer(userID, name , address1)`
- B. `context.ExecuteCommand("createCustomer", userID, name , address1);`
- C. `Customer customer = new Customer() {
 ID = userID,
 Address1 = address1,
 Name = name,
};
context.ExecuteCommand("createCustomer", customer);`
- D. `Customer customer = new Customer() {
 ID = userID,
 Address1 = address1,
 Name = name,
};
context.ExecuteQuery(typeof(Customer), "createCustomer", customer);`

Answer: A

Explanation:

CHAPTER 4 LINQ to SQL

Lesson 3: Submitting Changes to the Database

Using Stored Procedures (page 285)

Question: 12

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. You use a TableAdapter object to load a DataTable object. The DataTable object is used as the data source for a GridView control to display a table of customer information on a Web page. You need to ensure that the application meets the following requirements:

- Load only new customer records each time the page refreshes.
- Preserve existing customer records.

What should you do?

A. Set the ClearBeforeFill property of the TableAdapter to false.

Use the Fill method of the TableAdapter to load additional customers.

B. Set the ClearBeforeFill property of the TableAdapter to false.

Use the GetData method of the TableAdapter to create a new DataTable.

C. Set the ClearBeforeFill property of the TableAdapter to true.

Use the Fill method of the TableAdapter to load additional customers.

D. Set the ClearBeforeFill property of the TableAdapter to true.

Use the GetData method of the TableAdapter to create a new DataTable.

Answer: A

Explanation:

TableAdapter.Fill Populates the TableAdapter's associated data table with the results of the TableAdapter's SELECT command.

TableAdapter.Update Sends changes back to the database. For more information, see How to:

Update Data Using a TableAdapter.

TableAdapter.GetData Returns a new DataTable filled with data.

TableAdapter.Insert Creates a new row in the data table. For more information, see How to: Add Rows to a DataTable.

TableAdapter.ClearBeforeFill Determines whether a data table is emptied before you call one of the Fill methods.

Table Adapter Overview

([http://msdn.microsoft.com/en-us/library/bz9tthwx\(v=vs.80\).aspx](http://msdn.microsoft.com/en-us/library/bz9tthwx(v=vs.80).aspx))

Question: 13

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application that connects to a Microsoft SQL Server 2008 database. The application performs a database query within a transaction. You need to ensure that the application can read data that has not yet been committed by other transactions. Which IsolationLevel should you use?

A. ReadUncommitted

B. ReadCommitted

C. RepeatableRead

D. Unspecified

Answer: A

Explanation:

Unspecified A different isolation level than the one specified is being used, but the level cannot be determined.

When using OdbcTransaction, if you do not set IsolationLevel or you set IsolationLevel to

Unspecified, the transaction executes according to the isolation level that is determined by the driver that is being used.

Chaos The pending changes from more highly isolated transactions cannot be overwritten.

ReadUncommitted A dirty read is possible, meaning that no shared locks are issued and no exclusive locks are honored.

ReadCommitted Shared locks are held while the data is being read to avoid dirty reads, but the data can be changed before the end of the transaction, resulting in non-repeatable reads or phantom data.

RepeatableRead Locks are placed on all data that is used in a query, preventing other users from updating the data.

Prevents non-repeatable reads but phantom rows are still possible.

Serializable A range lock is placed on the DataSet, preventing other users from updating or inserting rows into the dataset until the transaction is complete.

Snapshot Reduces blocking by storing a version of data that one application can read while another is modifying the same data.

Indicates that from one transaction you cannot see changes made in other transactions, even if you requery.

IsolationLevel Enumeration

(<http://msdn.microsoft.com/en-us/library/system.data.isolationlevel.aspx>)

Isolation Levels in Database Engine

(<http://msdn.microsoft.com/en-us/library/ms189122.aspx>)

SET TRANSACTION ISOLATION LEVEL (Transact-SQL)

(<http://msdn.microsoft.com/ru-ru/library/ms173763.aspx>)

Question: 14

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. You create a stored procedure to insert a new record in the Categories table according to following code segment.

CREATE PROCEDURE dbo.InsertCategory

 @CategoryName nvarchar(15),

 @Id Identity int OUT

AS

 INSERT INTO Categories (CategoryName) VALUES(@CategoryName)

 SET @Identity = SCOPE_IDENTITY()

 RETURN @@ROWCOUNT

You write the following code segment. (Line numbers are included for reference only).

```
01 private static void ReturnIdentity(string connectionString)
02 {
03     using (SqlConnection connection = new SqlConnection(connectionString))
04     {
05         SqlDataAdapter adapter = new SqlDataAdapter(
06             "SELECT CategoryID, CategoryName FROM dbo.Categories",connection);
07         adapter.InsertCommand = new SqlCommand("InsertCategory", connection);
08         adapter.InsertCommand.CommandType = CommandType.StoredProcedure;
09         SqlParameter rowCountParameter = adapter.InsertCommand.Parameters.Add(
10             "@RowCount", SqlDbType.Int);
11
12         adapter.InsertCommand.Parameters.Add(
```

```
13     "@CategoryName", SqlDbType.NChar, 15, "CategoryName");
14     SqlParameter identityParameter = adapter.InsertCommand.Parameters.Add(
15         "@Identity", SqlDbType.Int, 0, "CategoryID");
16
17     DataTable categories = new DataTable();
18     adapter.Fill(categories);
19     DataRow categoryRow = categories.NewRow();
20     categoryRow["CategoryName"] = "New Beverages";
21     categories.Rows.Add(categoryRow);
22     adapter.Update(categories);
23     Int32 rowCount = (Int32)adapter.InsertCommand.Parameters["@RowCount"].Value;
24 }
25 }
```

You need to retrieve the identity of the new record. You also need to retrieve the row count. What should you do?

A. Insert the following code segment at line 11.

```
rowCountParameter.Direction = ParameterDirection.ReturnValue;
```

Insert the following code segment at line 16.

```
identityParameter.Direction = ParameterDirection.ReturnValue;
```

B. Insert the following code segment at line 11.

```
rowCountParameter.Direction = ParameterDirection.Output;
```

Insert the following code segment at line 16.

```
identityParameter.Direction = ParameterDirection.Output;
```

C. Insert the following code segment at line 11.

```
rowCountParameter.Direction = ParameterDirection.ReturnValue;
```

Insert the following code segment at line 16.

```
identityParameter.Direction = ParameterDirection.Output;
```

D. Insert the following code segment at line 11.

```
rowCountParameter.Direction = ParameterDirection.Output;
```

Insert the following code segment at line 16.

```
identityParameter.Direction = ParameterDirection.ReturnValue;
```

Answer: C

Explanation:

Input - The parameter is an input parameter.

InputOutput - The parameter is capable of both input and output.

Output - The parameter is an output parameter.

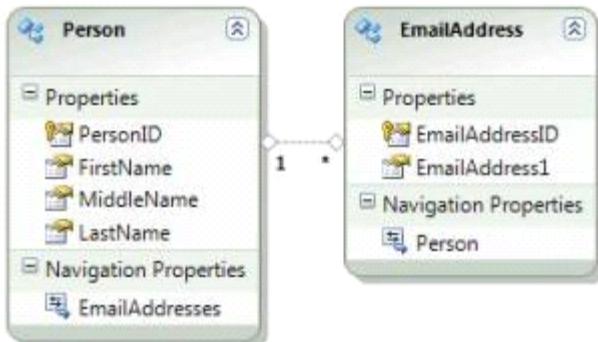
ReturnValue - The parameter represents a return value from an operation such as a stored procedure, builtin function, or user-defined function.

ParameterDirection Enumeration

([http://msdn.microsoft.com/en-us/library/system.data.parameterdirection\(v=vs.71\).aspx](http://msdn.microsoft.com/en-us/library/system.data.parameterdirection(v=vs.71).aspx))

Question: 15

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application. You use the ADO.NET Entity Framework Designer to model entities. The application includes self-tracking entities as shown in the following diagram.



There is a Person entity named person1 that has Track Changes turned on. You need to delete all e-mail addresses that are associated with person1 by using an ObjectContext named context. What are two possible code segments that you can use to achieve this goal? (Each correct answer presents a complete solution. Choose two).

- A.

```
foreach(var email in person1.EmailAddresses)
{
    email.MarkAsDeleted();
}
context.SaveChanges();
```
- B.

```
while(person1.EmailAddresses.Count() > 0)
{
    person1.EmailAddresses.RemoveAt(0);
}
context.SaveChanges();
```
- C.

```
person1.EmailAddresses = null;
context.SaveChanges();
```
- D.

```
person1.EmailAddresses = new
TrackableCollection<EmailAddress>();
context.SaveChanges();
```

Answer: B, C

Explanation:

Working with Self-Tracking Entities

(<http://msdn.microsoft.com/en-us/library/ff407090.aspx>)

Working with Sets of Self-Tracking Entities

(<http://blogs.msdn.com/b/adonet/archive/2010/06/02/working-with-sets-of-self-tracking-entities.aspx>)

Question: 16

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application uses the ADO.NET Entity Framework to manage customer and related order records. You add a new order for an existing customer. You need to associate the Order entity with the Customer entity. What should you do?

- A. Set the Value property of the EntityReference of the Order entity.
- B. Call the Add method on the EntityCollection of the Order entity.
- C. Use the AddObject method of the ObjectContext to add both Order and Customer entities.
- D. Use the Attach method of the ObjectContext to add both Order and Customer entities.

Answer: A

Explanation:

Entity Reference (Of Entity) Represents a related end of an association with a multiplicity of zero or one.

Question: 17

You use Microsoft .NET Framework 4 to develop an application that uses the Entity Framework. The application has an entity model with a Person entity. A Person instance named person1 and an ObjectContext instance named model exist. You need to delete the person1 instance. Which code segment should you use?

- A. model.DeleteObject(person1);
model.SaveChanges();
- B. model.Detach(person1);
model.SaveChanges();
- C. model.ExecuteStoreCommand("Delete", new []
{ new ObjectParameter("Person", person1) });
model.SaveChanges();
- D. model.ExecuteFunction("Detach", new []
{ new ObjectParameter("Person", person1) });
model.SaveChanges();

Answer: A

Explanation:

ObjectContext.DeleteObject Marks an object for deletion from the ObjectStateManager. The object is deleted in the data source when the SaveChanges method is called.

ObjectContext.ExecuteStoreCommand Method executes an arbitrary command directly against the data source using the existing connection.

Question: 18

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server database. You use the ADO.NET Entity Framework to manage persistence-ignorant entities. You create an ObjectContext instance named context. Then, you directly modify properties on several entities. You need to save the modified entity values to the database. Which code segment should you use?

- A. context.SaveChanges(SaveOptions.AcceptAllChangesAfterSave);
- B. context.SaveChanges(SaveOptions.DetectChangesBeforeSave);
- C. context.SaveChanges(SaveOptions.None);
- D. context.SaveChanges();

Answer: B

Explanation:

None Changes are saved without the DetectChanges or the AcceptAllChangesAfterSave() methods being called.

AcceptAllChangesAfterSave After changes are saved, the AcceptAllChangesAfterSave() method is called, which resets change tracking in the ObjectStateManager.

DetectChangesBeforeSave Before changes are saved, the DetectChanges method is called to synchronize the property values of objects that are attached to the object context with data in the

ObjectStateManager.
SaveOptions Enumeration
(<http://msdn.microsoft.com/en-us/library/system.data.objects.saveoptions.aspx>)

Question: 19

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server database. The application has two DataTable objects that reference the Customers and Orders tables in the database. The application contains the following code segment. (Line numbers are included for reference only.)

```
01 DataSet customerOrders = new DataSet();  
02 customerOrders.EnforceConstraints = true;  
03 ForeignKeyConstraint ordersFK = new ForeignKeyConstraint("ordersFK",  
04 customerOrders.Tables["Customers"].Columns["CustomerID"],  
05 customerOrders.Tables["Orders"].Columns["CustomerID"]);  
06  
07 customerOrders.Tables["Orders"].Constraints.Add(ordersFK);
```

You need to ensure that an exception is thrown when you attempt to delete Customer records that have related Order records. Which code segment should you insert at line 06?

- A. ordersFK.DeleteRule = Rule.SetDefault;
- B. ordersFK.DeleteRule = Rule.None;
- C. ordersFK.DeleteRule = Rule.SetNull;
- D. ordersFK.DeleteRule = Rule.Cascade;

Answer: B

Explanation:

None No action taken on related rows, but exceptions are generated.

Cascade Delete or update related rows. This is the default.

SetNull Set values in related rows to DBNull.

SetDefault Set values in related rows to the value contained in the DefaultValue property. SetDefault specifies that all child column values be set to the default value.

CHAPTER 1 ADO.NET Disconnected Classes

Lesson 1: Working with the DataTable and DataSet Classes

Cascading Deletes and Cascading Updates (page 26)

Question: 20

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server 2008 database. The application uses DataContexts to query the database. You create a function that meets the following requirements:

- Updates the Customer table on the database when a customer is marked as deleted.
- Updates the related entries in other tables (CustomerAddress, CustomerContacts) by marking them as deleted.
- Prevents consumer code from setting the Deleted columns value directly.

You need to ensure that the function verifies that customers have no outstanding orders before they are marked as deleted. You also need to ensure that existing applications can use the updated function without requiring changes in the code. What should you do?

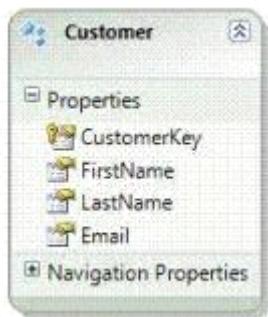
- A. Override the Delete operation of the DataContext object.

- B. Override the Update operation of the DataContext object.
- C. Modify the SELECT SQL statement provided to the DataContext object to use an INNER JOIN between the Customer and Orders tables.
- D. Add new entities to the DataContext object for the Customers and Orders tables.

Answer: A

Question: 21

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application uses the ADO.NET Entity Framework to model entities. The application includes a Customer entity along with a CustomerKey property of the Guid type as shown in the following exhibit.



You discover that when the application adds a new instance of a Customer, calling the SaveChanges method results in the following error message:

"Server generated keys are only supported for identity columns."

You need to ensure that the application can add new Customer entities.

What should you do?

- A. Add a handler for the ObjectContext.SavingChanges event. In the event handler, set the CustomerKey value.
- B. Add a handler for the ObjectContext.ObjectMaterialized event. In the event handler, set the CustomerKey value.
- C. Call the ObjectContext.Attach method before saving a Customer entity.
- D. Call the ObjectContext.CreateEntityKey method before saving a Customer entity.

Answer: A

Explanation:

SavingChanges() Event Occurs when changes are saved to the data source.

ObjectMaterialized() Event Occurs when a new entity object is created from data in the data source as part of a query or load operation.

Attach() Method Attaches an object or object graph to the object context when the object has an entity key.

CreateEntityKey() Creates the entity key for a specific object, or returns the entity key if it already exists.

ObjectContext Class

(<http://msdn.microsoft.com/en-us/library/system.data.objects.objectcontext.aspx>)

Question: 22

You use Microsoft .NET Framework 4 to develop an application that uses WCF Data Services to retrieve entities. WCF Data Services uses an authentication scheme that requires an HTTP request that has the following header format.

GET /OData.svc/Products(1)

Authorization: WRAP access_token="123456789"

The application includes the following code. (Line numbers are included for reference only.)

```
01 public class Program  
02 {  
03     public void GetProducts()  
04     {  
05         var proxy = new MyDataContext();  
06  
07         ...  
08     }  
09  
10 }
```

You need to ensure that the correct authentication header is present when requests are made by using MyDataContext. What should you do?

A. Insert the following code segment at line 06.

```
proxy.Credentials = new NetworkCredential  
    ("WRAP access_token", "123456789");
```

B. Insert the following code segment at line 06.

```
proxy.Credentials = new NetworkCredential  
    ("Authorization", "WRAP access_token=\\"123456789\\\"");
```

C. Insert the following code segment at line 06.

```
proxy.SendingRequest += new  
    EventHandler<SendingRequestEventArgs>  
    (proxy_SendingRequest);
```

Insert the following code segment at line 09.

```
void proxy_SendingRequest(object sender,  
    SendingRequestEventArgs e) {  
    e.RequestHeaders.Add("WRAP access_token", 123456789);  
}
```

D. Insert the following code segment at line 06.

```
proxy.SendingRequest += new EventHandler  
    <SendingRequestEventArgs>(proxy_SendingRequest);
```

Insert the following code segment at line 09.

```
void proxy_SendingRequest(object sender,  
    SendingRequestEventArgs e)  
{  
    e.RequestHeaders.Add("Authorization",  
        "WRAP access_token=\\"123456789\\\"");  
}
```

Answer: D

Question: 23

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application uses the ADO.NET Entity Framework to model entities. You deploy an application to a production server. The application uses the model and mapping files that are deployed as application resources. You need to update the conceptual model for the application on the production server. What should you do?

- A. Copy the updated .edmx file to the production server.
- B. Copy the updated .csdl file to the production server.
- C. Copy the updated .ssdl file to the production server.
- D. Recompile the application and redeploy the modified assembly file.

Answer: D

Question: 24

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. You use the ADO.NET Entity Framework to model entities. The application connects to a Microsoft SQL Server database named AdventureWorks. The application includes the following code segment. (Line numbers are included for reference only.)

```
01 using (AdventureWorksEntities context = new AdventureWorksEntities()){  
02     ObjectQuery<SalesOrderHeader> orders =  
03         context.SalesOrderHeader.Where("it.CreditCardApprovalCode IS NULL").Top("100");  
04     foreach (SalesOrderHeader order in orders){  
05         order.Status = 4;  
06     }  
07     try {  
08         context.SaveChanges();  
09     }  
10     catch (OptimisticConcurrencyException){  
11     }  
12 }  
13 }
```

You need to resolve any concurrency conflict that can occur. You also need to ensure that local changes are persisted to the database. Which code segment should you insert at line 11?

- A. context.Refresh(RefreshMode.ClientWins, orders);
context.AcceptAllChanges();
- B.context.Refresh(RefreshMode.ClientWins, orders);
context.SaveChanges();
- C.context.Refresh(RefreshMode.StoreWins, orders);
context.AcceptAllChanges();
- D.context.Refresh(RefreshMode.StoreWins, orders);
context.SaveChanges();

Answer: B

Explanation:

SaveChanges() Persists all updates to the data source and resets change tracking in the object context.

Refresh(RefreshMode, Object) Updates an object in the object context with data from the data source.

AcceptAllChanges() Accepts all changes made to objects in the object context.

Refresh(RefreshMode refreshMode, Object entity) Method has the dual purpose of allowing an object to be refreshed with data from the data source and being the mechanism by which conflicts can be resolved.

ObjectContext.Refresh Method

(<http://msdn.microsoft.com/en-us/library/bb896255.aspx>)

Question: 25

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application uses the ADO.NET Entity Framework to model entities. You need to ensure that the model and mapping files are not deployed as application resources. What should you do?

- A. Modify the connection string in the application's .config file to refer to the absolute physical path to the .edmx file.
- B. Modify the connection string in the application's .config file to refer to the relative path to the .edmx file.
- C. Set the value of the .edmx file's Metadata Artifact Processing property to Copy to Output Directory.
- D. Set the value of the .edmx files Build Action property to Copy to Output.

Answer: C

Question: 26

You use Microsoft .NET Framework 4 to develop an application that connects to a Microsoft SQL Server 2008 database. The application contains the following code segment.

```
string SQL = string.Format ("SELECT * FROM Customer WHERE CompanyName LIKE '%{0}%", companyName);  
var cmd = new SqlCommand(SQL, con);
```

You need to reduce the vulnerability to SQL injection attacks. Which code segment should you use?

- A. string SQL = "SELECT * FROM Customer WHERE " +
 "CompanyName LIKE @companyName";
var cmd = new SqlCommand(SQL, con);
cmd.Parameters.AddWithValue("@companyName",
 string.Format("%{0}%", companyName));
- B. string SQL = "SELECT * FROM Customer WHERE " +
 "CompanyName LIKE @companyName";
var cmd = new SqlCommand(SQL, con);
var param = new SqlParameter("@companyName",
 string.Format("%{0}%", companyName));
- C. string SQL = string.Format("SELECT * FROM " +
 "Customer WHERE CompanyName LIKE {0}",
 new SqlParameter("@companyName",
 string.Format("%{0}%", companyName)));
var cmd = new SqlCommand(SQL, con);
- D. string SQL = "SELECT * FROM Customer @companyName";
var cmd = new SqlCommand(SQL, con);
cmd.Parameters.AddWithValue("@companyName",
 string.Format("WHERE CompanyName LIKE '%{0}%",
 companyName));

Answer: A

Explanation:

SqlParameterCollection.AddWithValue Method

(<http://msdn.microsoft.com/en-us/library/system.data.sqlclient.sqlparametercollection.addwithvalue.aspx>)

Question: 27

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server 2008 database. The application contains two SqlCommand objects named cmd1 and cmd2. You need to measure the time required to execute each command. Which code segment should you use?

- A. Stopwatch w1 = new Stopwatch();
w1.Start();

```
cmd1.ExecuteNonQuery();
w1.Stop();
Trace.WriteLine(w1.ElapsedMilliseconds);
w1.Start();
cmd2.ExecuteNonQuery();
w1.Stop();
Trace.WriteLine(w1.ElapsedMilliseconds);
B.Stopwatch w1 = new Stopwatch();
w1.Start();
cmd1.ExecuteNonQuery();
w1.Stop();
Trace.WriteLine(w1.ElapsedMilliseconds);
w1.Reset();
cmd2.ExecuteNonQuery();
w1.Stop();
Trace.WriteLine(w1.ElapsedMilliseconds);
C.Stopwatch w1 = Stopwatch.StartNew();
cmd1.ExecuteNonQuery();
w1.Stop();
Trace.WriteLine(w1.ElapsedMilliseconds);
w1.Start();
cmd2.ExecuteNonQuery();
w1.Stop();
Trace.WriteLine(w1.ElapsedMilliseconds);
D.Stopwatch w1 = Stopwatch.StartNew();
cmd1.ExecuteNonQuery();
w1.Stop();
Trace.WriteLine(w1.ElapsedMilliseconds);
w1 = Stopwatch.StartNew();
cmd2.ExecuteNonQuery();
w1.Stop();
Trace.WriteLine(w1.ElapsedMilliseconds);
```

Answer: D

Explanation:

A & C do not reset the stopwatch before running cmd2. B does not start the stopwatch after resetting the stopwatch. Start() does not reset the stopwatch, whereas StartNew() will create a new instance of the Stop watch and initialise the elapsed time to Zero.

Stopwatch Class

(<http://msdn.microsoft.com/en-us/library/system.diagnostics.stopwatch.aspx>)

Question: 28

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. You create a Data Access Layer (DAL) that is database-independent. The DAL includes the following code segment. (Line numbers are included for reference only.)

```
01 static void ExecuteDbCommand(DbConnection connection)
02 {
03   if (connection != null){
04     using (connection){
```

```
05 try{
06   connection.Open();
07   DbCommand command = connection.CreateCommand();
08   command.CommandText = "INSERT INTO Categories (CategoryName) VALUES ('Low Carb')";
09   command.ExecuteNonQuery();
10 }
11
12 catch (Exception ex){
13   Trace.WriteLine("Exception.Message: " + ex.Message);
14 }
15 }
16 }
17 }
```

You need to log information about any error that occurs during data access. You also need to log the data provider that accesses the database. Which code segment should you insert at line 11?

- A. `catch (OleDbException ex){
 Trace.WriteLine("ExceptionType: " + ex.Source);
 Trace.WriteLine("Message: " + ex.Message);
}`
- B. `catch (OleDbException ex){
 Trace.WriteLine("ExceptionType: " + ex.InnerException.Source);
 Trace.WriteLine("Message: " + ex.InnerException.Message);
}`
- C. `catch (DbException ex){
 Trace.WriteLine("ExceptionType: " + ex.Source);
 Trace.WriteLine("Message: " + ex.Message);
}`
- D. `catch (DbException ex){
 Trace.WriteLine("ExceptionType: " + ex.InnerException.Source);
 Trace.WriteLine("Message: " + ex.InnerException.Message);
}`

Answer: C

Explanation:

`Exception.InnerException` Gets the Exception instance that caused the current exception.

`Message` Gets a message that describes the current exception.

`Exception.Source` Gets or sets the name of the application or the object that causes the error.

`OleDbException` catches the exception that is thrown only when the underlying provider returns a warning or error for an OLE DB data source.

`DbException` catches the common exception while accessing data base.

Question: 29

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create a Windows Forms application. The application connects to a Microsoft SQL Server database. You need to find out whether the application is explicitly closing or disposing SQL connections. Which code segment should you use?

- A. `string instanceName = Assembly.GetEntryAssembly().FullName;
PerformanceCounter perf = new PerformanceCounter()`

```
".NET Data Provider for SqlServer",
"NumberOfReclaimedConnections", instanceName, true);
int leakedConnections = (int)perf.NextValue();
B.string instanceName = Assembly.GetEntryAssembly().GetName().Name;
PerformanceCounter perf = new PerformanceCounter(
".NET Data Provider for SqlServer",
"NumberOfReclaimedConnections", instanceName, true);
int leakedConnections = (int)perf.NextValue();
C.string instanceName = Assembly.GetEntryAssembly().FullName;
PerformanceCounter perf = new PerformanceCounter(
".NET Data Provider for SqlServer",
"NumberOfNonPooledConnections", instanceName, true);
int leakedConnections = (int)perf.NextValue();
D.string instanceName = Assembly.GetEntryAssembly().GetName().Name;
PerformanceCounter perf = new PerformanceCounter(
".NET Data Provider for SqlServer",
"NumberOfNonPooledConnections", instanceName, true);
int leakedConnections = (int)perf.NextValue();
```

Answer: A

Explanation:

NumberOfNonPooledConnections The number of active connections that are not pooled.

NumberOfReclaimedConnections The number of connections that have been reclaimed through garbage collection where Close or Dispose was not called by the application.

Not explicitly closing or disposing connections hurts performance.

Use of ADO.NET performance counters

([http://msdn.microsoft.com/en-us/library/ms254503\(v=vs.80\).aspx](http://msdn.microsoft.com/en-us/library/ms254503(v=vs.80).aspx))

Assembly Class

(<http://msdn.microsoft.com/en-us/library/system.reflection.assembly.aspx>)

Question: 30

You use Microsoft .NET Framework 4 to develop an application that connects to a Microsoft SQL Server 2008 database. You add the following stored procedure to the database.

CREATE PROCEDURE GetProducts

AS

BEGIN

SELECT ProductID, Name, Price, Cost

FROM Product

END

You create a SqlDataAdapter named adapter to execute the stored procedure. You need to fill a DataTable instance with the first 10 rows of the result set. What are two possible code segments that you can use to achieve this goal? (Each correct answer presents a complete solution. Choose two.)

- A. DataSet ds = new DataSet();
adapter.Fill(ds, 0, 10, "Product")
- B. DataSet ds = new DataSet();
DataTable dt = ds.Tables.Add("Product");
adapter.Fill(0, 10, dt);
- C. DataSet ds = new DataSet();

```
DataTable dt = ds.Tables.Add("Product");
dt.ExtendedProperties["RowCount"] = 10;
dt.ExtendedProperties["RowIndex"] = 0;
adapter.Fill(dt);
DataSet ds = new DataSet();
ds.ExtendedProperties["RowCount"] = 10;
ds.ExtendedProperties["RowIndex"] = 0;
adapter.Fill(ds);
```

Answer: A, B

Explanation:

`Fill(Int32, Int32, DataTable())` Adds or refreshes rows in a `DataTable` to match those in the data source starting at the specified record and retrieving up to the specified maximum number of records. (Inherited from `DbDataAdapter`.)

`Fill(DataSet, Int32, Int32, String)` Adds or refreshes rows in a specified range in the `DataSet` to match those in the data source using the `DataSet` and `DataTable` names. (Inherited from `DbDataAdapter`.)

SqlDataAdapter Class

(<http://msdn.microsoft.com/en-us/library/system.data.sqlclient.sqldataadapter.aspx>)

`DataTable.ExtendedProperties` Gets the collection of customized user information.

Question: 31

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create a Windows Communication Foundation (WCF) Data Services service. You deploy the data service to the following URL: `http://contoso.com/Northwind.svc`. You add the following code segment. (Line numbers are included for reference only.)

```
01 var uri = new Uri(@"http://contoso.com/Northwind.svc/");
02 var ctx = new NorthwindEntities(uri);
03 var categories = from c in ctx.Categories
04 select c;
05 foreach (var category in categories) {
06     PrintCategory(category);
07 }
08 foreach (var product in category.Products) {
09 }
10     PrintProduct(product);
11 }
12 }
```

You need to ensure that the Product data for each Category object is lazy-loaded. What should you do?

- A. Add the following code segment at line 07.

```
ctx.LoadProperty(category, "Products");
```

- B. Add the following code segment at line 09.

```
ctx.LoadProperty(product, "*");
```

- C. Add the following code segment at line 07.

```
var strPrdUri = string.Format("Categories({0})?$expand=Products", category.CategoryID);
var productUri = new Uri(strPrdUri, UriKind.Relative); ctx.Execute<Product>(productUri);
```

- D. Add the following code segment at line 09.

```
var strPrdUri = string.Format("Products?$filter=CategoryID eq {0}", category.CategoryID);
var productUri = new Uri(strPrdUri, UriKind.Relative); ctx.Execute<Product>(productUri);
```

Answer: A

Explanation:

`LoadProperty(Object, String)` Explicitly loads an object related to the supplied object by the specified navigation property and using the default merge option.

UriKind Enumeration

(<http://msdn.microsoft.com/en-us/library/system.urikind.aspx>)

RelativeOrAbsolute The kind of the Uri is indeterminate.

Absolute The Uri is an absolute Uri.

Relative The Uri is a relative Uri.

Question: 32

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application uses the ADO.NET Entity Framework to model entities. The conceptual schema definition language (CSDL) file contains the following XML fragment.

```
<EntityType Name="Contact">
...
<Property Name="EmailPhoneComplexProperty"
  Type="AdventureWorksModel.EmailPhone"
  Nullable="false" />
</EntityType>
...
<ComplexType Name="EmailPhone">
<Property Type="String" Name="EmailAddress"
  MaxLength="50" FixedLength="false"
  Unicode="true" />
<Property Type="String" Name="Phone" MaxLength="25"
  FixedLength="false" Unicode="true" />
</ComplexType>
```

You write the following code segment. (Line numbers are included for reference only.)

```
01 using (EntityConnection conn = new EntityConnection("name=AdvWksEntities"))
02 {
03   conn.Open();
04   string esqlQuery = @"SELECT VALUE contacts FROM
05     AdvWksEntities.Contacts AS contacts
06     WHERE contacts.ContactID == 3";
07   using (EntityCommand cmd = conn.CreateCommand())
08   {
09     cmd.CommandText = esqlQuery;
10     using (EntityDataReader rdr = cmd.ExecuteReader())
11     {
12       while (rdr.Read())
13     {
14
15   }
16 }
17 }
18 conn.Close();
19 }
```

You need to ensure that the code returns a reference to a ComplexType entity in the model named EmailPhone. Which code segment should you insert at line 14?

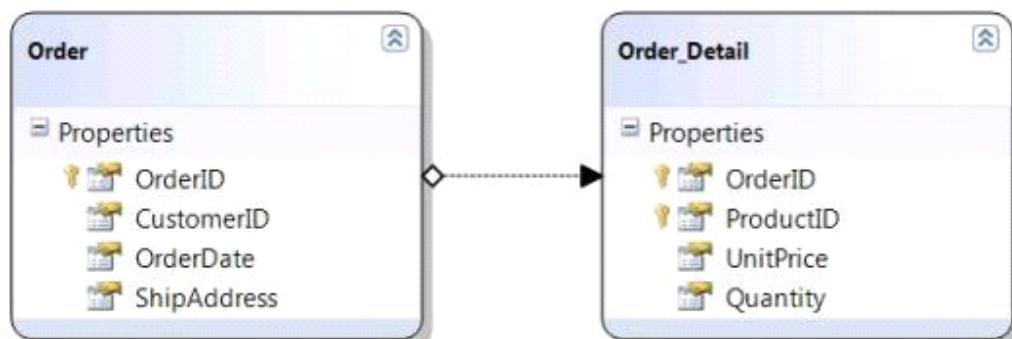
```

A. int FldIdx = 0;
EntityKey key = record.GetValueFldIdx) as EntityKey;
foreach (EntityKeyMember keyMember in key.EntityKeyValues)
{
return keyMember.Key + " : " + keyMember.Value;
}
B.IExtendedDataRecord record = rdr["EmailPhone"]as IExtendedDataRecord;
int FldIdx = 0;
return record.GetValue(FldIdx);
C.DbDataRecord nestedRecord = rdr["EmailPhoneComplexProperty"] as DbDataRecord; return nestedRecord;
D.int fieldCount = rdr["EmailPhone"].DataRecordInfo.FieldMetadata.Count;
for (int FldIdx = 0; FldIdx < fieldCount; FldIdx++)
{
rdr.GetName(FldIdx); if (rdr.IsDBNull(FldIdx) == false)
{
return rdr["EmailPhone"].GetValue(FldIdx).ToString();
}
}
}

```

Answer: C**Question: 33**

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server 2008 database. You create classes by using LINQ to SQL based on the records shown in the exhibit. (Click the Exhibit button.)



You need to create a LINQ query to retrieve a list of objects that contains the OrderID and CustomerID properties. You need to retrieve the total price amount of each Order record. What are two possible ways to achieve this goal? (Each correct answer presents a complete solution. Choose two.)

A. from details in dataContext.Order_Detail
group details by details.OrderID into g
join order in dataContext.Orders on g.Key equals order.OrderID
select new {
 OrderID = order.OrderID, CustomerID = order.CustomerID,
 TotalAmount = g.Sum(od => od.UnitPrice * od.Quantity)
}
B.dataContext.Order_Detail.GroupJoin(dataContext.Orders,
d => d.OrderID,
o => o.OrderID,

```
(dts, ord) => new {
    OrderID = dts.OrderID,
    CustomerID = dts.Order.CustomerID,
    TotalAmount = dts.UnitPrice * dts.Quantity
}
)
C.from order in dataContext.
Orders group order by order.OrderID into g
join details in dataContext.Order_Detail on g.Key equals details.OrderID
select new {
    OrderID = details.OrderID,
    CustomerID = details.Order.CustomerID,
    TotalAmount = details.UnitPrice * details.Quantity
}
D.dataContext.Orders.GroupJoin(dataContext.Order_Detail,
o => o.OrderID,
d => d.OrderID.
(ord, dts) => new {
    OrderID = ord.OrderID,
    CustomerID = ord.CustomerID,
    TotalAmount = dts.Sum(od => od.UnitPrice * od.Quantity)
}
)
```

Answer: A, D

Explanation:

Alterantive

A. This is an Object Query. It looks at the Order Details EntitySet and creating a group g based on OrderID.

* The group g is then joined with Orders EntitySet based on g.Key = OrderID

* For each matching records a new dynamic object containing OrderID, CustomerID and TotalAmount is created.

* The dynamic records are the results returned in an INumerable Object, for later processing

Alterantive D. This is an Object Query. The GroupJoin method is used to join Orders to OrderDetails.

Parameters for GroupJoin:

1. An Order_Details EntitySet
2. Order o (from the Orders in the Orders Entity Set, picking up Order_id from both Entity Sets)
3. Order_ID from the first Order_Details record from the OD EntitySet
4. Lamda Expression passing ord and dts (ord=o, dts=d)

The body of the Lamda Expression is working out the total and Returning a Dynamic object as in A.

Question: 34

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server database. You use Entity SQL to retrieve data from the database. You need to enable query plan caching. Which object should you use?

- A. EntityCommand
- B. EntityConnection
- C. EntityTransaction
- D. EntityDataReader

Answer: A

Explanation:

Whenever an attempt to execute a query is made, the query pipeline looks up its query plan cache to see whether the exact query is already compiled and available.

If so, it reuses the cached plan rather than building a new one. If a match is not found in the query plan cache, the query is compiled and cached.

A query is identified by its Entity SQL text and parameter collection (names and types). All text comparisons are case-sensitive.

Query plan caching is configurable through the EntityCommand.

To enable or disable query plan caching through System.Data.EntityClient.EntityCommand.

EnablePlanCaching, set this property to true or false.

Disabling plan caching for individual dynamic queries that are unlikely to be used more than once improves performance.

You can enable query plan caching through EnablePlanCaching.

Query Plan Caching

(<http://msdn.microsoft.com/en-us/library/bb738562.aspx>)

Question: 35

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server 2008 database. The database includes a database table named ProductCatalog as shown in the exhibit. (Click the Exhibit button.)

Column Name	Data Type	Nullable
Id	int	No
Weight	float	No
Price	money	No
Status	bit	No

You add the following code segment to query the first row of the ProductCatalog table. (Line numbers are included for reference only.)

```

01 using (var cnx = new SqlConnection(connString))
02 {
03     var command = cnx.CreateCommand();
04     command.CommandType = CommandType.Text;
05     command.CommandText = "SELECT TOP 1 * FROM dbo.ProductCatalog";
06     cnx.Open();
07     var reader = command.ExecuteReader();
08     if (reader.Read()) {
09         var id = reader.GetInt32(0);
10
11         reader.Close();
12     }
13 }
```

You need to read the values for the Weight, Price, and Status columns. Which code segment should you insert at line 10?

- A. var weight = reader.GetDouble(1);
- var price = reader.GetDecimal(2);

```
var status = reader.GetBoolean(3);
B.var weight = reader.GetDecimal(1);
var price = reader.GetFloat(2);
var status = reader.GetByte(3);
C.var weight = reader.GetDouble(1);
var price = reader.GetFloat(2);
var status = reader.GetBoolean(3);
D.var weight = reader.GetFloat(1);
var price = reader.GetDouble(2);
var status = reader.GetByte(3);
```

Answer: A

Question: 36

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application retrieves data from a Microsoft SQL Server 2008 database named AdventureWorks. The AdventureWorks.dbo.ProductDetails table contains a column named ProductImages that uses a varbinary(max) data type. You write the following code segment. (Line numbers are included for reference only.)

```
01 SqlDataReader reader =
02 command.ExecuteReader(
03
04 );
05 while (reader.Read())
06 {
07  pubID = reader.GetString(0);
08  stream = new FileStream(
09  ...
10 );
11  writer = new BinaryWriter(stream);
12  startIndex = 0;
13  retval = reader.GetBytes(1, startIndex, outByte, 0, bufferSize);
14  while (retval == bufferSize)
15  {
16  ...
17 }
18  writer.Write(outByte, 0, (int)retval - 1);
19  writer.Flush();
20  writer.Close();
21  stream.Close();
22 }
```

You need to ensure that the code supports streaming data from the ProductImages column. Which code segment should you insert at line 03?

- A. CommandBehavior.Default
- B. CommandBehavior.KeyInfo
- C. CommandBehavior.SingleResult
- D. CommandBehavior.SequentialAccess

Answer: D

Explanation:

Default

The query may return multiple result sets. Execution of the query may affect the database state.

Default sets no CommandBehavior flags, so calling ExecuteReader(CommandBehavior.Default) is functionally equivalent to calling ExecuteReader().

KeyInfo The query returns column and primary key information. When KeyInfo is used for command execution, the provider will append extra columns to the result set for existing primary key and timestamp columns.

SingleResult The query returns a single result set.

SequentialAccess Provides a way for the DataReader to handle rows that contain columns with large binary values.

Rather than loading the entire row, SequentialAccess enables the DataReader to load data as a stream.

You can then use the GetBytes or GetChars method to specify a byte location to start the read operation, and a limited buffer size for the data being returned.

CommandBehavior Enumeration

(<http://msdn.microsoft.com/en-us/library/system.data.commandbehavior.aspx>)

Question: 37

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application contains the following XML document.

```
<bib>
  <book title="TCP/IP Illustrated" year="1994">
    <author> Author1 </author>
  </book>
  <book title="Programming in Unix" year="1992">
    <author> Author1 </author>
    <author> Author2 </author>
    <author> Author3 </author>
  </book>
  <book title="Data on the Web" year="2000">
    <author> Author4 </author>
    <author> Author3 </author>
  </book>
</bib>
```

You add the following code fragment. (Line numbers are included for reference only.)

```
01 public IEnumerable< XElement> GetBooks(string xml)
02 {
03   XDocument doc = XDocument.Parse(xml);
04
05 }
```

You need to return a list of book XML elements that are authored by Author1. Which code segment should you insert at line 04?

- A.

```
return doc.Element("bib")
  .Elements()
  .SelectMany(e1 => e1.Elements()
  .Where(e2 => e2 .Equals(new XElement("author", " Author1 "))));
```
- B.

```
return doc.Element("bib")
  .Elements()
  .SelectMany(e1 => e1.Elements()
  .Where(e2 => (string)e2 == " Author1 "));
```
- C.

```
return doc.Element("bib")
```

```
.Elements()
.Where(e1 => e1.Elements().Any(e2 => (string)e2 == " Author1 "));
D.return doc.Element("bib")
.Elements()
.Where(e1=> e1.Elements().Any(e2 => e2 .Equals(new XElement("author","Author1"))));
```

Answer: C

Question: 38

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server database. You use the following SQL statement to retrieve an instance of a DataSet object named ds:

```
SELECT CustomerID, CompanyName, ContactName, Address, City
FROM dbo.Customers
```

You need to query the DataSet object to retrieve only the rows where the ContactName field is not NULL. Which code segment should you use?

- A. from row in ds.Tables[0].AsEnumerable()
where (string)row["ContactName"] != null
select row;
- B.from row in ds.Tables[0].AsEnumerable()
where row.Field<string>("ContactName") != null
select row;
- C.from row in ds.Tables[0].AsEnumerable()
where !row.IsNull((string)row["ContactName"])
select row;
- D.from row in ds.Tables[0].AsEnumerable()
where !Convert.IsDBNull(row.Field<string>(" ContactName "))
select row;

Answer: B

Explanation:

Field<T>(DataRow, String) Provides strongly-typed access to each of the column values in the specified row.
The Field method also supports nullable types.

Question: 39

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application that will access a WCF data service. The solution contains the projects shown in the following table.

Name	Contents
Application.Model	Entity Framework model
Application.Service	WCF data service
Application.Client	User interface

The WCF data service exposes an Entity Framework model. You need to access the service by using a WCF Data Services client. What should you do in the Application.Client project?

- A. Add a reference to the Application.Model project.
- B. Add a reference to the Application.Service project.
- C. Add a service reference that uses the URL of the WCF data service.
- D. Add a Web reference that uses the URL of the WCF data service.

Answer: C

Question: 40

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application uses the ADO.NET Entity Framework to model entities. You need to create a database from your model. What should you do?

- A. Run the edmgen.exe tool in FullGeneration mode.
- B. Run the edmgen.exe tool in FromSSDLGeneration mode.
- C. Use the Update Model Wizard in Visual Studio.
- D. Use the Generate Database Wizard in Visual Studio. Run the resulting script against a Microsoft SQL Server database.

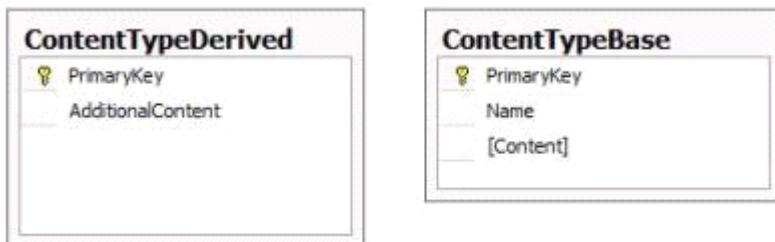
Answer: D

Explanation:

To update the database, right-click the Entity Framework designer surface and choose Generate Database From Model. The Generate Database Wizard produces a SQL script file that you can edit and execute.

Question: 41

You use the Microsoft .NET Framework 4 Entity Framework to develop an application that contains an Entity Data Model for the following database tables.



You need to ensure that the entity that is mapped to the ContentTypeDerived table derives from the entity that is mapped to the ContentTypeBase table. What should you do?

- A. Use a Table-Per-Type mapping method.
- B. Use a Table-Per-Hierarchy mapping method.
- C. Create a function import for each entity.
- D. Create a complex type for each entity.

Answer: A

Question: 42

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to enhance an existing application to use the Entity Framework. The classes that represent the entities in the model are Plain Old CLR Object (POCO) classes. You need to connect the existing POCO classes to an Entity Framework context. What should you do?

- A.
 1. Generate a MetadataWorkspace and create an ObjectContext for the model.

2. Disable proxy object creation on the ContextOptions of the ObjectContext.
3. Enable lazy loading on the ContextOptions of the ObjectContext.
- B.

 1. Generate a MetadataWorkspace and create an ObjectContext for the model.
 2. Create an ObjectSet for the POCO classes.
 3. Disable proxy object creation on the ContextOptions of the ObjectContext.

- C.

 1. Generate an Entity Data Model for the POCO classes.
 2. Create an ObjectSet for the POCO classes.
 3. Disable proxy object creation on the ContextOptions of the ObjectContext.
 4. Enable lazy loading on the ContextOptions of the ObjectContext.

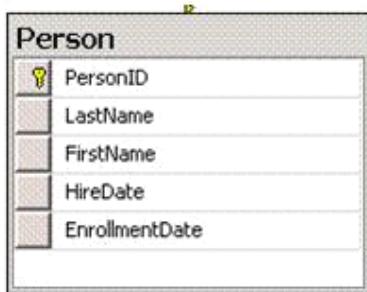
- D.

 1. Generate an Entity Data Model for the POCO classes.
 2. Create an ObjectSet for the POCO classes.
 3. Set Code Generation Strategy on the Entity Data Model to none.
 4. Create an ObjectContext for the model.

Answer: D

Question: 43

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application uses the ADO.NET Entity Framework to model entities. The model includes the entity shown in the following exhibit.



Person	
PersonID	
Lastname	
Firstname	
Hiredate	
EnrollmentDate	

You need to add a function that returns the number of years since a person was hired. You also need to ensure that the function can be used within LINQ to Entities queries. What should you do?

- A. Add the following code fragment to the .edmx file.

```
<Function Name="YearsSinceNow" ReturnType="Edm.Int32">
  <Parameter Name="date" Type="Edm.DateTime" />
  <DefiningExpression>
    Year(.currentTimeMillis()) - Year(date)
  </DefiningExpression>
</Function>
```

Add the following function to the entity class definition.

```
[EdmComplexType("SchoolModel", "YearsSinceNow")]
public static int YearsSinceNow(DateTime date)
{
  throw new NotSupportedException("Direct calls are not supported.");
}
```

- B. Add the following code fragment to the .edmx file.

```
<Function Name="YearsSinceNow" ReturnType="Edm.Int32">
  <Parameter Name="date" Type="Edm.DateTime" />
```

```
<DefiningExpression>
    Year(.currentTimeMillis()) - Year(date)
</DefiningExpression>
</Function>
```

Add the following function to the entity class definition.

```
[EdmFunction("SchoolModel", "YearsSinceNow")]
public static int YearsSinceNow(DateTime date)
{
    throw new NotSupportedException("Direct calls are not supported.");
}
```

C. Add the following code fragment to the .edmx file.

```
<Function Name="YearsSinceNow" ReturnType="Edm.Int32">
    <Parameter Name="date" Type="Edm.DateTime" />
</Function>
```

Add the following function to the entity class definition.

```
[EdmFunction("SchoolModel", "YearsSinceNow")]
public static int YearsSinceNow(DateTime date)
{
    return Year.currentTimeMillis() - Year(date);
}
```

D. Use the Entity Data Model Designer to create a complex property named YearsSinceNow that can be accessed through the LINQ to Entities query at a later time.

Answer: B

Explanation:

How to: Call Model-Defined Functions in Queries

(<http://msdn.microsoft.com/en-us/library/dd456857.aspx>)

How to: Call Model-Defined Functions as Object Methods

(<http://msdn.microsoft.com/en-us/library/dd456845.aspx>)

Question: 44

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server database. You use the ADO.NET Entity Framework to model entities. You need to add a new type to your model that organizes scalar values within an entity. You also need to map stored procedures for managing instances of the type. What should you do?

A. Add the stored procedures in the SSDL file along with a Function attribute.

Define a complex type in the CSDL file.

Map the stored procedure in the MSL file with a ModificationFunctionElement.

B. Add the stored procedures in the SSDL file along with a Function attribute.

Define a complex type in the CSDL file.

Map the stored procedure in the MSL file with an AssociationEnd element.

C. Use the edmx designer to import the stored procedures.

Derive an entity class from the existing entity as a complex type.

Map the stored procedure in the MSL file with an AssociationEnd element.

D. Add the stored procedures in the SSDL file along with a Function attribute.

Derive an entity class from the existing entity as a complex type.

Map the stored procedure in the MSL file with a ModificationFunctionElement.

Answer: A

Explanation:

EndProperty Element (MSL)

(<http://msdn.microsoft.com/en-us/library/bb399578.aspx>)

AssosiationEnd Attribute

(<http://msdn.microsoft.com/en-us/library/cc716774.aspx>)

Question: 45

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application that uses the Entity Framework. You need to execute custom logic when an entity is attached to the ObjectContext. What should you do?

- A. Create a partial method named OnStateChanged in the partial class for the entity.
- B. Create a partial method named OnAttached in the partial class for the entity.
- C. Create an event handler to handle the ObjectStateManagerChanged event.
- D. Create an event handler to handle the ObjectMaterialized event.

Answer: C

Explanation:

ObjectStateManagerChanged Occurs when entities are added to or removed from the state manager.

ObjectMaterialized Occurs when a new entity object is created from data in the data source as part of a query or load operation.

ObjectStateManagerChanged Event

(<http://msdn.microsoft.com/en-us/library/system.data.objects.objectstatemanager.objectstatemanagerchanged.aspx>)

ObjectMaterialized Event

(<http://msdn.microsoft.com/en-us/library/system.data.objects.objectcontext.objectmaterialized.aspx>)

Question: 46

You use Microsoft Visual Studio 2010 and Microsoft ADO.NET Framework 4 to create an application. The application connects to a Microsoft SQL Server 2008 database. You use the ADO.NET LINQ to SQL model to retrieve data from the database. You use stored procedures to return multiple result sets. You need to ensure that the result sets are returned as strongly typed values. What should you do?

- A. Apply the FunctionAttribute and ResultTypeAttribute to the stored procedure function. Use the GetResult<TElement> method to obtain an enumerator of the correct type.
- B. Apply the FunctionAttribute and ParameterAttribute to the stored procedure function and directly access the strongly typed object from the results collection.
- C. Apply the ResultTypeAttribute to the stored procedure function and directly access the strongly typed object from the results collection.
- D. Apply the ParameterAttribute to the stored procedure function. Use the GetResult<TElement> method to obtain an enumerator of the correct type.

Answer: A

Explanation:

You must use the IMultipleResults.GetResult<TElement> Method pattern to obtain an enumerator of the correct type,

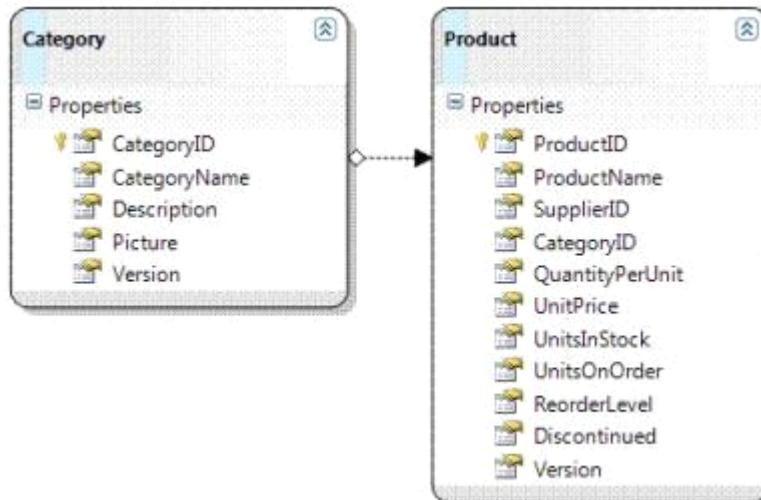
based on your knowledge of the stored procedure. FunctionAttribute Associates a method with a stored procedure or user-defined function in the database.

IMultipleResults.GetResult<TElement> Method

(<http://msdn.microsoft.com/en-us/library/bb534218.aspx>)

Question: 47

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server database. You use the ADO.NET LINQ to SQL model to retrieve data from the database. The application contains the Category and Product entities, as shown in the following exhibit.



You need to ensure that LINQ to SQL executes only a single SQL statement against the database. You also need to ensure that the query retrieves the list of categories and the list of products. Which code segment should you use?

- A. using (NorthwindDataContext dc = new NorthwindDataContext())


```

      {
        dc.ObjectTrackingEnabled = false;
        var categories = from c in dc.Categories
        select c;
        foreach (var category in categories)
        {
          Console.WriteLine("{0} has {1} products", category.CategoryName, category.Products.Count);
        }
      }
    
```
- B. using (NorthwindDataContext dc = new NorthwindDataContext())


```

      {
        dc.DeferredLoadingEnabled = false;
        DataLoadOptions dLOptions = new DataLoadOptions();
        dLOptions.LoadWith<Category>(c => c.Products);
        dc.LoadOptions = dLOptions;
        var categories = from c in dc.Categories
        select c;
        foreach (var category in categories)
        {
          Console.WriteLine("{0} has {1} products", category.CategoryName, category.Products.Count);
        }
      }
    
```
- C. using (NorthwindDataContext dc = new NorthwindDataContext())


```

      {
        dc.DeferredLoadingEnabled = true;
        var categories = from c in dc.Categories
        select c;
        foreach (var category in categories)
        {
          Console.WriteLine("{0} has {1} products", category.CategoryName, category.Products.Count);
        }
      }
    
```

```
{  
    dc.DeferredLoadingEnabled = false;  
    var categories = from c in dc.Categories  
        select c;  
    foreach (var category in categories)  
    {  
        Console.WriteLine("{0} has {1} products", category.CategoryName, category.Products.Count);  
    }  
}  
D. using (NorthwindDataContext dc = new NorthwindDataContext())  
{  
    dc.DeferredLoadingEnabled = false;  
    DataLoadOptions dlOptions = new DataLoadOptions();  
    dlOptions.AssociateWith<Category>(c => c.Products);  
    dc.LoadOptions = dlOptions;  
    var categories = from c in dc.Categories  
        select c;  
    foreach (var category in categories)  
    {  
        Console.WriteLine("{0} has {1} products", category.CategoryName, category.Products.Count);  
    }  
}
```

Answer: B

Explanation:

DataLoadOptions Class Provides for immediate loading and filtering of related data.

DataLoadOptions.LoadWith(LambdaExpression) Retrieves specified data related to the main target by using a lambda expression.

You can retrieve many objects in one query by using LoadWith.

DataLoadOptions.AssociateWith(LambdaExpression) Filters the objects retrieved for a particular relationship.

Use the AssociateWith method to specify sub-queries to limit the amount of retrieved data.

DataLoadOptions Class

(<http://msdn.microsoft.com/en-us/library/system.data.linq.dataloadoptions.aspx>)

How to: Retrieve Many Objects At Once (LINQ to SQL)

([http://msdn.microsoft.com/en-us/library/Bb386917\(v=vs.90\).aspx](http://msdn.microsoft.com/en-us/library/Bb386917(v=vs.90).aspx))

How to: Filter Related Data (LINQ to SQL)

([http://msdn.microsoft.com/en-us/library/Bb882678\(v=vs.100\).aspx](http://msdn.microsoft.com/en-us/library/Bb882678(v=vs.100).aspx))

Question: 48

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application. You use the Entity Framework Designer to create an Entity Data Model from an existing database by using the Generate from database wizard. The model contains an entity type named Product. The Product type requires an additional property that is not mapped to a database column. You need to add the property to Product. What should you do?

- A. Add the property in the generated class file, and select Run Custom Tool from the solution menu.
- B. Add the property in a partial class named Product in a new source file.
- C. Create a complex type with the name of the property in the Entity Framework Designer.
- D. Create a function import with the name of the property in the Entity Framework Designer.

Answer: B

Question: 49

You use Microsoft .NET Framework 4 to develop an ASP.NET application. The application uses Integrated Windows authentication. The application accesses data in a Microsoft SQL Server 2008 database that is located on the same server as the application. You use the following connection string to connect to the database.

Integrated Security=SSPI; Initial Catalog=AdventureWorks;

The application must also execute a stored procedure on the same server on a database named pubs.

Users connect to the ASP.NET application through the intranet by using Windows-based authentication. You need to ensure that the application will use connection pooling whenever possible and will keep the number of pools to a minimum. Which code segment should you use?

- A.

```
command.CommandText = "USE [pubs]; exec uspLoginAudit;"  
using (SqlConnection connection = new SqlConnection(  
    "Initial Catalog=AdventureWorks; Integrated Security=SSPI;  
    MultipleActiveResultSets=True"))  
{  
    connection.Open();  
    command.ExecuteNonQuery();  
}
```
- B.

```
command.CommandText = "exec uspLoginAudit;"  
using (SqlConnection connection = new SqlConnection(  
    "Integrated Security=SSPI; Initial Catalog=pubs"))  
{  
    connection.Open();  
    command.ExecuteNonQuery();  
}
```
- C.

```
command.CommandText = "USE [pubs]; exec uspLoginAudit;"  
using (SqlConnection connection = new SqlConnection("Integrated Security=SSPI; Initial Catalog=AdventureWorks"))  
{  
    connection.Open();  
    command.ExecuteNonQuery();  
}
```
- D.

```
command.CommandText = "exec uspLoginAudit;"  
using (SqlConnection connection = new SqlConnection(  
    "Integrated Security=SSPI;"))  
{  
    connection.Open();  
    command.ExecuteNonQuery();  
}
```

Answer: C

Explanation:

Working with Multiple Active Result Sets

([http://msdn.microsoft.com/en-us/library/yf1a7f4f\(v=vs.80\).aspx](http://msdn.microsoft.com/en-us/library/yf1a7f4f(v=vs.80).aspx))

SSPI

([http://msdn.microsoft.com/en-us/library/windows/desktop/aa380493\(v=vs.85\).aspx](http://msdn.microsoft.com/en-us/library/windows/desktop/aa380493(v=vs.85).aspx))

Question: 50

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server 2008 database. The application uses a Microsoft ADO.NET SQL Server managed provider. When a connection fails, the application logs connection information, including the full connection string. The information is stored as plain text in a .config file. You need to ensure that the database credentials are secure. Which connection string should you add to the .config file?

- A. Data Source=myServerAddress; Initial Catalog=myDataBase; Integrated Security=SSPI; Persist Security Info=true;
- B. Data Source=myServerAddress; Initial Catalog=myDataBase; User Id = myUsername; Password = myPassword; Persist Security Info=false;
- C. Data Source=myServerAddress; Initial Catalog=myDataBase; Integrated Security=SSPI; Persist Security Info=false;
- D. Data Source=myServerAddress; Initial Catalog=myDataBase; User Id = myUsername; Password = myPassword; Persist Security Info=true;

Answer: C

Explanation:

Persist Security Info

Default: 'false'

When set to false or no (strongly recommended), security-sensitive information, such as the password, is not returned as part of the connection if the connection is open or has ever been in an open state. Resetting the connection string resets all connection string values including the password.

Recognized values are true, false, yes, and no.

Question: 51

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server database. The application uses the ADO.NET LINQ to SQL model to retrieve data from the database. The application will not modify retrieved data. You need to ensure that all the requested data is retrieved. You want to achieve this goal using the minimum amount of resources. What should you do?

- A. Set DeferredLoadingEnabled to true on the DataContext class.
- B. Set DeferredLoadingEnabled to false on the DataContext class.
- C. Set ObjectTrackingEnabled to true on the DataContext class.
- D. Set ObjectTrackingEnabled to false on the DataContext class.

Answer: D

Explanation:

Setting property ObjectTrackingEnabled to false improves performance at retrieval time, because there are fewer items to track.

DataContext.ObjectTrackingEnabled Property

(<http://msdn.microsoft.com/en-us/library/system.data.linq.datacontext.objecttrackingenabled.aspx>)

Question: 52

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application contains the following XML document.

< feed >

```
< title > Products < /title >
< entry >
  < title > Entry title 1 < /title >
  < author > Author1 < /author >
  < content >
    < properties >
      < description > some description < /description >
      < notes > some notes < /notes >
      < comments > some comments < /comments >
    < /properties >
  < /content >
< /entry >
...
< /feed >
```

You plan to add localization features to the application.

You add the following code segment. (Line numbers are included for reference only.)

```
01 public IEnumerable < XNode > GetTextNodesForLocalization(XDocument doc)
02 {
03
04   return from n in nodes
05   where n.NodeType == XmlNodeType.Text
06   select n;
07 }
```

You need to ensure that the GetTextNodesForLocalization method returns all the XML text nodes of the document.

Which code segment should you insert at line 03?

- A. IEnumerable < XNode > nodes = doc.DescendantNodes();
- B. IEnumerable < XNode > nodes = doc.Nodes();
- C. IEnumerable < XNode > nodes = doc.Descendants();
- D. IEnumerable < XNode > nodes = doc.NodesAfterSelf();

Answer: A

Explanation:

DescendantNodes() Returns a collection of the descendant nodes for this document or element, in document order.

Descendants() Returns a collection of the descendant elements for this document or element, in document order.

Nodes() Returns a collection of the child nodes of this element or document, in document order.

NodesAfterSelf() Returns a collection of the sibling nodes after this node, in document order

Question: 53

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. You deploy a Windows Communication Foundation (WCF) Data Service to a production server. The application is hosted by Internet Information Services (IIS). After deployment, applications that connect to the service receive the following error message:

"The server encountered an error processing the request. See server logs for more details."

You need to ensure that the actual exception data is provided to client computers.

What should you do?

- A. Add the ServiceBehavior attribute to the class that implements the data service.

- B. Add the FaultContract attribute to the class that implements the data service.
- C. Modify the applications Web.config file. Set the value for the customErrors element to Off.
- D. Modify the applications Web.config file. Set the value for the customErrors element to RemoteOnly.

Answer: A

Explanation:

Apply the ServiceBehaviorAttribute attribute to a service implementation to specify service-wide execution behavior. The IncludeExceptionDetailInFaults property specifies whether unhandled exceptions in a service are returned as SOAP faults. This is for debugging purposes only.

ServiceBehavior Attribute

(<http://msdn.microsoft.com/en-us/library/system.servicemodel.servicebehaviorattribute.aspx>)

FaultContract Attribute

(<http://msdn.microsoft.com/en-us/library/ms752208.aspx>)

[ServiceContract(Namespace="http://Microsoft.ServiceModel.Samples")]

public interface ICalculator

{

 [OperationContract]

 int Add(int n1, int n2);

 [OperationContract]

 int Subtract(int n1, int n2);

 [OperationContract]

 int Multiply(int n1, int n2);

 [OperationContract]

 [FaultContract(typeof(MathFault))]

 int Divide(int n1, int n2);

}

The FaultContractAttribute attribute indicates that the Divide operation may return a fault of type MathFault. A fault can be of any type that can be serialized. In this case, the MathFault is a data contract, as follows:

[DataContract(Namespace="http://Microsoft.ServiceModel.Samples")]

public class MathFault

{

 private string operation;

 private string problemType;

 [DataMember]

 public string Operation

{

 get { return operation; }

 set { operation = value; }

}

 [DataMember]

 public string ProblemType

{

 get { return problemType; }

 set { problemType = value; }

}

}

Question: 54

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application

connects to a Microsoft SQL Server 2008 database. You need to use a spatial value type as a parameter for your database query. What should you do?

- A. Set the parameters SqlDbType to Udt. Set the parameters UdtTypeName to GEOMETRY.
- B. Set the parameters SqlDbType to Binary.
- C. Set the parameters SqlDbType to Variant.
- D. Set the parameters SqlDbType to Structured. Set the parameters TypeName to GEOMETRY.

Answer: A

Explanation:

There are two types of spatial data. The geometry data type supports planar, or Euclidean (flat-earth), data. The geometry data type conforms to the Open Geospatial Consortium (OGC) Simple Features for SQL Specification version 1.1.0.

In addition, SQL Server supports the geography data type, which stores ellipsoidal (round-earth) data, such as GPS latitude and longitude coordinates.

SqlParameter.UdtTypeName Gets or sets a string that represents a user-defined type as a parameter.

CHAPTER 2 ADO.NET Connected Classes

Lesson 2: Reading and Writing Data

Working with SQL Server User-Defined Types (UDTs) (page 105)

Spatial types

(<http://msdn.microsoft.com/en-us/library/ff848797.aspx>)

Types of Spatial Data

(<http://msdn.microsoft.com/en-us/library/bb964711.aspx>)

Question: 55

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server database. You create a DataSet object in the application. You add two DataTable objects named App_Products and App_Categories to the DataSet. You add the following code segment to populate the DataSet object. (Line numbers are included for reference only.)

```
01  public void Fill(SqlConnection cnx, DataSet ds) {  
02      var cmd = cnx.CreateCommand();  
03      cmd.CommandText = "SELECT * FROM dbo.Products; " + "SELECT * FROM dbo.Categories";  
04      var adapter = new SqlDataAdapter(cmd);  
05  
06      }  
07  }
```

You need to ensure that App_Products and App_Categories are populated from the dbo.Products and dbo. Categories database tables. Which code segment should you insert at line 06?

- A. adapter.Fill(ds, "Products"); adapter.Fill(ds, "Categories");
- B. adapter.Fill(ds.Tables["App_Products"]);
adapter.Fill(ds.Tables["App_Categories"]);
- C. adapter.TableMappings.Add("Table", "App_Products");
adapter.TableMappings.Add("Table1", "App_Categories");
adapter.Fill(ds);
- D. adapter.TableMappings.Add("Products", "App_Products");
adapter.TableMappings.Add("Categories", "App_Categories");
adapter.Fill(ds);

Answer: C

Explanation:

Table Mapping in ADO.NET

(<http://msdn.microsoft.com/en-us/library/ms810286.aspx>)

Question: 56

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server 2008 database. You need to ensure that the application calls a stored procedure that accepts a table-valued parameter. You create a SqlParameter object. What should you do next?

- A. Set the SqlDbType of SqlParameter to Udt
- B. Set the SqlDbType of SqlParameter to Variant.
- C. Set the Parameter Direction of SqlParameter to Output.
- D. Set the SqlDbType of SqlParameter to Structured. Set the TypeName of SqlParameter to Udt.

Answer: D

Explanation:

SqlParameter.DbType Gets or sets the SqlDbType of the parameter.

SqlParameter.TypeName Gets or sets the type name for a table-valued parameter.

SqlDbType.Structured A special data type for specifying structured data contained in table-valued parameters.

Udt A SQL Server 2005 user-defined type (UDT).

Spatial types

(<http://msdn.microsoft.com/en-us/library/ff848797.aspx>)

Types of Spatial Data

(<http://msdn.microsoft.com/en-us/library/bb964711.aspx>)

Question: 57

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create a Windows Communication Foundation (WCF) Data Services service. You deploy the service to the following URL: <http://contoso.com/Northwind.svc>. You want to query the WCF Data Services service to retrieve a list of customer objects. You need to ensure that the query meets the following requirements:

- "Only customers that match the following filter criteria are retrieved: City="Seattle" AND Level > 200.
- "Data is sorted in ascending order by the ContactName and Address properties.

Which URL should you use for the query?

- A. [http://contoso.com/Northwind.svc/Customers?City=Seattle & Level gt 200 & \\$orderby=ContactName, Address](http://contoso.com/Northwind.svc/Customers?City=Seattle & Level gt 200 & $orderby=ContactName, Address)
- B. [http://contoso.com/Northwind.svc/Customers?City=Seattle & Level gt 200 & \\$orderby=ContactName and Address](http://contoso.com/Northwind.svc/Customers?City=Seattle & Level gt 200 & $orderby=ContactName and Address)
- C. [http://contoso.com/Northwind.svc/Customers?\\$filter=City eq 'Seattle' and Level gt 200 & \\$orderby=ContactName,Address](http://contoso.com/Northwind.svc/Customers?$filter=City eq 'Seattle' and Level gt 200 & $orderby=ContactName,Address)
- D. [http://contoso.com/Northwind.svc/Customers?\\$filter=City eq 'Seattle' and Level gt 200 & \\$orderby=ContactName and Address](http://contoso.com/Northwind.svc/Customers?$filter=City eq 'Seattle' and Level gt 200 & $orderby=ContactName and Address)

Answer: C

Explanation:

CHAPTER 7 WCF Data Services

Lesson 1: What Is WCF Data Services?

Working with Filters (page 474)

Accessing the Service from a Web Browser (WCF Data Services Quickstart)

(<http://msdn.microsoft.com/en-us/library/dd728279.aspx>)

Accessing Data Service Resources (WCF Data Services)

(<http://msdn.microsoft.com/en-us/library/dd728283.aspx>)

Question: 58

You use Microsoft .NET Framework 4 to develop an application that uses LINQ to SQL. You create a data model named AdvWorksDataContext, and you add the Product table to the data model. The Product table contains a decimal column named ListPrice and a string column named Color. You need to update the ListPrice column where the product color is Black or Red. Which code segment should you use?

- A. string[] colorList = new string[] {"Black", "Red"};


```
AdvWorksDataContext dc = new AdvWorksDataContext();
var prod = from p in dc.Products
where colorList.Contains(p.Color)
select p;
foreach (var product in prod)
{
product.ListPrice = product.StandardCost * 1.5M;
}
dc.SubmitChanges();
```
- B. AdvWorksDataContext dc = new AdvWorksDataContext("& ");


```
var prod = from p in dc.Products
select p;
var list = prod.ToList();
foreach (Product product in list)
{
if (product.Color == "Black,Red")
{
product.ListPrice = product.StandardCost * 1.5M;
}
}
dc.SubmitChanges();
```
- C. AdvWorksDataContext dc = new AdvWorksDataContext("& ");


```
var prod = from p in dc.Products
where p.Color == "Black,Red"
select p;
foreach (var product in prod)
{
product.ListPrice = product.StandardCost * 1.5M;
}
dc.SubmitChanges();
```
- D. AdvWorksDataContext dc = new AdvWorksDataContext("& ");


```
var prod = from p in dc.Products
select p;
var list = prod.ToList();
foreach (Product product in list)
{
```

```
if ((product.Color == "Black")&&(product.Color == "Red"))
{
product.ListPrice = product.StandardCost * 1.5M;
}
}
dc.SubmitChanges();
```

Answer: A

Question: 59

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server database. The application uses a DataTable named OrderDetailTable that has the following columns:

- ID
- OrderID
- ProductID
- Quantity
- LineTotal

Some records contain a null value in the LineTotal field and 0 in the Quantity field. You write the following code segment. (Line numbers are included for reference only.)

```
01DataColumn column = new DataColumn("UnitPrice", typeof(double));
02
03OrderDetailTable.Columns.Add(column);
```

You need to add a calculated DataColumn named UnitPrice to the OrderDetailTable object. You also need to ensure that UnitPrice is set to 0 when it cannot be calculated. Which code segment should you insert at line 02?

- A. column.Expression = "LineTotal/Quantity";
- B. column.Expression = "LineTotal/ISNULL(Quantity, 1)";
- C. column.Expression = "if(Quantity > 0, LineTotal/Quantity, 0)";
- D. column.Expression = "iif(Quantity > 0, LineTotal/Quantity, 0)";

Answer: D

Explanation:

IIF (boolean_expression, true_value, false_value)

Question: 60

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application updates several Microsoft SQL Server databases within a single transaction. You need to ensure that after a resource failure, you can manage unresolved transactions. What should you do?

- A. Call the EnlistVolatile method of the Transaction class.
- B. Call the Reenlist method of the TransactionManager class.
- C. Call the EnlistDurable method of the Transaction class.
- D. Call the RecoveryComplete method of the TransactionManager class.

Answer: B

Explanation:

Enlisting Resources as Participants in a Transaction

(<http://msdn.microsoft.com/en-us/library/ms172153.aspx>)

Implementing a Resource Manager

(<http://msdn.microsoft.com/en-us/library/ms229975.aspx>)

Committing a Transaction in Single-Phase and Multi-Phase

(<http://msdn.microsoft.com/en-us/library/ckawh9ct.aspx>)

TransactionManager.Renlist() Reenlists a durable participant in a transaction. A resource manager facilitates resolution of durable enlistments in a transaction by reenlisting the transaction participant after resource failure.

Transaction.EnlistVolatile() Enlists a volatile resource manager to participate in a transaction. Volatile resource managers cannot recover from failure to complete a transaction in which they were participating.

Transaction.EnlistDurable() Enlists a durable resource manager to participate in a transaction.

TransactionManager.RecoveryComplete() Notifies the transaction manager that a resource manager recovering from failure has finished reenlisting in all unresolved transactions. All durable resource managers should do recovery when they first start up by calling the Reenlist method for each outstanding transaction.

Only when all of the reenlistments are done should the resource manager call RecoveryComplete.

TransactionManager.Renlist() Method

(<http://msdn.microsoft.com/en-us/library/system.transactions.transactionmanager.reenlist.aspx>)

Transaction.EnlistVolatile() Method

(<http://msdn.microsoft.com/en-us/library/system.transactions.transaction.enlistvolatile.aspx>)

Transaction.EnlistDurable()

(<http://msdn.microsoft.com/en-us/library/system.transactions.transaction.enlistdurable.aspx>)

TransactionManager.RecoveryComplete() Method

(<http://msdn.microsoft.com/en-us/library/system.transactions.transactionmanager.recoverycomplete.aspx>)

Question: 61

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application. You use the Entity Framework Designer to create an Entity Data Model using model-first development. The database has the following requirements:

- Each table must have a datetime column named time_modified.
- Each table requires a trigger that updates the value of the time_modified column when a row is inserted or updated.

You need to ensure that the database script that is created by using the Generate Database From Model option meets the requirements. What should you do?

- A. Create a new T4 Template, and set the DDL Generation template to the name of the new template.
- B. Create a new Windows Workflow Foundation workflow, and set Database Generation Workflow to the name of the new workflow.
- C. Add a DateTime property named time_modified to each entity in the model, and set the property s StoreGeneratedPattern to Computed.
- D. Add a new entity named time_modified to the model, and modify each existing entity so that it inherits from the new entity.

Answer: A

Explanation:

Model-First in the Entity Framework 4

(<http://msdn.microsoft.com/en-us/data/ff830362>)

Question: 62

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server 2008 database. You use the ADO.NET Entity Framework to model your entities. You use ADO.NET selftracking entities. You need to ensure that the change-tracking information for the selftracking entities can be used to update the database. Which ObjectContext method should you call after changes are made to the entities?

- A. Attach
- B. Refresh
- C. SaveChanges
- D. ApplyChanges

Answer: D

Explanation:

ApplyChanges takes the changes in a connected set of entities and applies them to an ObjectContext.

Starting with Microsoft Visual Studio 2010, the ADO.NET Self-Tracking Entity Generator template generates self-tracking entities.

This template item generates two .tt (text template) files: <model name>.tt and <model name>.Context.tt. The <model name>.tt file generates the entity types and a helper class that contains the change-tracking logic that is used by self-tracking entities and the extension methods that allow setting state on self-tracking entities.

The <model name>.Context.tt file generates a typed ObjectContext and an extension class that contains ApplyChanges methods for the ObjectContext and ObjectSet classes. These methods examine the change-tracking information that is contained in the graph of self-tracking entities to infer the set of operations that must be performed to save the changes in the database.

Working with Self-Tracking Entities

(<http://msdn.microsoft.com/en-us/library/ff407090.aspx>)

Question: 63

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server database. You use Entity SQL of the ADO .NET Entity Framework to retrieve data from the database. You need to define a custom function in the conceptual model. You also need to ensure that the function calculates a value based on properties of the object. Which two XML element types should you use? (Each correct answer presents part of the solution Choose two.)

- A. Function
- B. Function Import
- C. Dependent
- D. Association
- E. DefiningExpression

Answer: A, E

Explanation:

CHAPTER 6 ADO.NET Entity Framework

Lesson 1: What Is the ADO.NET Entity Framework?

Model-Defined Functions (page 413)

Question: 64

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server 2008 database. The database includes a table that contains information about all the employees. The database table has a field named EmployeeType that identifies whether an employee is a Contractor or a Permanent employee. You declare the employee entity base type. You create a new Association entity named Contractor that inherits the Employee base type. You need to ensure that all Contractors are bound to the Contractor class. What should you do?

- A. Modify the .edmx file to include the following line of code.
<NavigationProperty Name='Type' FromRole="EmployeeType" ToRole="Contractor"/>
- B. Modify the .edmx file to include the following line of code.
<Condition ColumnName="EmployeeType" Value="Contractor"/>
- C. Use the Entity Data Model Designer to set up an association between the Contractor class and EmployeeType
- D. Use the Entity Data Model Designer to set up a referential constraint between the primary key of the Contractor class and EmployeeType

Answer: B

Explanation:

```
<Association Name="FK_OrderDetails_Orders1">
<End Role="Orders" Type="StoreDB.Store.Orders" Multiplicity="1">
<OnDelete Action="Cascade" />
</End>
<End Role="OrderDetails" Type="StoreDB.Store.OrderDetails" Multiplicity="*" />
<ReferentialConstraint>
<Principal Role="Orders">
<PropertyRef Name="ID" />
</Principal>
<Dependent Role="OrderDetails">
<PropertyRef Name="OrderId" />
</Dependent>
</ReferentialConstraint>
</Association>
```

Question: 65

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application uses the ADO.NET Entity Framework to model persistence-ignorant entities. The application operates in a disconnected mode. You need to ensure that changes made to local entities while the application is in the disconnected mode are correctly persisted. Which method should you call before persisting changes?

- A. ObjectStateEntry.SetModifiedProperty
- B. DataContext.AcceptAllChanges
- C. ObjectStateEntry.AcceptChanges
- D. ObjectContext.Refresh

Answer: A

Explanation:

ObjectStateEntry.SetModifiedProperty(string propertyName) Method Marks the specified property as modified.

Question: 66

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server database. You write the following code segment that executes two commands against the database within a transaction. (Line numbers are included for reference only.)

```

01   using (SqlConnection connection = new SqlConnection(cnnStr)) {
02     connection.Open();
03     SqlTransaction sqlTran = connection.BeginTransaction();
04     SqlCommand command = connection.CreateCommand();
05     command.Transaction = sqlTran;
06     try {
07       command.CommandText = "INSERT INTO Production.ScrapReason(Name) VALUES('Wrong size')";
08       command.ExecuteNonQuery();
09       command.CommandText = "INSERT INTO Production.ScrapReason(Name) VALUES('Wrong color')";
10       command.ExecuteNonQuery();
11     }
12   }
```

You need to log error information if the transaction fails to commit or roll back. Which code segment should you insert at line 11?

A. `sqlTran.Commit();`
`}`
`catch (Exception ex) {`
`sqlTran.Rollback();`
`Trace.WriteLine(ex.Message);`
`}`

B. `sqlTran.Commit();`
`}`
`catch (Exception ex) {`
`Trace.WriteLine(ex.Message);`
`try {`
`sqlTran.Rollback();`
`}`
`catch (Exception exRollback) {`
`Trace.WriteLine(exRollback.Message);`
`}`
`}`

C. `catch (Exception ex){`
`Trace.WriteLine(ex.Message);`
`try{`
`sqlTran.Rollback();`
`}`
`catch (Exception exRollback){`
`Trace.WriteLine(exRollback.Message);`
`}`
`}`
`finaly {`
`sqltran.commit();`
`}`

```
D. catch (Exception ex) {  
    sqlTran.Rollback();  
    Trace.WriteLine(ex.Message);  
}  
finally {  
    try {  
        sqltran.commit( );  
    }  
    catch (Exception exRollback) {  
        Trace.WriteLine(excommit.Message);  
    }  
}
```

Answer: B

Explanation:

A would work, but B is better since we are checking for possible errors during the rollback. C & D would try to do a rollback before a commit?

The finally block is only executed when the application ends, which may not be the appropriate place to put this logic. Normally, a finally block would contain code to close a Database connection. The finally block executes even if an exception arises.

Question: 67

You use Microsoft visual Studio 2010 and Microsoft NET Framework 4 to create an application. The application connects to a Microsoft SQL Server database. The application stores encrypted credit card numbers in the database. You need to ensure that credit card numbers can be extracted from the database. Which cryptography provider should you use?

- A. DSACryptoServiceProvider
- B. AESCryptoServiceProvider
- C. MD5CryptoServiceProvider
- D. SHA1 CryptoServiceProvider

Answer: B

Explanation:

AESCryptoServiceProvider Performs symmetric encryption and decryption using the Cryptographic Application Programming Interfaces (CAPI) implementation of the Advanced Encryption Standard (AES) algorithm.

DSACryptoServiceProvider Defines a wrapper object to access the cryptographic service provider (CSP) implementation of the DSA algorithm. This class cannot be inherited.

MD5CryptoServiceProvider Computes the MD5 hash value for the input data using the implementation provided by the cryptographic service provider (CSP). This class cannot be inherited.

SHA1CryptoServiceProvider Computes the SHA1 hash value for the input data using the implementation provided by the cryptographic service provider (CSP). This class cannot be inherited.

DSACryptoServiceProvider

(<http://msdn.microsoft.com/en-us/library/system.security.cryptography.dsacryptoserviceprovider.aspx>)

AESCryptoServiceProvider

(<http://msdn.microsoft.com/en-us/library/system.security.cryptography.aescryptoserviceprovider.aspx>)

MD5CryptoServiceProvider

(<http://msdn.microsoft.com/en-us/library/system.security.cryptography.md5cryptoserviceprovider.aspx>)

SHA1CryptoServiceProvider Class

(<http://msdn.microsoft.com/en-us/library/system.security.cryptography.sha1cryptoserviceprovider.aspx>)

Question: 68

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server database. The application uses the following object query to load a product from the database. (Line numbers are included for reference only.)

```
01using (AdventureWorksEntities advWorksContext = new AdventureWorksEntities())
02{
03ObjectQuery<Product> productQuery = advWorksContext.Product.Where("it.ProductID = 900");
04
05 }
```

You need to log the command that the query executes against the data source.

Which code segment should you insert at line 04?

- A. Trace.WriteLine(productQuery.ToString());
- B. Trace.WriteLine(productQuery.ToTraceString());
- C. Trace.WriteLine(productQuery.CommandText);
- D. Trace.WriteLine(((IQueryable)productQuery).Expression);

Answer: B

Explanation:

CHAPTER 8 Developing Reliable Applications

Lesson 1: Monitoring and Collecting Performance Data

Accessing SQL Generated by the Entity Framework (page 509)

Question: 69

You develop a Microsoft .NET Framework 4 application that uses the Entity Framework to store entities in a Microsoft SQLServer2008 database. While the application is disconnected from the database, entities that are added or modified are serialized to a local file. The next time the application connects to the database, it retrieves a Customer entity from the database by using an object context named context and stores the entity in a variable named remoteCustomer. The application then deserializes the Customer entity from the local file and stores the entity in a variable named localCustomer. The remoteCustomer and the localCustomer variables have the same entity key. You need to ensure that the offline changes to the Customer entity are persisted in the database when the ObjectContext.SaveChanges() method is called. Which line of code should you use?

- A. context.ApplyOriginalValues("Customers", remoteCustomer);
- B. context.ApplyOriginalValues("Customers", localCustomer);
- C. context.ApplyCurrentValues("Customers", remoteCustomer);
- D. context.ApplyCurrentValues("Customers", localCustomer);

Answer: D

Explanation:

<http://msdn.microsoft.com/en-us/library/dd487246.aspx>

Question: 70

You use Microsoft Visual Studio 2010 and the Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server database. The application uses DataContexts to query the database. You define a foreign key between the Customers and Orders tables in the database. You need to ensure that when you delete a customer record, the corresponding order records are deleted. You want to achieve this goal by using the minimum amount of development effort. What should you do?

- A. Override the Delete operation of the customer entity.
- B. Remove the foreign key between the Customers and Orders tables.
- C. Use the ExecuteDynamicDelete method of the Data Context object.
- D. Modify the foreign key between the Customers and Orders tables to enable the ON DELETE CASCADE option.

Answer: D

Explanation:

DataContext.ExecuteDynamicDelete Method

(<http://msdn.microsoft.com/en-us/library/system.data.linq.datacontext.executedynamicdelete.aspx>)

Question: 71

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server database. The application uses DataContexts to query the database. The application meets the following requirements:

- Stores customer data offline.
- Allows users to update customer records while they are disconnected from the server.
- Enables offline changes to be submitted back to the SQL Server by using the DataContext object.

You need to ensure that the application can detect all conflicts that occur between the offline customer information submitted to the SQL Server and the server version. You also need to ensure that you can roll back local changes. What should you do?

- A. Add a try/catch statement around calls to the SubmitChanges method of the DataContext object and catch ChangeConflictExceptions.
- B. Add a try/catch statement around calls to the SubmitChanges method of the DataContext object and catch SqlExceptions.
- C. Override the Update operation of the DataContext object. Call the ExecuteDynamicUpdate method to generate the update SQL.
- D. Call the SubmitChanges method of the DataContext object.
Pass System.Data.Linq.ConflictMode.ContinueOnConflict to the method.

Answer: D

Explanation:

FailOnFirstConflict Specifies that attempts to update the database should stop immediately when the first concurrency conflict error is detected.

ContinueOnConflict Specifies that all updates to the database should be tried, and that concurrency conflicts should be accumulated and returned at the end of the process.

ExecuteDynamicUpdate() Method Called inside update override methods to redelegate to LINQ to SQL the task of generating and executing dynamic SQL for update operations.

ConflictMode Enumeration

(<http://msdn.microsoft.com/en-us/library/bb345922.aspx>)

DataContext.ExecuteDynamicUpdate Method

(<http://msdn.microsoft.com/en-us/library/system.data.linq.datacontext.executedynamicupdate.aspx>)

Question: 72

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server database. You load records from the Customers table into a DataSet object named dataset. You need to retrieve the value of the City field from the first and last records in the Customers table. Which code segment should you use?

- A. DataTable dt = dataset.Tables["Customers"];
string first = dt.Rows[0]["City"].ToString();
string last = dt.Rows[dt.Rows.Count - 1]["City"].ToString();
- B. DataTable dt = dataset.Tables["Customers"];
string first = dt.Rows[0]["City"].ToString();
string last = dt.Rows[dt.Rows.Count]["City"].ToString();
- C. DataRelation relationFirst = dataset.Relations[0];
DataRelation relationLast = dataset.Relations[dataset.Relations.Count - 1];
string first = relationFirst.childTable.Columns["City"].ToString();
string last = relationLast.childTable.Columns["City"].ToString();
- D. DataRelation relationFirst = dataset.Relations[0];
DataRelation relationLast = dataset.Relations[dataset.Relations.Count];
string first = relationFirst.childTable.Columns["City"].ToString();
string last = relationLast.childTable.Columns["City"].ToString();

Answer: A

Question: 73

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to two different Microsoft SQL Server 2008 database servers named Server1 and Server2. A string named sql1 contains a connection string to Server1. A string named sql2 contains a connection string to Server2.

```
01  using (TransactionScope scope = new
02    ...
03  )
04  {
05    using (SqlConnection cn1 = new SqlConnection(sql1))
06  {
07    try{
08      ...
09  }
10  catch (Exception ex)
11 {
12 }
13 }
14  scope.Complete();
15 }
```

You need to ensure that the application meets the following requirements:

There is a SqlConnection named cn2 that uses sql2.

The commands that use cn1 are initially enlisted as a lightweight transaction.

The cn2 SqlConnection is enlisted in the same TransactionScope only if commands executed by cn1 do not throw an exception.

What should you do?

A. Insert the following code segment at line 02.

TransactionScope(TransactionScopeOption.Suppress)

Insert the following code segment at line 08.

using (SqlConnection cn2 = new SqlConnection(sql2))

{

try

{

cn2.Open();

...

cn1.Open();

...

}

catch (Exception ex){}

}

B. Insert the following code segment at line 02.

TransactionScope(TransactionScopeOption.Suppress)

Insert the following code segment at line 08.

cn1.Open();

...

using (SqlConnection cn2 = new SqlConnection(sql2))

{

try

{

cn2.Open();

...

}

catch (Exception ex){}

}

C. Insert the following code segment at line 02.

TransactionScope(TransactionScopeOption.RequiresNew)

Insert the following code segment at line 08.

using (SqlConnection cn2 = new SqlConnection(sql2))

{

try{

cn2.Open();

...

cn1.Open();

...

}

catch (Exception ex){}

}

D. Insert the following code segment at line 02.

TransactionScope(TransactionScopeOption.RequiresNew)

Insert the following code segment at line 08.

cn1.Open();

```
...
using (SqlConnection cn2 = new SqlConnection(sql2))
{
try
{
cn2.Open();
...
}
catch (Exception ex){}
}
```

Answer: B

Explanation:

Seen in exam

Here cn1 is for the Ambient Transaction (i.e the lightweight or logical transaction) that will be used run the 2 transactions in the ambient scope.

If the cn1 transaction fails, then the requirement is for the cn2 transaction NOT to join the ambient transaction. It needs to run within its own independent transaction. This is achieved by using TransactionScopeOption.

Suppress.

If the cn2 transaction does NOT fail, then both transactions will run under the ambient Transaction.

TransactionScopeOption

Required A transaction is required by the scope. It uses an ambient transaction if one already exists. Otherwise, it creates a new transaction before entering the scope. This is the default value.

RequiresNew A new transaction is always created for the scope.

Suppress The ambient transaction context is suppressed when creating the scope. All operations within the scope are done without an ambient transaction context.

Question: 74

You use Microsoft .NET Framework 4 to develop an application that connects to a Microsoft SQL Server 2008 database. You add the following stored procedure to the database.

```
CREATE PROCEDURE GetSalesPeople
AS
BEGIN
SELECT FirstName, LastName, Suffix, Email, Phone
FROM SalesPeople
END
```

You write the following code. (Line numbers are included for reference only.)

```
01SqlConnection connection = new SqlConnection("& ");
02SqlCommand command = new SqlCommand("GetSalesPeople", connection);
03command.CommandType = CommandType.StoredProcedure;
04
```

You need to retrieve all of the results from the stored procedure.

Which code segment should you insert at line 04?

- A. var res = command.ExecuteReader();
- B. var res = command.ExecuteScalar();
- C. var res = command.ExecuteNonQuery();
- D. var res = command.ExecuteXmlReader();

Answer: A

Explanation:

ExecuteReader Sends the CommandText to the Connection and builds a SqlDataReader.

SqlCommand Class

(<http://msdn.microsoft.com/en-us/library/system.data.sqlclient.sqlcommand.aspx>)

Question: 75

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create a Windows Communication Foundation (WCF) Data Services service. You deploy the data service to the following URL: <http://contoso.com/Northwind.svc>. You need to update the City property of the Customer record that has its ID value as 123. You also need to preserve the current values of the remaining properties. Which HTTP request should you use?

A. PUT /Northwind.svc/Customers(123)

Host: contoso.com

Content-Type: application/json

{

City: 'Seattle'

}

B. PUT /Northwind.svc/Customers(123)

Host: contoso.com

Accept: application/json

{

City: 'Seattle'

}

C. MERGE /Northwind.svc/Customers(123)

Host: contoso.com

Content-Type: application/json

{

City: 'Seattle'

}

D. MERGE /Northwind.svc/Customers(123)

Host: contoso.com

Accept: application/json

{

City: 'Seattle'

}

Answer: C

Explanation:

HTTP Actions

OData supports the following HTTP actions to perform create, read, update, and delete operations on the entity data that the addressed resource represents:

HTTP GET - This is the default action when a resource is accessed from a browser. No payload is supplied in the request message, and a response method with a payload that contains the requested data is returned.

HTTP POST - Inserts new entity data into the supplied resource. Data to be inserted is supplied in the payload of the request message.

The payload of the response message contains the data for the newly created entity. This includes any autogenerated key values.

The header also contains the URI that addresses the new entity resource.

HTTP DELETE - Deletes the entity data that the specified resource represents. A payload is not present in the request or response messages.

HTTP PUT - Replaces existing entity data at the requested resource with new data that is supplied in the payload of the request message.

HTTP MERGE - Because of inefficiencies in executing a delete followed by an insert in the data source just to change entity data, OData introduces a new HTTP MERGE action. The payload of the request message contains the properties that must be changed on the addressed entity resource. Because HTTP MERGE is not defined in the HTTP specification, it may require additional processing to route a HTTP MERGE request through non-OData aware servers.

Accessing and Changing Data Using REST Semantics

(<http://msdn.microsoft.com/en-us/library/dd728282.aspx>)

HTTP header fields

(http://en.wikipedia.org/wiki/List_of_HTTP_header_fields)

Accept Content-Types that are acceptable

Content-Type The mime type of the body of the request (used with POST and PUT requests)

A Guide to Designing and Building RESTful WebServices with WCF 3.5

(<http://msdn.microsoft.com/en-us/library/dd203052.aspx>)

Question: 76

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. You use Plain Old CLR objects (POCO) to model your entities. The application communicates with a Windows Communication Foundation (WCF) Data Services service. You need to ensure that entities can be sent to the service as XML. What should you do?

- A. Apply the virtual keyword to the entity properties
- B. Apply the [Serializable]
- C. Apply the [DataContract(IsReference = true)] attribute to the entities
- D. Apply the [DataContract(IsReference = false)] attribute to the entities

Answer: C

Explanation:

DataContractAttribute Specifies that the type defines or implements a data contract and is serializable by a serializer, such as the DataContractSerializer. To make their type serializable, type authors must define a data contract for their type.

IsReference Gets or sets a value that indicates whether to preserve object reference data.

Question: 77

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application uses the ADO.NET Entity Framework to model entities. You define a Category class by writing the following code segment. (Line numbers are included for reference only.)

```
01  public class Category
02  {
03      public int CategoryID { get; set; }
04      public string CategoryName { get; set; }
05      public string Description { get; set; }
06      public byte[] Picture { get; set; }
```

```
07  
08 }
```

You need to add a collection named Products to the Category class. You also need to ensure that the collection supports deferred loading. Which code segment should you insert at line 07?

- A. public static List <Product> Products { get; set; }
- B. public virtual List <Product> Products { get; set; }
- C. public abstract List <Product> Products { get; set; }
- D. protected List <Product> Products { get; set; }

Answer: B

Explanation:

One of the requirements for lazy loading proxy creation is that the navigation properties must be declared virtual (Overridable in Visual Basic).

If you want to disable lazy loading for only some navigation properties, then make those properties non-virtual.

Loading Related Objects (Entity Framework)

([http://msdn.microsoft.com/en-us/library/gg715120\(v=vs.103\).aspx](http://msdn.microsoft.com/en-us/library/gg715120(v=vs.103).aspx))

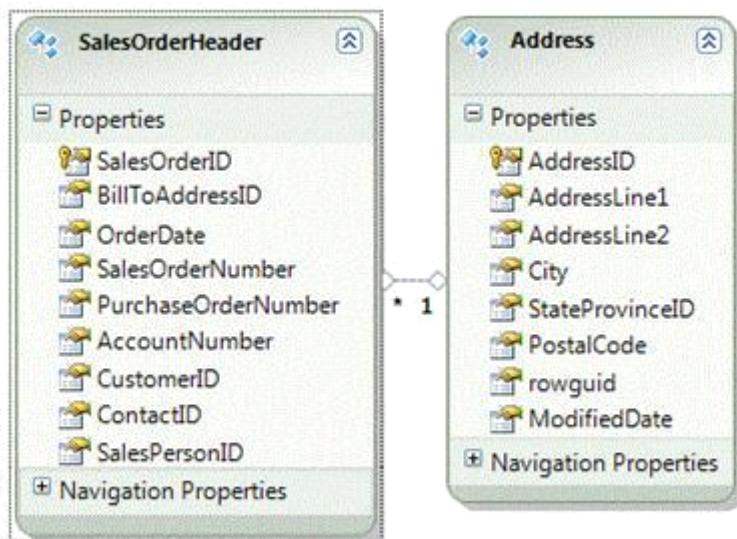
Question: 78

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server database. The Data Definition Language (DDL) script of the database contains the following code segment.

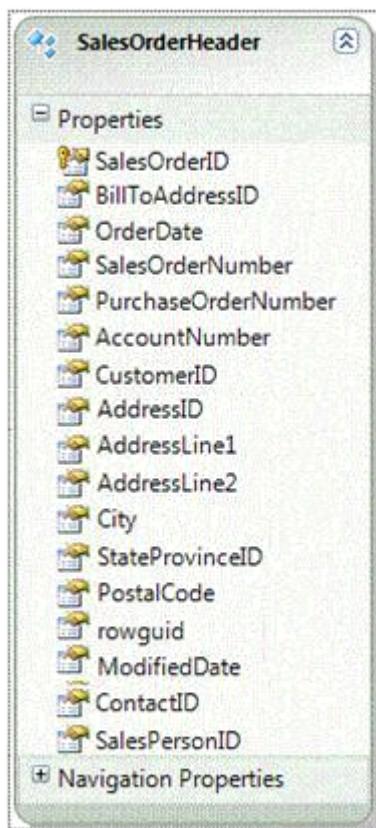
```
CREATE TABLE [Sales].[SalesOrderHeader](  
[SalesOrdedD] [int] IDENTITY(1,1)NOT NULL,  
(BillToAddressID][int] NOT NULL,  
...CONSTRAINT [PK_SalesOrderHeader_SalesOrder1D]  
PRIMARY KEY CLUSTERED ([SalesOrder1D]ASC)  
)ALTER TABLE [Sales].[SalesOrderHeader]  
WITH CHECK ADD CONSTRAINT [FK_SalesOrderHeader_Address]  
FOREIGN KEY{[BillToAddressID]}  
REFERENCES [Person] [Address](AddressID)]
```

You create an ADO.NET Entity Framework model. You need to ensure that the entities of the model correctly map to the DDL of the database. What should your model contain?

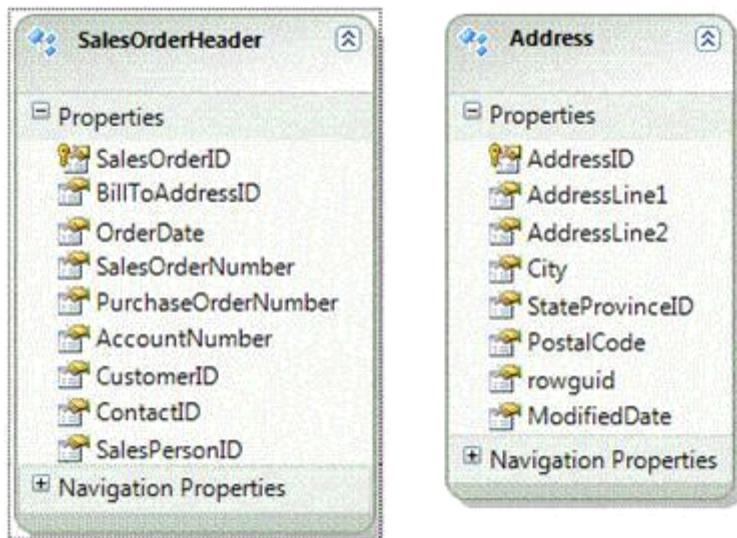
- A.



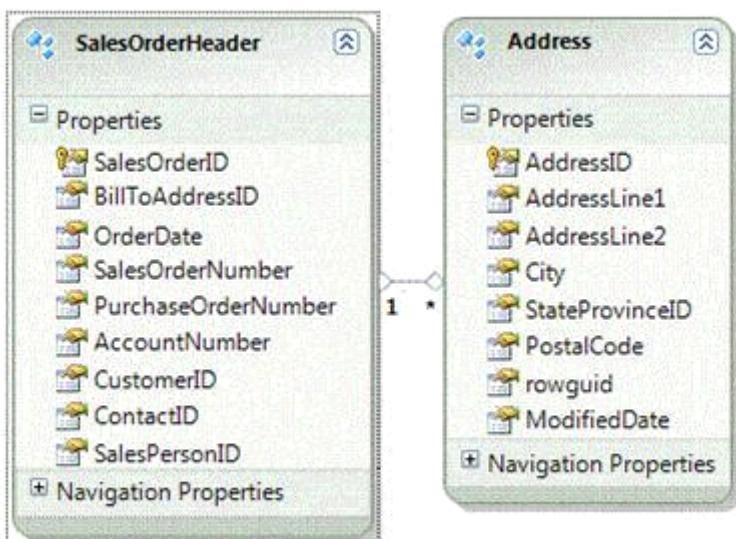
B.



C.



D.



- A. Exhibit A
- B. Exhibit B
- C. Exhibit C
- D. Exhibit D

Answer: A

Question: 79

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. You use the ADO.NET Entity Framework to model your entities. The application connects to a Microsoft SQL Server 2008 database named Adventure Works by using Windows Authentication. Information about the required Entity Data Model (EDM) is stored in the following files:

- model.csdl
- model.ssdl
- model.msi

These files are embedded as resources in the MyCompanyData.dll file. You need to define the connection string that is used by the application. Which connection string should you add to the app.config file?

A. <add name="AdventureWorksEntities"
connectionString="metadata=res://MyCompanry.Data,
Culture=neutral, PublicKeyToken=null/model.csdl|
res://MyCompany.Data,Culture=neutral, PublicKeyToken=null/model.ssdl| res:
//MyCompany.Data,Culture=neutral, PublicKeyToken
=null/model.msl;provider=System.Data.EntityClient.provider connection
string='DataSource=localhost;
Initial Catalog=AdventureWorks;Integrated Security=True;multipleactivesuitsets=true"
providerName="System.Data.SqlClient"/>
B. <add name="AdventureWorksEntities"
connectionString="metadata=res://MyCompanry.Data,Culture=neutral,PublicKeyToken=null/model.csdl|
res://MyCompany.Data,Culture=neutral, PublicKeyToken=null/model.ssdl|
res://MyCompany.Data,Culture=neutral, PublicKeyToken =null/model.msl;
provider=System.Data.EntityClient.provider connection string='DataSource=localhost;
Initial Catalog=AdventureWorks;Integrated Security=True;multipleactivesuitsets=true"
providerName="System.Data.EntityClient"/>
C. <add name="AdventureWorksEntities"
connectionString="metadata=res://MyCompanry.Datamodel.csdl|
res://MyCompany.Data.model.ssdl|
res://MyCompanry.Datamodel.msi;
provider=System.Data.SqlClient.provider connection string='DataSource=localhost;
Initial Catalog=AdventureWorks;Integrated Security=SSPI;multipleactivesuitsets=true"
providerName="System.Data.EntityClient"/>
D. <add name="AdventureWorksEntities"
connectionString="metadata=res://MyCompanry.Data,Culture=neutral,PublicKeyToken=
null/model.csdl|
res://MyCompanry.Data,Culture=neutral,PublicKeyToken=null/model.ssdl|
res://MyCompanry.Data,Culture=neutral,PublicKeyToken=null/model.msi;
provider=System.Data.OleDbClient.provider connection
string='Provider=sqloledb;DataSource=localhost;
Initial Catalog=AdventureWorks;Integrated Security=SSPI;multipleactivesuitsets=true"
providerName="System.Data.EntityClient"/>

Answer: B

Answering this question pay attention to fact that Entity Framework is used, so settings provider="System.Data.SqlClient" and providerName="System.Data.EntityClient" shold be set.

Connection Strings

(<http://msdn.microsoft.com/en-us/library/cc716756.aspx>)

Question: 80

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create a Wmdows Communication Foundation (WCF) Data Services service. The service connects to a Microsoft SQL Server 2008 database. The service is hosted by an internet Information Services (IIS) 6.0 server. You need to ensure that applications authenticate against user information stored in the database before the application is allowed to use the service. Which two actions should you perform? (Each correct answer presents part of the solution. Choose two.)

- A. Configure IIS to require basic authentication
- B. Configure IIS to allow anonymous access

- C. Configure IIS to require Windows authentication
- D. Enable the WCF Authentication Service
- E. Modify the Data Services service to use a Microsoft ASP.NET membership provider

Answer: B, E

Question: 81

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create a Windows Forms application. You plan to deploy the application to several shared client computers. You write the following code segment. (Line numbers are included for reference only.)

```
01Configuration config = ConfigurationManager.OpenExeConfiguration(exeConfigName);  
02  
03config.Save();  
04...
```

You need to encrypt the connection string stored in the .config file.

Which code segment should you insert at line 02?

- A. ConnectionStringsSection section = config.GetSection("connectionString") as ConnectionStringsSection;
section.SectionInformation.ProtectSection("DataProtectionConfigurationProvider");
- B. ConnectionStringsSection section = config.GetSection("connectionStrings") as ConnectionStringsSection;
section.SectionInformation.ProtectSection("DataProtectionConfigurationProvider");
- C. ConnectionStringsSection section = config.GetSection("connectionString") as ConnectionStringsSection;
section.SectionInformation.ProtectSection("RsaProtectedConfigurationProvider");
- D. ConnectionStringsSection section = config.GetSection("connectionStrings") as ConnectionStringsSection;
section.SectionInformation.ProtectSection("RsaProtectedConfigurationProvider");

Answer: D

Explanation:

You encrypt and decrypt the contents of a Web.config file by using System.Configuration .

DPAPIProtectedConfigurationProvider,

which uses the Windows Data Protection API (DPAPI) to encrypt and decrypt data, or System.Configuration.

RSAProtectedConfigurationProvider, which uses the RSA encryption algorithm to encrypt and decrypt data. When you use the same encrypted configuration file on many computers in a Web farm, only System.Configuration.RSAProtectedConfigurationProvider enables you to export the encryption keys that encrypt the data and import them on another server. This is the default setting.

CHAPTER 2 ADO.NET Connected Classes

Lesson 1: Connecting to the Data Store

Storing Encrypted Connection Strings in Web Applications (page 76)

Securing Connection Strings

([http://msdn.microsoft.com/en-us/library/89211k9b\(v=vs.80\).aspx](http://msdn.microsoft.com/en-us/library/89211k9b(v=vs.80).aspx))

Question: 82

You use Microsoft .NET Framework 4 to develop an application that uses LINQ to SQL. The Product entity in the LINQ to SQL model contains a field named ProductImage. The ProductImage field holds a large amount of binary data. You need to ensure that the ProductImage field is retrieved from the database only when it is needed by the application. What should you do?

- A. Set the Update Check property on the ProductImage property of the Product entity to Never.
- B. Set the Auto-Sync property on the ProductImage property of the Product entity to Never.
- C. Set the Delay Loaded property on the ProductImage property of the Product entity to True.
- D. When the context is initialized, specify that the ProductImage property should not be retrieved by using DataLoadOptions

Answer: C

Explanation:

Lazy loading is configured in the LINQ to SQL designer by selecting an entity and then, in the Properties window, setting the Delay Loaded property to true. The Delay Loaded property indicates that you want lazy loading of the column.

CHAPTER 4 LINQ to SQL

Lesson 1: What Is LINQ to SQL?

Eager Loading vs. Lazy Loading (page 254)

<http://geekswithblogs.net/AzamSharp/archive/2008/03/29/120847.aspx>

<http://weblogs.asp.net/scottgu/archive/2007/05/29/linq-to-sql-part-2-defining-our-data-model-classes.aspx>

Question: 83

You use Microsoft .NET Framework 4 to develop an application that uses Entity Framework. The application includes the following Entity SQL (ESQL) query.

```
SELECT VALUE product  
FROM AdventureHorksEntities.Products AS product  
ORDER BY product.ListPrice
```

You need to modify the query to support paging of the query results.

Which query should you use?

- A. SELECT TOP Stop VALUE product
FROM AdventureHorksEntities.Products AS product ORDER BY product.ListPrice SKIP @skip
- B. SELECT VALUE product
FROM AdventureHorksEntities.Products AS product ORDER BY product.ListPrice SKIP @skip LIMIT @limit
- C. SELECT SKIP @skip VALUE product
FROM AdventureHorksEntities.Products AS product ORDER BY product.ListPrice LIMIT @limit
- D. SELECT SKIP @skip TOP Stop VALUE product
FROM AdventureHorksEntities.Products AS product ORDER BY product.ListPrice

Answer: B

Explanation:

Entity SQL Reference

(<http://msdn.microsoft.com/en-us/library/bb387118.aspx>)

How to: Page Through Query Results

(<http://msdn.microsoft.com/en-us/library/bb738702.aspx>)

Question: 84

You use Microsoft .NET Framework 4 to develop an application that connects to two separate Microsoft SQL Server 2008 databases. The Customers database stores all the customer information, and the Orders database stores all the order information. The application includes the following code. (Line numbers are included for reference only.)

```
01 try
02 {
03     conn.Open();
04     tran = conn.BeginTransaction("Order");
05     SqlCommand cmd = new SqlCommand();
06     cmd.Connection = conn;
07     cmd.Transaction = tran;
08     tran.Save("save1");
09     cmd.CommandText = "INSERT INTO [Cust].dbo.Customer " +
"(Name, PhoneNumber) VALUES ('Paul Jones', '" + "404-555-1212')";
10    cmd.ExecuteNonQuery(); tran.Save("save2");
11    cmd.CommandText = "INSERT INTO [Orders].dbo.Order " +
"(CustomerID) VALUES (1234)";
12    cmd.ExecuteNonQuery();
13    cmd.ExecuteNonQuery();
14    tran.Save("save3");
15    cmd.CommandText = "INSERT INTO [Orders] .dbo." +
"OrderDetail (OrderID, ProductNumber) VALUES" + "(5678, 'DC-6721')";
16    cmd.ExecuteNonQuery();
17    tran.Commit();
18 }
19 catch (Exception ex)
20 {
21
22 }
```

You run the program, and a timeout expired error occurs at line 16. You need to ensure that the customer information is saved in the database. If an error occurs while the order is being saved, you must roll back all of the order information and save the customer information. Which line of code should you insert at line 21?

- A. tran.Rollback();
- B. tran.Rollback ("save2"); tran.Commit();
- C. tran.Rollback (); tran.Commit();
- D. tran.Rollback("save2");

Answer: B

Reference: <http://msdn.microsoft.com/en-us/library/system.data.sqlclient.sqltransaction.save.aspx>
<http://msdn.microsoft.com/en-us/library/4ws6y4dy.aspx>

Question: 85

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application. You use the Entity Framework Designer to create the following Entity Data Model.



The application contains a class as shown in the following code segment.

```
public class MyBaseClass : EntityObject
{
    ....
}
```

You need to ensure that all generated entities inherit from MyBaseClass.

What should you do?

- A. Change MyBaseClass to inherit from ObjectContext.
- B. Create a new ObjectQuery that uses MyBaseClass as the type parameter.
- C. Modify the generated code file so that all entities inherit from MyBaseClass.
- D. Use the ADO.NET EntityObject Generator template to configure all entities to inherit from MyBaseClass.

Answer: D

Explanation:

You can use the Text Template Transformation Toolkit (T4) to generate your entity classes, and Visual Studio .NET provides the T4 EntityObject Generator template by which you can control the entity object generation. Visual Studio .NET also provides the T4 SelfTracking Entity Generator template by which you can create and control the Add an EntityObject Generator to your project and add the new modification to the text template.self-tracking entity classes. Add an EntityObject Generator to your project and add the new modification to the text template.

CHAPTER 6 ADO.NET Entity Framework

Lesson 1: What Is the ADO.NET Entity Framework?

The EntityObject Generator (page 403-404)

<http://blogs.msdn.com/b/efdesign/archive/2009/01/22/customizing-entity-classes-with-t4.aspx>

Question: 86

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application that uses the Entity Framework. The application defines the following Entity Data Model.



Within the .edmx file, the following function is defined,

```
<Function Name="Round" ReturnType="Decimal">
<Parameter Name="val" Type="Decimal" />
<DefiningExpression>
CAST(val as Edm.Int32)
</DefiningExpression>
</Function>
```

The application includes the following LINQ query.

```
var query = from detail in context.SalesOrderDetails
select detail.LineTotal.Round();
```

You need to ensure that the Round function executes on the database server when the query is executed.

Which code segment should you use?

- A. public static class DecimalHelper


```
{
[EdmFunction("SqlServer", "Round")]
public static Decimal Round(this Decimal Amt)
{
throw new NotSupportedException();
}
}
```
- B. public static class DecimalHelper


```
{
[EdmFunction("Edm", "Round")]
public static Decimal Round(this Decimal Amt)
{
throw new NotSupportedException();
}
}
```
- C. public static class DecimalHelper


```
{
public static SqlDecimal Round(this Decimal input) <
return SqlDecimal.Round(input, 0);
}
}
```
- D. public static class DecimalHelper


```
{
public static Decimal Round(this Decimal input)
```

```
{  
    return (Decimal)(Int32)input;  
}  
}
```

Answer: B

Explanation:

EdmFunctionAttribute Class

(<http://msdn.microsoft.com/en-us/library/system.data.objects.dataclasses.edmfunctionattribute.aspx>)

How to: Call Model-Defined Functions in Queries

(<http://msdn.microsoft.com/en-us/library/dd456857.aspx>)

The model-defined function has been created in the conceptual model, but you still need a way to connect your code to it.

To do so, add a function into your C# code, which will have to be annotated with the EdmFunctionAttribute attribute. This function can be another instance method of the class itself, but best practice is to create a separate class and define this method as static.

Question: 87

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application. You use the Entity Framework Designer to create an Entity Data Model (EDM). You need to create a database creation script for the EDM. What should you do?

- A. Use a new Self-Tracking Entities template.
- B. Drag entities to Server Explorer.
- C. Run the Generate Database command.
- D. Select Run Custom Tool from the solution menu.

Answer: C

Explanation:

You can generate the database from the conceptual model: Right-click the Entity Framework designer surface and then choose Generate Database From Model.

The script has been created and saved to a file, but it has not been executed.

Model First

(<http://blogs.msdn.com/b/efdesign/archive/2008/09/10/model-first.aspx>)

Question: 88

You use Microsoft .NET Framework 4 to develop an application. You use the XmlReader class to load XML from a location that you do not control. You need to ensure that loading the XML will not load external resources that are referenced in the XML. Which code segment should you use?

- A. XmlReaderSettings settings = new XmlReaderSettings();
settings.ValidationType = ValidationType.None;
XmlReader reader = XmlReader.Create("data.xml", settings);
- B. XmlReaderSettings settings = new XmlReaderSettings();
settings.CheckCharacters = true;
XmlReader reader = XmlReader.Create("data.xml", settings);

```
C. XmlReaderSettings settings = new XmlReaderSettings();
settings.XmlResolver = null;
XmlReader reader = XmlReader.Create("data.xml", settings);
D. XmlReaderSettings settings = new XmlReaderSettings();
settings.ConformanceLevel = ConformanceLevel.Auto;
XmlReader reader = XmlReader.Create("data.xml", settings);
```

Answer: C

Explanation:

CheckCharacters Gets or sets a value indicating whether to do character checking.

ConformanceLevel Gets or sets the level of conformance which the XmlReader will comply.

ValidationType Gets or sets a value indicating whether the XmlReader will perform validation or type assignment when reading.

XmlResolver Sets the XmlResolver used to access external documents.

XmlReaderSettings Class

(<http://msdn.microsoft.com/en-us/library/system.xml.xmlreadersettings.aspx>)

<http://stackoverflow.com/questions/215854/prevent-dtd-download-when-parsing-xml>

<http://msdn.microsoft.com/en-us/library/x1h1125x.aspx>

Question: 89

You use Microsoft .NET Framework 4 to develop an application that connects to a Microsoft SQL Server 2008 database. You add the following table to the database.

```
CREATE TABLE Orders(
ID numeric(18, 0) NOT NULL,
OrderName varchar(50) NULL,
OrderTime time(7) NULL,
OrderDate date NULL)
```

You write the following code to retrieve data from the OrderTime column. (Line numbers are included for reference only.)

```
01 SqlConnection conn = new SqlConnection (...);
02 conn.Open();
03 SqlCommand cmd = new SqlCommand(
"SELECT ID, OrderTime FROM Orders", conn);
04 SqlDataReader rdr = cmd.ExecuteReader(); 05
06 while(rdr.Read())
07 {08
09 }
```

You need to retrieve the OrderTime data from the database.

Which code segment should you insert at line 08?

- A. TimeSpan time = (TimeSpan)rdr[1];
- B. Timer time = (Timer)rdr[1];
- C. string time = (string)rdr[1];
- D. DateTime time = (DateTime)rdr[1];

Answer: A

Explanation:

Pay attention to the fact that it goes about Microsoft SQL Server 2008 in the question.

Types date and time are not supported in Microsoft SQL Server Express.

time (Transact SQL)

(<http://msdn.microsoft.com/en-us/library/bb677243.aspx>)

Using date and time data

(<http://msdn.microsoft.com/en-us/library/ms180878.aspx>)

date and time functions

(<http://msdn.microsoft.com/en-us/library/ms186724.aspx>)

SQL Server Data Type Mappings (ADO.NET)

(<http://msdn.microsoft.com/en-us/library/cc716729.aspx>)

Question: 90

You use Microsoft .NET Framework 4 to develop an application. You write the following code to update data in a Microsoft SQL Server 2008 database. (Line numbers are included for reference only.)

```
01  private void ExecuteUpdate (SqlCoiranand cmd,  
string connString, string updateStrnt)  
02  {  
03  
04  }
```

You need to ensure that the update statement executes and that the application avoids connection leaks.

Which code segment should you insert at line 03?

- A. SqlConnection conn = new SqlConnection(connString) ;
conn. Open ();
cmd.Connection = conn;
cmd.CommandText = updateStmt;
cmd.ExecuteNonQuery();
cmd.Connection.Close() ;
- B. using (SqlConnection conn = new SqlConnection(connString))
{
cmd.Connection = conn;
cmd.CommandText = updateStmt;
cmd.ExecuteNonQuery();
cmd.Connection.Close();
}
- C. using (SqlConnection conn = new SqlConnection(connString))
{
conn.Open() ;
cmd.Connection = conn;
cmd.CommandText = updateStmt;
cmd.ExecuteNonQuery() ;
}
- D. SqlConnection conn = new SqlConnection(connString);
conn. Open ();
cmd.Connection = conn;
cmd.CommandText = updateStmt;
cmd.ExecuteNonQuery();

Answer: C

Explanation:

Reference:

<http://stackoverflow.com/questions/376068/does-end-using-close-an-open-sql-connection>

<http://www.w3enterprises.com/articles/using.aspx>

<http://msdn.microsoft.com/en-us/library/system.data.sqlclient.sqlconnection.aspx>

Question: 91

You use Microsoft .NET Framework 4 to develop an application that connects to a Microsoft SQL Server 2008 database. You need to ensure that the application connects to the database server by using SQL Server authentication. Which connection string should you use?

- A. SERVER=MyServer; DATABASE=AdventureWorks; Integrated Security=SSPI; UID=sa; PWD=secret
- B. SERVER-MyServer; DATABASE-AdventureWorks; UID=sa; PWD=secret
- C. SERVER-HyServer; DATABASE-AdventureUocks; Integrated Security=false
- D. SERVER-HyServer; DATABASE-AdventureWorks; Trusted Connection=true

Answer: B

Explanation:

SQL Server authentication using the passed-in user name and password. User ID, Uid, User, Password, Pwd

Connection String Syntax (ADO.NET)

(<http://msdn.microsoft.com/en-us/library/ms254500.aspx>)

Question: 92

You use Microsoft .NET Framework 4 to develop an application that connects to a Microsoft SQL Server 2008 database. You add the following stored procedure to the database.

```
CREATE PROCEDURE dbo.GetClassAndStudents
AS
BEGIN
SELECT * FROM dbo.Class
SELECT * FROM dbo.Student END
```

You create a SqlConnection named conn that connects to the database. You need to fill a DataSet from the result that is returned by the stored procedure. The first result set must be added to a DataTable named Class, and the second result set must be added to a DataTable named Student. Which code segment should you use?

- A. DataSet ds = new DataSet();
SqlDataAdapter ad = new SqlDataAdapter
("GetClassAndStudents", conn);
ds.Tobies.Add("Class");
ds.Tables.Add("Student");
ad.Fill(ds);
- B. DataSet ds = new DataSet();
SqlDataAdapter ad = new SqlDataAdapter
("GetClassAndStudents", conn);
ad.TableMappings.Add("Table", "Class");
ad.TableMappings.Add("Table1", "Student") ;
ad.Fill(ds) ;
- C. DataSet ds = new DataSet();

```
SqlDataAdapter ad = new SqlDataAdapter  
("GetClassAndStudents", conn);  
ad.MissingMappingAction = MissingMapplingAction.Ignore;  
ad.Fill(ds, "Class");  
ad.Fill(ds, "Student");  
D. DataSet ds = new DataSet();  
SqlDataAdapter ad = new SqlDataAdapter  
("GetClassAndStudents", conn);  
ad.Fill(ds);
```

Answer: B

Explanation:

Reference:

<http://msdn.microsoft.com/en-us/library/ms810286.aspx>
<http://msdn.microsoft.com/en-us/library/ms810286.aspx>

Question: 93

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application. You use the ADO.NET Entity Framework Designer to model entities. The model contains an entity type named Product. You need to ensure that a stored procedure will be invoked when the ObjectContext.SaveChanges method is executed after an attached Product has changed. What should you do in the ADO.NET Entity Framework Designer?

- A. Add a new entity that has a base class of Product that is mapped to the stored procedure.
- B. Add a stored procedure mapping for the Product entity type.
- C. Add a complex type named Product that is mapped to the stored procedure.
- D. Add a function import for the Product entity type.

Answer: B

Explanation:

The ObjectContext class exposes a SaveChanges method that triggers updates to the underlying database.

By default, these updates use SQL statements that are automatically generated, but the updates can use stored procedures that you specify.

The good news is that the application code you use to create, update, and delete entities is the same whether or not you use stored procedures to update the database.

To map stored procedures to entities, in the Entity Framework designer, right-click the entity and choose Stored Procedure Mapping.

In the Mapping Details window assign a stored procedure for insert, update, and delete.

CHAPTER 6 ADO.NET Entity Framework

Lesson 1: What Is the ADO.NET Entity Framework?

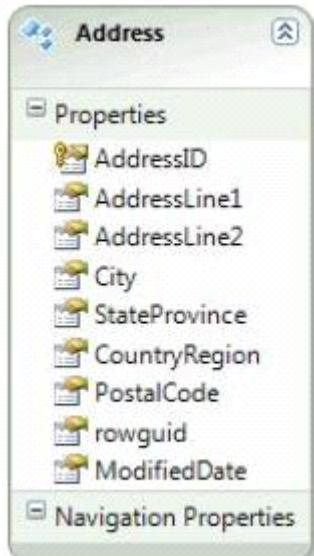
Mapping Stored Procedures(page 387-388)

Stored Procedures in the Entity Framework

(<http://msdn.microsoft.com/en-us/data/gg699321>)

Question: 94

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application. You use the Entity Framework Designer to create the following Entity Data Model.



You write a method named ValidatePostalCode to validate the postal code for the application.

You need to ensure that the ValidatePostalCode method is called before the PostalCode property set method is completed and before the underlying value has changed. Which code segment should you place in the entity's partial class?

- A. partial void OnPostalCodeChanged(string value)


```
{
        PostalCode - GetValidValue<string>
        (value, "ValidatePostalCode", false, true);
      }
```
- B. public string ValidatedPostalCode


```
{
        set ( ValidatePostalCode(value); _PostalCode = value;
      }
      get
      {
        return _PostalCode;
      }
```
- C. partial void OnPostalCodeChanging(string value)


```
{
        ValidatePostalCode(value);
      }
```
- D. public string ValidatedPostalCode


```
{
        set
        {
          _PostalCode = StructuralObject.SetValidValue ("ValidatePostalCode", false);
        }
        get
        {
          return _PostalCode;
        }
      }
```

Answer: C

Explanation:

Another area of extensibility is with the partial methods created on each entity type. There is a pair of partial methods called OnXxxChanging and OnXxxChanged for each property, in which Xxx is the name of the property. The OnXxxChanging method executes before the property has changed, and the OnXxxChanged method executes after the property has changed. To implement any of the partial methods, create a partial class and add the appropriate partial method with implementation code.

CHAPTER 6 ADO.NET Entity Framework

Lesson 1: What Is the ADO.NET Entity Framework?

Partial Classes and Methods(page 390)

How to: Execute Business Logic During Scalar Property Changes

(<http://msdn.microsoft.com/en-us/library/cc716747.aspx>)

Question: 95

You use Microsoft .NET Framework 4 to develop an application that uses the Entity Framework. The application defines the following Entity SQL (ESQL) query, which must be executed against the mode.

string prodQuery = "select value p from Products as

 p where p.ProductCategory.Name = @p0";

You need to execute the query.

Which code segment should you use?

- A. var prods = ctx.CreateQuery<Product>(prodQuery,
new ObjectParameter("p0", "Road Bikes")).ToList();
- B. var prods = ctx.ExecuteStoreCommand(prodQuery,
new ObjectParameter("p0", "Road Bikes")).ToList();
- C. var prods = ctx.ExecuteFunction<Product>(prodQuery,
new ObjectParameter("p0", "Road Bikes")).ToList();
- D. var prods = ctx.ExecuteStoreQuery<Product>(prodQuery,
new ObjectParameter("p0", "Road Bikes")).ToList();

Answer: A

Explanation:

CreateQuery<T> - Creates an ObjectQuery<T> in the current object context by using the specified query string.

ExecuteStoreCommand - Executes an arbitrary command directly against the data source using the existing connection.

ExecuteFunction(String, ObjectParameter[]) - Executes a stored procedure or function that is defined in the data source and expressed in the conceptual model; discards any results returned from the function; and returns the number of rows affected by the execution.

ExecuteStoreQuery<TElement>(String, Object[]) - Executes a query directly against the data source that returns a sequence of typed results.

ObjectContext.CreateQuery<T> Method

(<http://msdn.microsoft.com/en-us/library/bb339670.aspx>)

Question: 96

You use Microsoft .NET Framework 4 to develop an application that connects to a Microsoft SQL Server 2008 database. The application uses nested transaction scopes. An inner transaction scope contains code that inserts records into the database. You need to ensure that the inner transaction can successfully commit even if the outer

transaction rolls back. What are two possible TransactionScope constructors that you can use for the inner transaction to achieve this goal? (Each correct answer presents a complete solution. Choose two.)

- A. TransactionScope(TransactionScopeOption.Required)
- B. TransactionScope ()
- C. TransactionScope(TransactionScopeOption.RequiresNew)
- D. TransactionScope (TransactionScopeOption.Suppress)

Answer: C, D

Required - A transaction is required by the scope. It uses an ambient transaction if one already exists.

Otherwise, it creates a new transaction before entering the scope. This is the default value.

RequiresNew - A new transaction is always created for the scope.

Suppress - The ambient transaction context is suppressed when creating the scope.

All operations within the scope are done without an ambient transaction context.

TransactionScopeOption Numeration

(<http://msdn.microsoft.com/en-us/library/system.transactions.transactionscopeoption.aspx>)

Question: 97

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application that uses the Entity Framework. Entity types in the model are generated by the Entity Data Model generator tool (EdmGen.exe).

You write the following code. (Line numbers are included for reference only.)

```
01  MemoryStream stream = new MemoryStream();  
02  var query = context.Contacts.Include(  
"SalesOrderHeaders.SalesOrderDetails");  
03  var contact = query.Where("it.LostName = Glostname",  
new ObjectParameter("lastname", lastName)).First();  
04
```

You need to serialize the contact and all of its related objects to the MemoryStream so that the contact can be deserialized back into the model. Which code segment should you insert at line 04?

- A. var formatter = new XmlSerializer(typeof(Contact), new Type[] {
typeof(SalesOrderHeader),
typeof(SalesOrderDetail)
});
formatter.Serialize(stream contact);
- B. var formatter = new XmlSerializer(typeof(Contact));
formatter.Serialize(stream, contact);
- C. var formatter = new BinaryFormatter();
formatter.Serialize(stream, contact);
- D. var formatter = new SoapFormatter();
formatter.Serialize(stream, contact);

Answer: A

Explanation:

public XmlSerializer(Type type, Type[] extraTypes)

Initializes a new instance of the System.Xml.Serialization.XmlSerializer class that can serialize objects of the specified type into XML documents,

and deserialize XML documents into object of a specified type. If a property or field returns an array, the extraTypes parameter specifies objects that can be inserted into the array.

type:

The type of the object that this System.Xml.Serialization.XmlSerializer can serialize.extraTypes:

A System.Type array of additional object types to serialize.

XmlSerializer Constructor (Type, Type[])

(<http://msdn.microsoft.com/en-us/library/e5aakyae.aspx>)

Question: 98

You use Microsoft Visual Studio 2010 to create a Microsoft .NET Framework 4 application. You create an Entity Data Model for the database tables shown in the following diagram.



You need to modify the .edmx file so that a many-to-many association can exist between the Address and Customer entities. Which storage Model section of the .edmx file should you include?

- A. <EntityType Name="CustomerAddress">
<Key>
<PropertyRef Name="CustomerAddressID" />
<PropertyRef Name="CustomerID" />
<PropertyRef Name="AddressID" />
</Key>
<Property Name="CustomerAddressID" Type="int" Nullable="false" StoreGeneratedPattern="Identity" />
<Property Name="CustomerID" Type="int" Nullable="false"/>
<Property Name="AddressID" Type="int" Nullable="false"/>
<Property Name="AddressType" Type="nvarchar" Nullable="false" MaxLength="50"/>
</EntityType>
- B. <EntityType Name="CustomerAddress">
<Key>
<PropertyRef Name="CustomerID" />
<PropertyRef Name="AddressID" />
</Key>
<Property Name="CustomerID" Type="int" Nullable="false" />
<Property Name="AddressID" Type="int" Nullable="false" />
<Property Name="AddressType" Type="nvarchar" Nullable="false" MaxLength="50" DefaultValue="Home" />
</EntityType>
- C. <EntityType Name="CustomerAddress">
<Key>

```
<PropertyRef Name="CustomerAddressID" />
</Key>
<Property Name="CustomerAddressID" Type="int" Nullable="false" StoreGeneratedPattern="Identity" />
<Property Name="CustomerID" Type="int" Nullable="false"/>
<Property Name="AddressID" Type="int" Nullable="false" />
<Property Name="AddressType" Type="nvarchar" Nullable="false" MaxLength="50"/>
</EntityType>
D. <EntityType Name="CustomerAddress">
<Key>
<PropertyRef Name="CustomerID" />
<PropertyRef Name="AddressID" />
</Key>
<Property Name="CustomerID" Type="int" Nullable="false"/>
<Property Name="AddressID" Type="int" Nullable="false"/>
<Property Name="AddressType" Type="nvarchar" Nullable="false" MaxLength="50" />
</EntityType>
```

Answer: D

Question: 99

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application. You use the ADO.NET Entity Framework Designer to model entities. You need to ensure that the entities are self-tracking. What should you do in the ADO.NET Entity Framework Designer?

- A. Change the Code Generation Strategy option from Default to None.
- B. Change the Transform Related Text Templates On Save option to False.
- C. Add an ADO.NET Self-Tracking Entity Generator to the model.
- D. Add an ADO.NET EntityObject Generator to the model.

Answer: C

Explanation:

The ADO.NET Self-Tracking Entity Generator text template generates the object-layer code that consists of a custom typed ObjectContext and entity classes that contain self-tracking state logic so that the entities themselves keep track of their state instead of ObjectContext doing so. Probably the best usage of self-tracking entities is when working with N-tier applications.

CHAPTER 6 ADO.NET Entity Framework

Lesson 1: What Is the ADO.NET Entity Framework?

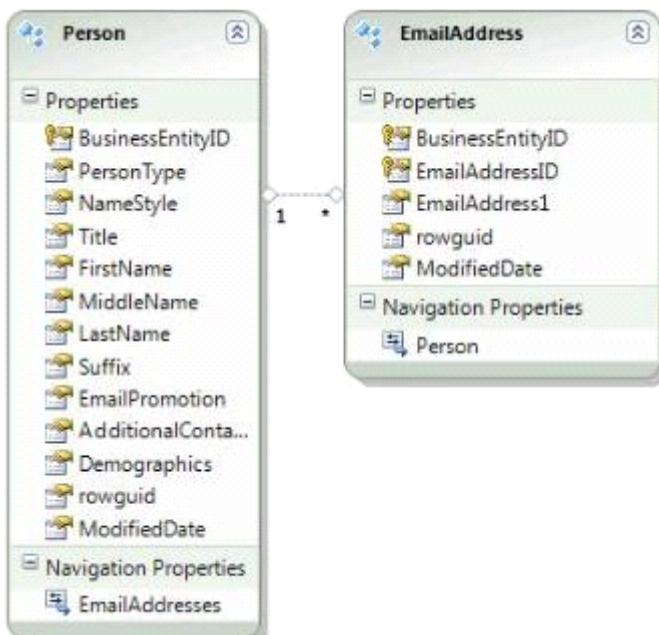
The Self-Tracking Entity Generator (page 405)

ADO.NET Self-Tracking Entity Generator Template

(<http://msdn.microsoft.com/en-us/library/ff477604.aspx>)

Question: 100

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application that uses the ADO.NET Entity Framework to model entities. You create an entity model as shown in the following diagram.



You need to ensure that all Person entities and their associated EmailAddresses are loaded. Which code segment should you use?

- A. var people = context.People.Include("EmailAddresses").ToList();
- B. var people = context.People.Except(new ObjectQuery<Person>("Person.EmailAddresses", context)).ToList();
- C. var people = context.People.Except(new ObjectQuery<Person>("EmailAddresses", context)).ToList();
- D. var people = context.People.Include("Person.EmailAddresses").ToList();

Answer: A

Explanation:

CHAPTER 6 ADO.NET Entity Framework

Lesson 1: What Is the ADO.NET Entity Framework?

Lazy Loading vs. Explicit Loading vs. Eager Loading (page 384)

<http://msdn.microsoft.com/en-us/library/bb896272.aspx>

Question: 101

You use Microsoft .NET Framework 4 to develop an application that connects to a local Microsoft SQL Server 2008 database. The application can access a high-resolution timer. You need to display the elapsed time, in sub-milliseconds (<1 millisecond), that a database query takes to execute. Which code segment should you use?

- A. int Start = Environment.TickCount;
command.ExecuteNonQuery();
int Elapsed = (Environment.TickCount) - Start;
Console.WriteLine("Time Elapsed: {0:N3} ms", Elapsed);
- B. Stopwatch sw = Stopwatch.StartNew();
command.ExecuteNonQuery();
sw.Stop();

```
Console.WriteLine("Time Elapsed: {0:N3} ms",
sw.Elapsed.TotalHilliseconds);
C. DateTime Start = DateTime.UtcNow;
command.ExecuteNonQuery();
TimeSpan Elapsed = DateTime.UtcNow - Start;
Console.WriteLine("Time Elapsed: {0:N3} ms",
Elapsed.Milliseconds);
D. Stopwatch sw = new Stopwatch();
sw.Start();
command.ExecuteNonQuery();
sw.Stop();
Console.WriteLine ("Time Elapsed: {0:N3} ms", sw.ElapsedHilliseconds);
```

Answer: D

Explanation:

Reference:

<http://msdn.microsoft.com/en-us/library/system.diagnostics.stopwatch.aspx>

Question: 102

You are developing an ADO.NET 4 application that interacts with a Microsoft SQL Server 2008 server through the SQL Server Native Client. You create a trace DLL registry entry and you register all of the trace schemas. You need to trace the application data access layer. Which control GUID file should you use?

- A. ctrl.guid.snac10
- B. ctrl.guid.mdac
- C. ctrl.guid.adonet
- D. ctrl.guid.msdadiag

Answer: A

Explanation:

ctrl.guid.adonet - ADO.NET only

ctrl.guid.msdadiag - MSDADIAG only

ctrl.guid.snac10 - SQL Server Native Client Providers only (SQL Server 2008)

ctrl.guid.mdac - Windows Data Access Components (formerly Microsoft Data Access Components) on Windows 7 only
Data Access Tracing in SQL Server 2008

(<http://msdn.microsoft.com/en-us/library/cc765421.aspx>)

Question: 103

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application. You use the ADO.NET Entity Framework Designer to model entities. You need to associate a previously deserialized entity named personl to an object context named model and persist changes to the database. Which code segment should you use?

- A. personl.AcceptChanges();
model1.SaveChanges();
- B. model.People.ApplyChanges(personl);
model1.SaveChanges();

C. model.AttachTo("People", personl);
 model.SaveChanges();
 D. model.People.Attach(personl);
 model.SaveChanges();

Answer: C

Explanation:

Considerations from Attaching and Detaching objects
[\(<http://msdn.microsoft.com/en-us/library/bb896271.aspx>\)](http://msdn.microsoft.com/en-us/library/bb896271.aspx):

The object that is passed to the Attach method must have a valid EntityKey value. If the object does not have a valid EntityKey value, use the AttachTo method to specify the name of the entity set.

- **Attach** Use the Attach method of ObjectContext where the method accepts a single typed entity parameter.
- **AttachTo** The AttachTo method of ObjectContext accepts two parameters. The first parameter is a string containing the name of the entity set.

The second parameter's type is object and references the entity you want to add.

- **Attach** The Attach method of ObjectSet, which is the entity set's type, accepts a single typed parameter containing the entity to be added to the ObjectSet.

CHAPTER 6 ADO.NET Entity Framework

Lesson 2: Querying and Updating with the Entity Framework

Attaching Entities to an ObjectContext(page 437)

Attaching and Detaching objects

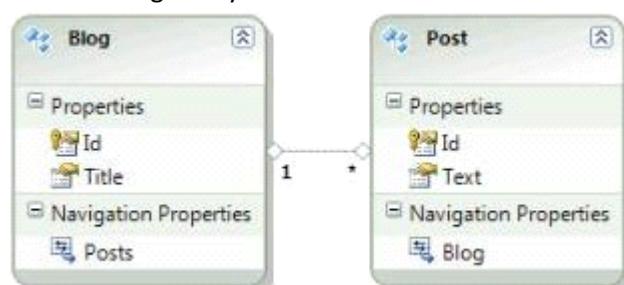
[\(<http://msdn.microsoft.com/en-us/library/bb896271.aspx>\)](http://msdn.microsoft.com/en-us/library/bb896271.aspx)

[\(\[http://msdn.microsoft.com/en-us/library/bb896248\\(v=vs.90\\).aspx\]\(http://msdn.microsoft.com/en-us/library/bb896248\(v=vs.90\).aspx\)\)](http://msdn.microsoft.com/en-us/library/bb896248(v=vs.90).aspx)

[\(<http://msdn.microsoft.com/en-us/library/bb896248.aspx>\)](http://msdn.microsoft.com/en-us/library/bb896248.aspx)

Question: 104

You use Microsoft .NET Framework 4 to develop an application that uses WCF Data Services to persist entities from the following Entity Data Model.



You create a new Blog instance named newBlog and a new Post instance named newPost as shown in the following code segment. (Line numbers are included for reference only.)

```

01 Blog newBlog = new Blog();
02 Post newPost = new Post();
03 -
04 Uri serviceUri = new Uri ("... ");
05 BlogsEntities context = new BlogsEntities(serviceUri);
06
  
```

You need to ensure that newPost is related to newBlog through the Posts collection property and that newPost and newBlog are sent to the service. Which code segment should you insert at line 06?

A. context.AttachLink(newBlog, "Posts", newPost); context.SaveChanges(SaveChangesOptions.Batch);

B. newBlog.Posts.Add(newPost);
 context.AddToBlogs(newBlog);
 context.AddToPosts(newPost);
 context.SaveChanges(SaveChangesOptions.Batch);
 C. newBlog.Posts.Add(newPost);
 context.AttachTo("Blogs", newBlog);
 context.AttachTo("Posts", newPost);
 context.SaveChanges(SaveChangesOptions.Batch);
 D. newBlog.Posts.Add(newPost);
 context.UpdateObject(newBlog);
 context.UpdateObject(newPost);
 context.SaveChanges(SaveChangesOptions.Batch);

Answer: C

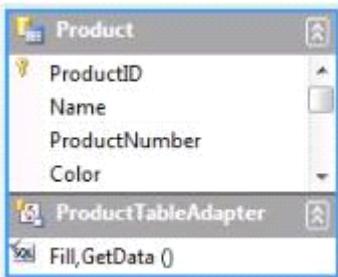
Explanation:

Attaching and Detaching objects

(<http://msdn.microsoft.com/en-us/library/bb896271.aspx>)

Question: 105

You use Microsoft .NET Framework 4 to develop an application that connects to a Microsoft SQL Server 2008 database. The application includes a table adapter named taStore, which has the following DataTable.



There is a row in the database that has a ProductID of 680. You need to change the Name column in the row to "New Product Name". Which code segment should you use?

- A. var dt = new taStore.ProductDataTable();
 var ta = new taStoreTableAdapters.ProductTableAdapter();
 ta.Fill(dt);
 taStore.ProductRow row = (taStore.ProductRow)dt.Rows.Find(680);
 row.Name = "New Product Name";
 ta.Update(row);
 B. var ta = new taStoreTableAdapters.ProductTableAdapter();
 var dt = ta.GetData();
 var row = dt.Select("680");
 row[0]["Name"] = "New Product Name";
 ta.Update(row);
 C. var dt = new taStore.ProductDataTable();
 var ta = new taStoreTableAdapters.ProductTableAdapter();
 ta.Fill(dt);
 var dv = new DataView();
 dv.RowFilter = "680";

```
dv[0]["Name"] = "New Product Name";
ta.Update(dt);
D. var dt = new taStore.ProductDataTable();
var row = dt.NewProductRow();
row.ProductID = 680;
row.Name =
"New Product Name";
dt.Rows.Add(row);
```

Answer: A

Explanation:

DataRowCollection.Find() Method To use the Find method, the DataTable object to which the DataRowCollection object belongs to must have at least one column designated as a primary key column. See the PrimaryKey property for details on creating a PrimaryKey column, or an array of DataColumn objects when the table has more than one primary key.

```
var dt = new CustomersDS.CustomersDataTable();
var ta = new CustomersDSTableAdapters.CustomersTableAdapter();
ta.Fill(dt);
CustomersDS.CustomersRow row = (CustomersDS.CustomersRow)dt.Rows.Find(4);
row.Name = "A. Found Customer Id";
ta.Update(row);
```

DataTable.Select() Method Gets an array of all DataRow objects that match the filter criteria. To create the filterExpression argument, use the same rules that apply to the DataColumn class's Expression property value for creating filters.

```
var ta = new CustomersDSTableAdapters.CustomersTableAdapter();
var dt = ta.GetData();
var row = dt.Select("CustomerID > 2");
row[0]["Name"] = "B. Found Customer Id";
ta.Update(row);
```

TableAdapter Overview

([http://msdn.microsoft.com/en-us/library/bz9tthwx\(v=vs.80\).aspx](http://msdn.microsoft.com/en-us/library/bz9tthwx(v=vs.80).aspx))

Question: 106

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to several SQL Server databases. You create a function that modifies customer records that are stored in multiple databases. All updates for a given record are performed in a single transaction. You need to ensure that all transactions can be recovered. What should you do?

- A. Call the RecoveryComplete method of the TransactionManager class.
- B. Call the EnlistDurable method of the Transaction class.
- C. Call the Reenlist method of the TransactionManager class.
- D. Call the EnlistVolatile method of the Transaction class.

Answer: B

Explanation:

Volatile resource managers cannot recover from failure to complete a transaction in which they were participating.

To obtain a durable enlistment in a transaction, use the EnlistDurable method. For more information on volatile and durable resources, as well as how to enlist a resource, see Implementing A Resource Manager. For more information on how a resource manager responds to commit notification and prepare the commit, see Committing A Transaction In Single-Phase and Multi-Phase.

<http://msdn.microsoft.com/en-us/library/ms149779.aspx>

Question: 107

You use Microsoft .NET Framework 4 to develop an application that exposes a WCF Data Services endpoint. The endpoint uses an authentication scheme that requires an HTTP request that has the following header format.

GET /OData.svc/Products(1)
Authorization: WRAP access_token "123456789"

You add the following method to your DataService implementation.

```
protected override void OnStartProcessingRequest  
(ProcessRequestArgs args)  
{  
    • • •  
}
```

You need to ensure that the method retrieves the authentication token. Which line of code should you use?

- A. string token = args.OperationContext.RequestHeaders["Authorization"];
- B. string token = args.OperationContext.RequestHeaders["WRAP access token"];
- C. string token = args.OperationContext.ResponseHeaders["Authorization"] ;
- D. string token = args.OperationContext.ResponseHeaders["WRAP access token"];

Answer: A

Explanation:

OData and Authentication – OAuth WRAP

<http://blogs.msdn.com/b/astoriateam/archive/2010/08/19/odata-and-authentication-part-8-oauth-wrap.aspx>

Question: 108

You are developing a WCF data service that will expose an existing Entity Data Model (EDM). You have the following requirements:

- Users must be able to read all entities that are exposed in the EDM.
- Users must be able to update or replace the SalesOrderHeader entities.
- Users must be prevented from inserting or deleting the SalesOrderHeader entities

You need to ensure that the data service meets the requirements.

Which code segment should you use in the Initialize method?

- A. config.SetEntitySetAccessRule("*", EntitySetRights.AllRead);
config.SetEntitySetAccessRule ("SalesOrderHeader",
EntitySetRights.AllWrite);
- B. config.SetEntitySetAccessRule("*", EntitySetRights.AllRead);
config.SetEntitySetAccessRule ("SalesOrderHeader", EntitySetRights.WriteMerge |
EntitySetRights.WriteReplace);
- C. config.SetEntitySetAccessRule("*", EntitySetRights.AllRead);
config.SetEntitySetAccessRule ("SalesOrderHeader", EntitySetRights.WriteAppend |
EntitySetRights.WriteDelete);

```
D. config.SetEntitySetAccessRule("*", EntitySetRights.AllRead);
config.SetEntitySetAccessRule ("SalesOrderHeader",
EntitySetRights.All);
```

Answer: B

<http://msdn.microsoft.com/en-us/library/system.data.services.entitysetrights.aspx>
<http://msdn.microsoft.com/en-us/library/ee358710.aspx>

Question: 109

You use Microsoft .NET Framework 4 to develop an application that uses LINQ to SQL. The LINQ to SQL model contains the Product entity. A stored procedure named GetActiveProducts performs a query that returns the set of active products from the database. You need to invoke the stored procedure to return the active products, and you must ensure that the LINQ to SQL context can track changes to these entities. What should you do?

- A. Select the Product entity, view the entity's property window, and change the Name for the entity to GetActiveProducts.
- B. Add a property named GetActiveProducts to the Product entity.
- C. Navigate to the GetActiveProducts stored procedure in Server Explorer, and drag the procedure onto the Product entity in the LINQ to SQL model designer surface.
- D. Select the Product entity, view the entity's property window, and change the Source for the entity to GetActiveProducts.

Answer: C

Explanation:

Reference:

<http://weblogs.asp.net/scottgu/archive/2007/08/16/linq-to-sql-part-6-retrieving-data-using-stored-procedures.aspx>

Question: 110

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application. You use the ADO.NET Entity Framework Designer to model entities. You retrieve an entity from an object context. A different application updates the database. You need to update the entity instance to reflect updated values in the database. Which line of code should you use?

- A. context.Refresh(RefreshMode.StoreWins, entity);
- B. context.LoadProperty(entity, "Client",
MergeOption.OverwriteChanges);
- C. context.AcceptAllChanges();
- D. context.LoadProperty[entity, "Server",
MergeOption.OverwriteChanges];

Answer: A

Explanation:

LoadProperty(Object, String) Explicitly loads an object related to the supplied object by the specified navigation property and using the default merge option.

AcceptAllChanges Accepts all changes made to objects in the object context.

Refresh(RefreshMode, Object) Updates an object in the object context with data from the data source.
ObjectContext.Refresh Method (RefreshMode, Object)
(<http://msdn.microsoft.com/en-us/library/bb896255.aspx>)

Question: 111

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application that connects to a Microsoft SQL Server 2008 database. You use the ADO.NET Entity Framework Designer to model entities. You add the following stored procedure to the database, and you add a function import to the model.

```
CREATE PROCEDURE [dbo].[InsertDepartment]
@Name nvarchar(50),
@ ID int NULL OUTPUT
AS
INSERT INTO Department (Name) VALUES (@Name)
SELECT @ID = SCOPE_IDENTITY()
```

You need to insert a new department and display the generated ID. Which code segment should you use?

- A. using (SchoolEntities context = new SchoolEntities())
{
var id = new ObjectParameter("ID", typeof(int));
context.InsertDepartment("Department 1", id);
Console.WriteLine(id.Value);
}
- B. using (SchoolEntities context = new SchoolEntities())
{
var id = context.InsertDepartment("Department 1", null);
Console.WriteLine(id);
}
- C. using (SchoolEntities context ■ new SchoolEntities())
{
CtojectParameter id = null;
context.InsertDepartment("Department 1", id);
Console.WriteLine(id.Value);
}
- D. using (SchoolEntities context = new SchoolEntities())
{
var id = new OtajectParameter("ID", null);
context.InsertDepartment("Department 1", id);
Console.WriteLine(id.Value);
}

Answer: A

Reference: <http://blogs.microsoft.co.il/blogs/gilf/archive/2010/05/09/how-to-retrieve-stored-procedure-output-parametersin-entity-framework.aspx>

Question: 112

You use Microsoft .NET Framework 4 to develop an ASP.NET Web application that connects to a Microsoft SQL Server 2008 database. The application uses Integrated Windows authentication in Internet Information Services (IIS) to

authenticate users. A connection string named connString defines a connection to the database by using integrated security. You need to ensure that a SqlCommand executes under the application pool's identity on the database server. Which code segment should you use?

A. using (var conn = new SqlConnection())
{
conn.ConnectionString = connString;
SqlCommand cmd = null;
using (HostingEnvironment.Impersonate())
{
cmd = new SqlCommand("SELECT * FROM BLOG", conn);
}
conn.Open();
var result = cmd.ExecuteScalar();
}
B. using (var conn = new SqlConnection(connString))
{
var cmd = new SqlCommand ("SELECT * FROM BLOG, conn);
conn.Open();
using(HostingEnvironment.Impersonate())
{
var result = cmd.ExecuteScalar();
}
}
C. using (var conn = new SqlConnección())
{
using (HostingEnvironroent.Impersonate())
{
conn.ConnectionString = connString;
}
var cmd = new SqlCommand("SELECT * FROM BLOG, conn);
conn.Open() ;
var result = cmd.ExecuteScalar();
}
D. using (var conn = new SqlConnection())
{
conn.ConnectionString = connString;
var cmd = new SqlCommand("SELECT * FROM BLOG", conn);
using (HostingEnvironment.Impersonate())
{
conn.Open();
}
var result = cmd.ExecuteScalar();
}

Answer: D

Question: 113

You need to fill a DataSet from the result that is returned by the stored procedure. The first result set must be added to a DataTable named Class, and the second result set must be added to a DataTable named Student. Which code

segment should you use?

- A. DataSet ds = new DataSet();
SqlDataAdapter ad = new SqlDataAdapter
("GetClassAndStudents", conn); ad.Fill(ds) ;
- B. DataSet ds = new DataSet();
SqlDataAdapter ad = new SqlDataAdapter
("GetClassAndStudents", conn); ds.Tables.Add("Class") ;
ds.Tables.Add("Student") ;
ad.Fill(ds) ;
- C. DataSet ds = new DataSet();
SqlDataAdapter ad = new SqlDataAdapter
("GetClassAndStudents", conn);
ad.MissingMappingAction = MissingMappingAction.Ignore;
ad.Fill(ds, "Class");
ad.Fill(ds, "Student");
- D. DataSet ds = new DataSet();
SqlDataAdapter ad = new SqlDataAdapter
("GetClassAndStudents", conn);
ad.TableMappings.Add("Table", "Class");
ad.TableMappings.Add("Table1", "Student");
ad.Fill(ds) ;

Answer: D

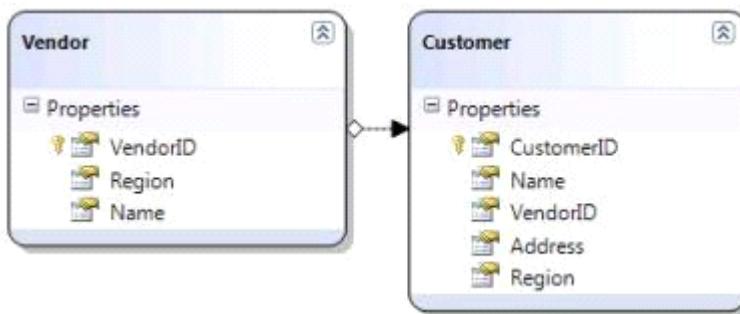
Explanation:

Reference:

<http://msdn.microsoft.com/en-us/library/ms810286.aspx>

Question: 114

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application that uses LINQ to SQL. The application contains the following model.



Each region contains a single vendor. Customers order parts from the vendor that is located in their region. You need to ensure that each row in the Customer table references the appropriate row from the Vendor table. Which code segment should you use?

- A. SalesDataContext dc = new SalesDataContext("... ");
var query = from v in dc.Vendors
join c in dc.Customers on v.VendorID equals c.VendorID
select new { Vendor = v, Customer= c };
foreach (var u in query)
{

```
u.Customer.Region = u.Vendor.Region;
}
dc.SubmitChanges();
B. SalesDataContext dc = new SalesDataContext( "..." );
var query = from c in dc.Customers
join v in dc.Vendors on c.VendorID equals v.VendorID
select new { Customer = c, Vendor = v };
foreach (var u in query)
{
    u.Vendor.Region = u.Customer.Region;
    dc.SubmitChanges();
C. SalesDataContext dc = new SalesDataContext ( "..." );
var query = from v in dc.Vendors
join c in dc.Customers on v.Region equals c.Region
select new { Vendor = v, Customer = c };
foreach (var u in query)
{
    u.Customer.VendorID = u.Vendor.VendorID;
}
dc.SubmitChanges();
D. SalesDataContext dc = new SalesDataContext ( "..." );
var query = from c in dc.Customers
join v in dc.Vendors on c.Region equals v.Region
select new { Customer = c, Vendor = v };
foreach (var u in query)
{
    u.Vendor.VendorID = u.Customer.VendorID;
}
dc.SubmitChanges();
```

Answer: C

Question: 115

You use Microsoft .NET Framework 4 to develop an application that connects to a Microsoft SQL Server 2008 database. You need to prevent dirty or phantom reads. Which IsolationLevel should you use?

- A. Snapshot
- B. Serializable
- C. ReadUncommitted
- D. ReadCommitted

Answer: A

Explanation:

Unspecified A different isolation level than the one specified is being used, but the level cannot be determined. When using OdbcTransaction, if you do not set IsolationLevel or you set IsolationLevel to Unspecified, the transaction executes according to the isolation level that is determined by the driver that is being used.

Chaos The pending changes from more highly isolated transactions cannot be overwritten.

ReadUncommitted A dirty read is possible, meaning that no shared locks are issued and no exclusive locks are honored.

ReadCommitted Shared locks are held while the data is being read to avoid dirty reads, but the data can be changed before the end of the transaction, resulting in non-repeatable reads or phantom data.

RepeatableRead Locks are placed on all data that is used in a query, preventing other users from updating the data.

Prevents non-repeatable reads but phantom rows are still possible.

Serializable A range lock is placed on the DataSet, preventing other users from updating or inserting rows into the dataset until the transaction is complete.

Snapshot Reduces blocking by storing a version of data that one application can read while another is modifying the same data.

Indicates that from one transaction you cannot see changes made in other transactions, even if you requery.

IsolationLevel Enumeration

(<http://msdn.microsoft.com/en-us/library/system.data.isolationlevel.aspx>)

Isolation Levels in Database Engine

(<http://msdn.microsoft.com/en-us/library/ms189122.aspx>)

SET TRANSACTION ISOLATION LEVEL (Transact-SQL)

(<http://msdn.microsoft.com/ru-ru/library/ms173763.aspx>)

Question: 116

You use Microsoft .NET Framework 4 to develop an application that connects to a Microsoft SQL Server 2008 database. You populate a SqlDataAdapter by using the following code. (Line numbers are included for reference only.)

```
01  SqlDataAdapter dataAdapter1 = new SqlDataAdapter  
("SELECT * FROM [BlogEntries]  
ORDER BY CreationDate", connection);  
02  SqlCommandBuilder cmdBuilder = new SqlCommandBuilder(dataAdapter1);  
03  dataAdapter1.Fill(BlogEntryDataSet, "BlogEntries"); 04  
05  connection.Close()
```

You need to update the blog owner for all BlogEntry records.

Which code segment should you insert at line 04?

- A.

```
foreach(DataRow row in BlogEntryDataSet.Tables ["BlogEntries"].Rows)  
{  
    row.Item["BlogOwner"] = "New Owner";  
}  
dataAdapter1.Update(BlogEntryDataSet, "BlogEntries");
```
- B.

```
foreach(DataRow row in BlogEntryDataSet.Tables  
["BlogEntries"].Rows) {  
    row.Item["BlogOwner"] = "New Owner";  
}  
dataAdapter1.Fill(BlogEntryDataSet, "BlogEntries");
```
- C.

```
SqlDataAdapter dataAdapter2 = new SqlDataAdapter  
("UPDATE [BlogEntries] SET [BlogOwner = 'New Owner' 3",  
connection);  
dataAdapter2.Update(BlogEntryDataSet, "BlogEntries");
```
- D.

```
SqlDataAdapter dataAdapter2 = new SqlDataAdapter  
(dataAdapter1.UpdateCommand);  
dataAdapter2.Fill(BlogEntryDataSet, "BlogEntries");
```

Answer: A

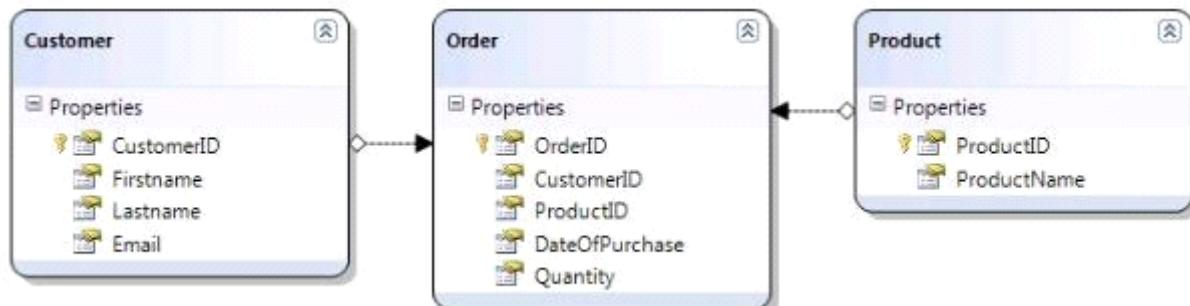
Explanation:

SqlDataAdapter.Update() - Calls the respective INSERT, UPDATE, or DELETE statements for each inserted, updated, or deleted row in the System.Data.DataSet with the specified System.Data.DataTable name.

(<http://msdn.microsoft.com/en-us/library/system.data.sqlclient.sqlcommandbuilder.aspx>)

Question: 117

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application that uses LINQ to SQL. The application contains the following model.



You write the following code. (Line numbers are included for reference only.)

```

01 static void Insect()
02 {
03     NorthwindDataContext dc = new NorthwindDataContext();
04     Customer newCustomer = new Customer();
05     newCustomer.Fristname = "Todd";
06     newCustomer.Lastname = "Meadows";
07     newCustomer.Email = "troeadows@contoso.com"; 08
09     dc.SubmitChanges();
10 }
  
```

A product named Bike Tire exists in the Products table. The new customer orders the Bike Tire product. You need to ensure that the correct product is added to the order and that the order is associated with the new customer. Which code segment should you insert at line 08?

- A. Order newOrder = new Order();
newOrder.Product = (from p in dc.Products
where p.ProductName == "Bike Tire"
select p).First();
- B. Product newProduct = new Product();
newProduct.ProductName = "Bike Tire"; Order
newOrder = new Order();
newOrder.Product = newProduct;
- C. Product newProduct = new Product();
newProduct.ProductName = "Bike Tire";
Order newOrder = new Order();
newOrder.Product = newProduct;
newCustomer.Orders.Add(newOrder);
- D. Order newOrder = new Order();
newOrder.Product = (from p in dc.Products
where p.ProductName == "Bike Tire"
select p).First();
newCustomer.Orders.Add(newOrder);

Answer: D

Question: 118

You use Microsoft .NET Framework 4 to develop an ASP.NET 4 Web application. You need to encrypt the connection string information that is stored in the web.config file. The application is deployed to multiple servers. The encryption keys that are used to encrypt the connection string information must be exportable and importable on all the servers. You need to encrypt the connection string section of the web.config file so that the file can be used on all of the servers. Which code segment should you use?

- A. Configuration config = WebConfigurationManager.OpenWebConfiguration("~/");
ConnectionStringsSection section = (ConnectionStringsSection)config.GetSection("connectionStrings");
section.SectionInformation.ProtectSection("RsaProtectedConfigurationProvider");
config.Save();
- B. Configuration config = WebConfigurationManager.OpenMachineConfiguration("~/");
ConnectionStringsSection section = (ConnectionStringsSection)config.GetSection("connectionStrings");
section.SectionInformation.ProtectSection("RsaProtectedConfigurationProvider*");
config.Save();
- C. Configuration config = WebConfigurationManager.OpenWebConfiguration ("~/");
ConnectionStringsSection section = (ConnectionStringsSection)config.GetSection("connectionStrings") ;
section.SectionInformation.ProtectSection("DpapiProtectedConfigurationProvider");
config.Save ();
- D. Configuration config = WebConfigurationManager.OpenMachineConfiguration ("~/");
ConnectionStringsSection section = (ConnectionStringsSection)config.GetSection("connectionStrings") ;
section.SectionInformation.ProtectSection("DpapiProtectedConfigurationProvider");
config.Save () ;

Answer: A

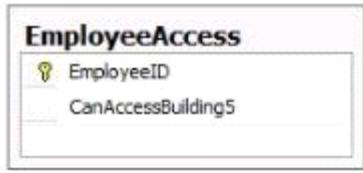
Explanation:

You encrypt and decrypt the contents of a Web.config file by using System.Configuration . DPAPIProtectedConfigurationProvider from the System.Configuration.dll assembly, which uses the Windows Data Protection API (DPAPI) to encrypt and decrypt data, or by using System.Configuration . RSAProtectedConfigurationProvider, which uses the RSA encryption algorithm to encrypt and decrypt data. When you use the same encrypted configuration file on many computers in a web farm, only System.Configuration.RSAProtectedConfigurationProvider enables you to export the encryption keys that encrypt the data and import them on another server. This is the default setting.

CHAPTER 8 Developing Reliable Applications
Lesson 3: Protecting Your Data
Storing Encrypted Connection Strings in Web Applications (page 555)

Question: 119

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application that connects to a database by using the Entity Framework. You create an Entity Data Model (EDM) by using the Generate from database wizard for the following tables.



You need to ensure that the EDM contains an entity type named Employee that contains all of the data from both tables. What should you do?

- Delete the EmployeeAccess entity, create a new property named CanAccessBuilding5 on the Employee entity, and add a mapping for the new property.
- Create an inheritance relationship between the Employee and EmployeeAccess entities, and use CanAccessBuilding5 as an inheritance condition.
- Modify the .edmx file to include the following line of code.
`<NavigationProperty Name="Type" FromRole="EmployeeAccess" ToRole="Employee" />`
- Create a one-to-one association named CanAccessBuildingsAssociation between the EmployeeAccess entity and the Employee entity.

Answer: A

Question: 120

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application that uses the Entity Framework. The application has an entity model that contains a SalesOrderHeader entity. The entity includes an OrderDate property of type DateTime. You need to retrieve the 10 oldest SalesOrderHeaders according to the OrderDate property. Which code segment should you use?

- `var model = new AdventureWorksEntities();
var sales = model.SalesOrderHeaders.Take(10).OrderByDescending(soh => soh.OrderDate);`
- `var model = new AdventureWorksEntities();
var sales = model.SalesOrderHeaders.OrderByDescending(soh => soh.OrderDate).Take(10);`
- `var model = new AdventureWorksEntities();
var sales = model.SalesOrderHeaders.OrderBy(soh => soh.OrderDate).Take(10);`
- `var model = new AdventureWorksEntities();
var sales = model.SalesOrderHeaders.Take(10).OrderBy(soh => soh.OrderDate);`

Answer: C

Explanation:

`OrderBy()` Sorts the elements of a sequence in ascending order according to a key.

`OrderByDescending()` Sorts the elements of a sequence in descending order according to a key.

`Enumerable.OrderBy<TSource, TKey>` Method (`IEnumerable<TSource>, Func<TSource, TKey>`)
[\(<http://msdn.microsoft.com/en-us/library/bb534966.aspx>\)](http://msdn.microsoft.com/en-us/library/bb534966.aspx)

Question: 121

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. You are creating the data layer of the application. You write the following code segment. (Line numbers are included for reference only.)

```
01 public static SqlDataReader GetDataReader(string sql) {
```

```

02     SqlDataReader dr = null;
03
03     return dr;
05 }
```

You need to ensure that the following requirements are met:

- The SqlDataReader returned by the GetDataReader method can be used to retrieve rows from the database.
- SQL connections opened within the GetDataReader method will close when the SqlDataReader is closed.

Which code segment should you insert at line 03?

- A. SqlConnection cnn = new SqlConnection(strCnn);
 SqlCommand cmd = new SqlCommand(sql, cnn);
 cnn.Open();
 try {
 dr = cmd.ExecuteReader();
 cnn.Close();
 }
 catch {
 throw;
 }
 B. SqlConnection cnn = new SqlConnection(scrCnn);
 SqlCommand cmd = new SqlCommand(sql, cnn);
 cnn.Open();
 try {
 dr = cmd.ExecuteReader(CommandBehavior.CloseConnection);
 }
 catch {
 cnn.Close();
 throw;
 }
 C. using (SqlConnection cnn = new SqlConnection(strCnn))
 {
 try {
 SqlCommand cmd = new SqlCommand(sql, cnn);
 cnn.Open();
 dr = cmd.ExecuteReader(); } catch
 {
 throw;
 }
 }
 D. SqlConnection cnn = new SqlConnection(strCnn);
 SqlCommand cmd = new SqlCommand(sql, cnn);
 cnn.Open();
 try
 {
 dr = cmd.ExecuteReader();
 }
 finally
 {
 cnn.Close();
 }

Answer: B

Explanation:

CommandBehavior.CloseConnection When the command is executed, the associated Connection object is closed when the associated DataReader object is closed.

CommandBehavior Enumeration

(<http://msdn.microsoft.com/en-us/library/system.data.commandbehavior.aspx>)

SqlCommand.ExecuteReader Method (CommandBehavior)

(<http://msdn.microsoft.com/en-us/library/y6wy5a0f.aspx>)

Question: 122

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application. A file named books.xmi contains the following XML.

```
<bib>
  <book title="Ercgranraig in Unix" year="1992*>
    <author> Author1</author >
    <author>Author2</author>
    <author>Author3</author>
  </book>
</bib>
```

The application must generate an XML result that contains an XML element named BookTitle for each book. The text content of must contain the title of the book. You need to create a query that generates the new XML result. Which code segment should you use?

A.

```
XDocument document = XDocument.Load("books.xml") ;
var query = from node in document.Descendants()
  where node.Name == "book"
  select new XElement ("BookTitle",
    node.FirstAttribute.Value);
```

B.

```
XDocument document = XDocument.Load("books.xml") ;
var query = from node in document.DescendantNodes()
  where node.ToString() == "book"
  select new XElement("BookTitle", node.ToString()) ;
```

C.

```
XDocument document = XDocument.Load("books.xml") ;
var query = from node in document.Descendants()
  where node.Name.LocalName = "book"
  select new XElement("BookTitle").Value =
    node.FirstAttribute.Value;
```

D.

```
XDocument document = XDocument.Load("books.xml") ;
var query = from node in document.DescendantNodes()
  where node.ToString() == "book"
  select new XText("BookTitle" + node.ToString());
```

Answer: A

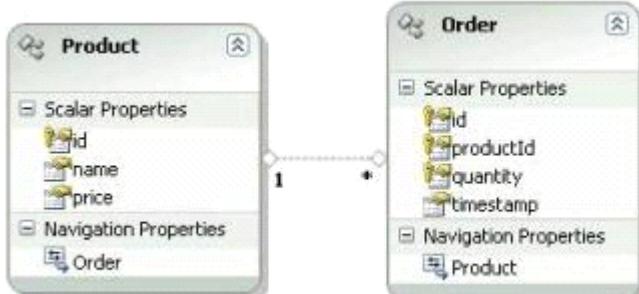
Question: 123

CD -C# 1st

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. You create stored procedures by using the following signatures:

- CREATE procedure [dbo].[Product_Insert](Gname varchar(50),@price float)
- CREATE procedure [dbo].[Product_Update](@id int, Bname varchar(50), @price float)
- CREATE procedure [dbo].[Product_Delete](@Id int)
- CREATE procedure [dbo].[Order_Insert] (@productId Int, Gquantity Int)
- CREATE procedure [dbo].[Order_Update](@id int, Gquantity int,GoriginalTimestamp timestamp)
- CREATE procedure [dbo].[Order_Delete](@id int)

You create a Microsoft ADO.NET Entity Data Model (EDM) by using the Product and Order entities as shown in the exhibit. (Click the Exhibit button.)



You need to map the Product and Order entities to the stored procedures. To which two procedures should you add the QproductId parameter? (Each correct answer presents part of the solution. Choose two.)

- A. Order_Delete
- B. Product_Update
- C. Order_Update
- D. Product_Delete

Answer: A, C

Explanation:

@productId parameter resides in the order table...

Question: 124

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. You use Microsoft ADO.NET Entity Data Model (EDM) to mode entities. You create an entity named Person with a schema defined by the following XML fragment

```

<EntityType Name='CPerson'>
  <Key>
    <PropertyRef Name="PersonId" />
  </Key>
  <Property Name="PersonId" Type="int32" Nullable="false" />
  <Property Name="CompaianyName" Type="String"/>
  <Property Name="ContactName" Type="Strng"/>
  <Property Name="ContactTitle" Type="String"/>
  <Property Name="Address" Type="String"/>
</EntityType>
  
```

You need to ensure that entities within the application are able to add properties related to the city, region, and country of Person's address. What should you do?

- A. "Create a new complex type named CAddress that contains the properties for city, region, and country
"Change the type of the Address property in CPerson to "Self.CAddress".
- B. "Create a SubEntity named Address.
"Map the SubEntity to a stored procedure that retrieves city, region, and country
- C. "Create a new entity named Address.
"Add a person ID property to filter the results to display only the City, Region, and Country properties for a specific Person entity.
- D. "Create a view named Name that returns city, region, and country along with person IDs. "Add a WHERE clause to filter the results to display only the City, Region and Country properties for a specific Person entity

Answer: A

Question: 125

You use Microsoft Visual Studio 2010 and Microsoft ADO.NET Framework 4 to create an application. The application connects to a Microsoft SQL Server database. The application uses the ADO.NET LINQ to SQL model to retrieve data from the database. The application will not modify retrieved data. You need to ensure that all the requested data is retrieved. You want to achieve this goal using the minimum amount of resources. What should you do?

- A. Set ObjectTrackingEnabled to true on the DataContext class
- B. Set ObjectTrackingEnabled to false on the DataContext class
- C. Set DeferredloadingEnabled to true on the DataContext class
- D. Set DeferredloadingEnabled to false on the DataContext class

Answer: B

Explanation:

Setting property ObjectTrackingEnabled to false improves performance at retrieval time, because there are fewer items to track.

DataContext.ObjectTrackingEnabled Property

(<http://msdn.microsoft.com/en-us/library/system.data.linq.datacontext.objecttrackingenabled.aspx>)

Question: 126

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. You use the ADO.NET Entity Framework to model your entities. You use Plain Old CLR Objects (POCO) entities along with snapshot-based change tracking. The code accesses the POCO entities directly. You need to ensure that the state manager synchronizes when changes are made to the object graph. Which ObjectContext method should you choose?

- A. Refresh
- B. SaveChanges
- C. DetectChanges
- D. ApplyPropertyChanges

Answer: C

Explanation:

When working with POCO, you must call the DetectChanges method on the ObjectContext to attach the POCO entity to the ObjectContext. Be sure to call DetectChanges prior to calling SaveChanges.

ApplyPropertyChanges Obsolete. Applies property changes from a detached object to an object already attached to the object context.

CHAPTER 6 ADO.NET Entity Framework

Lesson 2: Querying and Updating with the Entity Framework

Attaching Entities to an ObjectContext (page 438)

Question: 127

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application uses the ADO.NET Entity Framework to manage Plain Old CLR Objects (POCO) entities. You create a new POCO class.

You need to ensure that the class meets the following requirements:

- It can be used by an ObjectContext
- It is enabled for change-tracking proxies

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

Choose two.)

- A. Modify each mapped property to contain sealed and protected accessors.
- B. Modify each mapped property to contain non-sealed, public, and virtual accessors
- C. Configure the navigation property to return a type that implements the ICollectio interface
- D. Configure the navigation property to return a type that implements the IQueryable interface
- E. Configure the navigation property to return a type that implements the IEntityWithRelationships Interface

Answer: B, C

Explanation:

CHAPTER 6 ADO.NET Entity Framework

Lesson 1: What Is the ADO.NET Entity Framework?

Other POCO Considerations (page 412)

Question: 128

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server database. You use the ADO.NET LINQ to Entities model to retrieve data from the database. You need to call a function that is defined in the conceptual model from within the LINQ to Entities queries. You create a common language runtime (CLR) method that maps to the function. What should you do next?

- A. Declare the method as static
- B. Declare the method as abstract
- C. Apply the EdmFunctionAttribute attribute to the method
- D. Apply the EdmComplexTypAttribute attribute to the method.

Answer: C

Explanation:

CHAPTER 6 ADO.NET Entity Framework

Lesson 1: What Is the ADO.NET Entity Framework?

Model-Defined Functions (page 413-414)

Question: 129

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. You manually create your own Context class named AdventureWorksDB that inherits from Object Context. You need to use Adventure WorksDB to invoke a stored procedure that is defined in the data source. Which method should you call?

- A. Translate
- B. ExecuteFunction
- C. ExecuteStoreQuery
- D. ExecuteStoreCommand

Answer: B

Explanation:

ExecuteFunction(String, ObjectParameter[]) Executes a stored procedure or function that is defined in the data source and expressed in the conceptual model;

discards any results returned from the function; and returns the number of rows affected by the execution.

ExecuteStoreCommand() Executes an arbitrary command directly against the data source using the existing connection.

ExecuteStoreQuery<TElement>(String, Object[]) Executes a query directly against the data source that returns a sequence of typed results.

Translate<TElement>(DbDataReader) Translates a DbDataReader that contains rows of entity data to objects of the requested entity type.

ObjectContext.ExecuteFunction Method

(<http://msdn.microsoft.com/en-us/library/dd986915.aspx>)

Question: 130

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server database. You use Entity SQL to retrieve data from the database. You need to find out whether a collection is empty. Which entity set operator should you use?

- A. ANYELEMENT
- B. EXCEPT
- C. EXISTS
- D. IN

Answer: C

Explanation:

EXISTS Determines if a collection is empty.

Entity SQL Reference

(<http://msdn.microsoft.com/en-us/library/bb387118.aspx>)

Question: 131

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server 2008 database. You need to use a spatial value type as a parameter for your database query. What should you do?

- A. Set the parameter's SqlDbType to Binary.
- B. Set the parameter's SqlDbType to Variant.
- C. Set the parameter's SqlDbType to Udt. Set the parameter's UdtTypeName to GEOMETRY.
- D. Set the parameter's SqlDbType to Structured. Set the parameter's TypeName to GEOMETRY.

Answer: C

Explanation:

There are two types of spatial data. The geometry data type supports planar, or Euclidean (flat-earth), data. The geometry data type conforms to the Open Geospatial Consortium (OGC) Simple Features for SQL Specification version 1.1.0.

In addition, SQL Server supports the geography data type, which stores ellipsoidal (round-earth) data, such as GPS latitude and longitude coordinates.

SqlParameter.UdtTypeName Gets or sets a string that represents a user-defined type as a parameter.

CHAPTER 2 ADO.NET Connected Classes

Lesson 2: Reading and Writing Data

Working with SQL Server User-Defined Types (UDTs) (page 105)

Spatial types

(<http://msdn.microsoft.com/en-us/library/ff848797.aspx>)

Types of Spatial Data

(<http://msdn.microsoft.com/en-us/library/bb964711.aspx>)

Question: 132

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application contains the following XML fragment.

```
<ApplicationMenu>
  <MenuItem name='File'>
    MenuItem name='New'
    <MenuItem name?projectw I>
    <MenuItem name='Web Site' I> <4Aenulitem>
    <MenuItem name='Open'> <MenuItem name=Project">
    <MenuItem name='Web Site">
      <iNenulitem> <MenuItem narner"Save0 1>
      </1ienuttem>
    <MenuItem nameEdr>
    <MenuItem nameCut" I>
    <MenuItem name"COW I>
    <MenuItem name'Paste01>
    <'Menulitem>
    <MenuItem name'1-4elp'>
    <MenuItem namezlHelp I>
    <MenuItem name"About' I>
  </Menulteni>
</ApplicationMenu>
```

The application queries the XML fragment by using the `Xml Document` class. You need to select all the descendant elements of the `MenuItem` element that has its `name` attribute as `File`. Which XPath expression should you use?

- A. `//[@name='File'][name()'MenuItem']`
- B. `/ApplicationMenu/MenuItem[Fil&f(MenuItem`
- C. `/ApphcationMenulMenuItem/descendant: :MenuItem[file']`

D. /ApplicationMenu/MenuItem[name='File']/descendant::MenuItem

Answer: D

Explanation:

XPath Examples:

```
XmlNodeList nodes = doc.SelectNodes("/ApplicationMenu/MenuItem[@name='File']/descendant::MenuItem"); // 01 == 02
XmlNodeList nodes = doc.SelectNodes("/ApplicationMenu/MenuItem[@name='File']//MenuItem"); // 02 == 01
XmlNodeList nodes = doc.SelectNodes("/ApplicationMenu/MenuItem[2]/descendant::MenuItem"); // 03
XmlNodeList nodes = doc.SelectNodes("/ApplicationMenu/MenuItem[last()]/descendant::MenuItem"); // 04
XmlNodeList nodes = doc.SelectNodes("/ApplicationMenu/MenuItem/descendant::MenuItem[/ApplicationMenu/MenuItem/@name=@name]"); // 05
XmlNodeList nodes = doc.SelectNodes("/ApplicationMenu/MenuItem/*"); // 06
XmlNodeList nodes = doc.SelectNodes("/ApplicationMenu/MenuItem/descendant::*[@Description]"); // 07
XmlNodeList nodes = doc.SelectNodes("/ApplicationMenu/MenuItem[MenuItem][position()=2]"); // 08 == 09
XmlNodeList nodes = doc.SelectNodes("/ApplicationMenu/MenuItem[MenuItem and position()=2]"); // 09 == 08
XmlNodeList nodes = doc.SelectNodes("/ApplicationMenu/MenuItem[SubMenu or position()=2]"); // 10
XPath Examples  
(http://msdn.microsoft.com/en-us/library/ms256086.aspx)
```

Question: 133

You u Microsoft ‘Visual Studio 2010 and Microsoft .NET Framework 4.1 create a Windows Communication Foundation (‘ACF) Data Services service

You deploy the service b the following URL `http://contoso.com/Northwind.svc`. You want to query the WCF Data Services service to retneve a list at customer objects You need to ensure that the query meets the following requirements. “Only customers that match the following filter criteria are retrieved City=Seattle AND Level > 200 “Data sorted in ascending order by the ContactName arid Address properties.

Which URL should you use for the query’?

- A. `http://contoso.com/Northwind.svc/Customers?City=Seattle & Level > 200 & SortBy=ContactName,Address`
- B. `http://contoso.com/Northwind.svc/Customers?City=Seattle & Level > 200 & SortBy=ContactName,Address`
- C. `http://contoso.com/Northwind.svc/Customers?City eq 'Seattle' and Level > 200 & SortBy=ContactName,Address`
- D. `http://contoso.com/Northwind.svc/Customers?City eq 'Seattle' and Level > 200 & SortBy=ContactName,Address`

Answer: C

Question: 134

Which code segment will properly return the TimeSpan returned by the stopWatch variable?

- A. `Stopwatch stopWatch = new Stopwatch();
stopWatch.Start();
DoSomething();
stopWatch.Stop();`

```
TimeSpan ts = stopWatch.Elapsed;
string elapsedTime = String.Format("{0:00}:{1:00}:{2:00}.{3:00}", ts.Hours, ts.Minutes, ts.Seconds, ts.
Milliseconds / 10);
Console.WriteLine(elapsedTime, "RunTime");
private void DoSomething()
{ ... }
B. Stopwatch stopWatch = new Stopwatch();
stopWatch.Start();
DoSomething();
stopWatch.Reset();
TimeSpan ts = stopWatch.Elapsed;
string elapsedTime = String.Format("{0:00}:{1:00}:{2:00}.{3:00}", ts.Hours, ts.Minutes, ts.Seconds, ts.
Milliseconds / 10);
Console.WriteLine(elapsedTime, "RunTime");
private void DoSomething()
{ ... }
C. ...Stopwatch stopWatch = new Stopwatch();
stopWatch.Start();
DoSomething();
TimeSpan ts = stopWatch.Elapsed;
string elapsedTime = String.Format("{0:00}:{1:00}:{2:00}.{3:00}", ts.Hours, ts.Minutes, ts.Seconds, ts.
Milliseconds / 10);
Console.WriteLine(elapsedTime, "RunTime");
private void DoSomething()
{ ... }
D. Stopwatch stopWatch = new Stopwatch();
stopWatch.Begin();
DoSomething();
stopWatch.End();
TimeSpan ts = stopWatch.Elapsed;
string elapsedTime = String.Format("{0:00}:{1:00}:{2:00}.{3:00}", ts.Hours, ts.Minutes, ts.Seconds, ts.
Milliseconds / 10);
Console.WriteLine(elapsedTime, "RunTime");
private void DoSomething()
{ ... }
```

Answer: A

Explanation:

Stopwatch Class

(<http://msdn.microsoft.com/en-us/library/system.diagnostics.stopwatch.aspx>)

Question: 135

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. You use the ADO.NET Entity Data Model (EDM) to define a Customer entity. You need to add a new Customer to the data store without setting all the customer's properties. What should you do?

- A. Call the Create method of the Customer object
- B. Call the CreateObject method of the Customer object
- C. Override the Create method for the Customer object

D. Override the Save Changes method for the Customer object

Answer: B

Explanation:

CreateObject<T> Creates and returns an instance of the requested type .

Question: 136

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create a multi-tier application. You use Microsoft ADO.NET Entity Data Model (EDM) to model entities. The model contains entities named Sales Order Header and Sales Order Detail. For performance considerations in querying sales order header you detach SalesOrderDetail entities from Object Context. You need to ensure that changes made to existing Sales Order Detail entities updated in other areas of your application are persisted to the database. Which two actions should you perform?

- A. Re-attach the Sales Order Detail entities.
- B. Set the Merge Option of Sales Order Detail to Merge Options overwrite Changes
- C. Set the Merge Option of Sales Order detail to Merge Options NoTracking
- D. Call Object Context.ApplyCurrentValue
- E. Call Object Context.ApplyOriginalValue

Answer: A, E

Explanation:

ApplyCurrentValues(Of TEntity) Copies the scalar values from the supplied object into the object in the ObjectContext that has the same key.

The ApplyCurrentValues< TEntity > method is used to apply changes that were made to objects outside the ObjectContext, such as detached objects that are received by a Web service. The method copies the scalar values from the supplied object into the object in the ObjectContext that has the same key. You can use the EntityKey of the detached object to retrieve an instance of this object from the data source. Any values that differ from the original values of the object are marked as modified.

Note, the method does not apply the current values to the related objects of currentEntity.

ApplyOriginalValues(Of TEntity) Copies the scalar values from the supplied object into set of original values for the object in the ObjectContext that has the same key.

The ApplyOriginalValues< TEntity > method is used to apply changes that were made to objects outside the ObjectContext, such as detached objects that are received by a Web service. The method copies the scalar values from the supplied object into the object in the ObjectContext that has the same key. You can use the EntityKey of the detached object to retrieve an instance of this object from the data source. Any values that differ from the current values of the object are marked as modified.

Note, the method does not apply the current values to the related objects of originalEntity.

Question: 137

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application the application updates several Microsoft SQL Server databases within a single transaction. You need to ensure that after a resource failure, you can manage unresolved transactions. What should you do?

- A. Call the Enlist Volatile method of the Transaction class.
- B. Call the Enlist Durable method of the Transaction class.
- C. Call the Reenlist method of the TransactionManager class

D. Call the Recovery Complete method of the Transaction Manager class.

Answer: C

Explanation:

Enlisting Resources as Participants in a Transaction

(<http://msdn.microsoft.com/en-us/library/ms172153.aspx>)

Implementing a Resource Manager

(<http://msdn.microsoft.com/en-us/library/ms229975.aspx>)

Committing a Transaction in Single-Phase and Multi-Phase

(<http://msdn.microsoft.com/en-us/library/ckawh9ct.aspx>)

TransactionManager.Renlist() Reenlists a durable participant in a transaction. A resource manager facilitates resolution of durable enlistments in a transaction by reenlisting the transaction participant after resource failure.

Transaction.EnlistVolatile() Enlists a volatile resource manager to participate in a transaction. Volatile resource managers cannot recover from failure to complete a transaction in which they were participating.

Transaction.EnlistDurable() Enlists a durable resource manager to participate in a transaction.

TransactionManager.RecoveryComplete() Notifies the transaction manager that a resource manager recovering from failure has finished reenlisting in all unresolved transactions. All durable resource managers should do recovery when they first start up by calling the Renlist method for each outstanding transaction.

Only when all of the reenlistments are done should the resource manager call RecoveryComplete.

TransactionManager.Renlist() Method

(<http://msdn.microsoft.com/en-us/library/system.transactions.transactionmanager.renlist.aspx>)

Transaction.EnlistVolatile() Method

(<http://msdn.microsoft.com/en-us/library/system.transactions.transaction.enlistvolatile.aspx>)

Transaction.EnlistDurable()

(<http://msdn.microsoft.com/en-us/library/system.transactions.transaction.enlistdurable.aspx>)

TransactionManager.RecoveryComplete() Method

(<http://msdn.microsoft.com/en-us/library/system.transactions.transactionmanager.recoverycomplete.aspx>)

Question: 138

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server database over the network.

The application uses data from multiple related database tables. You need to ensure that the application can be used if the connection is disconnected or unavailable. Which object type should you use to store data from the database tables?

- A. DataSet
- B. DataAdapter
- C. DataReader
- D. Data Services

Answer: A

Explanation:

The DataSet, which is an in-memory cache of data retrieved from a data source, is a major component of the ADO.NET architecture.

The DataSet consists of a collection of DataTable objects that you can relate to each other with DataRelation objects.

You can also enforce data integrity in the DataSet by using the UniqueConstraint and ForeignKeyConstraint objects.

Question: 139

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application uses the ADO.NET Entity Framework to model entities. The application allows users to make changes while disconnected from the data store. Changes are submitted to the data store by using the SubmitChanges method of the Data Context object. You receive an exception when you call the SubmitChanges method to submit entities that a user has changed in offline mode. You need to ensure that entities changed in offline mode can be successfully updated in the data store. What should you do?

- A. Set the Object Tracking Enabled property of Data Context to true.
- B. Set the Deferred Loading Enabled property of Data Context to true.
- C. Call the Save Changes method of DataContext with a value of false.
- D. Call the Submit Changes method of Data Context with a value of System.Data.Linq.ConflictMode.ContinueOnConflict

Answer: A

Explanation:

ObjectTrackingEnabled Instructs the framework to track the original value and object identity for this DataContext. ObjectTrackingEnabled Property
(<http://msdn.microsoft.com/en-us/library/system.data.linq.datacontext.objecttrackingenabled.aspx>)

Question: 140

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server database. The application stores user names and passwords in the database. You need to ensure that users cannot read passwords extracted from the database. What should you do?

- A. Encrypt stored passwords by using the RC2CryptoServiceProvider class.
- B. Encrypt stored passwords by using the TripleDESCryptoServiceProvider class.
- C. Append a salt to the password by using the RNGCryptoServiceProvider class.
- D. Append a salt to the password by using the RijndaelManaged class.
- E. Hash stored passwords by using the SHA1CryptoServiceProvider class.

Answer: D

Explanation:

SHA1CryptoServiceProvider Class Computes the SHA1 hash value for the input data using the implementation provided by the cryptographic service provider (CSP). This class cannot be inherited.

SHA1CryptoServiceProvider Class

(<http://msdn.microsoft.com/en-us/library/system.security.cryptography.sha1cryptoserviceprovider.aspx>)

CHAPTER 8 Developing Reliable Applications

Lesson 3: Protecting Your Data

Hashing and Salting (page 550-551)

Question: 141

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4.0 to create a Microsoft ASP.NET application.

The application connects to a Microsoft SQL Server database. The application is hosted on a Web server along with other applications. You need to secure the transmission of data between the application and the database. You need to achieve this goal without affecting other applications. What should you do?

- A. EnCrypt the connection string
- B. Use encryption to store sensitive data in the database.
- C. Use Secure Sockets Layer (SSL) to establish connections to the database
- D. Use Internet Protocol Security (IPSec) to secure the communication channel.

Answer: C

Explanation:

SSL is an established standard for ensuring secure HTTP transactions.

SSL provides a mechanism to perform up to 128-bit encryption on all transactions between the client and server.

It enables the client to verify that the server belongs to a trusted entity through the use of server certificates.

It also enables the server to confirm the identity of the client with client certificates. Each of these issues—encryption, server identity, and client identity—are negotiated in the SSL handshake that occurs when a client first requests a resource from a

Secure Hypertext Transfer Protocol (HTTPS) server. Essentially, the client and server each present a list of required and preferred settings.

If a common set of requirements can be agreed upon and met, an SSL connection is established.

Internet Protocol Security (IPsec) is a set of security protocols used to transfer IP packets confidentially across the Internet.

IPsec is mandatory for all IPv6 implementations and optional for IPv4.

An IPsec policy is a set of rules that determine which type of IP traffic needs to be secured using IPsec and how to secure that traffic.

Only one IPsec policy is active on a computer at one time.

Question: 142

You use Microsoft Visual Studio 2010 and Microsoft .NET framework 4 to create an application the application uses the ADO.NET entity framework to model entities. You define a Category class by writing the following code segment (Line numbers are included for reference only) Public Class Category

```
01  Public Class Category
02      Public Property CategoryID() As Integer
03      Get
04      End Get
05      Set
06      End Set
07      End Property
08      Public Property CategoryName() As String
09      Get
10     End Get
11     Set
12     End Set
13     End Property
14     Public Property Description() As String
15     Get
16     End Get
17     Set
18     End Set
```

```
19 End Property  
20 Public Property Picture() As Byte()  
21 Get  
22 End Get  
23 Set  
24 End Set 25  
26 End Property
```

You need to add a collection named Products to the Category class. You also need to ensure that the collection supports deferred loading. Which code segment should you insert at line 25?

- A. Public Shared Property Products() As List(Of Product) Get
End Get
Set
End Set
End Property
- B. Public Overridable Property Products() As List(Of Product) Get
End Get
Set
End Set
End Property
- C. Public Shared Property Products() As List(Of Product)
- D. Protected Property Products() As List(Of Product) Get
End Get
Set
End Set
End Property

Answer: B

Question: 143

How do you call a model-defined function as static method on a custom class?

- A. Add a class to your application with a static method that does the following:
Apply an EdmFunctionAttribute to the method and ensure it accepts an IQueryable argument and returns the results of the Execute method that is returned by the Provider property.
- B. Add a class to your application with a static method that does the following:
Apply an EdmFunctionAttribute to the method and ensure it accepts IEntityWithRelationships argument and returns the results of the Execute method that is returned by the Provider property.
- C. Add a class to your application with a static method that does the following:
Apply an EdmFunctionAttribute to the method and ensure it accepts ICollection argument and returns the results of the Execute method that is returned by the Provider property.
- D. Add a class to your application with a static method that does the following:
Apply an EdmFunctionAttribute to the method and have it return the results of the Execute method that is returned by the Provider property.

Answer: A

Explanation:

To call a model-defined function as static method on a custom class:

1.Add a class to your application with a static method that does the following:

- Maps to the function defined in the conceptual model. To map the method, you must apply an EdmFunctionAttribute to the method.

Note that the NamespaceName and FunctionName parameters of the attribute are the namespace name of the conceptual model and the function name in the conceptual model, respectively.

- Accepts an IQueryable argument.
- Returns the results of the Execute method that is returned by the Provider property.

2.Call the method as a member a static method on the custom class

Example:

- function mapping

```
<Function Name="GetDetailsById"
  ReturnType="Collection(AdventureWorksModel.SalesOrderDetail)">
```

```
<Parameter Name="productID" Type="Edm.Int32" />
```

```
<DefiningExpression>
```

```
SELECT VALUE s
```

```
FROM AdventureWorksEntities.SalesOrderDetails AS s
```

```
WHERE s.ProductID = productID
```

```
</DefiningExpression>
```

```
</Function>
```

- source code

```
public partial class AdventureWorksEntities : ObjectContext
```

```
{
```

```
[EdmFunction("AdventureWorksModel", "GetDetailsById")]
```

```
public IQueryable<SalesOrderDetail> GetDetailsById(int productId)
```

```
{
```

```
return this.QueryProvider.CreateQuery<SalesOrderDetail>(Expression.Call(
  Expression.Constant(this),
  (MethodInfo)MethodInfo.GetCurrentMethod(),
  Expression.Constant(productId, typeof(int))));
```

```
}
```

```
}
```

How to: Call Model-Defined Functions as Object Methods

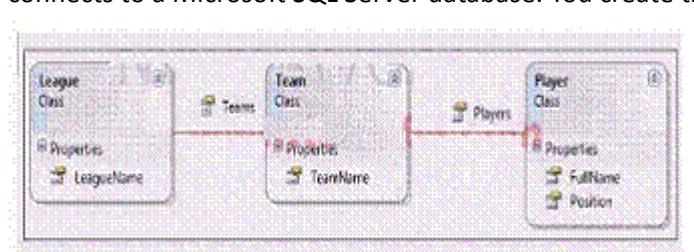
(<http://msdn.microsoft.com/en-us/library/dd456845.aspx>)

How to: Call Model-Defined Functions in Queries

(<http://msdn.microsoft.com/en-us/library/dd456857.aspx>)

Question: 144

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server database. You create the classes shown in the following exhibit.



You add the following code segment to the application. (Line numbers are included for reference only.)

- A. var query = leagues.Select(l => l.Teams.Select(t => t.Players));
- B. var query = leagues.Select(l => l.Teams.SelectMany(t => t.Players));
- C. var query = leagues.SelectMany(l => l.Teams.SelectMany(t => t.Players));
- D. var query = leagues.SelectMany(l => l.Teams.Select(t => t.Players));

Answer: C

Question: 145

Which one of these samples it the correct way to close the connection using Command Behavior.

- A. SqlDataReader rdr = new SqlDataReader();
string sql = @"sql statement";
SqlConnection conn = connection.GetConnection();
SqlCommand cmd = new SqlCommand(sql, conn);
SqlDataReader rdr = cmd.ExecuteReader(CommandBehavior.CloseConnection);
Console.WriteLine("{0}", rdr);
- B. SqlDataReader rdr = new SqlDataReader();
string sql = @"sql statement";
SqlConnection conn = connection.GetConnection();
SqlCommand cmd = new SqlCommand(sql, conn);
SqlDataReader rdr = cmd.ExecuteReader(CommandBehavior.CloseConnection);
rdr.close();
Console.WriteLine("{0}", rdr);
- C. SqlDataReader rdr = new SqlDataReader();
string sql = @"sql statement";
SqlConnection conn = connection.GetConnection();
SqlCommand cmd = new SqlCommand(sql, conn);
SqlDataReader rdr = cmd.ExecuteReader(CommandBehavior.CloseConnection);
conn.close();
Console.WriteLine("{0}", rdr);
- D. using (SqlDataReader rdr = new SqlDataReader())
{
 string sql = @"sql statement";
 SqlConnection conn = connection.GetConnection();
 SqlCommand cmd = new SqlCommand(sql, conn);
 SqlDataReader rdr = cmd.ExecuteReader(CommandBehavior.CloseConnection);
 Console.WriteLine("{0}", rdr);
}

Answer: B

Explanation:

An alternative to explicitly closing the Connection is to pass CommandBehavior.CloseConnection to the ExecuteReader method to ensure that the associated connection is closed when the DataReader is closed. This is especially useful if you are returning a DataReader from a method and do not have control over the closing of the DataReader or associated connection. When you close the data reader and you use CommandBehavior.CloseConnection - the SqlConnection also closes

<http://msdn.microsoft.com/en-us/library/ms971481.aspx>

Question: 146

Which method will return all nodes of an XDocument?

- A. doc.DescendantNodes();
- B. doc.Descendant();
- C. doc.Root.Allnodes();
- D. doc.GetAllnodes();

Answer: A

Explanation:

public IEnumerable<XNode> DescendantNodes() Returns a collection of the descendant nodes for this document or element, in document order.
public IEnumerable< XElement> Descendants() Returns a collection of the descendant elements for this document or element, in document order.

Question: 147

You are tasked with performing a code review. The business rule is the following:

- If INSERTs into the first table succeed, then INSERT into the second table.
- However, if the INSERTs into the second table fail, roll back the inserts in the second table but do not roll back the inserts in the first table.
- Although this can also be done by way of regular transactions, It needs to be performed using TransactionScope objects.

Which code would fit this business rule?

- A. try{
using (TransactionScope scope1 = new TransactionScope(TransactionScopeOption)
{
....
try
{
....
using (TransactionScope scope2 = new TransactionScope(TransactionScopeOption))
{ }
}
}
}
B. try
{
using (TransactionScope scope1 = new TransactionScope(TransactionScopeOption.Required))
{
....
using (TransactionScope scope2 = new TransactionScope(TransactionScopeOption.RequiresNew))
{ }
}....

```

}
}
C. try
{
using (TransactionScope scope1 = new TransactionScope(TransactionScopeOption.Required))
{
...
}
using (TransactionScope scope2 = new TransactionScope(TransactionScopeOption.RequiresNew))
{
....
}
}
D. try
{
using (TransactionScope scope1 = new TransactionScope(TransactionScopeOption.Required))
{
...
try
{
....
using (TransactionScope scope2 = new TransactionScope(TransactionScopeOption.RequiresNew))
{ .... }
}
}
}

```

Answer: D

Explanation:

Required A transaction is required by the scope. It uses an ambient transaction if one already exists.

Otherwise, it creates a new transaction before entering the scope. This is the default value.

RequiresNew A new transaction is always created for the scope.

Suppress The ambient transaction context is suppressed when creating the scope. All operations within the scope are done without an ambient transaction context.

Transaction Scope (EXAMPLE 3)

(<http://msdn.microsoft.com/en-us/library/bb896149%28SQL.100%29.aspx>)

TransactionScopeOption Enumeration

(<http://msdn.microsoft.com/en-us/library/system.transactions.transactionscopeoption.aspx>)

Question: 148

You use Microsoft Visual Studio 2010, Microsoft Sync Framework, and Microsoft .NET Framework 4 to create an application. You have a ServerSyncProvider connected to a Microsoft SQL Server database. The database is hosted on a Web server. Users will use the Internet to access the Customer database through the ServerSyncProvider. You write the following code segment. (Line numbers are included for reference only.)

```

01SyncTable customerSyncTable = new SyncTable("Customer");
02customerSyncTable.CreationOption = TableCreationOption.UploadExistingOrCreateNewTable;
03
04customerSyncTable.SyncGroup = customerSyncGroup;
05this.Configuration.SyncTables.Add(customerSyncTable);

```

You need to ensure that the application meets the following requirements:

Users can modify data locally and receive changes from the server.

Only changed rows are transferred during synchronization.

Which code segment should you insert at line 03

- A. customerSyncTable.SyncDirection = SyncDirection.DownloadOnly;
- B. customerSyncTable.SyncDirection = SyncDirection.Snapshot;
- C. customerSyncTable.SyncDirection = SyncDirection.Bidirectional;
- D. customerSyncTable.SyncDirection = SyncDirection.UploadOnly;

Answer: C

Explanation:

TableCreationOption:

CreateNewTableOrFail - Create the table in the client database. If an existing table has the same name, throw an exception.

DropExistingOrCreateNewTable - Create the table in the client database. If an existing table has the same name, drop the existing table first.

TruncateExistingOrCreateNewTable - Create the table in the client database if the table does not exist. If an existing table has the same name, delete all rows from this table.

UploadExistingOrCreateNewTable - Create the table in the client database if the table does not exist. If an existing table has the same name, upload all rows from this table on the first synchronization.

This option is only valid with a SyncDirection of Bidirectional or UploadOnly.

UseExistingTableOrFail - Use an existing table in the client database that has the same name. If the table does not exist, throw an exception.

SyncDirection:

Bidirectional - During the first synchronization, the client typically downloads schema and an initial data set from the server.

On subsequent synchronizations, the client uploads changes to the server and then downloads changes from the server.

DownloadOnly - During the first synchronization, the client typically downloads schema and an initial data set from the server.

On subsequent synchronizations, the client downloads changes from the server.

Snapshot - The client downloads a set of data from the server. The data is completely refreshed during each synchronization.

UploadOnly - During the first synchronization, the client typically downloads schema from the server.

On subsequent synchronizations, the client uploads changes to the server.

TableCreationOption Enumeration

(<http://msdn.microsoft.com/en-us/library/microsoft.synchronization.data.tablecreationoption.aspx>)

SyncDirection Enumeration

(<http://msdn.microsoft.com/en-us/library/microsoft.synchronization.data.syncdirection.aspx>)

CHAPTER 8 Developing Reliable Applications

Lesson 4: Synchronizing Data

Implementing the Microsoft Sync Framework (page 566)

Question: 149

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application uses the ADO.NET Entity Framework to model entities. You create an entity as shown in the following code fragment.

< EntityType Name="ProductCategory" >

< Key >

```

<PropertyRef Name="ProductCategoryID" />
</Key>
<Property Name="ProductCategoryID" Type="int" Nullable="false" StoreGeneratedPattern="Identity" />
<Property Name="ParentProductCategoryID" Type="int" />
<Property Name="Name" Type="nvarchar" Nullable="false" MaxLength="50" />
...
</EntityType>

```

You need to provide two entity-tracking fields:

- rowguid that is automatically generated when the entity is created
- ModifiedDate that is automatically set whenever the entity is updated

Which code fragment should you add to the .edmx file

- A. <Property Name="rowguid" Type="uniqueidentifier" Nullable="false" StoreGeneratedPattern="Computed" />
- B. <Property Name="rowguid" Type="uniqueidentifier" Nullable="false" StoreGeneratedPattern="Identity" />
- C. <Property Name="rowguid" Type="uniqueidentifier" Nullable="false" StoreGeneratedPattern="Identity" />
- D. <Property Name="rowguid" Type="uniqueidentifier" Nullable="false" StoreGeneratedPattern="Computed" />
- <Property Name="ModifiedDate" Type="timestamp" Nullable="false" StoreGeneratedPattern="Computed" />
- <Property Name="ModifiedDate" Type="timestamp" Nullable="false" StoreGeneratedPattern="Identity" />

Answer: C

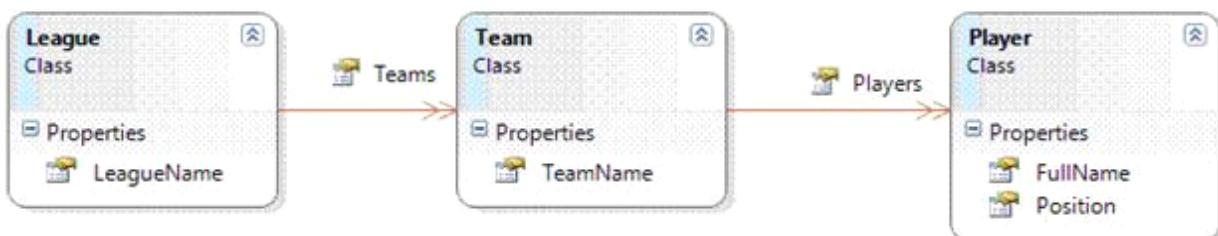
Explanation:

StoreGeneratedPattern Enumeration

(<http://msdn.microsoft.com/en-us/library/system.data.metadata.edm.storegeneratedpattern.aspx>)

Question: 150

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server database. You create the classes shown in the following exhibit.



You add the following code segment to the application. (Line numbers are included for reference only.)

```

01public void QueryPlayers (List <League> leagues) {
02
03}

```

You create a LINQ query to retrieve a collection of Player objects.

You need to ensure that the collection includes all the players from each team and every league.

Which code segment should you insert at line 02

- A. var query = leagues.Select (l => l.Teams.Select (t => t.Players));
- B. var query = leagues.Select (l => l.Teams.SelectMany (t => t.Players));
- C. var query = leagues.SelectMany (l => l.Teams.SelectMany (t => t.Players));
- D. var query = leagues.SelectMany (l => l.Teams.Select (t => t.Players));

Answer: C

Question: 151

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. You use the ADO.NET Entity Data Model (EDM) to define a Customer entity.

You need to add a new Customer to the data store without setting all the customer's properties. What should you do?

- A. Call the Create method of the Customer class.
- B. Call the CreateObject method of the Customer class.
- C. Override the Create method for the Customer class.
- D. Override the SaveChanges method for the Customer class.

Answer: B

Explanation:

CreateObject<T> Creates and returns an instance of the requested type .

Question: 152

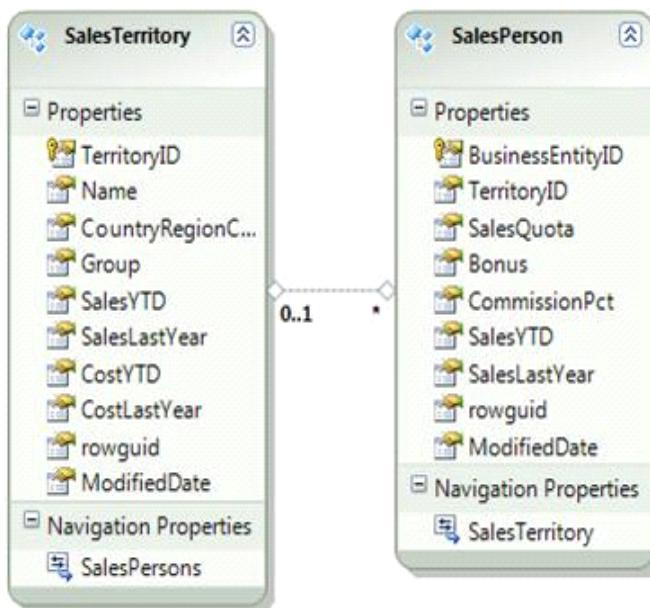
You are developing a Microsoft .NET Framework 4 application. You create an Entity Data Model (EDM) by using the Microsoft ADO.NET Entity Data Model Designer (Entity Designer). The EDM contains a complex type. You need to map a stored procedure to the complex type by using the Entity Designer. What should you do?

- A. Add an association to the stored procedure.
- B. Add a code generation item that has the name of the stored procedure.
- C. Add a function import for the stored procedure.
- D. Add an entity that mirrors the properties of the complex type.

Answer: C

Question: 153

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application. You use the ADO.NET Entity Framework Designer to model entities as shown in the following diagram.



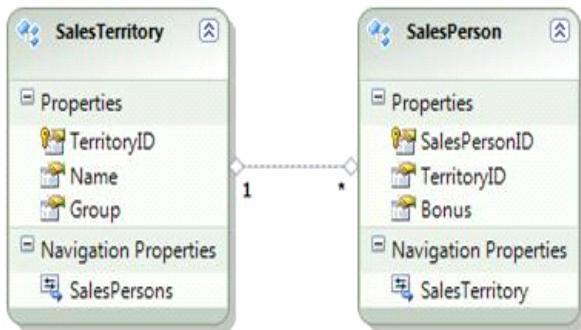
You create an `ObjectContext` instance named `objectContext1` and use it to create a `SalesPerson` instance named `person1`. You also create an `ObjectContext` instance named `objectContext2` and use it to create a `SalesTerritory` instance named `territory1`. You need to create and persist a relationship between `person1` and `territory1`. What should you do?

- A.
 1. Detach `person1` from `objectContext1`.
 2. Attach `person1` to `objectContext2`.
 3. Set the `SalesTerritory` property of `person1` to `territory1`.
 4. Call `SaveChanges` on `objectContext2`.
- B.
 1. Attach `person1` to `objectContext2`.
 2. Attach `territory1` to `objectContext1`.
 3. Set the `SalesTerritory` property of `person1` to `territory1`.
 4. Call `SaveChanges` on both `objectContext1` and `objectContext2`.
- C.
 1. Detach `person1` from `objectContext1`.
 2. Detach `territory1` from `objectContext2`.
 3. Set the `SalesTerritory` property of `person1` to `territory1`.
 4. Call `Refresh` on both `objectContext1` and `objectContext2`.
- D.
 1. Attach `person1` to `objectContext2`.
 2. Detach `territory1` from `objectContext2`.
 3. Set the `SalesTerritory` property of `person1` to `territory1`.
 4. Call `Refresh` on `objectContext1`.

Answer: A

Question: 154

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application that uses the Entity Framework. The application has an entity model that includes `SalesTerritory` and `SalesPerson` entities as shown in the following diagram.



You need to calculate the total bonus for all sales people in each sales territory. Which code segment should you use?

A. from person in model.SalesPersons

group person by person.SalesTerritory

into territoriesByPerson

select new

```
{
    SalesTerritory = territoriesByPerson.Key,
    TotalBonus = territoriesByPerson.Sum(person => person.Bonus)
};
```

B. from territory in model.SalesTerritories

group territory by territory.SalesPersons

into personByterritories

select new

```
{
    SalesTerritory = personByterritories.Key,
    TotalBonus = personByterritories.Key.Sum(person => person.Bonus)
};
```

C. model.SalesPersons

```
.GroupBy(person => person.SalesTerritory)
.SelectMany(group => group.Key.SalesPersons)
```

```
.Sum(person => person.Bonus);
```

D. model.SalesTerritories

```
.GroupBy(territory => territory.SalesPersons)
.SelectMany(group => group.Key)
```

```
.Sum(person => person.Bonus);
```

Answer: A

Question: 155

You use Microsoft .NET Framework 4 to develop an application that connects to a Microsoft SQL Server 2008 database. You add the following table to the database.

```
CREATE TABLE ObjectCache (
    Id INT IDENTITY PRIMARY KEY,
    SerializedObjectData XML )
```

You write the following code segment to retrieve records from the ObjectCache table. (Line numbers are included for reference only.)

```
01string s = GetConnectionStringFromConfigFile("xmlDb");
```

```
02using (SqlConnection conn = new SqlConnection(s))
```

```
03using (SqlCommand cmd = new SqlCommand(
```

```

04"select * from ObjectCache", conn))
05{
06conn.Open();
07SqlDataReader rdr = cmd.ExecuteReader();
08while(rdr.Read())
09{
10
11DeserializeObject(obj);
12}
13}

```

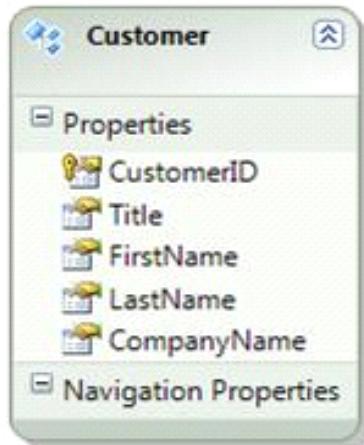
You need to retrieve the data from the SerializedObjectData column and pass it to a method named DeserializeObject. Which line of code should you insert at line 10?

- A. XmlReader obj = (XmlReader)rdr[1];
- B. SByte obj = (SByte)rdr[1];
- C. String obj = (String)rdr[1];
- D. Type obj = rdr[1].GetType();

Answer: C

Question: 156

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application that uses the Entity Framework. You create the following Entity Data Model.



You write the following code. (Line numbers are included for reference only.)

```

01using (var context = new AdventureWorksLTEntities())
02{
03Customer cust = context.Customers.First();
04cust.CompanyName = "Contoso";
05int count = 0;
06
07}

```

The changes to the cust entity must be saved. If an exception is thrown, the application must retry the save 3 times. You need to add a code segment to meet the requirements. Which code segment should you insert at line 06?

- A. while (count++ < 3)
 - {
 - try

```
{  
    context.SaveChanges();  
    break;  
}  
catch (Exception)  
{  
}  
}  
}  
B. while (cust.EntityState == EntityState.Modified )  
{  
try  
{  
    context.SaveChanges();  
}  
catch (Exception)  
{  
}  
if (count++ > 2 && context.Connection.State == ConnectionState.Broken)  
{  
    throw new Exception();  
}  
}  
}  
}  
C. while (true)  
{  
    context.SavingChanges += delegate  
    (System.Object o, System.EventArgs e)  
    {  
        if (count++ > 2)  
        {  
            throw new Exception();  
        }  
        context.SaveChanges();  
    };  
}  
}  
D. while (context.ObjectStateManager.GetObjectStateEntry  
(cust).OriginalValues.IsDBNull(0))  
{  
    if (count++ > 2)  
    {  
        break;  
    }  
    context.SaveChanges();  
}
```

Answer: B

Question: 157

You use Microsoft .NET Framework 4 to develop an application that connects to a Microsoft SQL Server 2008 database. The application contains the following code segment.

stringSQL=string.Format

```
("SELECT*FROMCustomerWHERECompanyNameLIKE'%{0}%',  
companyName);  
varcmd=newSqlCommand(SQL,con);
```

You need to reduce the vulnerability to SQL injection attacks. Which code segment should you use?

- A. stringSQL="SELECT * FROMCustomerWHERE" +
"CompanyNameLIKE@ companyName";
varcmd=newSqlCommand(SQL,con);
cmd.Parameters.AddWithValue("@ companyName",
string.Format("%{0}%",companyName));
- B. stringSQL="SELECT * FROMCustomerWHERE" +
"CompanyNameLIKE@ companyName";
varcmd=newSqlCommand(SQL,con);
varparam=newSqlParameter("@ companyName",
string.Format("%{0}%",companyName));
- C. stringSQL=string.Format("SELECT*FROM" +
"CustomerWHERECompanyNameLIKE{0}",
newSqlParameter("@ companyName",
string.Format("%{0}%",companyName)));
varcmd=newSqlCommand(SQL,con);
- D. stringSQL="SELECT * FROMCustomer@ companyName";
varcmd=newSqlCommand(SQL,con);
cmd.Parameters.AddWithValue("@ companyName",
string.Format("WHERECompanyNameLIKE'%{0}%",
companyName));

Answer: A

Explanation:

SqlParameterCollection.AddWithValue Method

(<http://msdn.microsoft.com/en-us/library/system.data.sqlclient.sqlparametercollection.addwithvalue.aspx>)

Question: 158

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application that uses the Entity Framework. You create an Entity Data Model (EDM) named Model. You need to ensure that the Storage Schema Definition Language (SSDL) of the EDM can be modified without rebuilding the application. What should you do?

- A. Set the Metadata Artifact Processing property to Embed in Output Assembly and use the following connection string.

```
metadata=res:///*/Model.csdl|res:///*/Model.ssdl|  
res:///*/Model.msl;  
provider=System.Data.SqlClient;  
provider connection string=& "
```

- B. Set the Metadata Artifact Processing property to Copy to Output Directory and use the following connection string.

```
metadata=res:///*/Model.csdl|res:///*/Model.ssdl|  
res:///*/Model.msl;  
provider=System.Data.SqlClient;  
provider connection string& ="& "
```

- C. Set the Metadata Artifact Processing property to Embed in Output Assembly and use the following connection string.

```
metadata=.\Model.csdl|.\Model.ssdl|.\Model.msl;
```

```
provider=System.Data.SqlClient;
```

```
provider connection string=& "
```

D. Set the Metadata Artifact Processing property to Copy to Output Directory and use the following connection string.

```
metadata=.\Model.csdl|.\Model.ssdl|.\Model.msl;
```

```
provider=System.Data.SqlClient;
```

```
provider connection string& ="& "
```

Answer: D

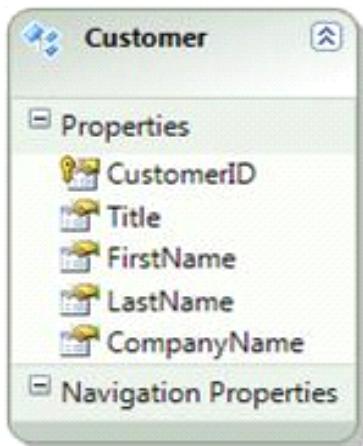
Explanation:

How to: Copy Model and Mapping Files to the Output Directory (Entity Data Model Tools)

(<http://msdn.microsoft.com/en-us/library/cc716709.aspx>)

Question: 159

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application that uses the Entity Framework. You create the following Entity Data Model.



You write the following code. (Line numbers are included for reference only.)

```
01 Using context As New Model1Container()
02 Dim cust As Customer = context.Customers.First()
03 cust.CompanyName = "Contoso"
04 Dim count As Integer = 0
05
06 End Using
```

The changes to the cust entity must be saved. If an exception is thrown, the application must retry the save 3 times. You need to add a code segment to meet the requirements. Which code segment should you insert at line 05?

A. While (count < 3)

Try

```
context.SaveChanges()
```

Exit While

Catch ex As Exception

End Try

```
count += 1
```

End While

B. While (cust.EntityState = EntityState.Modified)

Try

```

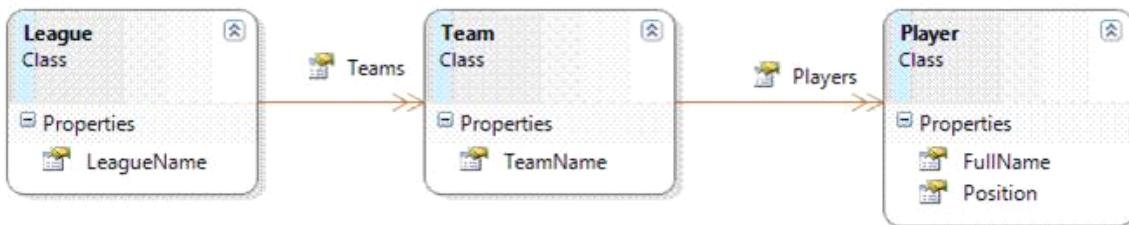
context.SaveChanges()
Catch ex As Exception
count += 1
If (count > 2 AndAlso context.Connection.State =
ConnectionState.Broken) Then
Throw New Exception()
End If
End Try
End While
C. While (True)
AddHandler context.SavingChanges, _
Function(o As System.Object, e As System.EventArgs)
count += 1
If count > 2 Then
Throw New Exception()
End If
context.SaveChanges()
End Function
End While
D. While (context.ObjectStateManager.GetObjectStateEntry(
cust).OriginalValues.IsDBNull(0))
count += 1
If (count > 2) Then
Exit While
End If
context.SaveChanges()
End While

```

Answer: B

Question: 160

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server database. You create the classes shown in the following exhibit.



You add the following code segment to the application. (Line numbers are included for reference only.)

```
01Public Sub QueryPlayers(leagues As List(Of League))
```

```
02
```

```
03End Sub
```

You create a LINQ query to retrieve a collection of Player objects. You need to ensure that the collection includes all the players from each team and every league. Which code segment should you insert at line 02?

- A. Dim query As var = leagues.[Select](Function(l As) l.Teams.[Select](Function(t As) t.Players))
- E. Dim query As var = leagues.[Select](Function(l As) l.Teams.SelectMany(Function(t As) t.Players))
- C. Dim query As var = leagues.SelectMany(Function(l As) l.Teams.SelectMany(Function(t As) t.Players))

D. Dim query As var = leagues.SelectMany(Function(l As) l.Teams.[Select](Function(t As) t.Players))

Answer: C

Question: 161

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application contains the following XML document.

```
< feed >
< title > Products < /title >
< entry >
< title > Entry title 1 < /title >
< author > Author1 < /title >
< content >
< properties >
< description > some description < /description >
< notes > some notes < /notes >
< comments > some comments < /comments >
< /properties >
< /content >
< /entry >
...
< /feed >
```

You plan to add localization features to the application.

You add the following code segment. (Line numbers are included for reference only.)

```
01Public Function GetTextNodesForLocalization(doc As XDocument) As IEnumerable(Of XNode)
02
03Return From n In nodes _
04Where n.NodeType = XmlNodeType.Text _
05 Select n
06End Function
```

You need to ensure that the GetTextNodesForLocalization method returns all the XML text nodes of the document. Which code segment should you insert at line 02?

- A. Dim nodes As IEnumerable(Of XNode) = doc.Descendants()
- B. Dim nodes As IEnumerable(Of XNode) = doc.Nodes()
- C. Dim nodes As IEnumerable(Of XNode) = doc.DescendantNodes()
- D. Dim nodes As IEnumerable(Of XNode) = doc.NodesAfterSelf()

Answer: C

Explanation:

DescendantNodes() Returns a collection of the descendant nodes for this document or element, in document order.

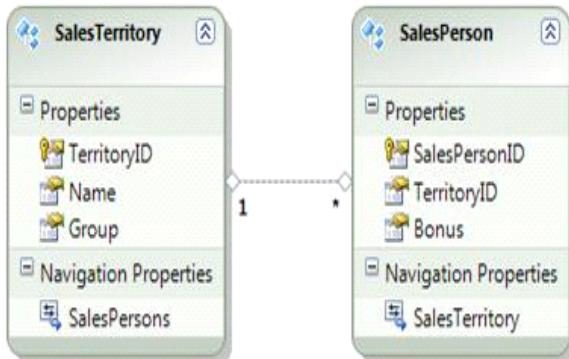
Descendants() Returns a collection of the descendant elements for this document or element, in document order.

Nodes() Returns a collection of the child nodes of this element or document, in document order.

NodesAfterSelf() Returns a collection of the sibling nodes after this node, in document order

Question: 162

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application that uses the Entity Framework. The application has an entity model that includes SalesTerritory and SalesPerson entities as shown in the following diagram.



You need to calculate the total bonus for all sales people in each sales territory. Which code segment should you use?

- A. From territory in model.SalesTerritories

```

Group Join person In model.SalesPersons On _
person.SalesTerritory Equals territory
Into territoriesByPerson = Group
Select New With {
.SalesTerritory = territory.Name,
.TotalBonus = territoriesByPerson.Sum(Function(p) p.Bonus)
}
  
```

- B. From territory in model.SalesTerritories

```

Group territory By territory.SalesPersons
Into personByterritories = Group _
Select New With
{
.SalesTerritory = personByterritories,
.TotalBonus = personByterritories.Sum(Function(person) _
person.SalesPersons(0).Bonus)
}
  
```

- C. model.SalesPersons. _

```

GroupBy(Function(person) person.SalesTerritory). _
SelectMany(Function(group) group.Key.SalesPersons). _
Sum(Function(person) person.Bonus)
  
```

- D. model.SalesTerritories. _

```

GroupBy(Function(territory) territory.SalesPersons). _
SelectMany(Function(group) group.Key). _
Sum(Function(person) person.Bonus)
  
```

Answer: A

Question: 163

You use Microsoft .NET Framework 4 to develop an application that connects to a Microsoft SQL Server 2008 database. You add the following table to the database.

```

CREATE TABLE ObjectCache (
Id INT IDENTITY PRIMARY KEY,
SerializedObjectData XML )
  
```

You write the following code segment to retrieve records from the ObjectCache table. (Line numbers are included for reference only.)

```
01Dim s As String = GetConnectionStringFromConfigFile("xmlDb")
02Using conn As New SqlConnection(s)
03Using cmd As New SqlCommand(
04"select * from ObjectCache", conn))
05
06conn.Open()
07Dim rdr As SqlDataReader = cmd.ExecuteReader()
08While rdr.Read()
09
10DeserializeObject(obj)
11End While
12End Using
13End Using
```

You need to retrieve the data from the SerializedObjectData column and pass it to a method named DeserializeObject. Which line of code should you insert at line 9?

A. Dim obj As XmlReader = DirectCast(rdr(1), XmlReader)
B. Dim obj As SByte = DirectCast(rdr(1), SByte)
C. Dim obj As String = DirectCast(rdr(1), String)
D. Dim obj As Type = rdr(1).GetType()

Answer: C

Question: 164

You use Microsoft .NET Framework 4 to develop an application that uses LINQ to SQL. You create a data model named AdvWorksDataContext, and you add the Product table to the data model. The Product table contains a decimal column named ListPrice and a string column named Color. You need to update the ListPrice column where the product color is Black or Red. Which code segment should you use?

A. Dim colorList() As String = New String() {"Black", "Red"}
Dim dc As AdvWorksDataContext = New AdvWorksDataContext
Dim prod = From p In dc.Products
Where colorList.Contains(p.Color)
Select p
For Each product In prod
product.ListPrice = product.StandardCost * 1.5
Next
dc.SubmitChanges()
B. Dim dc As AdvWorksDataContext =
New AdvWorksDataContext(" & ")
Dim prod = From p In dc.Products
Select p
Dim list = prod.ToList()
For Each product As Product In list
If (product.Color = "Black,Red") Then
product.ListPrice = product.StandardCost * 1.5
End If
Next

```

dc.SubmitChanges()
C. Dim dc As AdvWorksDataContext =
New AdvWorksDataContext( "& " )
Dim prod = From p In dc.Products
Where p.Color = "Black,Red"
Select p
For Each product In prod
product.ListPrice = product.StandardCost * 1.5
Next
dc.SubmitChanges()
D. Dim dc As AdvWorksDataContext =
New AdvWorksDataContext( "& " )
Dim prod = From p In dc.Products
Select p
Dim list = prod.ToList()
For Each product As Product In list
If (product.Color = "Black") AndAlso
(product.Color = "Red") Then
product.ListPrice = product.StandardCost * 1.5
End If
Next
dc.SubmitChanges()

```

Answer: A

Question: 165

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server database. The application uses the ADO.NET Entity Framework to model entities. The database includes objects based on the exhibit. The application includes the following code segment. (Line numbers are included for reference only.)

```

01 using (AdventureWorksEntities context = new AdventureWorksEntities()){
02
03 foreach (SalesOrderHeader order in customer.SalesOrderHeader){
04 Console.WriteLine(String.Format("Order: {0} ", order.SalesOrderNumber));
05 foreach (SalesOrderDetail item in order.SalesOrderDetail){
06 Console.WriteLine(String.Format("Quantity: {0} ", item.Quantity));
07 Console.WriteLine(String.Format("Product: {0} ", item.Product.Name));
08}
09}
10}

```

You want to list all the orders for a specified customer. You need to ensure that the list contains the following fields:

- "Order number"
- "Quantity of products"
- "Product name"

Which code segment should you insert at line 02?

- A. Contact customer = context.Contact.Where("it.ContactID = @customerId", new ObjectParameter ("@customerId", customerId)).First();
- B. Contact customer = context.Contact.Where("it.ContactID = @customerId", new ObjectParameter ("customerId", customerId)).First();

- C. context.ContextOptions.LazyLoadingEnabled = true; Contact customer = (From contact in context.Contact include("SalesOrderHeader.SalesOrderDetail") select conatct).FirstOrDefault();
- D. Contact customer = (From contact in context.Contact include("SalesOrderHeader") select conatct).FirstOrDefault();

Answer: B

Question: 166

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. You use the ADO.NET Entity Framework to model entities. You write the following code segment. (Line numbers are included for reference only.)

```
01public partial class SalesOrderDetail : EntityObject  
02{  
03partial void OnOrderQtyChanging(short value)  
04{  
05  
06{  
07...  
08}  
09}  
10}
```

You need to find out whether the object has a valid ObjectStateEntry instance. Which code segment should you insert at line 05?

- A. if (this.EntityState != EntityState.Detached)
- B. if (this.EntityState != EntityState.Uncanged)
- C. if (this.EntityState != EntityState.Modified)
- D. if (this.EntityState != EntityState.Added)

Answer: A

Explanation:

Detached The object exists but is not being tracked. An entity is in this state immediately after it has been created and before it is added to the object context. An entity is also in this state after it has been removed from the context by calling the Detach method or if it is loaded by using a NoTracking MergeOption. There is no ObjectStateEntry instance associated with objects in the Detached state.

Unchanged The object has not been modified since it was attached to the context or since the last time that the SaveChanges method was called.

Added The object is new, has been added to the object context, and the SaveChanges method has not been called. After the changes are saved, the object state changes to Unchanged. Objects in the Added state do not have original values in the ObjectStateEntry.

Deleted The object has been deleted from the object context. After the changes are saved, the object state changes to Detached.

Modified One of the scalar properties on the object was modified and the SaveChanges method has not been called.

In POCO entities without change-tracking proxies, the state of the modified properties changes to Modified when the DetectChanges method is called. After the changes are saved, the object state changes to Unchanged.

EntityType Enumeration

(<http://msdn.microsoft.com/en-us/library/system.data.entitystate.aspx>)

CHAPTER 6 ADO.NET Entity Framework

Lesson 1: What Is the ADO.NET Entity Framework?

Storing Information about Objects and Their State (page 381)

Question: 167

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server 2008 database. The database includes a table named dbo. Documents that contains a column with large binary data. You are creating the Data Access Layer (DAL). You add the following code segment to query the dbo.Documents table. (Line numbers are included for reference only.)

```
01 public void LoadDocuments(DbConnection cnx)
02 {
03     var cmd = cnx.CreateCommand();
04     cmd.CommandText = "SELECT * FROM dbo.Documents";
05 ...
06     cnx.Open();
07 ...
08     ReadDocument(reader);
09 }
```

You need to ensure that data can be read as a stream. Which code segment should you insert at line 07?

- A. var reader = cmd.ExecuteReader(CommandBehavior.Default);
- B. var reader = cmd.ExecuteReader(CommandBehavior.SchemaOnly);
- C. var reader = cmd.ExecuteReader(CommandBehavior.KeyInfo);
- D. var reader = cmd.ExecuteReader(CommandBehavior.SequentialAccess);

Answer: D

Explanation:

CommandBehavior:

Default The query may return multiple result sets. Execution of the query may affect the database state. Default sets no CommandBehavior flags, so calling ExecuteReader(CommandBehavior.Default) is functionally equivalent to calling ExecuteReader().

SingleResult The query returns a single result set.

SchemaOnly The query returns column information only. When using SchemaOnly, the .NET Framework Data Provider for SQL Server precedes the statement being executed with SET FMTONLY ON.

KeyInfo The query returns column and primary key information. When KeyInfo is used for command execution, the provider will append extra columns to the result set for existing primary key and timestamp columns. When using KeyInfo, the .NET Framework Data Provider

for SQL Server precedes the statement being executed with SET FMTONLY OFF and SET NO_BROWSETABLE ON.

The user should be aware of potential side effects, such as interference with the use of SET FMTONLY ON statements.

SingleRow The query is expected to return a single row of the first result set. Execution of the query may affect the database state.

Some .NET Framework data providers may, but are not required to, use this information to optimize the performance of the command.

When you specify SingleRow with the ExecuteReader method of the OleDbCommand object, the .NET Framework Data Provider for

OLE DB performs binding using the OLE DB IRow interface if it is available. Otherwise, it uses the IRowset interface.

If your SQL statement is expected to return only a single row, specifying SingleRow can also improve application performance.

It is possible to specify SingleRow when executing queries that are expected to return multiple result sets.

In that case, where both a multi-result set SQL query and single row are specified, the result returned will contain only the first row of the first result set. The other result sets of the query will not be returned.

SequentialAccess Provides a way for the DataReader to handle rows that contain columns with large binary values. Rather than loading the entire row,

SequentialAccess enables the DataReader to load data as a stream. You can then use the GetBytes or GetChars method to specify a byte location to start the read operation, and a limited buffer size for the data being returned.

When you specify SequentialAccess, you are required to read from the columns in the order they are returned, although you are not required to read each column. Once you have read past a location in the returned stream of data, data at or before that location can no longer be read from the DataReader.

When using the OleDbDataReader, you can reread the current column value until reading past it. When using the SqlDataReader, you can read a column value can only once.

CloseConnection When the command is executed, the associated Connection object is closed when the associated DataReader object is closed.

CommandBehavior Enumeration

(<http://msdn.microsoft.com/en-us/library/system.data.commandbehavior.aspx>)

Question: 168

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application uses the ADO.NET Entity Framework to model entities. The application allows users to make changes while disconnected from the data store. Changes are submitted to the data store by using the SubmitChanges method of the DataContext object. You receive an exception when you call the SubmitChanges method to submit entities that a user has changed in offline mode. You need to ensure that entities changed in offline mode can be successfully updated in the data store. What should you do?

- A. Set the ObjectTrackingEnabled property of DataContext to true.
- B. Set the DeferredLoadingEnabled property of DataContext to true.
- C. Call the SaveChanges method of DataContext with a value of false.
- D. Call the SubmitChanges method of DataContext with a value of System.Data.Linq.ConflictMode.ContinueOnConflict.

Answer: A

Explanation:

ObjectTrackingEnabled Instructs the framework to track the original value and object identity for this DataContext.

ObjectTrackingEnabled Property

(<http://msdn.microsoft.com/en-us/library/system.data.linq.datacontext.objecttrackingenabled.aspx>)

Question: 169

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application contains the following XML fragment.

```
<ApplicationMenu>
<MenuItem name="File">
<MenuItem name="New">
<MenuItem name="Project" />
<MenuItem name="Web Site" />
</MenuItem>
<MenuItem name="Open">
```

```
<MenuItem name="Project" />
<MenuItem name="Web Site" />
</MenuItem>
<MenuItem name="Save" />
</MenuItem>
<MenuItem name="Edit">
<MenuItem name="Cut" />
<MenuItem name="Copy" />
<MenuItem name="Paste" />
</MenuItem>
<MenuItem name="Help">
<MenuItem name="Help" />
<MenuItem name="About" />
</MenuItem>
</ApplicationMenu>
```

The application queries the XML fragment by using the XmlDocument class. You need to select all the descendant elements of the MenuItem element that has its name attribute as File. Which XPath expression should you use?

- A. //*[@name='File'][name()='MenuItem']
- B. /ApplicationMenu/MenuItem['File']//MenuItem
- C. /ApplicationMenu/MenuItem/descendant::MenuItem['File']
- D. /ApplicationMenu/MenuItem[@name='File']/descendant::MenuItem

Answer: D

Explanation:

XPath Examples:

```
XmlNodeList nodes = doc.SelectNodes("/ApplicationMenu/MenuItem[@name='File']/descendant::MenuItem"); // 01 == 02
XmlNodeList nodes = doc.SelectNodes("/ApplicationMenu/MenuItem[@name='File']//MenuItem"); // 02 == 01
XmlNodeList nodes = doc.SelectNodes("/ApplicationMenu/MenuItem[2]/descendant::MenuItem"); // 03
XmlNodeList nodes = doc.SelectNodes("/ApplicationMenu/MenuItem[last()]/descendant::MenuItem"); // 04
XmlNodeList nodes = doc.SelectNodes("/ApplicationMenu/MenuItem/descendant::MenuItem[/ApplicationMenu/MenuItem/@name=@name]"); // 05
XmlNodeList nodes = doc.SelectNodes("/ApplicationMenu/MenuItem/*"); // 06
XmlNodeList nodes = doc.SelectNodes("/ApplicationMenu/MenuItem/descendant::*[@Description]"); // 07
XmlNodeList nodes = doc.SelectNodes("/ApplicationMenu/MenuItem[MenuItem][position()=2]"); // 08 == 09
XmlNodeList nodes = doc.SelectNodes("/ApplicationMenu/MenuItem[MenuItem and position()=2]"); // 09 == 08
XmlNodeList nodes = doc.SelectNodes("/ApplicationMenu/MenuItem[SubMenu or position()=2]"); // 10
```

XPath Examples

(<http://msdn.microsoft.com/en-us/library/ms256086.aspx>)

Question: 170

You use Microsoft visual studio 2010 and Microsoft .NET Framework 4 to create an Application. The application uses the ADO.NET Entity Framework to model entities. The model includes the entity shown in the following exhibit.



You need to add a function that returns the number of years since a person was hired. You also need to ensure that the function can be used within LINQ to Entities queries. What should you do?

A. //Add the following conceptual model function returns the number of years since an instructor was hired

```
<Function Name="YearsSince" ReturnType="Edm.Int32">
<Parameter Name="date" Type="Edm.DateTime" />
<DefiningExpression>
    Year(CurrentDateTime()) - Year(date)
</DefiningExpression>
</Function>
```

// add the following method to your application and use an EdmFunctionAttribute to map it to the conceptual model function:

```
[EdmFunction("SchoolModel", "YearsSince")]
public static int YearsSince(DateTime date)
{
    throw new NotSupportedException("Direct calls are not supported.");
}
```

B. //Add the following conceptual model function returns the number of years since an instructor was hired

```
<Function Name="YearsSince" ReturnType="Edm.Int32">
<Parameter Name="date" Type="Edm.DateTime" />
<DefiningExpression>
    Year(CurrentDateTime()) - Year(date)
</DefiningExpression>
</Function>
```

// add the following method to your application and use an EdmFunctionAttribute to map it to the conceptual model function:

```
[EdmFunction("SchoolModel", "YearsSince")]
public static int YearsSince(DateTime date)
{
    return CurrentDateTime() - Year(date);
}
```

C. //Add the following conceptual model function returns the number of years since an instructor was hired

```
<Function Name="YearsSince" ReturnType="Edm.Int32">
<Parameter Name="date" Type="Edm.DateTime" />
<DefiningExpression>
    YearsSince(DateTime date)
</DefiningExpression>
</Function>
```

// add the following method to your application and use an EdmFunctionAttribute to map it to the conceptual model function:

```
[EdmFunction("SchoolModel", "YearsSince")]
public static int YearsSince(DateTime date)
{
```

```
return CurrentDateTime() - Year(date);  
}
```

D. Use the Entity Data Model Designer to create a complex property named YearsSinceNow that can be accessed through the LINQ to Entities query at a later time

Answer: A

Explanation:

<http://msdn.microsoft.com/en-us/library/dd456857.aspx>

Question: 171

The database contains a table named Categories. The Categories table has a primary key identity column named CategoryID.

The application inserts new records by using the following stored procedure.

```
CREATE PROCEDURE dbo.InsertCategory  
@CategoryName nvarchar(15),  
@Identity int OUT  
AS  
INSERT INTO Categories (CategoryName) VALUES(@CategoryName)  
SET @Identity = SCOPE_IDENTITY()  
RETURN @@ROWCOUNT
```

You write the following code segment.

```
SqlDataAdapter adapter = new SqlDataAdapter("SELECT categoryID, CategoryName FROM  
dbo.Categories",connection);  
adapter.InsertCommand = new SqlCommand("dbo.InsertCategory", connection);  
adapter.InsertCommand.CommandType = commandType.StoredProcedure;  
adapter.InsertCommand.Parameters.Add(new SqlParameter("@CategoryName", SqlDbType.  
NVarChar, 15,"CategoryName"));
```

You need to retrieve the identity value for the newly created record.

Which code segment should you add?

- A. SqlParameter parameter = adapter.InsertCommand.Parameters.Add("@CategoryName", SqlDbType.Int);
parameter.Direction = ParameterDirection.Output;
parameter = adapter.InsertCommand.Parameters.Add("@Identity", SqlDbType.Int, 0, "CategoryID");
parameter.Direction = ParameterDirection.Output;
- B. SqlParameter parameter = adapter.InsertCommand.Parameters.Add("@CategoryName", SqlDbType.Int);
parameter.Direction = ParameterDirection.Output;
parameter = adapter.InsertCommand.Parameters.Add("@Identity", SqlDbType.Int, 0, "CategoryID");
parameter.Direction = ParameterDirection.ReturnValue;
- C. SqlParameter parameter = adapter.InsertCommand.Parameters.Add("@RowCount", SqlDbType.Int);
parameter.Direction = ParameterDirection.ReturnValue;
parameter = adapter.InsertCommand.Parameters.Add("@Identity", SqlDbType.Int, 0, "CategoryID");
parameter.Direction = ParameterDirection.Output;
- D. SqlParameter parameter = adapter.InsertCommand.Parameters.Add("@RowCount", SqlDbType.Int);
parameter.Direction = ParameterDirection.Output;
parameter = adapter.InsertCommand.Parameters.Add("@Identity", SqlDbType.Int, 0, "CategoryID");
parameter.Direction = ParameterDirection.ReturnValue

Answer: C

Question: 172

The application populates a DataSet object by using a SqlDataAdapter object. You use the DataSet object to update the Categories database table in the database.

You write the following code segment. (Line numbers are included for reference only.)

```
01 SqlDataAdapter dataAdpater = new SqlDataAdapter("SELECT CategoryID,  
CategoryName FROM Categories", connection);  
02 SqlCommandBuilder builder = new SqlCommandBuilder(dataAdpater);  
03 DataSet ds = new DataSet();  
04 dataAdpater.Fill(ds);  
05 foreach (DataRow categoryRow in ds.Tables[0].Rows)  
06 {  
07 if (string.Compare(categoryRow["CategoryName"].ToString(), searchValue,  
true) == 0)  
08 {  
09  
10 }  
11 }  
12 dataAdpater.Update(ds);
```

You need to remove all the records from the Categories database table that match the value of the searchValue variable. Which line of code should you insert at line 09?

- A. categoryRow.Delete();
- B. ds.Tables[0].Rows.RemoveAt(0);
- C. ds.Tables[0].Rows.Remove(categoryRow);
- D. ds.Tables[0].Rows[categoryRow.GetHashCode()].Delete();

Answer: A

Explanation:

DataRow Class

(<http://msdn.microsoft.com/en-us/library/system.data.datarow.aspx>)

DataRow.Delete() Deletes the DataRow.

Question: 173

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server 2008 database. You must to retrieve a connection string. Wich the correct form.

- A. string connectionString = ConfigurationSettings.AppSettings["connectionString"];
- B. string connectionString = ConfigurationManager.AppSettings["connectionString"];
- C. string connectionString = ApplicationManager.ConnectionStrings["connectionString"];
- D. string connectionString = ConfigurationManager.ConnectionStrings["connectionString"].ConnectionString;

Answer: D

Explanation:

CHAPTER 2 ADO.NET Connected Classes

Lesson 1: Connecting to the Data Store

Storing the Connection String in the Application Configuration File (page 75)

Question: 174

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server 2008 database. The application uses a Microsoft ADO.NET SQL Server managed provider.

"Data Source=myServerAddress; Initial Catalog=myDataBase; User Id=myUsername; Password=secret;"

You need to ensure that the database credentials are secure. Which the correct Properties to insert?

- A. Integrated Security=SSPI;
- B. Persist Security Info=true;
- C. Persist Security Info=false;
- D. Integrated Security=false;

Answer: C

Explanation:

Persist Security Info

Default: 'false'

When set to false or no (strongly recommended), security-sensitive information, such as the password, is not returned as part of the connection if the connection is open or has ever been in an open state.

Resetting the connection string resets all connection string values including the password.

Recognized values are true, false, yes, and no.

SSPI

([http://msdn.microsoft.com/en-us/library/windows/desktop/aa380493\(v=vs.85\).aspx](http://msdn.microsoft.com/en-us/library/windows/desktop/aa380493(v=vs.85).aspx))

Question: 175

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create a multi-tier application. You use Microsoft ADO.NET Entity Data Model (EDM) to model entities. The model contains entities named SalesOrderHeader and SalesOrderDetail. For performance considerations in querying SalesOrderHeader, you detach SalesOrderDetail entities from ObjectContext. You need to ensure that changes made to existing SalesOrderDetail entities updated in other areas of your application are persisted to the database. Which two actions should you perform? (Each correct answer presents part of the solution. Choose two.)

- A. Set the MergeOption of SalesOrderDetail to MergeOptions.OverwriteChanges.
- B. Re-attach the SalesOrderDetail entities.
- C. Set the MergeOption of SalesOrderDetail to MergeOptions.NoTracking.
- D. Call ObjectContext.ApplyOriginalValue.
- E. Call ObjectContext.ApplyCurrentValue.

Answer: B, D

Explanation:

ApplyCurrentValues(Of TEntity) Copies the scalar values from the supplied object into the object in the ObjectContext that has the same key.

The ApplyCurrentValues< TEntity > method is used to apply changes that were made to objects outside the ObjectContext, such as detached objects that are received by a Web service. The method copies the scalar values from the supplied object into the object in the ObjectContext that has the same key. You can use the EntityKey of the

detached object to retrieve an instance of this object from the data source. Any values that differ from the original values of the object are marked as modified.

Note, the method does not apply the current values to the related objects of currentEntity.

ApplyOriginalValues(Of TEntity) Copies the scalar values from the supplied object into set of original values for the object in the ObjectContext that has the same key.

The **ApplyOriginalValues< TEntity >** method is used to apply changes that were made to objects outside the ObjectContext, such as detached objects that are received by a Web service. The method copies the scalar values from the supplied object into the object in the ObjectContext that has the same key. You can use the EntityKey of the detached object to retrieve an instance of this object from the data source. Any values that differ from the current values of the object are marked as modified.

Note, the method does not apply the current values to the related objects of originalEntity.

Question: 176

You have been assigned the task of writing code that executes an Entity SQL query that returns entity type objects that contain a property of a complex type. You need to fix line 12 -

Choose the correct line of code

```
01 using (EntityCommand cmd = conn.CreateCommand())
02 {
03 cmd.CommandText = esqlQuery;
04 EntityParameter param = new EntityParameter();
05 param.ParameterName = "id";
06 param.Value = 3;
07 cmd.Parameters.Add(param);
08 using (EntityDataReader rdr = cmd.ExecuteReader(CommandBehavior.SequentialAccess))
09 {
10 while (rdr.Read())
11 {
12
13 Console.WriteLine("Email and Phone Info:");
14 for (int i = 0; i < nestedRecord.FieldCount; i++)
15 {
16 Console.WriteLine(" " + nestedRecord.GetName(i) + ": " + nestedRecord.GetValue(i));
17 }
18 }
19 }
```

- A. ComplexDataRecord nestedRecord = rdr["EmailPhoneComplexProperty"];
- B. DbDataRecord nestedRecord = rdr["EmailPhoneComplexProperty"];
- C. DataSet nestedRecord = rdr["EmailPhoneComplexProperty"] as ComplexDataSet
- D. DbDataRecord nestedRecord = rdr["EmailPhoneComplexProperty"] as DbDataRecord;

Answer: D

Explanation:

How to: Execute a Query that Returns Complex Types

(<http://msdn.microsoft.com/en-us/library/bb896329.aspx>)

```
using (EntityConnection conn = new EntityConnection(ConfigurationManager.ConnectionStrings
["StoreConnection"].ConnectionString))
{
using (EntityCommand comm = conn.CreateCommand())
```

```
{  
// Here StoreConnection - ObjectContext name, Customers - correct DataSet name  
comm.CommandText = "Select Customers.CustomerID, Customers.Name, Customers.Address  
from StoreConnection.Customers where Customers.CustomerID=@qqqCustomerID";  
EntityParameter param = new EntityParameter("qqqCustomerID", DbType.Int32);  
param.Value = 1;  
comm.Parameters.Add(param);  
conn.Open();  
var reader = comm.ExecuteReader(CommandBehavior.SequentialAccess);  
while (reader.Read())  
{  
    DbDataRecord record = reader["Address"] as DbDataRecord;  
    for (int i = 0; i < record.FieldCount; i++)  
    {  
        name.Text += "<br/>" + record.GetName(i) + " : " + record.GetValue(i).ToString();  
    }  
}  
reader.Close();  
}  
}
```

Question: 177

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server 2008 database.

```
SQLConnection conn = new SQLConnection(connectionString);  
conn.Open();  
SqlTransaction tran = db.BeginTransaction(IsolationLevel. ...);  
...  
You must retrieve not committed records originate from various transactions.
```

Which method should you use?

- A. Serializable
- B. RepeatableRead
- C. ReadCommitted
- D. ReadUncommitted

Answer: D

Explanation:

Unspecified A different isolation level than the one specified is being used, but the level cannot be determined. When using OdbcTransaction, if you do not set IsolationLevel or you set IsolationLevel to Unspecified, the transaction executes according to the isolation level that is determined by the driver that is being used.

Chaos The pending changes from more highly isolated transactions cannot be overwritten.

ReadUncommitted A dirty read is possible, meaning that no shared locks are issued and no exclusive locks are honored.

ReadCommitted Shared locks are held while the data is being read to avoid dirty reads, but the data can be changed before the end of the transaction, resulting in non-repeatable reads or phantom data.

RepeatableRead Locks are placed on all data that is used in a query, preventing other users from updating the data. Prevents non-repeatable reads but phantom rows are still possible.

Serializable A range lock is placed on the DataSet, preventing other users from updating or inserting rows into the dataset until the transaction is complete.

Snapshot Reduces blocking by storing a version of data that one application can read while another is modifying the same data. Indicates that from one transaction you cannot see changes made in other transactions, even if you requery.

IsolationLevel Enumeration

(<http://msdn.microsoft.com/en-us/library/system.data.isolationlevel.aspx>)

SET TRANSACTION ISOLATION LEVEL (Transact-SQL)

(<http://msdn.microsoft.com/ru-ru/library/ms173763.aspx>)

(<http://msdn.microsoft.com/en-us/library/ms173763.aspx>)

Question: 178

The application contains following XML document.

```
<feed>
<title>Products</title>
<entry>
<title>Entry title 1</title>
<author>Author 1</author>
<content>
<properties>
<description>some description</description>
<notes>some notes</notes>
<comments>some comments</comments>
</properties>
</content>
</entry>
...
</feed>
```

You plan to add localization features to the application.

You add the following code segment:

```
public IEnumerable <XNode> GetTextNodesForLocalization(XDocument doc)
{
    -- empty line here
    return from n in nodes
    where n.NodeType = XmlNodeType.Text
    select n;
}
```

You need to ensure that the GetTextNodesForLocalization method returns all the XML text nodes of the XML document. Which code segment should you insert at the empty line?

- A. IEnumerable <XNode> nodes = doc.Descendants;
- B. IEnumerable <XNode> nodes = doc.Nodes();
- C. IEnumerable <XNode> nodes = doc.DescendantNodes();
- D. IEnumerable <XNode> nodes = doc.NodesAfterSelf;

Answer: C

Explanation:

DescendantNodes() Returns a collection of the descendant nodes for this document or element, in document order.

Descendants() Returns a collection of the descendant elements for this document or element, in

document order.

Nodes() Returns a collection of the child nodes of this element or document, in document order.

NodesAfterSelf() Returns a collection of the sibling nodes after this node, in document order

Question: 179

Ensure that SSDL can be modified without rebuilding application.

- A. res:///*/Model.csdl | ... (rest of files) copy to output directory
- B. .(backslash)Model.csdl | ... (rest of files) embeded in output assembly
- C. res:///*/Model.csdl | ... (rest of files) embeded in output assembly
- D. .(backslash)Model.csdl | ... (rest of files) copy to output directory

Answer: D

Question: 180

The user interface requires that a paged view be displayed of all the products sorted in alphabetical order. The user interface supplies a current starting index and a page size in variables named startIndex and pageSize of type int.

You need to construct a LINQ expression that will return the appropriate Parts from the database from an existing ContosoEntities context object named context. You begin by writing the following expression: context.Parts

Which query parts should you use in sequence to complete the expression?

(To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.)

- A. .OrderBy(x => x.Name)
- B. .Skip(pageSize)
- C. .Skip(startIndex)
- D. .Take(pageSize);
- E. .Take(startIndex)

Answer: A, C, D

Question: 181

You use Microsoft .NET Framework 4.0 to develop an application that connects to a local Microsoft SQL Server 2008 database. The application can access a high-resolution timer. You need to display the elapsed time, in sub-milliseconds (<1 millisecond), that a database query takes to execute. Which code segment should you use?

- A. int Start = Environment.TickCount;
command.ExecuteNonQuery();
int Elapsed = (Environment.TickCount) - Start;
Console.WriteLine("Time Elapsed: {0:N} ms", Elapsed);
- B. Stopwatch sw = Stopwatch.StartNew();
command.ExecuteNonQuery();
sw.Stop();
Console.WriteLine("Time Elapsed: {0:N} ms", sw.Elapsed.TotalMilliseconds);
- C. DateTime Start = DateTime.UtcNow;
command.ExecuteNonQuery();
TimeSpan Elapsed = DateTime.UtcNow - Start;

```
Console.WriteLine("Time Elapsed: {0:N} ms", Elapsed.Milliseconds);
D. Stopwatch sw = new Stopwatch();
sw.Start();
command.ExecuteNonQuery();
sw.Stop();
Console.WriteLine("Time Elapsed: {0:N} ms", sw.Elapsed.Milliseconds);
```

Answer: D

Explanation:

Stopwatch Class

(<http://msdn.microsoft.com/en-us/library/system.diagnostics.stopwatch.aspx>)

Question: 182

How do you define a WCF Data Service query to grab the first 10 records. Options are something like:

- A. DataServiceQuery<Order> selectedOrders = context.Orders.AddQueryOption("\$top", "10");
- B. DataServiceQuery<Order> selectedOrders = context.Orders.AddQueryOption("\$filter", "10");
- C. DataServiceQuery<Order> selectedOrders = context.Orders.AddQueryOption("\$select", "10");
- D. DataServiceQuery<Order> selectedOrders = context.Orders.AddQueryOption("\$expand", "10");

Answer: A

Explanation:

Accessing Data Service Resources (WCF Data Services)

(<http://msdn.microsoft.com/en-us/library/dd728283.aspx>)

DataServiceQuery<TElement>.AddQueryOption Method

(<http://msdn.microsoft.com/en-us/library/cc646860.aspx>)

Question: 183

There are Entities - States Class, Cities class. Deleting of state id raises exception. Which of the following?

- A. EntityException
- B. ConstraintException
- C. UpdateException
- D. EntityUpdateException

Answer: B

Explanation:

ConstraintException Represents the exception that is thrown when attempting an action that violates a constraint.

System.Object

System.Exception

System.SystemException

System.Data.DataException

System.Data.ConstraintException

EntityException Represents Entity Framework-related errors that occur in the EntityClient namespace.

The EntityException is the base class for all Entity Framework exceptions thrown by the EntityClient.

System.Object
System.Exception
System.SystemException
System.Data.DataException
System.Data.EntityException
System.Data.EntityCommandCompilationException
System.Data.EntityCommandExecutionException
System.Data.EntitySqlException
System.Data.MappingException
System.Data.MetadataException
System.Data.ProviderIncompatibleException
UpdateException The exception that is thrown when modifications to object instances cannot be persisted to the data source.
System.Object
System.Exception
System.SystemException
System.Data.DataException
System.Data.UpdateException
System.Data.OptimisticConcurrencyException
EntityException Class
(<http://msdn.microsoft.com/en-us/library/system.data.entityexception.aspx>)
ConstraintException Class
(<http://msdn.microsoft.com/en-us/library/system.data.constraintexception.aspx>)
UpdateException Class
(<http://msdn.microsoft.com/en-us/library/system.data.updateexception.aspx>)

Question: 184

You use Microsoft .NET Framework 4 to develop an application that connects to a Microsoft SQL Server 2008 database. The database contains a ClassStudent table that contains the StudentID for students who are enrolled in the classes.

You add the following stored procedure to the database.

```
CREATE PROCEDURE [dbo].[GetNumEnrolled]
```

```
    @ClassID INT,  
    @NumEnrolled INT OUTPUT  
AS  
BEGIN  
    SET NOCOUNT ON  
    SELECT @NumEnrolled = COUNT(StudentID)  
    FROM ClassStudent  
    WHERE (ClassID = @ClassID)  
END
```

You write the following code. (Line numbers are included for reference only.)

```
01 private int GetNumberEnrolled(string classID)  
02 {  
03     using (SqlConnection conn = new SqlConnection(GetConnectionString()))  
04     {  
05         SqlCommand cmd = new SqlCommand("GetNumEnrolled", conn);  
06         cmd.CommandType = CommandType.StoredProcedure;  
07         SqlParameter parClass = cmd.Parameters.Add("@ClassID", SqlDbType.Int, 4,  
"classID");
```

```
08 SqlParameter parNum = cmd.Parameters.Add("@NumEnrolled", SqlDbType.Int);
09 ...
10 conn.Open()
11 ...
12 }
13 }
```

You need to ensure that the GetNumberEnrolled method returns the number of students who are enrolled for a specific class.

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

A. Insert the following code at line 09.

```
parNum.Direction = ParameterDirection.Input;
```

B. Insert the following code at line 09.

```
parNum.Direction = ParameterDirection.Output;
```

C. Insert the following code at line 11.

```
int numEnrolled = 0;
```

```
SqlDataReader reader = cmd.ExecuteReader();
```

```
while(reader.Read())
```

```
{
```

```
numEnrolled = numEnrolled + (int)cmd.Parameters["@NumEnrolled"].Value;
```

```
}
```

```
return numEnrolled;
```

D. Insert the following code at line 11.

```
cmd.ExecuteNonQuery();
```

```
return (int)parNum.Value;
```

Answer: B, D

Question: 185

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4.0 to create an application. The application connects to a Microsoft SQL Server 2008 database. You need to ensure that the application calls a stored procedure that accepts a table-valued parameter. You create a SqlParameter object. What should you do next?

A. Set the SqlDbType of SqlParameter to Udt.

B. Set the SqlDbType of SqlParameter to Variant.

C. Set the ParameterDirection of SqlParameter to Output.

D. Set the SqlDbType of SqlParameter to Structured. Set the TypeName of SqlParameter to Udt.

Answer: D

Explanation:

SqlParameter.DbType Gets or sets the SqlDbType of the parameter.

SqlParameter.TypeName Gets or sets the type name for a table-valued parameter.

SqlDbType.Structured A special data type for specifying structured data contained in table-valued parameters.

Udt A SQL Server 2005 user-defined type (UDT).

Spatial types

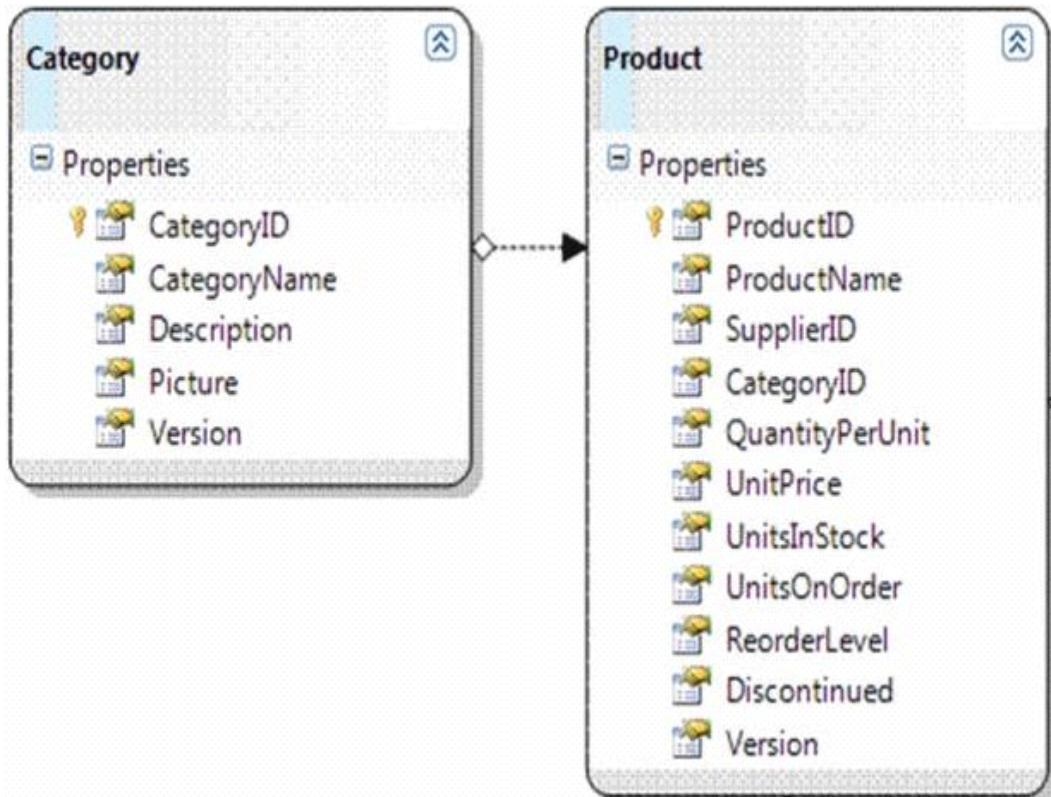
(<http://msdn.microsoft.com/en-us/library/ff848797.aspx>)

Types of Spatial Data

(<http://msdn.microsoft.com/en-us/library/bb964711.aspx>)

Question: 186

You use Microsoft Visual Studio 2010 and Microsoft Entity Framework 4.0 to create an application. The application connects to a Microsoft SQL Server database. You use the ADO.NET LINQ to SQL model to retrieve data from the database. The application contains the Category and Product entities as shown in the following exhibit:



You need to ensure that LINQ to SQL executes only a single SQL statement against the database. You also need to ensure that the query returns the list of categories and the list of products. Which code segment should you use?

- A. using (NorthwindDataContext dc = new NorthwindDataContext()) {

dc.ObjectTrackingEnabled = false;

var categories = from c in dc.Categories

select c;

foreach (var category in categories) {

Console.WriteLine("{0} has {1} products", category.CategoryName, category.Products.Count);

}

}
- B. using (NorthwindDataContext dc = new NorthwindDataContext()) {

dc.DeferredLoadingEnabled = false;

DataLoadOptions dLOptions = new DataLoadOptions();

dLOptions.LoadWith<Category>(c => c.Products);

dc.LoadOptions = dLOptions;

var categories = from c in dc.Categories

select c;

foreach (var category in categories) {

Console.WriteLine("{0} has {1} products", category.CategoryName, category.Products.Count);

}

}
- C. using (NorthwindDataContext dc = new NorthwindDataContext()) {

```
dc.DeferredLoadingEnabled = false;
var categories = from c in dc.Categories
select c;
foreach (var category in categories) {
Console.WriteLine("{0} has {1} products", category.CategoryName, category.Products.Count);
}
}

D. using (NorthwindDataContext dc = new NorthwindDataContext()) {
dc.DeferredLoadingEnabled = false;
DataLoadOptions dlOptions = new DataLoadOptions();
dlOptions.AssociateWith<Category>(c => c.Products);
dc.LoadOptions = dlOptions;
var categories = from c in dc.Categories
select c;
foreach (var category in categories) {
Console.WriteLine("{0} has {1} products", category.CategoryName, category.Products.Count);
}
}
```

Answer: B

Explanation:

DataLoadOptions Class Provides for immediate loading and filtering of related data. DataLoadOptions.LoadWith(LambdaExpression) Retrieves specified data related to the main target by using a lambda expression.

You can retrieve many objects in one query by using LoadWith.

DataLoadOptions.AssociateWith(LambdaExpression) Filters the objects retrieved for a particular relationship.

Use the AssociateWith method to specify sub-queries to limit the amount of retrieved data.

DataLoadOptions Class

(<http://msdn.microsoft.com/en-us/library/system.data.linq.dataloadoptions.aspx>)

How to: Retrieve Many Objects At Once (LINQ to SQL)

([http://msdn.microsoft.com/en-us/library/Bb386917\(v=vs.90\).aspx](http://msdn.microsoft.com/en-us/library/Bb386917(v=vs.90).aspx))

How to: Filter Related Data (LINQ to SQL)

([http://msdn.microsoft.com/en-us/library/Bb882678\(v=vs.100\).aspx](http://msdn.microsoft.com/en-us/library/Bb882678(v=vs.100).aspx))

Question: 187

Class Workflow - Has Workstepflow inside. Get workflow data as well as related workstepflow.

- A. context.CreateObjectSet<WorkFlow>("WorkFlowSteps").Where(i)WorkFlowSteps == workflow.WorkFlowSteps);
- B. context.LoadProperty(workFlow, "WorkFlow")
- C. context.CreateObjectSet<WorkFlowSteps>(WorkFlow .Where(i)WorkFlow == workflow);
- D. context.LoadProperty(workflow Function(i)WorkFlowSteps)

Answer: B

Explanation:

Syntax in A und C stimmt nicht ganz

Question: 188

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application. A file named books.xml contains the following XML.

```
<bib>
<book title="Programming in Unix" year="1992">
<author>Author1</author>
<author>Author2</author>
<author> Author 3 </author>
</book>
</bib>
```

The application must generate an XML result that contains an XML element named BookTitle for each book.

The text content of the element must contain the title of the book.

You need to create a query that generates the new XML result. What should you do?

- A. XDocument document = XDocument.Load("books.xml");
var query = from node in document.Descendants()
where node.Name.LocalName == "book"
select new XElement("BookTitle", node.FirstAttribute.Value);
- B. XDocument document = XDocument.Load("books.xml");
var query = from node in document.DescendantNodes()
where node.ToString() == "book"
select new XText("BookTitle" + node.ToString());
- C. XDocument document = XDocument.Load("books.xml");
var query = from node in document.Descendants()
where node.Name.LocalName == "book"
select new XElement("BookTitle").Value = node.FirstAttribute.Value;
- D. XDocument document = XDocument.Load("books.xml");
var query = from node in document.DescendantNodes()
where node.ToString() == "book"
select new XElement("BookTitle", node.ToString());

Answer: A

Question: 189

You use Microsoft .NET Framework 4 to develop an application that connects to a Microsoft SQL Server 2008 database.

You add the following stored procedure to the database.

```
CREATE PROCEDURE [dbo].[InsertTag]
@Name nvarchar (15)
AS
INSERT INTO [dbo].[Tags] (Name) VALUES(@Name)
RETURN @@ROWCOUNT
```

You need to invoke the stored procedure by using an open SqlConnection named conn.

Which code segment should you use?

```
A. SqlCommand cmd = new SqlCommand("EXEC InsertTag", conn);
cmd.CommandType = CommandType.Text;
cmd.Parameters.AddWithValue("@Name", "New Tag 1");
cmd.ExecuteNonQuery();
B. SqlCommand cmd = new SqlCommand("EXEC InsertTag", conn);
cmd.CommandType = CommandType.StoredProcedure;
cmd.Parameters.AddWithValue("@Name", "New Tag 1");
cmd.ExecuteNonQuery();
C. SqlCommand cmd = new SqlCommand("InsertTag", conn);
cmd.CommandType = CommandType.Text;
cmd.Parameters.AddWithValue("@Name", "New Tag 1");
cmd.ExecuteNonQuery();
D. SqlCommand cmd = new SqlCommand("InsertTag", conn);
cmd.CommandType = CommandType.StoredProcedure;
cmd.Parameters.AddWithValue("@Name", "New Tag 1");
cmd.ExecuteNonQuery();
```

Answer: D

Explanation:

[http://msdn.microsoft.com/en-us/library/yy6y35y8\(v=vs.71\).aspx](http://msdn.microsoft.com/en-us/library/yy6y35y8(v=vs.71).aspx)

Question: 190

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4.0 to create an application. The application uses the ADO.NET Entity Framework to manage Plain Old CLR Objects (POCO) entities. You create a new POCO class. You need to ensure that the class meets the following requirements:

It can be used by an ObjectContext.

It is enabled for change-tracking proxies.

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

- A. Modify each mapped property to contain sealed and protected accessors.
- B. Modify each mapped property to contain non-sealed, public, and virtual accessors.
- C. Configure the navigation property to return a type that implements the ICollection interface.
- D. Configure the navigation property to return a type that implements the IQueryable interface.
- E. Configure the navigation property to return a type that implements the IEntityWithRelationships interface.

Answer: B, C

Explanation:

CHAPTER 6 ADO.NET Entity Framework

Lesson 1: What Is the ADO.NET Entity Framework?

Other POCO Considerations (page 412)

Question: 191

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4.0 to create an application. The application connects to a Microsoft SQL Server database. The application stores user names and passwords in the database. You need to ensure that users cannot read passwords extracted from the database. What should you do?

- A. Encrypt stored passwords by using the RC2CryptoServiceProvider class.
- B. Encrypt stored passwords by using the TripleDESCryptoServiceProvider class.
- C. Append a random salt to the password by using the RNGCryptoServiceProvider class.
- Encrypt stored passwords by using the RijndaelManaged class.
- D. Append a random salt to the password by using the RNGCryptoServiceProvider class.
- Hash stored passwords by using the SHA1CryptoServiceProvider class.

Answer: D

Explanation:

SHA1CryptoServiceProvider Class Computes the SHA1 hash value for the input data using the implementation provided by the cryptographic service provider (CSP). This class cannot be inherited.

SHA1CryptoServiceProvider Class

(<http://msdn.microsoft.com/en-us/library/system.security.cryptography.sha1cryptoserviceprovider.aspx>)

CHAPTER 8 Developing Reliable Applications

Lesson 3: Protecting Your Data

Hashing and Salting (page 550-551)

Question: 192

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4.0 to create an application. The application connects to a Microsoft SQL Server 2008 database. You must retrieve a connection string. Which of the following is the correct connection string?

- A. string connectionString = ConfigurationSettings.AppSettings["connectionString"];
- B. string connectionString = ConfigurationManager.AppSettings["connectionString"];
- C. string connectionString = ApplicationManager.ConnectionStrings["connectionString"];
- D. string connectionString = ConfigurationManager.ConnectionStrings["connectionString"].ConnectionString;

Answer: D

Explanation:

CHAPTER 2 ADO.NET Connected Classes

Lesson 1: Connecting to the Data Store

Storing the Connection String in the Application Configuration File (page 75)

Question: 193

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4.0 to create an application. The application connects to a Microsoft SQL Server 2008 database. You add the following store procedure to the database.

CREATE PROCEDURE GetSalesPeople

AS

BEGIN

SELECT FirstName, LastName, Suffix, Email, Phone

FROM SalesPeople

END

You write the following code segment. (Line numbers are included for reference only.)

```
01 SqlConnection connection = new SqlConnection("...");  
02 SqlCommand command = new SqlCommand("GetSalesPeople", connection);
```

03 command.CommandType = CommandType.StoredProcedure;
04 ...

You need to retrieve all of the results from the stored procedure. Which code segment should you insert at line 04?

- A. var res = command.ExecuteReader();
- B. var res = command.ExecuteScalar();
- C. var res = command.ExecuteNonQuery();
- D. var res = command.ExecuteXmlReader();

Answer: A

Explanation:

ExecuteReader Sends the CommandText to the Connection and builds a SqlDataReader.

SqlCommand Class

(<http://msdn.microsoft.com/en-us/library/system.data.sqlclient.sqlcommand.aspx>)

Question: 194

You use Microsoft .NET Framework 4.0 and the Entity Framework to develop an application. You create an Entity Data Model that has an entity named Customer. You set the optimistic concurrency option for Customer. You load and modify an instance of Customer named loadedCustomer, which is attached to an ObjectContext named context. You need to ensure that if a concurrency conflict occurs during a save, the application will load up-to-date values from the database while preserving local changes. Which code segment should you use?

- A. try{context.SaveChanges();}
catch(EntitySqlException ex){context.Refresh(RefreshMode.StoreWins, loadedCustomer);}
- B. try{context.SaveChanges();}
catch(OptimisticConcurrencyException ex){context.Refresh(RefreshMode.ClientWins, loadedCustomer);}
- C. try{context.SaveChanges();}
catch(EntitySqlException ex){context.Refresh(RefreshMode.ClientWins, loadedCustomer);}
- D. try{context.SaveChanges();}

```

}
catch(OptimisticConcurrencyException ex)
{
context.Refresh(RefreshMode.StoreWins, loadedCustomer);
}

```

Answer: B

Explanation:

EntitySqlException Represents errors that occur when parsing Entity SQL command text.

This exception is thrown when syntactic or semantic rules are violated.

System.Object

System.Exception

System.SystemException

System.Data.DataException

System.Data.EntityException

System.Data.EntitySqlException

OptimisticConcurrencyException The exception that is thrown when an optimistic concurrency violation occurs.

System.Object

System.Exception

System.SystemException

System.Data.DataException

System.Data.UpdateException

System.Data.OptimisticConcurrencyException

Optimistic Concurrency (ADO.NET)

(<http://msdn.microsoft.com/en-us/library/aa0416cz.aspx>)

<http://msdn.microsoft.com/en-us/library/system.data.objects.refreshmode.aspx>

<http://msdn.microsoft.com/en-us/library/bb738618.aspx>

70-516CSHARP Case Study

Case Study: 1

Background

You are updating an existing Microsoft .NET Framework 4 application that includes a data layer built with ADO.NET Entity Framework 4. The application communicates with a Microsoft SQL Server 2008 instance named INST01 on a server named SQL01. The application stores data in a database named Contoso in the INST01 instance.

You need to update the existing technology and develop new functionality by using Microsoft Visual Studio 2010.

Application and Data Structure

The application tracks bicycle parts as they pass through a factory. Parts are represented by the abstract Part entity and its associated partial classes. Each part has a name stored in the Name field and a unique identifier stored in the Id field.

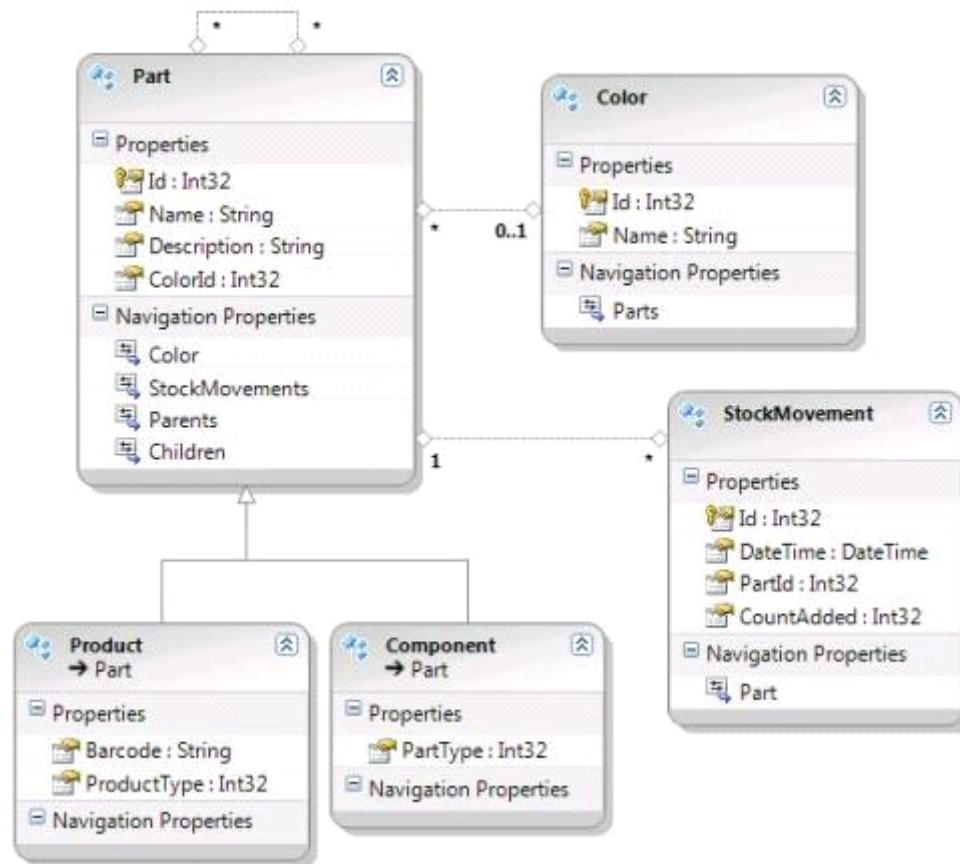
Parts are either components (represented by the Component class) such as chains, wheels, and frames, or finished products (represented by the Product class) such as completed bicycles. The Component class and the Product class derive from the Part class and may contain additional class-specific properties.

Parts may have a color (represented by the Color class), but not all parts have a color. Parts may be composed of other parts, and those parts may in turn be composed of other parts; any part represents a tree of the parts that are used to build it. The lowest level of the tree consists of components that do not contain other components.

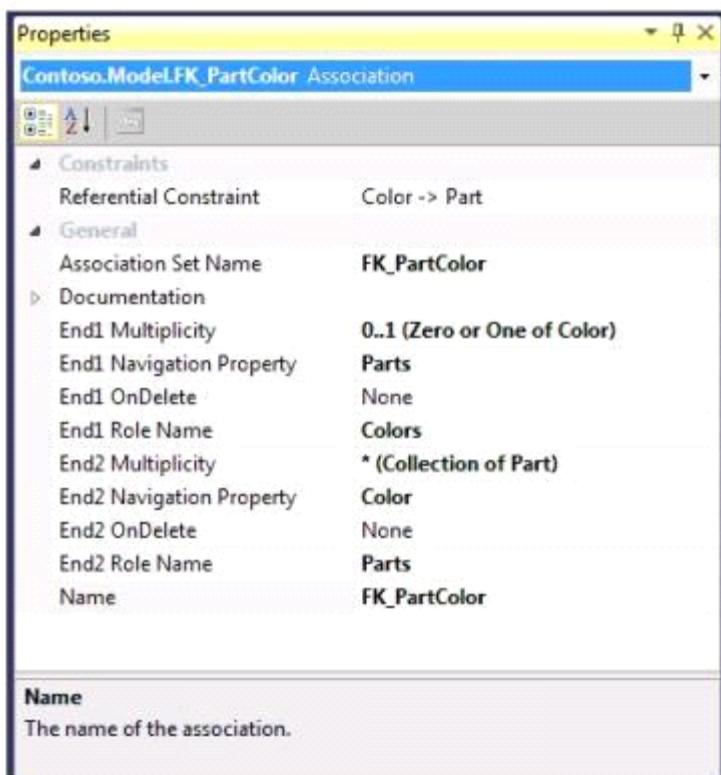
A product is a part that has been completed and is ready to leave the factory. A product typically consists of many components (forming a tree of child parts) but can also be constructed by combining other products and/or components to form a bundled product, such as a bicycle and a helmet that are sold together.

Components and products are stored in a database table named Parts by using a table-per-hierarchy (TPH) mapping. Components have a null ProductType field and a non-null PartType field. Products have a non-null ProductType field and a null PartType field.

The following diagram illustrates the complete Entity data model diagram (EDMX diagram).



The following graphic illustrates details of the Part-Color Association.



The following code segments show relevant portions of the files referenced by the case study items. (Line numbers in the samples below are included for reference only and include a two-character prefix that denotes the specific file to which they belong.)

Extension Method.cs

```

XX01  using System;
XX02  using System.Collections.Generic;
XX03  using System.Linq;
XX04  using Contoso.Model;
XX05
XX06 namespace Contoso
XX07 {
XX08     public static class ExtensionMethods
XX09     {
XX10         public static IEnumerable<Color> GetColors(this IEnumerable<Part> parts)
XX11         {
XX12             return parts.Select(part => part.Color).Distinct();
XX13         }
XX14
XX15     }
XX16 }
XX17 }
```

Model.edmx

```

...
EX228 <EntitySetName="Parts">
EX229 <EntityTypeMapping TypeName="IsTypeOf(Contoso.Model.Part)">
EX230   <MappingFragment StoreEntitySet="Parts">
EX231     <ScalarProperty Name="Id" ColumnName="Id" />
EX232     <ScalarProperty Name="Name" ColumnName="Name" />
EX233     <ScalarProperty Name="Description" ColumnName="Description" />
EX234     <ScalarProperty Name="ColorId" ColumnName="ColorId" />
EX235   </MappingFragment>
EX236 </EntityTypeMapping>
EX237   <EntityTypeMapping TypeName="IsTypeOf(Contoso.Model.Product)" 
EX238     xmlns="http://schemas.microsoft.com/ado/2008/09/mapping/cs">
EX239     <MappingFragment StoreEntitySet="Parts">
EX240       <ScalarProperty Name="ProductType" ColumnName="ProductType" />
EX241       <ScalarProperty Name="Barcode" ColumnName="Barcode" />
EX242       <ScalarProperty Name="Id" ColumnName="Id" />
EX243 ...
EX244   </MappingFragment>
EX245 </EntityTypeMapping>
EX246 <EntityTypeMapping TypeName="IsTypeOf(Contoso.Model.Component)">
EX247   <MappingFragment StoreEntitySet="Parts">
EX248     <ScalarProperty Name="PartType" ColumnName="PartType" />
EX249     <ScalarProperty Name="Id" ColumnName="Id" />
EX250 ...
EX251   </MappingFragment>
EX252 </EntityTypeMapping>
EX253 </EntitySetName>
...

```

Model/Color.cs

```

CL01  using System;
CL02  using System.Collections.Generic;
CL03  using System.Linq;
CL04  using System.Text;
CL05
CL06 namespace Contoso.Model
CL07 {
CL08
CL09   public partial class Color
CL10     : IName
CL11   {
CL12     public override string ToString()
CL13     {
CL14       return "( Color : " + this.Name + " )";
CL15     }
CL16
CL17   }
CL18 }
```

Model/component.cs

```

CT01  using System;
CT02  using System.Collections.Generic;
CT03  using System.Linq;
CT04  using System.Text;
CT05  using System.Xml.Linq;
CT06
CT07  namespace Contoso.Model
CT08  {
CT09      public partial class Component
CT10      {
CT11
CT12          public override XElement Create XElement Single()
CT13          {
CT14              ...
CT15          }
CT16      }
CT17  }

```

Model ContosoEntities.cs

```

CEO1  using System;
CEO2  using System.Collections.Generic;
CEO3  using System.Linq;
CEO4
CEO5  namespace Contoso.Model
CEO6  {
CEO7      public partial class ContosoEntities
CEO8      {
CEO9          public Color LoadOrCreate(string name)
CEO10         {
CEO11             Color result = this.Colors.SingleOrDefault(c => c.Name == name) ?? new Color() { Name =
name };
CEO12             return result;
CEO13         }
CEO14     }
CEO15  }

```

Model IName.cs

```

IMO1  namespace Contoso.Model
IMO2  {
IMO3      public interface IName
IMO4      {
IMO5          string Name { get; }
IMO6      }
IMO7  }

```

Model Part.cs

```

PA01  using System;
PA02  using System.Collections.Generic;
PA03  using System.Linq;
PA04  using System.Text;
PA05  using System.Diagnostics;
PA06  using System.Xml.Linq;
PA07
PA08 namespace Contoso.Model
PA09 {
PA10     public partial class Part
PA11         : IName
PA12     {
PA13         public Part()
PA14         {
PA15         }
PA16
PA17         public IEnumerable<Part> Descendants
PA18         {
PA19             get
PA20             {
PA21                 foreach (var child in this.Children)
PA22                 {
PA23                     yield return child;
PA24                     foreach (var descendant in child.Descendants)
PA25                         yield return descendant;
PA26                 }
PA27             }
PA28         }
PA29
PA30         public IEnumerable<Part> SelfAndDescendants
PA31         {
PA32             yield return this;
PA33             foreach (var descendant in this.Descendants)
PA34                 yield return descendant;
PA35         }
PA36
PA37         public abstract XElement Create XElement Single();
PA38
PA39
PA40         public virtual XElement Create XElement()
PA41         {
PA42             var single = this.Create XElement Single();
PA43             single.Add(this.Children.Select(p => p.Create XElement()).ToArray());
PA44             return single;
PA45         }
PA46
PA47         public void AddOrRemove Stock(int amount)
PA48         {
PA49             using (var context = new ContosoEntities())
PA50             {
PA51                 StockMovement stockMovement = new StockMovement
PA52                 {
PA53                     CountAdded = amount,
PA54                     DateTime = DateTime.UtcNow,
PA55                     PartId = this.Id
PA56                 };
PA57                 context.StockMovements.AddObject(stockMovement);
PA58                 context.SaveChanges();
PA59             }
PA60         }
PA61     }
PA62 }
PA63 }
PA64 }
```

Model/Product.cs

```

PRO1  using System;
PRO2  using System.Collections.Generic;
PRO3  using System.Linq;
PRO4  using System.Text;
PRO5  using System.Diagnostics;
PRO6  using System.Xml.Linq;
PRO7  using System.Transactions;
PRO8  using System.Data;
PRO9
PR10 namespace Contoso.Model
PR11 {
PR12     public partial class Product
PR13     {
PR14         public override XElement Create XElementSingle()
PR15         {
PR16             ...
PR17         }
PR18     }
PR19 }

```

SP_FindObsolete

```

SP01 USE [Contoso]
SP02 GO
SP03
SP04 SET ANSI_NULLS ON
SP05 GO
SP06 SET QUOTED_IDENTIFIER ON
SP07 GO
SP08
SP09 CREATE PROCEDURE [dbo].[sp_FindObsolete]
SP10 AS
SP11 SET NOCOUNT OFF
SP12
SP13 SELECT *
SP14 FROM Parts AS p
SP15 WHERE (p.PartType IS NOT NULL) AND NOT EXISTS (SELECT * FROM PartsParts AS b WHERE b.ChildId =
p.Id)
SP16
SP17 GO

```

Question: 1

You are developing a new feature that displays an auto-complete list to users as they type color names. You have an existing ContosoEntities context object named context. To support the new feature you must develop code that will accept a string object named text containing a users partial input and will query the Colors database table to retrieve all color names that begin with that input. You need to create an Entity SQL (ESQL) query to meet the requirement. The query must not be vulnerable to a SQL injection attack. Which code segment should you use?

- A. var parameter = new ObjectParameter("text", text + "%");
var result = context.CreateQuery<string>(
 "SELECT (c.Name) FROM Colors AS c WHERE c.Name LIKE @text", parameter);
- B. var parameter = new ObjectParameter("text", text + "%");
var result = context.CreateQuery<string>(
 "SELECT VALUE (c.Name) FROM Colors AS c WHERE c.Name LIKE '@text'", parameter);
- C. var parameter = new ObjectParameter("text", text + "%");
var result = context.CreateQuery<string>(
 "SELECT VALUE (c.Name) FROM Colors AS c WHERE c.Name LIKE @text", parameter);

```
D. var parameter = new ObjectParameter("text", HttpUtility.HtmlEncode(text) + "%");
var result = context.CreateQuery<string>(
    "SELECT (c.Name) FROM Colors AS c WHERE c.Name LIKE '@text'", parameter);
```

Answer: C

Explanation:

Entity SQL supports two variants of the SELECT clause. The first variant, row select, is identified by the SELECT keyword, and can be used to specify one or more values that should be projected out.

Because a row wrapper is implicitly added around the values returned, the result of the query expression is always a multiset of rows.

Each query expression in a row select must specify an alias. If no alias is specified, Entity SQL attempts to generate an alias by using the alias generation rules.

The other variant of the SELECT clause, value select, is identified by the SELECT VALUE keyword. It allows only one value to be specified, and does not add a row wrapper.

A row select is always expressible in terms of VALUE SELECT, as illustrated in the following example.

ESQL Select

(<http://msdn.microsoft.com/en-us/library/bb399554.aspx>)

Question: 2

You have a ContosoEntities context object named context and a Color object stored in a variable named color. You write the following code:

```
context.Colors.DeleteObject(color); context.SaveChanges();
```

When the code runs, it generates the following exception:

System.Data.UpdateException:

An error occurred while updating the entries. See the inner exception for details. --->

System.Data.SqlClient.SqlException:

The DELETE statement conflicted with the REFERENCE constraint "FK_PartColor". The conflict occurred in database "Contoso", table "dbo.Parts", column 'ColorId'. You need to resolve the exception without negatively impacting the rest of the application. What should you do?

- A. Add code before the call to the DeleteObject() method to examine the collection of Part objects associated with the Color object and then assign null to the Color property for each Part object.
- B. Add a transaction around the call to the SaveChanges() method and handle the exception by performing a retry.
- C. Change the End2 OnDelete property of the FK_PartColor association from None to Cascade.
- D. In the database, remove the foreign key association between the Parts table and the Colors table, and then update the entity data model.
- E. Change the End1 OnDelete property of the FK_PartColor association from None to Cascade.

Answer: A

Question: 3

The application user interface displays part names or color names in many places as '## Name ##'. You need to provide a method named FormattedName() to format part names and color names throughout the application. What should you do?

- A. Add the following code segment to the ExtensionMethods class in ExtensionMethods.cs:

```
public static string FormattedName (this Color entity)
```

```
{  
    return string.Format("## {0} ##", entity.Name);  
}
```

B. Add the following code segment to the ExtensionMethods class in ExtensionMethods.cs:

```
public static string FormattedName (this Part entity)
```

```
{  
    return string.Format("## {0} ##", entity.Name);  
}
```

C. Add the following code segment to the ExtensionMethods class in ExtensionMethods.cs:

```
public static string FormattedName (this IName entity)
```

```
{  
    return string.Format("## {0} ##", entity.Name);  
}
```

D. Add the following code segment to the Part class in Part.cs:

```
public string FormattedName()  
{  
    return string.Format("## {0} ##", this.Name);  
}
```

E. Add the following code segment to the Color class in Color.cs:

```
public string FormattedName()  
{  
    return string.Format("## {0} ##", this.Name);  
}
```

Answer: C

Question: 4

You are developing a new feature in the application to display a list of all bundled products. You need to write a LINQ query that will return a list of all bundled products. Which query expression should you use?

A. context.Parts

```
.OfType<Product>()  
.ToList()  
.Where(p => p.Descendants.Any(d => d is Product))
```

B. context.Parts

```
.Cast<Product>()  
.Where(p => p.Descendants.Any(d => d is Product))
```

C. context.Parts

```
.OfType<Product>()  
.Where(p => p.Descendants.Any(d => d is Product))
```

D. context.Parts

```
.Cast<Product>()  
.ToList()  
.Where(p => p.Descendants.Any(d => d is Product))
```

Answer: A

OfType() Filters the elements of an IEnumerable based on a specified type.

Enumerable.OfType<TResult> Method

(<http://msdn.microsoft.com/en-us/library/bb360913.aspx>)

Explanation:

Question: 5

A performance issue exists in the application. The following code segment is causing a performance bottleneck:

```
var colors = context.Parts.GetColors();
```

You need to improve application performance by reducing the number of database calls.

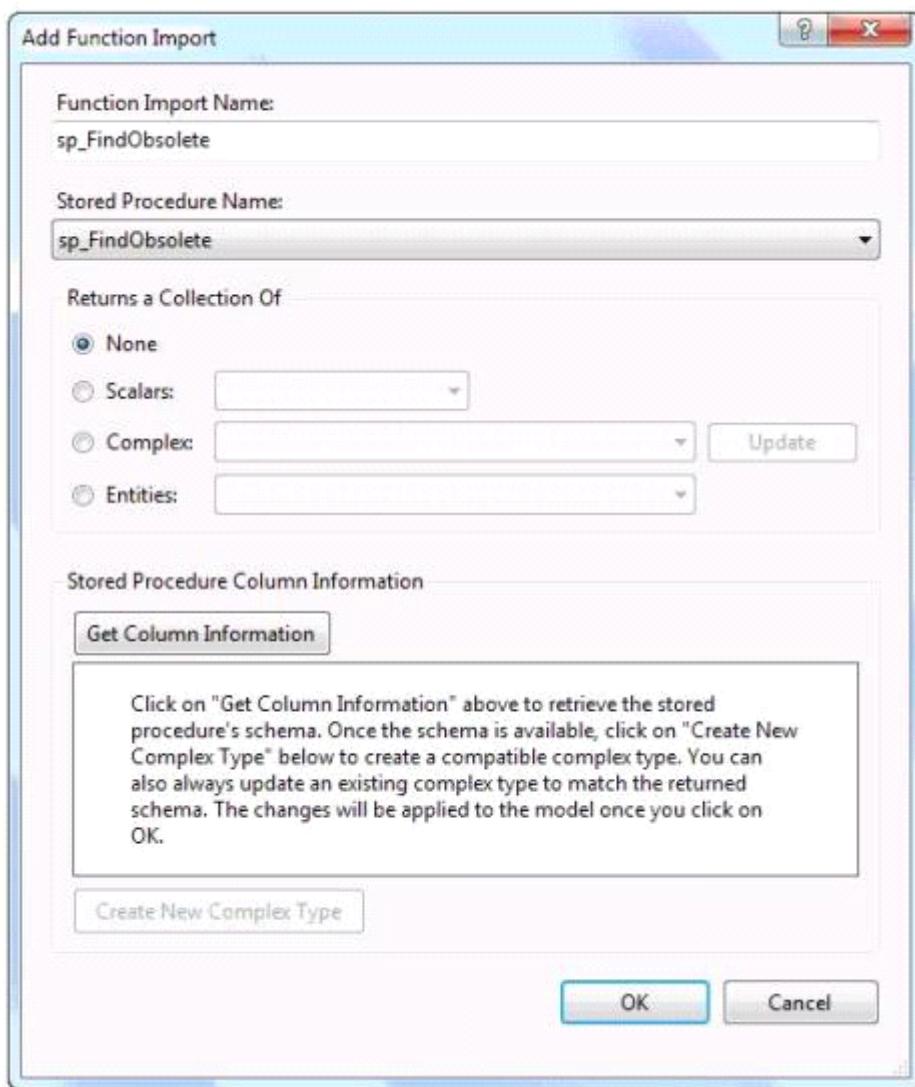
Which code segment should you use?

- A. var colors = context.Parts.OfType<Product>().Include("Parts.Color").GetColors();
- B. var colors = context.Parts.OfType<Product>().Include("Product.Color").GetColors();
- C. var colors = context.Parts.OfType<Product>().Include("Colors").GetColors();
- D. var colors = context.Parts.OfType<Product>().Include("Color").GetColors();

Answer: D

Question: 6

The entity data model must be configured to provide a way to call the sp_FindObsolete stored procedure. The returned data must implement the Descendants property. In Visual Studio 2010, you open the Add Function Import dialog box from the EDMX diagram and enter the information shown in the following graphic.



You need to complete the configuration in the dialog box. What should you do?

- In the Returns a Collection Of area, click Entities and then, in the Entities list, click Component.
- In the Returns a Collection Of area, click Scalars and then, in the Scalars list, click string.
- Click the Get Column Information button, click Create New Complex Type and then, in the Complex box, enter Parts.
- In the Returns a Collection Of area, click Scalars and then, in the Scalars list, click Int32.

Answer: A

Question: 7

You have an existing ContosoEntities context object named context. Calling the SaveChanges() method on the context object generates an exception that has the following inner exception:

System.Data.SqlClient.SqlException:

Cannot insert duplicate key row in object 'dbo.Colors' with unique index 'IX_Colours'.

You need to ensure that a call to SaveChanges() on the context object does not generate this exception. What should you do?

- Override the SaveChanges() method on the ContosoEntities class, call the

ObjectStateManager.GetObjectStateEntries(System.Data.EntityState.Added) method, and call the AcceptChanges() method on each ObjectStateEntry object it returns.

- B. Examine the code to see how Color objects are allocated. Replace any instances of the new Color() method with a call to the ContosoEntities.LoadOrCreate() method.
- C. Add a try/catch statement around every call to the SaveChanges() method.
- D. Remove the unique constraint on the Name column in the Colors table.

Answer: B

Question: 8

The Entity Data Model file (.edmx file) must be updated to support inheritance mapping for Products and Components. You need to add the following code to the \Model\Model.edmx file:

- The code in line EX243 that maps the Product type
- The code in line EX250 that maps the Component type

What should you do?

- A. Insert the following code at line EX243:

```
<Condition ColumnName="ProductType" IsNull="true" />
```

Insert the following code at line at EX250:

```
<Condition ColumnName="PartType" IsNull="true" />
```

- B. Insert the following code at line EX243:

```
<Condition ColumnName="ProductType" IsNull="false" />
```

Insert the following code at line at EX250:

```
<Condition ColumnName="PartType" IsNull="true" />
```

- C. Insert the following code at line EX243:

```
<Condition ColumnName="ProductType" IsNull="true" />
```

Insert the following code at line EX250:

```
<Condition ColumnName="PartType" IsNull="true" />
```

- D. Insert the following code at line EX243:

```
<Condition ColumnName="ProductType" IsNull="false" />
```

Insert the following code at line at EX250:

```
<Condition ColumnName="PartType" IsNull="false" />
```

Answer: D

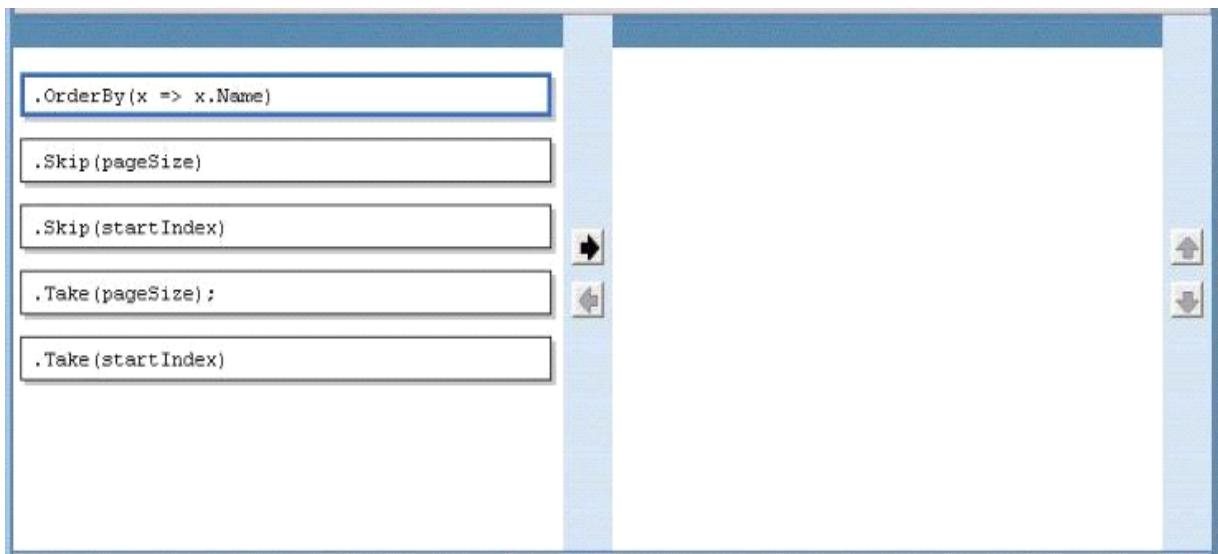
Question: 9

DRAG DROP

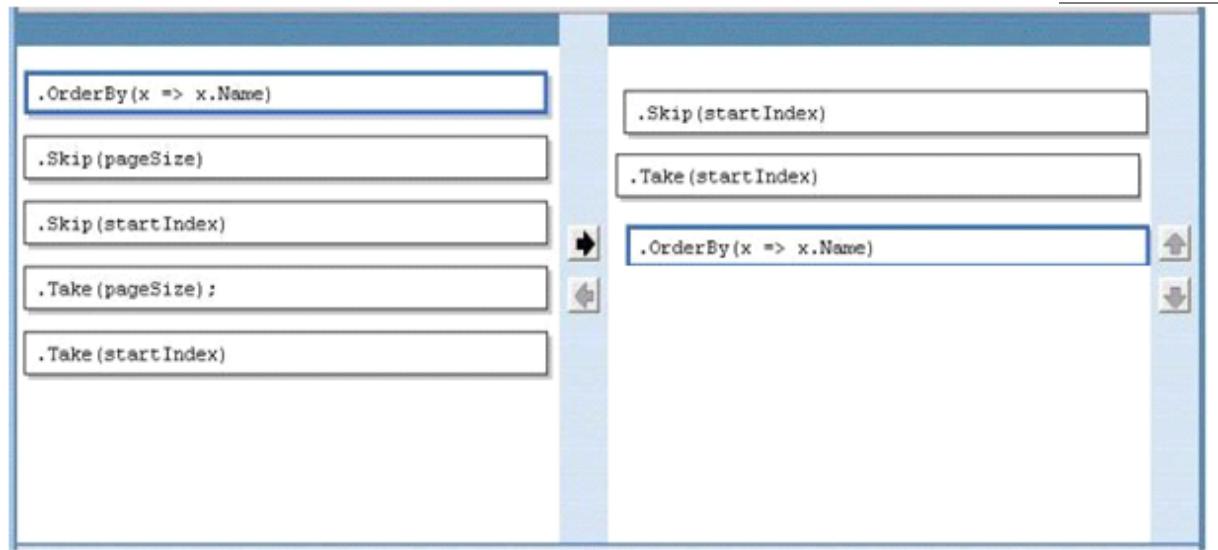
The user interface requires that a paged view be displayed of all the products sorted in alphabetical order. The user interface supplies a current starting index and a page size in variables named startIndex and pageSize of type int. You need to construct a LINQ expression that will return the appropriate Parts from the database from an existing ContosoEntities context object named context. You begin by writing the following expression:

context.Parts

Which query parts should you use in sequence to complete the expression? (To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.)



Answer:



Question: 10

The application must be configured to run on a new development computer. You need to configure the connection string to point to the existing named instance. Which connection string fragment should you use?

- A. Data Source=INST01\SQL01
- B. Data Source=SQL01\INST01
- C. Initial Catalog= INST01\SQL01
- D. Initial Catalog= SQL01\INST01

Answer: B

Question: 11

You are adding a process to the application. The process performs the following actions:

1. Opens a ContosoEntities context object named context1.
2. Loads a Part object into a variable named part1.

3. Calls the Dispose() method on context1.
4. Updates the data in part1.
5. Updates the database by using a new ContosoEntities context object named context2.
You need to update the database with the changed data from part1.
What should you do?

- A. Add the following code segment before calling SaveChanges() on context2:
`context2.ApplyOriginalValues("Parts", part1);`
- B. Add the following code segment before calling SaveChanges() on context2:
`context2.ApplyCurrentValues("Parts", part1);`
- C. Add the following code segment before calling SaveChanges() on context2:
`context2.Attach(part1); context2.ObjectStateManager.ChangeObjectState(part1, System.Data.EntityState.Modified);`
- D. Add the following code segment before calling SaveChanges() on context2:
`context2.Attach(part1); context2.ApplyCurrentValues("Parts", part1);`

Answer: C

Explanation:

How to: Apply Changes Made to a Detached Object

(<http://msdn.microsoft.com/en-us/library/bb896248.aspx>)

```
private static void ApplyItemUpdates(SalesOrderDetail originalItem, SalesOrderDetail updatedItem)
{
    using (AdventureWorksEntities context = new AdventureWorksEntities())
    {
        context.SalesOrderDetails.Attach(updatedItem);
        // Check if the ID is 0, if it is the item is new.
        // In this case we need to change the state to Added.
        if (updatedItem.SalesOrderDetailID == 0)
        {
            // Because the ID is generated by the database we do not need to
            // set updatedItem.SalesOrderDetailID.
            context.ObjectStateManager.ChangeObjectState(updatedItem, System.Data.EntityState.Added);
        }
        else
        {
            // If the SalesOrderDetailID is not 0, then the item is not new
            // and needs to be updated. Because we already added the
            // updated object to the context we need to apply the original values.
            // If we attached originalItem to the context
            // we would need to apply the current values:
            // context.ApplyCurrentValues("SalesOrderDetails", updatedItem);
            // Applying current or original values, changes the state
            // of the attached object to Modified.
            context.ApplyOriginalValues("SalesOrderDetails", originalItem);
        }
        context.SaveChanges();
    }
}
```

Question: 12

You add a table to the database to track changes to part names. The table stores the following row values: the username of the user who made the change a part ID the new part name a DateTime value You need to enable detection of unauthorized changes to the row values. You also need to ensure that database users can view the original row values. What should you do?

- A. Add a column named signature. Use System.Security.Cryptography.RSA to create a signature for all of the row values. Store the signature in the signature column. Publish only the public key internally.
- B. Add a column named hash. Use System.Security.Cryptography.MD5 to create an MD5 hash of the row values, and store the hash in the hash column.
- C. Use System.Security.Cryptography.DES to encrypt all the row values using an encryption key held by the application.
- D. Use System.Security.Cryptography.RSA to encrypt all the row values. Publish only the public key internally.

Answer: A

Question: 13

You need to ensure that an exception is thrown when color names are set to less than two characters. What should you do?

- A. Add the following method to the Color partial class in Model\Color.cs:

```
protected override void OnPropertyChanged(string property)
{
    if (property == "Name" && this.Name.Length < 2)
        throw new ArgumentOutOfRangeException("Name must be at least two characters");
}
```
- B. Add the following attribute to the Name property of the Color class in the entity designer file:

[StringLength(256, MinimumLength = 2)]
- C. Add the following code segment to the ContosoEntities partial class in Model\ContosoEntities.cs:

```
public override int SaveChanges(System.Data.Objects.SaveOptions options)
{
    var changes = this.ObjectStateManager.GetObjectStateEntries(System.Data.EntityState.Added);
    foreach (var change in changes)
    {
        if (change.Entity is Color)
            if (((Color)change.Entity).Name.Length < 2) throw new ArgumentException("Name too short");
    }
    return base.SaveChanges(options);
}
```
- D. Add the following method to the Color partial class in Model\Color.cs:

```
protected override void OnPropertyChanging(string property)
{
    if (property == "Name" && this.Name.Length < 2)
        throw new ArgumentOutOfRangeException("Name must be at least two characters");
}
```

Answer: A

Question: 14

Refer to the following lines in the case study: PA40 in \Model\Part.cs, PR16 in \Model\Product.cs, and CT14 in \Model\Component.cs.

The application must create XML files that detail the part structure for any product. The XML files must use the following format:

```
<?xml version="1.0" encoding="utf-8"?>
<product name="Brush" description="Brush product" productType="1">
    <component name="Handle" description="Handle" partType="2">
        <component name="Screw" description="Screw" partType="3" />
        <component name="Wood" description="Wooden shaft" partType="45" />
    </component>
    <component name="Head" description="Head" partType="5">
        <component name="Screw" description="Screw" partType="3" />
        <component name="Bristles" description="Bristles" partType="4" />
    </component>
</product>
```

You need to update the application to support the creation of an XElement object having a structure that will serialize to the format shown above. What should you do? (Each correct answer presents part of the solution. Choose two.)

A. Insert the following code segment at line PR16 in \Model\Product.cs:

```
return new XElement("product", new XAttribute("name", this.Name),
new XElement("description", this.Description),
new XElement("productType", this.ProductType));
```

B. Insert the following code segment at line CT14 in \Model\Component.cs:

```
return new XElement("component", new XElement("name", this.Name),
new XElement("description", this.Description),
new XElement("partType", this.PartType));
```

C. Insert the following code segment at line PR16 in \Model\Product.cs:

```
return new XElement("product", new XElement("name", this.Name),
new XElement("description", this.Description),
new XElement("productType", this.ProductType));
```

D. Insert the following code segment at line PR16 in \Model\Product.cs:

```
return new XElement("product", new XAttribute("name", this.Name),
new XAttribute("description", this.Description),
new XAttribute("productType", this.ProductType));
```

E. Insert the following code segment at line CT14 in \Model\Component.cs:

```
return new XElement("component", new XAttribute("name", this.Name),
new XElement("description", this.Description),
new XElement("partType", this.PartType));
```

F. Insert the following code segment at line CT14 in \Model\Component.cs:

```
return new XElement("component", new XAttribute("name", this.Name),
new XAttribute("description", this.Description),
new XAttribute("partType", this.PartType));
```

Answer: D, F

Question: 15

The database contains orphaned Color records that are no longer connected to Part records.

You need to clean up the orphaned records. You have an existing ContosoEntities context object named context. Which code segment should you use?

- A. context.Colors.ToList().RemoveAll(c => !c.Parts.Any()); context.SaveChanges();
- B. var unusedColors = context.Colors.Where(c => !c.Parts.Any()).ToList(); foreach (var unused in unusedColors) { context.DeleteObject(unused); } context.SaveChanges();
- C. var unusedColors = context.Colors.Where(c => !c.Parts.Any()); context.DeleteObject(unusedColors); context.SaveChanges();
- D. context.Colors.TakeWhile(c => !c.Parts.Any()); context.SaveChanges();

Answer: B

Question: 16

The application must provide a component part list for any product. The component part list must give the quantity of each distinct part that is required to manufacture that product. You need to create a LINQ expression that delivers a result of type `IEnumerable<Tuple<int, Part>>` to meet the requirements. Which expression should you use?

- A. `IEnumerable < Tuple < int , Part>> result = part.Descendants . GroupBy (p => p) .Select(g => Tuple.Create (g.Count (), g.Key));`
- B. `IEnumerable < Tuple < int , Part>> result = part.Descendants . ToDictionary (c => c) .Select(d => Tuple.Create (d.Value.Children.Count (), d.Key));`
- C. `IEnumerable < Tuple < int , Part>> result = part.Children . GroupBy (p => p) .Select(g => Tuple.Create (g.Count (), g.Key));`
- D. `IEnumerable < Tuple < int , Part>> result = part.Children .Distinct() . GroupBy (p => p) .Select(g => Tuple.Create (g.Count (), g.Key));`
- E. `IEnumerable < Tuple < int , Part>> result = part.Descendants .Distinct() . GroupBy (p => p) .Select(g => Tuple.Create (g.Count (), g.Key));`

Answer: A

Question: 17

You need to write a LINQ query that can be used against a ContosoEntities context object named context to find all parts that have a duplicate name. Which of the following queries should you use? (Each correct answer presents a complete solution. Choose two.)

- A. `context.Parts.Where(p => context.Parts.Any(q => q.Name == p.Name && p.Id != q.Id));`
- B. `context.Parts.SelectMany(p => context.Parts .Select(q => p.Name == q.Name && p.Id != q.Id));`
- C. `context.Parts .Any(p => context.Parts .Any(q => p.Name == q.Name));`
- D. `context.Parts.GroupBy(p => p.Name) .Where(g => g.Count() > 1) .SelectMany(x => x);`

Answer: A, D

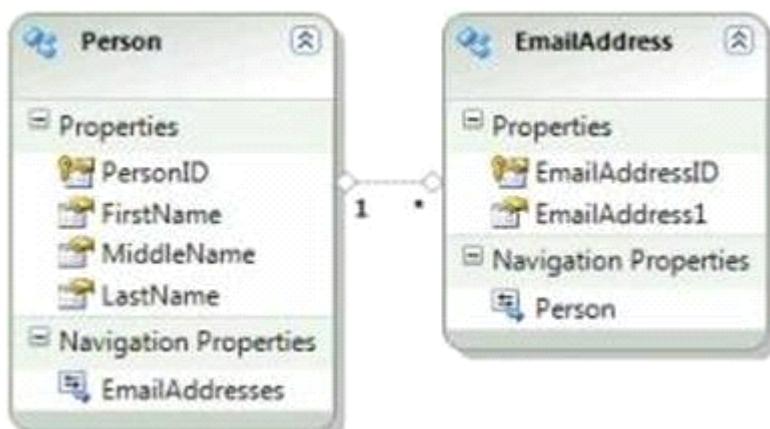
Question: 18

The application UI displays a list of products in alphabetical order. To display each product, the UI requires the value of the product Id field and the product Name field. You need to write a LINQ query that returns the product name and unique identifier without retrieving any other database columns. The query must create an anonymous type with a field named ProductName that contains the product name and a field named Id that contains the unique identifier. Which query expression should you write?

- A. var productNames = from produce in context.Parts.OfType<Product>()
 orderby product.Name ascending
 select: product;
- B. var productNames = from product in context.Parts
 where product is Product
 orderby product.Name ascending
 select new {product.Id, ProductName = product.Name};
- C. var productNames = from produce in context.Parts
 orderby product.Name ascending
 select new { Id = product.Id, ProductName = product.Name };
- D. var productNames = from product in context.Parts.OfType<Product>().ToList()
 orderby product.Name ascending
 select new { Id = product.Id, ProductName = product.Name };

Answer: D**70-516VB****Question: 1**

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application. You use the ADO.NET Entity Framework Designer to model entities. The application includes self-tracking entities as shown in the following diagram.



There is a Person entity named person1 that has Track Changes turned on.

You need to delete all e-mail addresses that are associated with person1 by using an ObjectContext named context. What are two possible code segments that you can use to achieve this goal? (Each correct answer presents a complete solution. Choose two).

- A. For Each email in person1.EmailAddresses

```
email.MarkAsDeleted()
Next
context.SaveChanges()
B.While (person1.EmailAddresses.Count() > 0)
    person1.EmailAddresses.RemoveAt(0)
End While
context.SaveChanges()
C.person1.EmailAddresses = Nothing
context.SaveChanges()
D.person1.EmailAddresses = New _
    TrackableCollection(Of EmailAddress)()
context.SaveChanges()
```

Answer: B, C

Explanation:

Working with Self-Tracking Entities

(<http://msdn.microsoft.com/en-us/library/ff407090.aspx>)

Working with Sets of Self-Tracking Entities

(<http://blogs.msdn.com/b/adonet/archive/2010/06/02/working-with-sets-of-self-tracking-entities.aspx>)

Question: 2

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application uses the ADO.NET Entity Framework to manage customer and related order records. You add a new order for an existing customer. You need to associate the Order entity with the Customer entity. What should you do?

- A. Set the Value property of the EntityReference of the Order entity.
- B. Call the Add method on the EntityCollection of the Order entity.
- C. Use the AddObject method of the ObjectContext to add both Order and Customer entities.
- D. Use the Attach method of the ObjectContext to add both Order and Customer entities.

Answer: A

Explanation:

Entity Reference (Of Entity) Represents a related end of an association with a multiplicity of zero or one.

Question: 3

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application that connects to a Microsoft SQL Server 2008 database. The application includes a SqlConnection named conn and a SqlCommand named cmd. You need to create a transaction so that database changes will be reverted in the event that an exception is thrown. Which code segment should you use?

```
A. Dim transaction = conn.BeginTransaction()
cmd.Transaction = transaction
Try
    ...
    transaction.Commit()
Catch
```

```
    transaction.Rollback()
End Try
B.Dim transaction = conn.BeginTransaction()
cmd.Transaction = transaction
Try
    ...
    transaction.Commit()
Catch
    transaction.Dispose()
End Try
C.Dim transaction = conn.BeginTransaction()
cmd.Transaction = transaction
Try
    ...
Catch
    transaction.Commit()
End Try
D.Dim transaction = conn.BeginTransaction()
cmd.Transaction = transaction
Try
    ...
transaction.Rollback()
Catch
    transaction.Dispose()
End Try
```

Answer: A

Question: 4

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server database. The application has two DataTable objects that reference the Customers and Orders tables in the database. The application contains the following code segment. (Line numbers are included for reference only.)

```
01 Dim customerOrders As New DataSet()
02 customerOrders.EnforceConstraints = True
03 Dim ordersFK As New ForeignKeyConstraint("ordersFK",
04 customerOrders.Tables("Customers").Columns("CustomerID"),
05 customerOrders.Tables("Orders").Columns("CustomerID"))
06
07 customerOrders.Tables("Orders").Constraints.Add(ordersFK)
```

You need to ensure that an exception is thrown when you attempt to delete Customer records that have related Order records. Which code segment should you insert at line 06?

- A. ordersFK.DeleteRule = Rule.SetDefault
- B. ordersFK.DeleteRule = Rule.None
- C. ordersFK.DeleteRule = Rule.SetNull
- D. ordersFK.DeleteRule = Rule.Cascade

Answer: B

Explanation:

None No action taken on related rows, but exceptions are generated.

Cascade Delete or update related rows. This is the default.

SetNull Set values in related rows to DBNull.

SetDefault Set values in related rows to the value contained in the DefaultValue property. SetDefault specifies that all child column values be set to the default value.

CHAPTER 1 ADO.NET Disconnected Classes

Lesson 1: Working with the DataTable and DataSet Classes

Cascading Deletes and Cascading Updates (page 26)

Question: 5

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. You use a TableAdapter object to load a DataTable object. The DataTable object is used as the data source for a GridView control to display a table of customer information on a Web page. You need to ensure that the application meets the following requirements:

- Load only new customer records each time the page refreshes.
- Preserve existing customer records.

What should you do?

A. Set the ClearBeforeFill property of the TableAdapter to false.

Use the Fill method of the TableAdapter to load additional customers.

B. Set the ClearBeforeFill property of the TableAdapter to false.

Use the GetData method of the TableAdapter to create a new DataTable.

C. Set the ClearBeforeFill property of the TableAdapter to true.

Use the Fill method of the TableAdapter to load additional customers.

D. Set the ClearBeforeFill property of the TableAdapter to true.

Use the GetData method of the TableAdapter to create a new DataTable.

Answer: A

Explanation:

TableAdapter.Fill Populates the TableAdapter's associated data table with the results of the TableAdapter's SELECT command.

TableAdapter.Update Sends changes back to the database. For more information, see How to:

Update Data Using a TableAdapter.

TableAdapter.GetData Returns a new DataTable filled with data.

TableAdapter.Insert Creates a new row in the data table. For more information, see How to: Add Rows to a DataTable.

TableAdapter.ClearBeforeFill Determines whether a data table is emptied before you call one of the Fill methods.

Table Adapter Overview

([http://msdn.microsoft.com/en-us/library/bz9tthwx\(v=vs.80\).aspx](http://msdn.microsoft.com/en-us/library/bz9tthwx(v=vs.80).aspx))

Question: 6

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server database and contains a LINQ to SQL data model. The data model contains a function named createCustomer that calls a stored procedure. The stored procedure is also named createCustomer. The createCustomer function has the following signature.

Sub New(customerID As Guid, customerName As [String], address1 As [String])

End Sub

The application contains the following the following code segment. (Line numbers are included for reference only.)

```
01 Dim context As New CustomDataContext()  
02 Dim userID As Guid = Guid.NewGuid()  
03 Dim address1 As [String] = "1 Main Street"  
04 Dim name As [String] = "Marc"  
05
```

You need to use the `createCustomer` stored procedure to add a customer to the database. Which code segment should you insert at line 05?

- A. `context.createCustomer(userID, name , address1)`
- B.`context.ExecuteCommand("createCustomer", userID, name , address1)`
- C.`Dim customer As New Customer()
context.ExecuteCommand("createCustomer", customer)`
- D.`Dim customer As New Customer()
context.ExecuteQuery(GetType(Customer), "createCustomer", customer)`

Answer: A

Explanation:

CHAPTER 4 LINQ to SQL

Lesson 3: Submitting Changes to the Database

Using Stored Procedures (page 285)

Question: 7

You use Microsoft .NET Framework 4 to develop an application that uses the Entity Framework. The application has an entity model with a Person entity. A Person instance named `person1` and an `ObjectContext` instance named `model` exist. You need to delete the `person1` instance. Which code segment should you use?

- A. `model.DeleteObject(person1)
model.SaveChanges()`
- B. `model.Detach(person1)
model.SaveChanges()`
- C. `model.ExecuteStoreCommand("Delete", New Object() { _
 New ObjectParameter("Person", person1)})
model.SaveChanges()`
- D. `model.ExecuteFunction("Detach", New ObjectParameter() { _
 New ObjectParameter("Person", person1)})
model.SaveChanges()`

Answer: A

Explanation:

`ObjectContext.DeleteObject` Marks an object for deletion from the `ObjectStateManager`. The object is deleted in the data source when the `SaveChanges` method is called. `ObjectContext.ExecuteStoreCommand` Method executes an arbitrary command directly against the data source using the existing connection.

Question: 8

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. You create a stored procedure to insert a new record in the Categories table according to following code segment.

```
CREATE PROCEDURE dbo.InsertCategory
    @CategoryName nvarchar(15),
    @Identity int OUT
AS
INSERT INTO Categories (CategoryName) VALUES(@CategoryName)
SET @Identity = SCOPE_IDENTITY()
RETURN @@ROWCOUNT
```

You write the following code segment. (Line numbers are included for reference only).

```
1 Private Shared Sub ReturnIdentity(connectionString As String)
2     Using connection As New SqlConnection(connectionString)
3         Dim adapter As New SqlDataAdapter("SELECT CategoryID, CategoryName FROM dbo.Categories", connection)
4         adapter.InsertCommand = New SqlCommand("InsertCategory", connection)
5         adapter.InsertCommand.CommandType = CommandType.StoredProcedure
6         Dim rowCountParameter As SqlParameter = adapter.InsertCommand.Parameters.Add("@RowCount",
SqlDbType.Int)
7
8         adapter.InsertCommand.Parameters.Add("@CategoryName", SqlDbType.NChar, 15, "CategoryName")
9         Dim identityParameter As SqlParameter =
10        adapter.InsertCommand.Parameters.Add("@Identity", SqlDbType.Int, 0, "CategoryID")
11
12        Dim categories As New DataTable()
13        adapter.Fill(categories)
14        Dim categoryRow As DataRow = categories.NewRow()
15        categoryRow("CategoryName") = "New Beverages"
16        categories.Rows.Add(categoryRow)
17        adapter.Update(categories)
18        Dim rowCount As Int32 =
19        DirectCast(adapter.InsertCommand.Parameters("@RowCount").Value, Int32)
20    End Using
21 End Sub
```

You need to retrieve the identity of the new record. You also need to retrieve the row count. What should you do?

A. Insert the following code segment at line 07.

```
rowCountParameter.Direction = ParameterDirection.ReturnValue
```

Insert the following code segment at line 11.

```
identityParameter.Direction = ParameterDirection.ReturnValue
```

B. Insert the following code segment at line 07.

```
rowCountParameter.Direction = ParameterDirection.Output
```

Insert the following code segment at line 11.

```
identityParameter.Direction = ParameterDirection.Output
```

C. Insert the following code segment at line 07.

```
rowCountParameter.Direction = ParameterDirection.ReturnValue
```

Insert the following code segment at line 11.

```
identityParameter.Direction = ParameterDirection.Output
```

D. Insert the following code segment at line 07.

```
rowCountParameter.Direction = ParameterDirection.Output
```

Insert the following code segment at line 11.

```
identityParameter.Direction = ParameterDirection.ReturnValue
```

Answer: C

Explanation:

Input - The parameter is an input parameter.

InputOutput - The parameter is capable of both input and output.

Output - The parameter is an output parameter.

ReturnValue - The parameter represents a return value from an operation such as a stored procedure, builtin function, or user-defined function.

ParameterDirection Enumeration

([http://msdn.microsoft.com/en-us/library/system.data.parameterdirection\(v=vs.71\).aspx](http://msdn.microsoft.com/en-us/library/system.data.parameterdirection(v=vs.71).aspx))

Question: 9

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server 2008 database. The application uses DataContexts to query the database. You create a function that meets the following requirements:

- Updates the Customer table on the database when a customer is marked as deleted
- Updates the related entries in other tables (CustomerAddress, CustomerContacts) by marking them as deleted
- Prevents consumer code from setting the Deleted columns value directly

You need to ensure that the function verifies that customers have no outstanding orders before they are marked as deleted. You also need to ensure that existing applications can use the updated function without requiring changes in the code. What should you do?

- A. Override the Delete operation of the DataContext object.
- B. Override the Update operation of the DataContext object.
- C. Modify the SELECT SQL statement provided to the DataContext object to use an INNER JOIN between the Customer and Orders tables.
- D. Add new entities to the DataContext object for the Customers and Orders tables.

Answer: A

Question: 10

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server database. You use the ADO.NET Entity Framework to manage persistence-ignorant entities. You create an ObjectContext instance named context. Then, you directly modify properties on several entities. You need to save the modified entity values to the database. Which code segment should you use?

- A. context.SaveChanges(SaveOptions.AcceptAllChangesAfterSave)
- B. context.SaveChanges(SaveOptions.DetectChangesBeforeSave)
- C. context.SaveChanges(SaveOptions.None)
- D. context.SaveChanges()

Answer: B

Explanation:

None Changes are saved without the DetectChanges or the AcceptAllChangesAfterSave() methods being called.

AcceptAllChangesAfterSave After changes are saved, the AcceptAllChangesAfterSave() method is called, which resets change tracking in the ObjectStateManager.

DetectChangesBeforeSave Before changes are saved, the DetectChanges method is called to synchronize the property values of objects that are attached to the object context with data in the ObjectStateManager.

SaveOptions Enumeration

(<http://msdn.microsoft.com/en-us/library/system.data.objects.saveoptions.aspx>)

Question: 11

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application that connects to a Microsoft SQL Server 2008 database. The application performs a database query within a transaction. You need to ensure that the application can read data that has not yet been committed by other transactions. Which IsolationLevel should you use?

- A. ReadUncommitted
- B. ReadCommitted
- C. RepeatableRead
- D. Unspecified

Answer: A

Explanation:

Unspecified A different isolation level than the one specified is being used, but the level cannot be determined. When using OdbcTransaction, if you do not set IsolationLevel or you set IsolationLevel to Unspecified, the transaction executes according to the isolation level that is determined by the driver that is being used.

Chaos The pending changes from more highly isolated transactions cannot be overwritten.

ReadUncommitted A dirty read is possible, meaning that no shared locks are issued and no exclusive locks are honored.

ReadCommitted Shared locks are held while the data is being read to avoid dirty reads, but the data can be changed before the end of the transaction, resulting in non-repeatable reads or phantom data.

RepeatableRead Locks are placed on all data that is used in a query, preventing other users from updating the data.

Prevents non-repeatable reads but phantom rows are still possible.

Serializable A range lock is placed on the DataSet, preventing other users from updating or inserting rows into the dataset until the transaction is complete.

Snapshot Reduces blocking by storing a version of data that one application can read while another is modifying the same data.

Indicates that from one transaction you cannot see changes made in other transactions, even if you requery.

IsolationLevel Enumeration

(<http://msdn.microsoft.com/en-us/library/system.data.isolationlevel.aspx>)

Isolation Levels in Database Engine

(<http://msdn.microsoft.com/en-us/library/ms189122.aspx>)

SET TRANSACTION ISOLATION LEVEL (Transact-SQL)

(<http://msdn.microsoft.com/ru-ru/library/ms173763.aspx>)

Question: 12

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application uses the ADO.NET Entity Framework to model entities. You need to ensure that the model and mapping files are not deployed as application resources. What should you do?

- A. Modify the connection string in the applications .config file to refer to the absolute physical path to the .edmx file.
- B. Modify the connection string in the applications .config file to refer to the relative path to the .edmx file.
- C. Set the value of the .edmx file's Metadata Artifact Processing property to Copy to Output Directory.
- D. Set the value of the .edmx files Build Action property to Copy to Output.

Answer: C

Question: 13

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server 2008 database. The application contains two SqlCommand objects named cmd1 and cmd2. You need to measure the time required to execute each command. Which code segment should you use?

- A. Dim w1 As New Stopwatch()
w1.Start()
cmd1.ExecuteNonQuery()
w1.[Stop]()
Trace.WriteLine(w1.ElapsedMilliseconds)
w1.Start()
cmd2.ExecuteNonQuery()
w1.[Stop]()
Trace.WriteLine(w1.ElapsedMilliseconds)
- B.Dim w1 As New Stopwatch()
w1.Start()
cmd1.ExecuteNonQuery()
w1.[Stop]()
Trace.WriteLine(w1.ElapsedMilliseconds)
w1.Reset()
cmd2.ExecuteNonQuery() w1.[Stop]()
Trace.WriteLine(w1.ElapsedMilliseconds)
- C.Dim w1 As Stopwatch = Stopwatch.StartNew()
cmd1.ExecuteNonQuery()
w1.[Stop]()
Trace.WriteLine(w1.ElapsedMilliseconds)
w1.Start()
cmd2.ExecuteNonQuery()
w1.[Stop]()
Trace.WriteLine(w1.ElapsedMilliseconds)
- D.Dim w1 As Stopwatch = Stopwatch.StartNew()
cmd1.ExecuteNonQuery()
w1.[Stop]()
Trace.WriteLine(w1.ElapsedMilliseconds)
w1 = Stopwatch.StartNew()
cmd2.ExecuteNonQuery()
w1.[Stop]()
Trace.WriteLine(w1.ElapsedMilliseconds)

Answer: D

Explanation:

A & C do not reset the stopwatch before running cmd2. B does not start the stopwatch after resetting the stopwatch

Start() does not reset the stopwatch, whereas StartNew() will create a new instance of the Stop watch and initialise the elapsed time to Zero.

Stopwatch Class

(<http://msdn.microsoft.com/en-us/library/system.diagnostics.stopwatch.aspx>)

Question: 14

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. You use the ADO.NET Entity Framework to model entities. The application connects to a Microsoft SQL Server database named AdventureWorks. The application includes the following code segment. (Line numbers are included for reference only.)

```
01 Using context As New AdventureWorksEntities()
02 Dim orders As ObjectQuery(Of SalesOrderHeader) =
03 context.SalesOrderHeader.Where("it.CreditCardApprovalCode IS NULL").Top("100")
04 For Each order As SalesOrderHeader In orders
05   order.Status = 4
06 Next
07 Try
08   context.SaveChanges()
09 Catch generatedExceptionName As OptimisticConcurrencyException
10
11 End Try
12 End Using
```

You need to resolve any concurrency conflict that can occur. You also need to ensure that local changes are persisted to the database. Which code segment should you insert at line 10?

- A. context.Refresh(RefreshMode.ClientWins, orders)
context.AcceptAllChanges()
- B.context.Refresh(RefreshMode.ClientWins, orders)
context.SaveChanges()
- C.context.Refresh(RefreshMode.StoreWins, orders)
context.AcceptAllChanges()
- D.context.Refresh(RefreshMode.StoreWins, orders)
context.SaveChanges()

Answer: B

Explanation:

SaveChanges() Persists all updates to the data source and resets change tracking in the object context.

Refresh(RefreshMode, Object) Updates an object in the object context with data from the data source.

AcceptAllChanges() Accepts all changes made to objects in the object context.

Refresh(RefreshMode refreshMode, Object entity) Method has the dual purpose of allowing an object to be refreshed with data from the data source and being the mechanism by which conflicts can be resolved.

ObjectContext.Refresh Method

(<http://msdn.microsoft.com/en-us/library/bb896255.aspx>)

Question: 15

You use Microsoft .NET Framework 4 to develop an application that uses WCF Data Services to retrieve entities. WCF Data Services uses an authentication scheme that requires an HTTP request that has the following header format.

GET /OData.svc/Products(1)
Authorization: WRAP access_token="123456789"

The application includes the following code. (Line numbers are included for reference only.)

01 Public Class Program

02

03 Public Sub GetProducts()

04

05 Dim proxy = New MyDataContext()

06

07

08 End Sub

09

10 End Class

You need to ensure that the correct authentication header is present when requests are made by using MyDataContext. What should you do?

A. Insert the following code segment at line 06.

```
proxy.Credentials = New NetworkCredential(_  
    "WRAP access_token", "123456789")
```

B. Insert the following code segment at line 06.

```
proxy.Credentials = New NetworkCredential(_  
    "Authorization", "WRAP access_token=""123456789""")
```

C. Insert the following code segment at line 06.

```
AddHandler proxy.SendingRequest, New _  
EventHandler(Of SendingRequestEventArgs)( _  
AddressOf proxy_SendingRequest)
```

Insert the following code segment at line 09.

```
Sub proxy_SendingRequest(ByVal sender As Object,  
    ByVal e As SendingRequestEventArgs)  
    e.RequestHeaders.Add("WRAP access_token", "123456789")  
End Sub
```

D. Insert the following code segment at line 06.

```
AddHandler proxy.SendingRequest, New EventHandler(  
Of SendingRequestEventArgs)( _  
AddressOf proxy_SendingRequest)
```

Insert the following code segment at line 09.

```
Sub proxy_SendingRequest(ByVal sender As Object,  
    ByVal e As SendingRequestEventArgs)  
    e.RequestHeaders.Add("Authorization",  
        "WRAP access_token=""123456789""")  
End Sub
```

Answer: D

Question: 16

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. You create a Database Access Layer (DAL) that is database-independent.

The DAL includes the following code segment. (Line numbers are included for reference only.)

01 Shared Sub ExecuteDbCommand(connection As DbConnection)

02 If connection <> Nothing Then

```
03 Using connection
04 Try
05   connection.Open()
06   Dim command As DbCommand = connection.CreateCommand()
07   command.CommandText = "INSERT INTO Categories (CategoryName) VALUES ('Low Carb')"
08   command.ExecuteNonQuery()
09
10 Catch ex As Exception
11   Trace.WriteLine("Exception.Message: " + ex.Message)
12 End Try
13 End Using
14 End If
15 End Sub
```

You need to log information about any error that occurs during data access. You also need to log the data provider that accesses the database. Which code segment should you insert at line 09?

A. Catch ex As OleDbException

```
Trace.WriteLine("ExceptionType: " + ex.Source)
Trace.WriteLine("Message: " + ex.Message)
```

B.Catch ex As OleDbException

```
Trace.WriteLine("ExceptionType: " + ex.InnerException.Source)
Trace.WriteLine("Message: " + ex.InnerException.Message)
```

C.Catch ex As DbException

```
Trace.WriteLine("ExceptionType: " + ex.Source)
Trace.WriteLine("Message: " + ex.Message)
```

D.Catch ex As DbException

```
Trace.WriteLine("ExceptionType: " + ex.InnerException.Source)
Trace.WriteLine("Message: " + ex.InnerException.Message)
```

Answer: C

Explanation:

Exception.InnerException Gets the Exception instance that caused the current exception.

Message Gets a message that describes the current exception.

Exception.Source Gets or sets the name of the application or the object that causes the error.

OleDbException catches the exception that is thrown only when the underlying provider returns a warning or error for an OLE DB data source.

DbException catches the common exception while accessing data base.

Question: 17

You use Microsoft .NET Framework 4 to develop an application that connects to a Microsoft SQL Server 2008 database. The application contains the following code segment.

```
Dim SQL As String = String.Format(
    "SELECT * FROM Customer WHERE CompanyName LIKE '%{0}%'",
    companyName)
```

```
Dim cmd = New SqlCommand(SQL, con)
```

You need to reduce the vulnerability to SQL injection attacks. Which code segment should you use?

A. Dim SQL As String = "SELECT * FROM Customer WHERE " &
"CompanyName LIKE @CompanyName"

```
Dim cmd = New SqlCommand(SQL, con)
cmd.Parameters.AddWithValue("@companyName",
String.Format("%{0}%", companyName))
B.Dim SQL As String = "SELECT * FROM Customer WHERE " &
"CompanyName LIKE @companyName"
Dim cmd = New SqlCommand(SQL, con)
Dim param = New SqlParameter("@companyName",
String.Format("%{0}%", companyName))
C.Dim SQL As String = String.Format("SELECT * FROM " &
"Customer WHERE CompanyName LIKE {0}",
New SqlParameter("@companyName",
String.Format("%{0}%", companyName)))
Dim cmd = New SqlCommand(SQL, con)
D.Dim SQL As String = "SELECT * FROM Customer @companyName"
Dim cmd = New SqlCommand(SQL, con)
cmd.Parameters.AddWithValue("@companyName",
String.Format("WHERE CompanyName LIKE '%{0}%'",
companyName))
```

Answer: A

Explanation:

SqlParameterCollection.AddWithValue Method

(<http://msdn.microsoft.com/en-us/library/system.data.sqlclient.sqlparametercollection.addwithvalue.aspx>)

Question: 18

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application uses the ADO.NET Entity Framework to model entities. You deploy an application to a production server. The application uses the model and mapping files that are deployed as application resources. You need to update the conceptual model for the application on the production server. What should you do?

- A. Copy the updated .edmx file to the production server.
- B. Copy the updated .csdl file to the production server.
- C. Copy the updated .ssdl file to the production server.
- D. Recompile the application and redeploy the modified assembly file.

Answer: D

Question: 19

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create a Windows Forms application. The application connects to a Microsoft SQL Server database. You need to find out whether the application is explicitly closing or disposing SQL connections. Which code segment should you use?

- A. Dim instanceName As String = Assembly.GetEntryAssembly().FullName
Dim perf As New PerformanceCounter()
".NET Data Provider for SqlServer",
"NumberOfReclaimedConnections", instanceName, True)
Dim leakedConnections As Integer = DirectCast(perf.NextValue(), Integer)

```

B.Dim instanceName As String = Assembly.GetEntryAssembly().GetName().Name
Dim perf As New PerformanceCounter(
    ".NET Data Provider for SqlServer",
    "NumberOfReclaimedConnections", instanceName, True)
Dim leakedConnections As Integer = DirectCast(perf.NextValue(), Integer)
C.Dim instanceName As String = Assembly.GetEntryAssembly().FullName
Dim perf As New PerformanceCounter(
    ".NET Data Provider for SqlServer",
    "NumberOfNonPooledConnections", instanceName, True)
Dim leakedConnections As Integer = DirectCast(perf.NextValue(), Integer)
D.Dim instanceName As String = Assembly.GetEntryAssembly().GetName().Name
Dim perf As New PerformanceCounter(
    ".NET Data Provider for SqlServer",
    "NumberOfNonPooledConnections", instanceName, True)
Dim leakedConnections As Integer = DirectCast(perf.NextValue(), Integer)

```

Answer: A

Explanation:

NumberOfNonPooledConnections The number of active connections that are not pooled.

NumberOfReclaimedConnections The number of connections that have been reclaimed through garbage collection where Close or Dispose was not called by the application.

Not explicitly closing or disposing connections hurts performance.

Use of ADO.NET performance counters

([http://msdn.microsoft.com/en-us/library/ms254503\(v=vs.80\).aspx](http://msdn.microsoft.com/en-us/library/ms254503(v=vs.80).aspx))

Assembly Class

(<http://msdn.microsoft.com/en-us/library/system.reflection.assembly.aspx>)

Question: 20

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application uses the ADO.NET Entity Framework to model entities. The application includes a Customer entity along with a CustomerKey property of the Guid type as shown in the following exhibit.



You discover that when the application adds a new instance of a Customer, calling the SaveChanges method results in the following error message:

"Server generated keys are only supported for identity columns."

You need to ensure that the application can add new Customer entities.

What should you do?

- A. Add a handler for the ObjectContext.SavingChanges event. In the event handler, set the CustomerKey value.
- B. Add a handler for the ObjectContext.ObjectMaterialized event. In the event handler, set the CustomerKey value.
- C. Call the ObjectContext.Attach method before saving a Customer entity.
- D. Call the ObjectContext.CreateEntityKey method before saving a Customer entity.

Answer: A

Explanation:

SavingChanges() Event Occurs when changes are saved to the data source.

ObjectMaterialized() Event Occurs when a new entity object is created from data in the data source as part of a query or load operation.

Attach() Method Attaches an object or object graph to the object context when the object has an entity key.

CreateEntityKey() Creates the entity key for a specific object, or returns the entity key if it already exists.

ObjectContext Class

(<http://msdn.microsoft.com/en-us/library/system.data.objects.objectcontext.aspx>)

Question: 21

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create a Windows Communication Foundation (WCF) Data Services service. The service connects to a Microsoft SQL Server 2008 database. The service is hosted by an Internet Information Services (IIS) 6.0 Web server. The application works correctly in the development environment. However, when you connect to the service on the production server, attempting to update or delete an entity results in an error. You need to ensure that you can update and delete entities on the production server. What should you do?

- A. Add the following line of code to the InitializeService method of the service. config.SetEntitySetAccessRule("*", EntitySetRights.WriteDelete Or EntitySetRights.WriteInsert)
- B. Add the following line of code to the InitializeService method of the service. config.SetEntitySetAccessRule("*", EntitySetRights.WriteDelete Or EntitySetRights.WriteMerge)
- C. Configure IIS to allow the PUT and DELETE verbs for the .svc Application Extension.
- D. Configure IIS to allow the POST and DELETE verbs for the .svc Application Extension.

Answer: C

Explanation:

An OData client accesses data provided by an OData service using standard HTTP. The OData protocol largely follows the conventions defined by REST, which define how HTTP verbs are used. The most important of these verbs are:

GET: Reads data from one or more entities.

PUT: Updates an existing entity, replacing all of its properties.

MERGE: Updates an existing entity, but replaces only specified properties[2].

POST: Creates a new entity.

DELETE: Removes an entity.

Http Header Verbs Enumeration

([http://msdn.microsoft.com/en-us/library/windows/desktop/aa364664\(v=vs.85\).aspx](http://msdn.microsoft.com/en-us/library/windows/desktop/aa364664(v=vs.85).aspx))

WCF Data Services Overview

(<http://msdn.microsoft.com/en-us/library/cc668794.aspx>)

Introduction to OData Protocol

(<http://msdn.microsoft.com/en-us/data/hh237663>)

Question: 22

You use Microsoft .NET Framework 4 to develop an application that connects to a Microsoft SQL Server 2008 database by using SQL Server authentication.

The application contains the following connection string.

SERVER=DBSERVER-01; DATABASE=pubs; uid=sa; pwd=secret;

You need to ensure that the password value in the connection string property of a SqlConnection object does not exist after the Open method is called. What should you add to the connection string?

- A. Persist Security Info=True
- B. Trusted_Connection=True
- C. Persist Security Info=False
- D. Trusted_Connection=False

Answer: C

Explanation:

The Persist Security Info property specifies whether the data source can persist sensitive authentication information such as a password.

Persist Security Info Property

([http://msdn.microsoft.com/en-us/library/aa214039\(v=sql.80\).aspx](http://msdn.microsoft.com/en-us/library/aa214039(v=sql.80).aspx))

Question: 23

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. You use the ADO.NET Entity Framework to model entities.

You write the following code segment. (Line numbers are included for reference only.)

```
01 Dim context As New AdventureWorksEntities("http://localhost:1234/AdventureWorks.svc")  
02  
03 Dim q As var = From c In context.Customers _  
04 Where c.City = "London" _  
05 Order By c.CompanyName _  
06 Select c
```

You need to ensure that the application meets the following requirements:

- Compares the current values of unmodified properties with values returned from the data source
- Marks the property as modified when the properties are not the same

Which code segment should you insert at line 02?

- A. context.MergeOption = MergeOption.AppendOnly
- B. context.MergeOption = MergeOption.PreserveChanges
- C. context.MergeOption = MergeOption.OverwriteChanges
- D. context.MergeOption = MergeOption.NoTracking

Answer: B

Explanation:

PreserveChanges - Objects that do not exist in the object context are attached to the context.

If the state of the entity is Unchanged, the current and original values in the entry are overwritten with data source values.

The state of the entity remains Unchanged and no properties are marked as modified.

If the state of the entity is Modified, the current values of modified properties are not overwritten with data source values.

The original values of unmodified properties are overwritten with the values from the data source.

In the .NET Framework version 4, the Entity Framework compares the current values of unmodified properties with the values that were returned from the data source. If the values are not the same, the property is marked as

modified.

MergeOption Enumeration

(<http://msdn.microsoft.com/en-us/library/system.data.objects.mergeoption.aspx>)

Question: 24

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create a Microsoft ASP.NET application. You want to connect the application to a Microsoft SQL Server Express 2008 database named MyDatabase. The primary database file is named MyDatabase.mdf and it is stored in the App_Data folder. You need to define the connection string. Which connection string should you add to the Web.config file?

- A. Data Source=localhost; Initial Catalog=MyDataBase; Integrated Security=SSPI; User Instance=True
- B. Data Source=.\SQLEXPRESS; Initial Catalog=MyDataBase; Integrated Security=True; User Instance=True
- C. Data Source=.\SQLEXPRESS; AttachDbFilename=|DataDirectory|\MyDatabase.mdf; Integrated Security=True; User Instance=True
- D. Data Source=SQLEXPRESS; AttachDbFilename=|DataDirectory|\App_Data\MyDatabase.mdf; Integrated Security=SSPI; User Instance=True

Answer: C

Explanation:

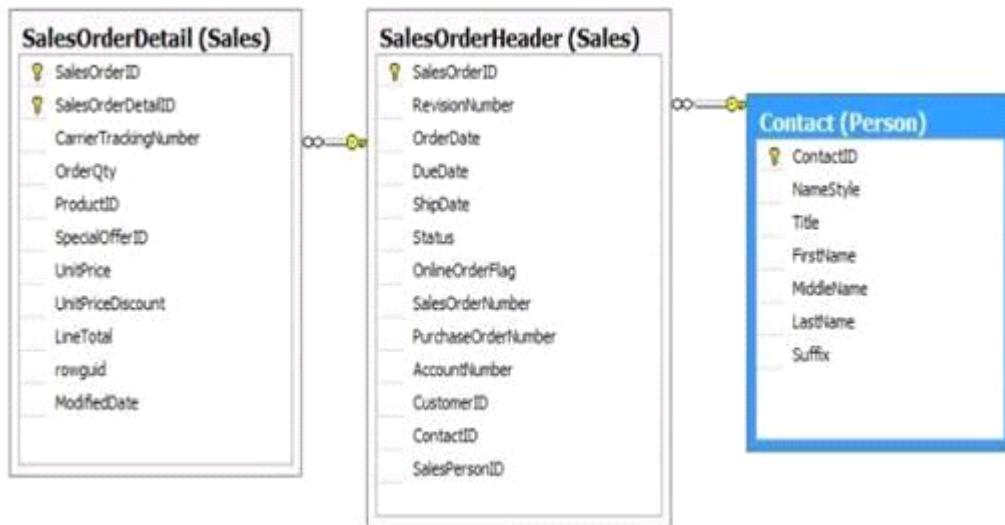
CHAPTER 2 ADO.NET Connected Classes

Lesson 1: Connecting to the Data Store

Attaching to a Local SQL Database File with SQL Express (page 73)

Question: 25

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server database. The application uses the ADO.NET Entity Framework to model entities. The database includes objects based on the exhibit. (Click the Exhibit button.)



The application includes the following code segment. (Line numbers are included for reference only.)

01 Using advWorksContext As New AdventureWorksEntities()

02

03 End Using

You need to retrieve a list of all Products from todays sales orders for a specified customer.

You also need to ensure that the application uses the minimum amount of memory when retrieving the list. Which

code segment should you insert at line 02?

```
A. Dim customer As Contact = context.Contact.Where("it.ContactID =  
    @customerId", New ObjectParameter("customerId", customerId)).First()  
customer.SalesOrderHeader.Load()  
For Each order As SalesOrderHeader In customer.SalesOrderHeader  
    order.SalesOrderDetail.Load()  
    If order.OrderDate.[Date] = DateTime.Today.[Date] Then  
        For Each item As SalesOrderDetail In order.SalesOrderDetail  
            Console.WriteLine([String].Format("Product: {0} ", item.ProductID))  
        Next  
    End If  
Next  
B.Dim customer As Contact = context.Contact.Where("it.ContactID =  
    @customerId", New ObjectParameter("customerId", customerId)).First()  
customer.SalesOrderHeader.Load()  
For Each order As SalesOrderHeader In customer.SalesOrderHeader  
    If order.OrderDate = DateTime.Today Then  
        order.SalesOrderDetail.Load()  
        For Each item As SalesOrderDetail In order.SalesOrderDetail  
            Console.WriteLine([String].Format("Product: {0} ", item.ProductID))  
        Next  
    End If  
Next  
C.Dim customer As Contact = (From contact In context.Contact.Include("SalesOrderHeader") _  
    Select contact).FirstOrDefault()  
For Each order As SalesOrderHeader In customer.SalesOrderHeader  
    order.SalesOrderDetail.Load()  
    If order.OrderDate = DateTime.Today Then  
        For Each item As SalesOrderDetail In order.SalesOrderDetail  
            Console.WriteLine([String].Format("Product: {0} ", item.ProductID))  
        Next  
    End If  
Next  
D.Dim customer As Contact = (From contact In context.Contact.Include("SalesOrderHeader.SalesOrderDetail") _  
    Select contact).FirstOrDefault()  
For Each order As SalesOrderHeader In customer.SalesOrderHeader  
    If order.OrderDate.[Date] = DateTime.Today.[Date] Then  
        For Each item As SalesOrderDetail In order.SalesOrderDetail  
            Console.WriteLine([String].Format("Product: {0} ", item.ProductID))  
        Next  
    End If  
Next
```

Answer: B

Explanation:

A & C check the Order date after Order Detail, so we are retrieving more Order details than necessary
D is calling a Function (using eager loading) for the First Contact record only, so does not meet the requirements.

Question: 26

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application

contains the following code segment. (Line numbers are included for reference only.)

```
01 Class DataAccessLayer  
02 Private Shared connString As String  
03  
04 ...  
05 Public Shared Function GetDataTable(command As String) As DataTable  
06  
07 ...  
08 End Function  
09 End Class
```

You need to define the connection life cycle of the DataAccessLayer class. You also need to ensure that the application uses the minimum number of connections to the database. What should you do?

A. Insert the following code segment at line 03.

```
Private Shared conn As New SqlConnection(connString)  
Public Shared Sub Open()  
    conn.Open()  
End Sub  
Public Shared Sub Close()  
    conn.Close()  
End Sub
```

B. Insert the following code segment at line 03.

```
Private conn As New SqlConnection(connString)  
Public Sub Open()  
    conn.Open() End Sub Public Sub Close()  
    conn.Close()  
End Sub
```

C. Replace line 01 with the following code segment.

```
Class DataAccessLayer  
Implements IDisposable  
    Insert the following code segment to line 03.  
Private conn As New SqlConnection(connString)  
Public Sub Open()  
    conn.Open()  
End Sub  
Public Sub Dispose()  
    conn.Close()  
End Sub
```

D. Insert the following code segment at line 06.

```
Using conn As New SqlConnection(connString)  
    conn.Open()  
End Using
```

Answer: D

Explanation:

One thing you should always do is to make sure your connections are always opened within a using statement. Using statements will ensure that even if your application raises an exception while the connection is open, it will always be closed (returned to the pool) before your request is complete. This is very important, otherwise there could be connection leaks.

Question: 27

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create a Windows Communication Foundation (WCF) Data Services service. You discover that when an application submits a PUT or DELETE request to the Data Services service, it receives an error. You need to ensure that the application can access the service. Which header and request type should you use in the application?

- A. an X-HTTP-Method header as part of a POST request
- B. an X-HTTP-Method header as part of a GET request
- C. an HTTP ContentType header as part of a POST request
- D. an HTTP ContentType header as part of a GET request

Answer: A

Explanation:

The X-HTTP-Method header can be added to a POST request that signals that the server MUST process the request not as a POST, but as if the HTTP verb specified as the value of the header was used as the method on the HTTP request's request line, as specified in [RFC2616] section 5.1. This technique is often referred to as "verb tunneling". This header is only valid when on HTTP POST requests.

X-HTTPMethod

([http://msdn.microsoft.com/en-us/library/dd541471\(v=prot.10\).aspx](http://msdn.microsoft.com/en-us/library/dd541471(v=prot.10).aspx))

Question: 28

You use Microsoft .NET Framework 4 to develop an application. The configuration file contains the following code segment.

```
<configuration>
  <connectionStrings>
    <add name="AdventureWorksLT"
      connectionString="Data Source=SQL01;
      Initial Catalog=AdventureWorksLT;
      Integrated Security=True;" 
      providerName="System.Data.SqlClient"/>
  </connectionStrings>
</configuration>
```

You need to retrieve the connection string named AdventureWorksLT from the configuration file. Which line of code should you use?

- A. Dim connectionString = ConfigurationManager _
..ConnectionStrings("AdventureWorksLT").ConnectionString
- B. Dim connectionString = ConfigurationManager _
..ConnectionStrings("AdventureWorksLT").Name
- C. Dim connectionString = ConfigurationManager _
.AppSettings("AdventureWorksLT")
- D. Dim connectionString = ConfigurationSettings _
.AppSettings("AdventureWorksLT")

Answer: A

Question: 29

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application

connects to a Microsoft SQL Server database. The application uses the ADO.NET Entity Framework to manage order data. The application makes a Web service call to obtain orders from an order-tracking system. You need to ensure that the orders are added to the local data store. Which method should you call on the ObjectContext?

- A. Attach
- B. AttachTo
- C. AddObject
- D. ApplyCurrentValues

Answer: C

Explanation:

ObjectContext.AddObject() Call AddObject on the ObjectContext to add the object to the object context.

Do this when the object is a new object that does not yet exist in the data source.

ObjectContext.Attach() Call Attach on the ObjectContext to attach the object to the object context.

Do this when the object already exists in the data source but is currently not attached to the context.

If the object being attached has related objects, those objects will also be attached to the object context.

Objects are added to the object context in an unchanged state.

The object that is passed to the Attach method must have a valid EntityKey value.

If the object does not have a valid EntityKey value, use the AttachTo method to specify the name of the entity set.

ObjectContext.AttachTo() Call AttachTo on the ObjectContext to attach the object to a specific entity set in the object context or if the object has a null (Nothing in Visual Basic) EntityKey value.

The object being attached is not required to have an EntityKey associated with it. If the object does not have an entity key, then entitySetName cannot be an empty string.

ApplyCurrentValues< TEntity >() method is used to apply changes that were made to objects outside the ObjectContext, such as detached objects that are received by a Web service.

The method copies the scalar values from the supplied object into the object in the ObjectContext that has the same key.

You can use the EntityKey of the detached object to retrieve an instance of this object from the data source.

Question: 30

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application that will access a WCF data service. The solution contains the projects shown in the following table.

Name	Contents
Application.Model	Entity Framework model
Application.Service	WCF data service
Application.Client	User interface

The WCF data service exposes an Entity Framework model. You need to access the service by using a WCF Data Services client. What should you do in the Application.Client project?

- A. Add a reference to the Application.Model project.
- B. Add a reference to the Application.Service project.
- C. Add a service reference that uses the URL of the WCF data service.
- D. Add a Web reference that uses the URL of the WCF data service.

Answer: C

Question: 31

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application retrieves data from a Microsoft SQL Server 2008 database named AdventureWorks. The AdventureWorks.dbo.ProductDetails table contains a column named ProductImages that uses a varbinary(max) data type. You write the following code segment. (Line numbers are included for reference only.)

```
01 Dim reader As SqlDataReader = command.ExecuteReader()  
02  
03 )  
04 While reader.Read()  
05     pubID = reader.GetString(0)  
06     ...  
07     stream = New FileStream()  
08     writer = New BinaryWriter(stream)  
09     startIndex = 0  
10    retval = reader.GetBytes(1, startIndex, outByte, 0, bufferSize)  
11    ...  
12    While retval = bufferSize  
13        End While  
14    writer.Write(outByte, 0, DirectCast(retval, Integer) - 1)  
15    writer.Flush()  
16    writer.Close()  
17    stream.Close()  
18 End While
```

You need to ensure that the code supports streaming data from the ProductImages column. Which code segment should you insert at line 02?

- A. CommandBehavior.[Default]
- B. CommandBehavior.KeyInfo
- C. CommandBehavior.SingleResult
- D. CommandBehavior.SequentialAccess

Answer: D

Explanation:

Default

The query may return multiple result sets. Execution of the query may affect the database state.

Default sets no CommandBehavior flags, so calling ExecuteReader(CommandBehavior.Default) is functionally equivalent to calling ExecuteReader().

KeyInfo The query returns column and primary key information. When KeyInfo is used for command execution, the provider will append extra columns to the result set for existing primary key and timestamp columns.

SingleResult The query returns a single result set.

SequentialAccess Provides a way for the DataReader to handle rows that contain columns with large binary values.

Rather than loading the entire row, SequentialAccess enables the DataReader to load data as a stream.

You can then use the GetBytes or GetChars method to specify a byte location to start the read operation, and a limited buffer size for the data being returned.

CommandBehavior Enumeration

(<http://msdn.microsoft.com/en-us/library/system.data.commandbehavior.aspx>)

Question: 32

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server database. You use Entity SQL to retrieve data from the database. You need to

enable query plan caching. Which object should you use?

- A. EntityCommand
- B. EntityConnection
- C. EntityTransaction
- D. EntityDataReader

Answer: A

Explanation:

Whenever an attempt to execute a query is made, the query pipeline looks up its query plan cache to see whether the exact query is already compiled and available.

If so, it reuses the cached plan rather than building a new one. If a match is not found in the query plan cache, the query is compiled and cached.

A query is identified by its Entity SQL text and parameter collection (names and types). All text comparisons are case-sensitive.

Query plan caching is configurable through the EntityCommand.

To enable or disable query plan caching through System.Data.EntityClient.EntityCommand.

EnablePlanCaching, set this property to true or false.

Disabling plan caching for individual dynamic queries that are unlikely to be used more than once improves performance.

You can enable query plan caching through EnablePlanCaching.

Query Plan Caching

(<http://msdn.microsoft.com/en-us/library/bb738562.aspx>)

Question: 33

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create a Windows Communication Foundation (WCF) Data Services service. You deploy the data service to the following URL:
http://contoso.com/Northwind.svc.

You add the following code segment. (Line numbers are included for reference only.)

```
01 Dim uri As var = New Uri("http://contoso.com/Northwind.svc/")
02 Dim ctx As var = New NorthwindEntities(uri)
03 Dim categories As var = From c In ctx.Categories _
04 Select c
05 For Each c category As var In categories
06 PrintCategory(category)
07
08 For Each product As var In category.Products
09
10 PrintProduct(product)
11 Next
12 Next
```

You need to ensure that the Product data for each Category object is lazy-loaded. What should you do?

A. Add the following code segment at line 07.

ctx.LoadProperty(category, "Products")

B. Add the following code segment at line 09.

ctx.LoadProperty(product, "*")

C. Add the following code segment at line 07.

Dim strPrdUri As var = String.Format("Categories({0})?\$expand=Products", category.CategoryID)

```
Dim productUri As var = New Uri(strPrdUri, UriKind.Relative)
ctx.Execute(Of Product)(productUri)
D.Add the following code segment at line 09.
Dim strPrdUri As var = String.Format("Products?$filter=CategoryID eq {0}", category.CategoryID)
Dim productUri As var = New Uri(strPrdUri, UriKind.Relative)
ctx.Execute(Of Product)(productUri)
```

Answer: A

Explanation:

LoadProperty(Object, String) Explicitly loads an object related to the supplied object by the specified navigation property and using the default merge option.

UriKind Enumeration

(<http://msdn.microsoft.com/en-us/library/system.urikind.aspx>)

RelativeOrAbsolute The kind of the Uri is indeterminate.

Absolute The Uri is an absolute Uri.

Relative The Uri is a relative Uri.

Question: 34

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server database. You use the following SQL statement to retrieve an instance of a DataSet object named ds.

```
SELECT CustomerID, CompanyName, ContactName, Address, City
FROM dbo.Customers
```

You need to query the DataSet object to retrieve only the rows where the ContactName field is not NULL. Which code segment should you use?

- A. from row in ds.Tables(0).AsEnumerable()
where DirectCast(row("ContactName"), String) IsNot Nothing
select row
- B. from row in ds.Tables(0).AsEnumerable()
where row.Field(Of String)("ContactName") IsNot Nothing
select row
- C. from row in ds.Tables(0).AsEnumerable()
where Not row.IsNull(DirectCast(row("ContactName"), String))
select row
- D. from row in ds.Tables(0).AsEnumerable()
where Not Convert.IsDBNull(row.Field(Of String)("Region"))
select row

Answer: B

Explanation:

Field<T>(DataRow, String) Provides strongly-typed access to each of the column values in the specified row.

The Field method also supports nullable types.

Question: 35

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server 2008 database. You create classes by using LINQ to SQL based on the records shown in the exhibit. (Click the Exhibit button.)



You need to create a LINQ query to retrieve a list of objects that contains the OrderID and CustomerID properties. You need to retrieve the total price amount of each Order record. What are two possible ways to achieve this goal? (Each correct answer presents a complete solution. Choose two.)

A. From details in dataContext.Order_Details _

```

Group details By details.OrderID Into g _
Join order In dataContext.Orders On g.Key = order.OrderID _
Select New With {
    .OrderID = order.OrderID,
    .CustomerID = order.CustomerID,
    .TotalAmount = g.Sum(Function(od) od.UnitPrice * od.Quantity)
}
  
```

B. dataContext.Order_Details.GroupJoin(dataContext.Orders, Function(d) d.OrderID, Function(o) o.OrderID, Function(dts,ord) New With {

```

    .OrderID = dts.OrderID,
    .CustomerID = dts.Order.CustomerID,
    .TotalAmount = dts.UnitPrice * dts.Quantity
})
  
```

C. From order in dataContext.Orders _

```

Group order By order.OrderID Into g _
Join details in dataContext.Order_Details On g.Key = details.OrderID _
Select New With {
    .OrderID = details.OrderID,
    .CustomerID = details.Order.CustomerID,
    .TotalAmount = details.UnitPrice * details.Quantity
}
  
```

D. dataContext.Orders.GroupJoin(dataContext.Order_Details, Function(o) o.OrderID, Function(d) d.OrderID, Function(ord, dts) New With {

```

    .OrderID = ord.OrderID,
    .CustomerID = ord.CustomerID,
    .TotalAmount = dts.Sum(Function(od) od.UnitPrice * od.Quantity)
})
  
```

Answer: A, D

Explanation:

Alterantive

A. This is an Object Query. It looks at the Order Details EntitySet and creating a group g based on OrderID.

* The group g is then joined with Orders EntitySet based on g.Key = OrderID

* For each matching records a new dynamic object containing OrderID, CustomerID and TotalAmount is created.

* The dynamic records are the results returned in an INumerable Object, for later processing Alterantive D. This is an Object Query. The GroupJoin method is used to join Orders to OrderDetails.

Parameters for GroupJoin:

1. An Order_Details EntitySet
2. Order o (from the Orders in the Orders Entity Set, picking up Order_id from both Entity Sets)
3. Order_ID from the first Order_Details record from the OD EntitySet
4. Lamda Expression passing ord and dts (ord=o, dts=d)

The body of the Lamda Expression is working out the total and Returning a Dynamic object as in A.

Question: 36

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application uses the ADO.NET Entity Framework to model entities. The conceptual schema definition language (CSDL) file contains the following XML fragment.

```
<EntityType Name="Contact">
...
<Property Name="EmailPhoneComplexProperty"
  Type="AdventureWorksModel.EmailPhone"
  Nullable="false" />
</EntityType>
...
<ComplexType Name="EmailPhone">
  <Property Type="String" Name="EmailAddress"
    MaxLength="50" FixedLength="false"
    Unicode="true" />
  <Property Type="String" Name="Phone" MaxLength="25"
    FixedLength="false" Unicode="true" />
</ComplexType>
```

You write the following code segment. (Line numbers are included for reference only.)

```
01 Using conn As New EntityConnection("name=AdvWksEntities")
02 conn.Open()
03 Dim esqlQuery As String = "SELECT VALUE contacts FROM" &
04   " AdvWksEntities.Contacts AS contacts" &
05   " WHERE contacts.ContactID == 3"
06 Using cmd As EntityCommand = conn.CreateCommand()
07 cmd.CommandText = esqlQuery
08 Using rdr As EntityDataReader = cmd.ExecuteReader()
09 While rdr.Read()
10
11 End While
12 End Using
13 End Using
14 conn.Close()
15 End Using
```

You need to ensure that the code returns a reference to a ComplexType entity in the model named EmailPhone. Which code segment should you insert at line 10?

A. Dim FldIdx As Integer = 0

Dim key As EntityKey = TryCast(record.GetValue(FldIdx), EntityKey)

For Each keyMember As EntityKeyMember In key.EntityKeyValue

 Return keyMember.Key + ":" + keyMember.Value

Next

B. Dim record As IExtendedDataRecord = TryCast(rdr("EmailPhone"), IExtendedDataRecord)

```

Dim FldIdx As Integer = 0
Return record.GetValue(FldIdx)
C.Dim nestedRecord As DbDataRecord = TryCast(rdr("EmailPhoneComplexProperty"), DbDataRecord) Return
nestedRecord
D.Dim fieldCount As Integer = rdr("EmailPhone").DataRecordInfo.FieldMetadata.Count
Dim FldIdx As Integer = 0
While FldIdx < fieldCount
    rdr.GetName(FldIdx)
    If rdr.IsDBNull(FldIdx) = False Then
        Return rdr("EmailPhone").GetValue(FldIdx).ToString()
    End If
    System.Math.Max(System.Threading.Interlocked.Increment(FldIdx), FldIdx - 1)
End While

```

Answer: C

Question: 37

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application contains the following XML document.

```

<bib>
    <book title="TCP/IP Illustrated" year="1994">
        <author> Author1 </author>
    </book>
    <book title="Programming in Unix" year="1992">
        <author> Author1 </author>
        <author> Author2 </author>
        <author> Author3 </author>
    </book>
    <book title="Data on the Web" year="2000">
        <author> Author4 </author>
        <author> Author3 </author>
    </book>
</bib>

```

You add the following code fragment. (Line numbers are included for reference only.)

```

01 Public Function GetBooks(xml As String) As IEnumerable(Of XElement)
02 Dim doc As XDocument = XDocument.Parse(xml)
03
04 End Function

```

You need to return a list of book XML elements that are authored by Author1. Which code segment should you insert at line 03?

- A. Return Document.Element("bib")
.Elements() .SelectMany(Function(e1 As e1.Elements())
.Where(Function(e2 As e2.Equals(New XElement("author", "Author1"))))
- B.Return Document.Element("bib")
.Elements().SelectMany(Function(e1 As e1.Elements())
.Where(Function(e2 As DirectCast(e2, String) = "Author1")))
- C.Return Document.Element("bib")
.Elements()
.Where(Function(e1 As e1.Elements()).Any(Function(e2 As DirectCast(e2, String) = "Author1")))

```
D.Return Document.Element("bib")
.Elements()
.Where(Function(e1 As XElement) e1.Elements().Any(Function(e2 As XElement) e2.Equals(New XElement("author", "Author1"))))
```

Answer: C**Question: 38**

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server 2008 database. The database includes a database table named ProductCatalog as shown in the exhibit. (Click the Exhibit button.)

ProductCatalog		
Column Name	Data Type	Nullable
Id	int	No
Weight	float	No
Price	money	No
Status	bit	No

You add the following code segment to query the first row of the ProductCatalog table. (Line numbers are included for reference only.)

```
01 Using cnx As var = New SqlConnection(connString)
02 Dim command As var = cnx.CreateCommand()
03 command.CommandType = CommandType.Text
04 command.CommandText = "SELECT TOP 1 * FROM dbo.ProductCatalog"
05 cnx.Open()
06 Dim reader As var = command.ExecuteReader()
07 If reader.Read() Then
08   Dim id As var = reader.GetInt32(0)
09
10  reader.Close()
11 End If
12 End Using
```

You need to read the values for the Weight, Price, and Status columns. Which code segment should you insert at line 09?

- A. Dim weight As var = reader.GetDouble(1)
Dim price As var = reader.GetDecimal(2)
Dim status As var = reader.GetBoolean(3)
- B. Dim weight As var = reader.GetDecimal(1)
Dim price As var = reader.GetFloat(2)
Dim status As var = reader.GetByte(3)
- C. Dim weight As var = reader.GetDouble(1)
Dim price As var = reader.GetFloat(2)
Dim status As var = reader.GetBoolean(3)
- D. Dim weight As var = reader.GetFloat(1)
Dim price As var = reader.GetDouble(2)
Dim status As var = reader.GetByte(3)

Answer: A

Question: 39

You use Microsoft .NET Framework 4 to develop an application that connects to a Microsoft SQL Server 2008 database. You add the following stored procedure to the database.

```
CREATE PROCEDURE GetProducts
AS
BEGIN
    SELECT ProductID, Name, Price, Cost
    FROM Product END
```

You create a SqlDataAdapter named adapter to execute the stored procedure. You need to fill a DataTable instance with the first 10 rows of the result set. What are two possible code segments that you can use to achieve this goal? (Each correct answer presents a complete solution. Choose two.)

- A. Dim ds As DataSet = New DataSet()
adapter.Fill(ds, 0, 10, "Product")
- B. Dim ds As DataSet = New DataSet()
Dim dt As DataTable = ds.Tables.Add("Product")
adapter.Fill(0, 10, dt)
- C. Dim ds As DataSet = New DataSet()
Dim dt As DataTable = ds.Tables.Add("Product")
dt.ExtendedProperties("RowCount") = 10
dt.ExtendedProperties("RowIndex") = 0
adapter.Fill(dt)
- D. Dim ds As DataSet = New DataSet()
ds.ExtendedProperties("RowCount") = 10
ds.ExtendedProperties("RowIndex") = 0
adapter.Fill(ds)

Answer: A, B

Explanation:

Fill(Int32, Int32, DataTable()) Adds or refreshes rows in a DataTable to match those in the data source starting at the specified record and retrieving up to the specified maximum number of records. (Inherited from DbDataAdapter.)

Fill(DataSet, Int32, Int32, String) Adds or refreshes rows in a specified range in the DataSet to match those in the data source using the DataSet and DataTable names. (Inherited from DbDataAdapter.)

SqlDataAdapter Class

(<http://msdn.microsoft.com/en-us/library/system.data.sqlclient.sqldataadapter.aspx>)

DataTable.ExtendedProperties Gets the collection of customized user information.

Question: 40

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application that uses the Entity Framework. You need to execute custom logic when an entity is attached to the ObjectContext. What should you do?

- A. Create a partial method named OnStateChanged in the partial class for the entity.
- B. Create a partial method named OnAttached in the partial class for the entity.
- C. Create an event handler to handle the ObjectStateManagerChanged event.
- D. Create an event handler to handle the ObjectMaterialized event.

Answer: C

Explanation:

ObjectStateManagerChanged Occurs when entities are added to or removed from the state manager.

ObjectMaterialized Occurs when a new entity object is created from data in the data source as part of a query or load operation.

ObjectStateManagerChanged Event

(<http://msdn.microsoft.com/en-us/library/system.data.objects.objectstatemanager.objectstatemanagerchanged.aspx>)

ObjectMaterialized Event

(<http://msdn.microsoft.com/en-us/library/system.data.objects.objectcontext.objectmaterialized.aspx>)

Question: 41

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server database. You use the ADO.NET Entity Framework to model entities. You need to add a new type to your model that organizes scalar values within an entity. You also need to map stored procedures for managing instances of the type. What should you do?

A. Add the stored procedures in the SSDL file along with a Function attribute.

Define a complex type in the CSDL file.

Map the stored procedure in the MSL file with a ModificationFunctionElement.

B. Add the stored procedures in the SSDL file along with a Function attribute.

Define a complex type in the CSDL file.

Map the stored procedure in the MSL file with an AssociationEnd element.

C. Use the edmx designer to import the stored procedures.

Derive an entity class from the existing entity as a complex type.

Map the stored procedure in the MSL file with an AssociationEnd element.

D. Add the stored procedures in the SSDL file along with a Function attribute.

Derive an entity class from the existing entity as a complex type.

Map the stored procedure in the MSL file with a ModificationFunctionElement.

Answer: A

Explanation:

EndProperty Element (MSL)

(<http://msdn.microsoft.com/en-us/library/bb399578.aspx>)

AssosiationEnd Attribute

(<http://msdn.microsoft.com/en-us/library/cc716774.aspx>)

Question: 42

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application. You use the Entity Framework Designer to create an Entity Data Model from an existing database by using the Generate from database wizard. The model contains an entity type named Product. The Product type requires an additional property that is not mapped to a database column. You need to add the property to Product. What should you do?

A. Add the property in the generated class file, and select Run Custom Tool from the solution menu.

B. Add the property in a partial class named Product in a new source file.

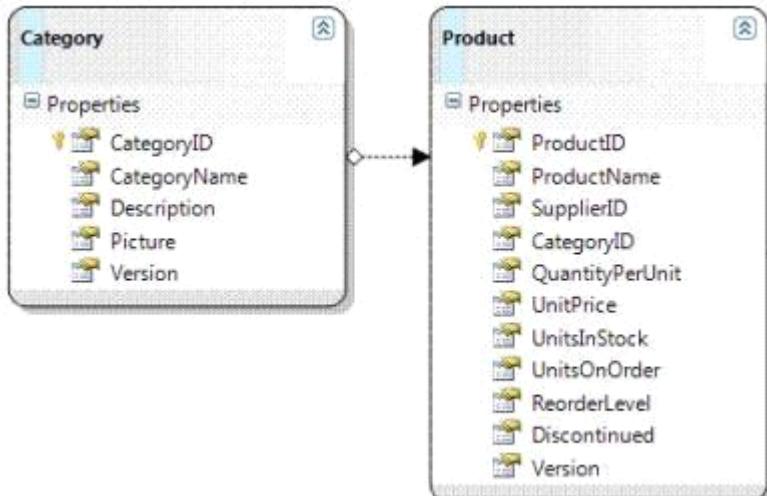
C. Create a complex type with the name of the property in the Entity Framework Designer.

D. Create a function import with the name of the property in the Entity Framework Designer.

Answer: B

Question: 43

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server database. You use the ADO.NET LINQ to SQL model to retrieve data from the database. The application contains the Category and Product entities, as shown in the following exhibit.



You need to ensure that LINQ to SQL executes only a single SQL statement against the database. You also need to ensure that the query retrieves the list of categories and the list of products. Which code segment should you use?

- A. Using dc As New NorthwindDataContext()
`dc.ObjectTrackingEnabled = False
Dim categories As var = From c In dc.Categories _
Select c
For Each category As var In categories
Console.WriteLine("{0} has {1} products", category.CategoryName, category.Products.Count)
Next
End Using`
- B.Using dc As New NorthwindDataContext()
`dc.DeferredLoadingEnabled = False
Dim dlOptions As New DataLoadOptions()
dlOptions.LoadWith(Of Category)(Function(c As) c.Products)
dc.LoadOptions = dlOptions
Dim categories As var = From c In dc.Categories _
Select c
For Each category As var In categories
Console.WriteLine("{0} has {1} products", category.CategoryName, category.Products.Count)
Next
End Using`
- C.Using dc As New NorthwindDataContext()
`dc.DefferredLoadingEnabled = False
Dim categories As var = From c In dc.Categories _
Select c
For Each category As var In categories
Console.WriteLine("{0} has {1} products", category.CategoryName, category.Products.Count)`

```
    Next
End Using
D.Using dc As New NorthwindDataContext()
    dc.DeferredLoadingEnabled = False
    Dim dlOptions As New DataLoadOptions()
    dlOptions.AssociateWith(Of Category)(Function(c As ) c.Products)
    dc.LoadOptions = dlOptions
    Dim categories As var = From c In dc.Categories _
        Select c
    For Each category As var In categories
        Console.WriteLine("{0} has {1} products", category.CategoryName, category.Products.Count)
    Next
End Using
```

Answer: B

Explanation:

DataLoadOptions Class Provides for immediate loading and filtering of related data.
DataLoadOptions.LoadWith(LambdaExpression) Retrieves specified data related to the main target by using a lambda expression.

You can retrieve many objects in one query by using LoadWith.

DataLoadOptions.AssociateWith(LambdaExpression) Filters the objects retrieved for a particular relationship.

Use the AssociateWith method to specify sub-queries to limit the amount of retrieved data.

DataLoadOptions Class

(<http://msdn.microsoft.com/en-us/library/system.data.linq.dataloadoptions.aspx>)

How to: Retrieve Many Objects At Once (LINQ to SQL)

([http://msdn.microsoft.com/en-us/library/Bb386917\(v=vs.90\).aspx](http://msdn.microsoft.com/en-us/library/Bb386917(v=vs.90).aspx))

How to: Filter Related Data (LINQ to SQL)

([http://msdn.microsoft.com/en-us/library/Bb882678\(v=vs.100\).aspx](http://msdn.microsoft.com/en-us/library/Bb882678(v=vs.100).aspx))

Question: 44

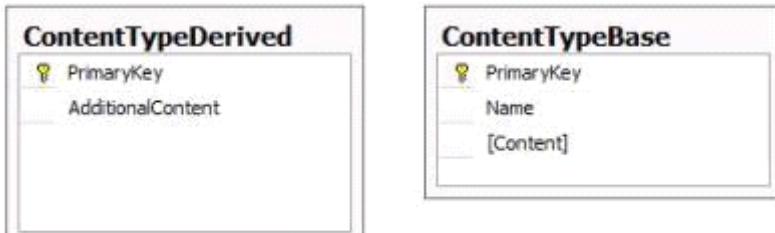
You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to enhance an existing application to use the Entity Framework. The classes that represent the entities in the model are Plain Old CLR Object (POCO) classes. You need to connect the existing POCO classes to an Entity Framework context. What should you do?

- A. 1. Generate a MetadataWorkspace and create an ObjectContext for the model.
- 2. Disable proxy object creation on the ContextOptions of the ObjectContext.
- 3. Enable lazy loading on the ContextOptions of the ObjectContext.
- B. 1. Generate a MetadataWorkspace and create an ObjectContext for the model.
- 2. Create an ObjectSet for the POCO classes.
- 3. Disable proxy object creation on the ContextOptions of the ObjectContext.
- C. 1. Generate an Entity Data Model for the POCO classes.
- 2. Create an ObjectSet for the POCO classes.
- 3. Disable proxy object creation on the ContextOptions of the ObjectContext.
- 4. Enable lazy loading on the ContextOptions of the ObjectContext.
- D. 1. Generate an Entity Data Model for the POCO classes.
- 2. Create an ObjectSet for the POCO classes.
- 3. Set Code Generation Strategy on the Entity Data Model to none.
- 4. Create an ObjectContext for the model.

Answer: D

Question: 45

You use the Microsoft .NET Framework 4 Entity Framework to develop an application that contains an Entity Data Model for the following database tables.



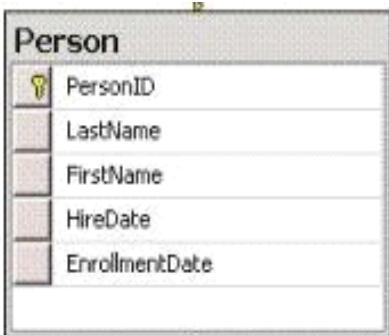
You need to ensure that the entity that is mapped to the **ContentTypeDerived** table derives from the entity that is mapped to the **ContentTypeBase** table. What should you do?

- A. Use a Table-Per-Type mapping method.
- B. Use a Table-Per-Hierarchy mapping method.
- C. Create a function import for each entity.
- D. Create a complex type for each entity.

Answer: A

Question: 46

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application uses the ADO.NET Entity Framework to model entities. The model includes the entity shown in the following exhibit.



You need to add a function that returns the number of years since a person was hired. You also need to ensure that the function can be used within LINQ to Entities queries. What should you do?

- A. Add the following code fragment to the .edmx file.
- ```

<Function Name="YearsSinceNow" ReturnType="Edm.Int32">
 <Parameter Name="date" Type="Edm.DateTime" />
 <DefiningExpression>
 Year(CurrentDateTime()) - Year(date)
 </DefiningExpression>
</Function>

```
- Add the following function to the entity class definition.
- ```

<EdmComplexType("SchoolModel", "YearsSinceNow")>_
  Public Shared Function YearsSinceNow([date] As DateTime) As Integer
    Throw New NotSupportedException("Direct calls are not supported.")
  End Function

```

End Function

B.Add the following code fragment to the .edmx file.

```
<Function Name="YearsSinceNow" ReturnType="Edm.Int32">
<Parameter Name="date" Type="Edm.DateTime" />
<DefiningExpression>
    Year(.currentTimeMillis()) - Year(date)
</DefiningExpression>
</Function>
```

Add the following function to the entity class definition.

```
<EdmFunction("SchoolModel", "YearsSinceNow")> _
Public Shared Function YearsSinceNow([date] As DateTime) As Integer
    Throw New NotSupportedException("Direct calls are not supported.")
End Function
```

C.Add the following code fragment to the .edmx file.

```
<Function Name="YearsSinceNow" ReturnType="Edm.Int32">
<Parameter Name="date" Type="Edm.DateTime" />
</Function>
```

Add the following function to the entity class definition.

```
<EdmFunction("SchoolModel", "YearsSinceNow")> _
Public Shared Function YearsSinceNow([date] As DateTime) As Integer
    Return Year(currentTime()) - Year([date]))
End Function
```

D.Use the Entity Data Model Designer to create a complex property named YearsSinceNow that can be accessed through the LINQ to Entities query at a later time.

Answer: B

Explanation:

How to: Call Model-Defined Functions in Queries

(<http://msdn.microsoft.com/en-us/library/dd456857.aspx>)

How to: Call Model-Defined Functions as Object Methods

(<http://msdn.microsoft.com/en-us/library/dd456845.aspx>)

Question: 47

You use Microsoft Visual Studio 2010 and Microsoft ADO.NET Framework 4 to create an application. The application connects to a Microsoft SQL Server 2008 database. You use the ADO.NET LINQ to SQL model to retrieve data from the database. You use stored procedures to return multiple result sets. You need to ensure that the result sets are returned as strongly typed values. What should you do?

- A. Apply the `FunctionAttribute` and `ResultTypeAttribute` to the stored procedure function. Use the `GetResult<TElement>` method to obtain an enumerator of the correct type.
- B. Apply the `FunctionAttribute` and `ParameterAttribute` to the stored procedure function and directly access the strongly typed object from the results collection.
- C. Apply the `ResultTypeAttribute` to the stored procedure function and directly access the strongly typed object from the results collection.
- D. Apply the `ParameterAttribute` to the stored procedure function. Use the `GetResult<TElement>` method to obtain an enumerator of the correct type.

Answer: A

Explanation:

You must use the `IMultipleResults.GetResult<TElement>` Method pattern to obtain an enumerator of the correct type, based on your knowledge of the stored procedure.

`FunctionAttribute` Associates a method with a stored procedure or user-defined function in the database.

`IMultipleResults.GetResult<TElement>` Method

(<http://msdn.microsoft.com/en-us/library/bb534218.aspx>)

Question: 48

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application uses the ADO.NET Entity Framework to model entities. You need to create a database from your model. What should you do?

- A. Run the `edmgen.exe` tool in `FullGeneration` mode.
- B. Run the `edmgen.exe` tool in `FromSSDLGeneration` mode.
- C. Use the Update Model Wizard in Visual Studio.
- D. Use the Generate Database Wizard in Visual Studio. Run the resulting script against a Microsoft SQL Server database.

Answer: D

Explanation:

To update the database, right-click the Entity Framework designer surface and choose `Generate Database From Model`.

The `Generate Database Wizard` produces a SQL script file that you can edit and execute.

Question: 49

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application. You use the ADO.NET Entity Framework Designer to model entities. The application includes two `ObjectContext` instances named `context1` and `context2`. You need to persist the changes in both object contexts within a single transaction. Which code segment should you use?

- A. Using scope As New TransactionScope()
 `context1.SaveChanges()`
 `context2.SaveChanges()`
End Using
- B. Using scope As New TransactionScope()
 Using scope1 As New _
 `TransactionScope(TransactionScopeOption.RequiresNew)`
 `context1.SaveChanges()`
 `scope1.Complete()`
 End Using
 Using scope2 As New _
 `TransactionScope(TransactionScopeOption.RequiresNew)`
 `context2.SaveChanges()`
 `scope2.Complete()`
 End Using
 `scope.Complete()`

```
End Using
C. Using scope As New TransactionScope()
    Using scope As New _
        TransactionScope(TransactionScopeOption.RequiresNew)
        context1.SaveChanges()
    End Using
    Using scope As New _
        TransactionScope(TransactionScopeOption.RequiresNew)
        context2.SaveChanges()
    End Using
End Using
D. Using scope As New TransactionScope()
    context1.SaveChanges()
    context2.SaveChanges()
    scope.Complete()
End Using
```

Answer: D

Explanation:

TransactionScope.Complete Indicates that all operations within the scope are completed successfully.

TransactionScope Class

(<http://msdn.microsoft.com/en-us/library/system.transactions.transactionscope.aspx>)

Question: 51

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application uses the ADO.NET Entity Framework to model entities. The application allows users to make changes to entities while disconnected from the central data store. You need to ensure that when the user connects to the central data store and retrieves new data, the application meets the following requirements:

- Changes made to the local data store in disconnected mode are preserved.
- Entities that have already been loaded into the local data store, but have not been modified by the user, are updated with the latest data.

What should you do?

- A. Call the query's Execute method by using the MergeOptions.AppendOnly option.
- B. Call the query's Execute method by using the MergeOptions.OverwriteChanges option.
- C. Call the Refresh method of ObjectContext by using the RefreshMode.StoreWins option.
- D. Call the Refresh method of ObjectContext by using the RefreshMode.ClientWins method.

Answer: D

Question: 52

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application. You use the ADO.NET Entity Framework Designer to model entities. The application includes two ObjectContext instances named context1 and context2. You need to persist the changes in both object contexts within a single transaction. Which code segment should you use?

- A. using (TransactionScope scope = new TransactionScope())

```

{
context1.SaveChanges();
context2.SaveChanges();
}
B. using (TransactionScope scope = new TransactionScope())
{
context1.SaveChanges();
context2.SaveChanges();
scope.Complete();
}
C. using (TransactionScope scope = new TransactionScope())
{
using (TransactionScope scope1 = new
TransactionScope(TransactionScopeOption.RequiresNew))
{
context1.SaveChanges();
scope1.Complete();
}
using (TransactionScope scope2 = new
TransactionScope(TransactionScopeOption.RequiresNew))
{
context2.SaveChanges();
scope2.Complete();
}
scope.Complete();
}
D. using (TransactionScope scope = new TransactionScope())
{
using (TransactionScope scope = new
TransactionScope(TransactionScopeOption.RequiresNew))
{
context1.SaveChanges();
}
using (TransactionScope scope = new
TransactionScope(TransactionScopeOption.RequiresNew))
{
context2.SaveChanges();
}
}

```

Answer: B

Explanation:

TransactionScope.Complete Indicates that all operations within the scope are completed successfully.
 TransactionScope Class
<http://msdn.microsoft.com/en-us/library/system.transactions.transactionscope.aspx>

Question: 53

You use Microsoft .NET framework 4 to develop an application that connects to a Microsoft SQL Server 2008 database named AdventureWorksLT. The database resides on an instance named INSTA on a server named SQL01. You need to

configure the application to connect to the database.

- A. Data Source=SQL01; Initial Catalog=INSTA;
Integrated Security=true;
Application Name=AdventureWorksLT;
- B. Data Source=SQL01;
Initial Catalog=AdventureWorksLT;
Integrated Security=true;
Application Name=INSTA;
- C. Data Source=SQL01\INSTA;
Initial Catalog=AdventureWorksLT;
Integrated Security=true;
- D. Data Source=AdventureWorksLT;
Initial Catalog=SQL01\INSTA;
Integrated Security=true;

Answer: C

Explanation:

CHAPTER 2 ADO.NET Connected Classes

Lesson 1: Connecting to the Data Store

Configuring an SQL Server Connection String (page 70-71)

Question: 54

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server 2008 database. The application uses a Microsoft ADO.NET SQL Server managed provider. When a connection fails, the application logs connection information, including the full connection string. The information is stored as plain text in a .config file. You need to ensure that the database credentials are secure. Which connection string should you add to the .config file?

- A. Data Source=myServerAddress; Initial Catalog=myDataBase; Integrated Security=SSPI; Persist Security Info=false;
- B. Data Source=myServerAddress; Initial Catalog=myDataBase; Integrated Security=SSPI; Persist Security Info=true;
- C. Data Source=myServerAddress; Initial Catalog=myDataBase; User Id = myUsername; Password = myPassword; Persist Security Info=false;
- D. Data Source=myServerAddress; Initial Catalog=myDataBase; User Id = myUsername; Password = myPassword; Persist Security Info=true;

Answer: A

Explanation:

Persist Security Info

Default: 'false'

When set to false or no (strongly recommended), security-sensitive information, such as the password, is not returned as part of the connection if the connection is open or has ever been in an open state. Resetting the connection string resets all connection string values including the password.

Recognized values are true, false, yes, and no.

Question: 55

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create a Windows Communication Foundation (WCF) Data Services service. You deploy the data service to the following URL: <http://contoso.com/Northwind.svc>. You need to update the City property of the Customer record that has its ID value as 123. You also need to preserve the current values of the remaining properties. Which HTTP request should you use?

A. PUT /Northwind.svc/Customers(123)

Host: contoso.com

Content-Type: application/json

{

City: 'Seattle'

}

B. PUT /Northwind.svc/Customers(123)

Host: contoso.com

Accept: application/json

{

City: 'Seattle'

}

C. MERGE /Northwind.svc/Customers(123)

Host: contoso.com

Content-Type: application/json

{

City: 'Seattle'

}

D. MERGE /Northwind.svc/Customers(123)

Host: contoso.com

Accept: application/json

{

City: 'Seattle'

}

Answer: C

Explanation:

HTTP Actions

OData supports the following HTTP actions to perform create, read, update, and delete operations on the entity data that the addressed resource represents:

HTTP GET - This is the default action when a resource is accessed from a browser. No payload is supplied in the request message, and a response method with a payload that contains the requested data is returned.

HTTP POST - Inserts new entity data into the supplied resource. Data to be inserted is supplied in the payload of the request message.

The payload of the response message contains the data for the newly created entity. This includes any autogenerated key values.

The header also contains the URI that addresses the new entity resource.

HTTP DELETE - Deletes the entity data that the specified resource represents. A payload is not present in the request or response messages.

HTTP PUT - Replaces existing entity data at the requested resource with new data that is supplied in the payload of the request message.

HTTP MERGE - Because of inefficiencies in executing a delete followed by an insert in the data source just to change entity data, OData introduces a new HTTP MERGE action. The payload of the request message contains the properties that must be changed on the addressed entity resource. Because HTTP MERGE is not defined in the HTTP

specification, it may require additional processing to route a HTTP MERGE request through non-OData aware servers.

Accessing and Changing Data Using REST Semantics

(<http://msdn.microsoft.com/en-us/library/dd728282.aspx>)

HTTP header fields

(http://en.wikipedia.org/wiki/List_of_HTTP_header_fields)

Accept Content-Types that are acceptable

Content-Type The mime type of the body of the request (used with POST and PUT requests)

A Guide to Designing and Building RESTful WebServices with WCF 3.5

(<http://msdn.microsoft.com/en-us/library/dd203052.aspx>)

Question: 56

You use Microsoft .NET Framework 4 to develop an application that connects to a Microsoft SQL Server 2008 database. You add the following stored procedure to the database.

CREATE PROCEDURE GetSalesPeople

AS

BEGIN

SELECT FirstName, LastName, Suffix, Email, Phone

FROM SalesPeople

END

You write the following code. (Line numbers are included for reference only.)

```
01  Dim connection As SqlConnection = New SqlConnection("& ")
02  Dim command As SqlCommand = New SqlCommand("GetSalesPeople", connection)
03  command.CommandType = CommandType.StoredProcedure
04
```

You need to retrieve all of the results from the stored procedure. Which code segment should you insert at line 04

- A. Dim res = command.ExecuteReader()
- B. Dim res = command.ExecuteScalar()
- C. Dim res = command.ExecuteNonQuery()
- D. Dim res = command.ExecuteXmlReader()

Answer: A

Explanation:

ExecuteReader Sends the CommandText to the Connection and builds a SqlDataReader.

SqlCommand Class

(<http://msdn.microsoft.com/en-us/library/system.data.sqlclient.sqlcommand.aspx>)

Question: 57

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server database. The application uses the following object query to load a product from the database. (Line numbers are included for reference only.)

```
01  Using advWorksContext As New AdventureWorksEntities()
02  Dim productQuery As ObjectQuery(Of Product) =
03  advWorksContext.Product.Where("it.ProductID = 900")
04
05  End Using
```

You need to log the command that the query executes against the data source. Which code segment should you insert

at line 04?

- A. Trace.WriteLine(productQuery.ToString())
- B. Trace.WriteLine(productQuery.ToTraceString())
- C. Trace.WriteLine(productQuery.CommandText)
- D. Trace.WriteLine((DirectCast(productQuery, IQuerybable)).Expression)

Answer: B

Explanation:

CHAPTER 8 Developing Reliable Applications

Lesson 1: Monitoring and Collecting Performance Data

Accessing SQL Generated by the Entity Framework (page 509)

Question: 58

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. You deploy a Windows Communication Foundation (WCF) Data Service to a production server. The application is hosted by Internet Information Services (IIS). After deployment applications that connect to the service receive the following error message. The server encountered an error processing the request. See server logs for more details. You need to ensure that the actual exception data is provided to client computers. What should you do?

- A. Modify the application's Web config file Set the value for the customErrors element to Off
- B. Modify the application's Web config file Set the value for the customErrors element to RemoteOnly
- C. Add the FaultContract attribute to the class that implements the data service
- D. Add the Service Behavior attribute to the class that implements the data service.

Answer: D

Question: 59

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server database. You write the following code segment that executes two commands against the database within a transaction. (Line numbers are included for reference only)

```
01 Using connection As New SqlConnection(cnnStr)
02 connnectionOpen()
03 Dim sqlTran As SqlTransaction = connection.BeginTraraction()
04 Dim command As SqlCommand = connection.Createcommand()
05 commandTransation = sqlTran
06 Try
07 command.CommandText = "INSERT INTO Production.ScrapReason(Name)
VALUES('Wrong size')"
08 command.ExecuteNonQuery()
09 command.CommandText = "INSERT INTO Production ScrapReason(Name)
VALUES('Wrong color')"
10 command.ExecuteNonQuery()
11
12 End Using
```

You need to log error information if the transaction fails to commit or roll back. Which code segment should you insert line 11?

```
A. sqlTran.Commit() Catch ex As Exception  
sqlTran.Rollback()  
Trace.WriteLine(ex.Message)  
End Try  
B. sqlTran.Commit() Catch ex As Exception  
Trace.WriteLine(ex.Message)  
Try  
sqlTran.Rollback()  
Catch exRollback As Exception  
Trace.WriteLine(exRollback.Message)  
End Try  
End Try  
C. Catch ex As Exception Trace.Writeline(ex.Message)  
Try sqlTran.Rollback()  
Catch exRollback As Exception  
Trace.WriteLine(exRollback.Message)  
End Try Finally sqlTran.Commit()  
End Try  
D. Catch ex As Exception sqlTran.Rollback()  
Trace.WriteLine(ex.Message)  
Finally  
try sqlTran.Commit() Catch exCommit As Exception  
Trace.WriteLine(exCommit.Message)  
End Try  
End Try
```

Answer: B

Explanation:

A would work, but B is better since we are checking for possible errors during the rollback. C & D would try to do a rollback before a commit?
The finally block is only executed when the application ends, which may not be the appropriate place to put this logic.
Normally, a finally block would contain code to close a Database connection. The finally block executes even if an exception arises.

Question: 60

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server database. The application uses Data Contexts to query the database. The application meets the following requirements:

- Stores customer data offline
- Allows users to update customer records while they are disconnected from the server
- Enables online changes to be submitted back to the SQL Server by using the Data Context object

You need to ensure that the application can detect all conflicts that occur between the offline customer information submitted to the SQL Server and the server version. You also need to ensure that you can roll back local changes. What should you do?

- A. Add a try/catch statement around calls to the Submit Changes method of the Data Context object and catch Sql Exceptions
- B. Add a try/catch statement around calls to the Submit Changes method of the Data Context object and catch Change

context Exceptions

- C. Override the Update operation of the Data Context object Call the Executedynamic Update method to generate the update SQL
- D. Call the Submit Changes method of the Data Context object, Pass System Data L'nq ConflictMode Continue OnConflict to the method

Answer: D

Explanation:

FailOnFirstConflict Specifies that attempts to update the database should stop immediately when the first concurrency conflict error is detected.

ContinueOnConflict Specifies that all updates to the database should be tried, and that concurrency conflicts should be accumulated and returned at the end of the process.

ExecuteDynamicUpdate() Method Called inside update override methods to redelegate to LINQ to SQL the task of generating and executing dynamic SQL for update operations.

ConflictMode Enumeration

(<http://msdn.microsoft.com/en-us/library/bb345922.aspx>)

DataContext.ExecuteDynamicUpdate Method

(<http://msdn.microsoft.com/en-us/library/system.data.linq.datacontext.executedynamicupdate.aspx>)

Question: 61

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. You are creating the data layer of the application. You write the following code segment. (Line numbers are included for reference only.)

```
01  Public Shared Function GetDataReader(sql As String) As SqlDataReader
02  Dim dr As SqlDataReader = Nothing
03
04  Return dr
05  End Function
```

You need to ensure that the following requirements are met:

The SqlDataReader returned by the GetDataReader method can be used to retrieve rows from the database.

SQL connections opened within the GetDataReader method will close when the SqlDataReader is closed. Which code segment should you insert at line 03?

- A. Using cnn As New SqlConnection(strCnn)

```
Try
Dim cmd As New SqlCommand(sql, cnn)
cnn.Open()
dr = cmd.ExecuteReader()
Catch
Throw
End Try
End Using
```

- B. Dim cnn As New SqlConnection(strCnn)

```
Dim cmd As New SqlCommand(sql, cnn)
cnn.Open()
dr = cmd.ExecuteReader()
Finally
cnn.Close()
End Try
```

```
C. Dim cnn As New SqlConnection(strCnn)
Dim cmd As New SqlCommand(sql, cnn)
cnn.Open()
Try
dr = cmd.ExecuteReader()
cnn.Close()
Catch
Throw
End Try

D. Dim cnn As New SqlConnection(strCnn)
Dim cmd As New SqlCommand(sql, cnn)
cnn.Open()
Try
dr = cmd.ExecuteReader(CommandBehavior.CloseConnection)
Catch
cnn.Close()
Throw
End Try
```

Answer: D

Explanation:

CommandBehavior.CloseConnection When the command is executed, the associated Connection object is closed when the associated DataReader object is closed.

CommandBehavior Enumeration

(<http://msdn.microsoft.com/en-us/library/system.data.commandbehavior.aspx>)

SqlCommand.ExecuteReader Method (CommandBehavior)

(<http://msdn.microsoft.com/en-us/library/y6wy5a0f.aspx>)

Question: 62

You use Microsoft .NET Framework 4 to develop an ASP.NET application. The application uses Integrated Windows authentication. The application accesses data in a Microsoft SQL Server 2008 database that is located on the same server as the application.

You use the following connection string to connect to the database.

Integrated Security=SSPI; Initial Catalog=AdventureWorks;

The application must also execute a stored procedure on the same server on a database named pubs.

Users connect to the ASP.NET application through the intranet by using Windows-based authentication. You need to ensure that the application will use connection pooling whenever possible and will keep the number of pools to a minimum. Which code segment should you use?

A. corrmand.CommandText = "USE [pubs]; exec uspLoginAudit;"

Using connection As New SqlConnection(

"Integrated Security=SSPI;"

"Initial Catalog=AdventureWorks")

connection.Open()

command.ExecuteNonQuery()

End Using

B. command.CommandText = "exec uspLoginAudit;" Using connection As New SqlConnection("Integrated Security=SSPI; ")

connection.Open() command.ExecuteNonQuery()

End Using

```
C. command.CommandText = "USE [pubs]; exec uspLoginAudit;" Using connection As New SqlConnection(  
"Initial Catalog=AdventureWorks;" "Integrated Security=SSPI;" "MultipleActiveResultSets=True")  
connection.Open() command.ExecuteNonQuery()
```

End Using

```
D. command.CommandText = "exec uspLoginAudit;" Using connection As New SqlConnection(  
"Integrated Security=SSPI; Initial Catalog=pubs")  
connection.Open() command.ExecuteNonQuery()
```

End Using

Answer: A

Explanation:

Working with Multiple Active Result Sets

([http://msdn.microsoft.com/en-us/library/yf1a7f4f\(v=vs.80\).aspx](http://msdn.microsoft.com/en-us/library/yf1a7f4f(v=vs.80).aspx))

SSPI

([http://msdn.microsoft.com/en-us/library/windows/desktop/aa380493\(v=vs.85\).aspx](http://msdn.microsoft.com/en-us/library/windows/desktop/aa380493(v=vs.85).aspx))

Question: 63

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application. You use the Entity Framework Designer to create an Entity Data Model using model-first development. The database has the following requirements:

- Each table must have a datetime column named time_modified.
- Each table requires a trigger that updates the value of the time_modified column when a row is inserted or updated.

You need to ensure that the database script that is created by using the Generate Database From Model option meets the requirements. What should you do?

- A. Add a DateTime property named time_modified to each entity in the model, and set the property's StoreGeneratedPattern to Computed.
- B. Add a new entity named time_modified to the model, and modify each existing entity so that it inherits from the new entity.
- C. Create a new T4 Template, and set the DDL Generation template to the name of the new template.
- D. Create a new Windows Workflow Foundation workflow, and set Database Generation Workflow to the name of the new workflow.

Answer: C

Explanation:

Model-First in the Entity Framework 4

(<http://msdn.microsoft.com/en-us/data/ff830362>)

Question: 64

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server 2008 database. You use the ADO.NET Entity Framework to model your entities. You use ADO.NET self-tracking entities. You need to ensure that the change-tracking information for the self-tracking entities can be used to update the database. Which ObjectContext method should you call after changes are made to the entities?

- A. Attach
- B. SaveChanges
- C. ApplyChanges
- D. Refresh

Answer: C

Explanation:

ApplyChanges takes the changes in a connected set of entities and applies them to an ObjectContext.

Starting with Microsoft Visual Studio 2010, the ADO.NET Self-Tracking Entity Generator template generates self-tracking entities.

This template item generates two .tt (text template) files: <model name>.tt and <model name>.Context.tt.

The <model name>.tt file generates the entity types and a helper class that contains the change-tracking logic that is used by self-tracking entities and the extension methods that allow setting state on self-tracking entities.

The <model name>.Context.tt file generates a typed ObjectContext and an extension class that contains ApplyChanges methods for the ObjectContext and ObjectSet classes. These methods examine the change-tracking information that is contained in the graph of self-tracking entities to infer the set of operations that must be performed to save the changes in the database.

Working with Self-Tracking Entities

(<http://msdn.microsoft.com/en-us/library/ff407090.aspx>)

Question: 65

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server 2008 database. The database includes a table that contains information about all the employees. The database table has a field named EmployeeType that identifies whether an employee is a Contractor or a Permanent employee. You declare the Employee entity base type. You create a new Association entity named Contractor that inherits the Employee base type. You need to ensure that all Contractors are bound to the Contractor class. What should you do?

- A. Modify the .edmx file to include the following line of code.

<Condition ColumnName="EmployeeType" Value="Contractor" />

- B. Use the Entity Data Model Designer to set up a referential constraint between the primary key of the Contractor class and EmployeeType.

- C. Modify the .edmx file to include the following line of code.

<NavigationProperty Name="Type" FromRole="EmployeeType" ToRole="Concracor" />

- D. Use the Entity Data Model Designer to set up an association between the Contractor class and EmployeeType.

Answer: A

Explanation:

```
<Association Name="FK_OrderDetails_Orders1">
<End Role="Orders" Type="StoreDB.Store.Orders" Multiplicity="1">
<OnDelete Action="Cascade" />
</End>
<End Role="OrderDetails" Type="StoreDB.Store.OrderDetails" Multiplicity="*" />
<ReferentialConstraint>
<Principal Role="Orders">
<PropertyRef Name="ID" />
```

```
</Principal>
<Dependent Role="OrderDetails">
<PropertyRef Name="OrderId" />
</Dependent>
</ReferentialConstraint>
</Association>
```

Question: 66

You use Microsoft .NET Framework 4 to develop an application that exposes a WCF Data Services endpoint. The endpoint uses an authentication scheme that requires an HTTP request that has the following header format.

GET /OData.svc/Products()

Authorization: WRAP access_token "123456789"

You add the following method to your DataService implementation.

```
Protected Overrides Sub OnStartProcessingRequest( ByVal args As System.Data.Services.ProcessRequestArgs)
```

```
...
```

```
End Sub
```

You need to ensure that the method retrieves the authentication token. Which line of code should you use?

- A. Dim token As String =
args.OperationContext.RequestHeaders("Authorization")
- B. Dim token As String =
args.OperationContext.RequestHeaders("WRAP access token")
- C. Dim token As String =
args.OperationContext.ResponseHeaders("WRAP access token")
- D. Dim token As String =
args.OperationContext.ResponseHeaders("Authorization")

Answer: A

Explanation:

OData and Authentication – OAuth WRAP

(<http://blogs.msdn.com/b/astoriateam/archive/2010/08/19/odata-and-authentication-part-8-oauth-wrap.aspx>)

Question: 67

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application. You use the Entity Framework Designer to create the following Entity Data Model.



The application contains a class as shown in the following code segment.

```
Public Class MyBaseClass Inherits EntityObject
End Class
```

You need to ensure that all generated entities inherit from MyBaseClass.

What should you do?

- A. Use the ADO.NET EntityObject Generator template to configure all entities to inherit from MyBaseClass.
- B. Modify the generated code file so that all entities inherit from MyBaseClass.
- C. Create a new ObjectQuery that uses MyBaseClass as the type parameter.
- D. Change MyBaseClass to inherit from ObjectContext.

Answer: A

Explanation:

You can use the Text Template Transformation Toolkit (T4) to generate your entity classes, and Visual Studio .NET provides the T4 EntityObject Generator template by which you can control the entity object generation. Visual Studio .NET also provides the T4 SelfTracking Entity Generator template by which you can create and control the Add an EntityObject Generator to your project and add the new modification to the text template.self-tracking entity classes. Add an EntityObject Generator to your project and add the new modification to the text template.

CHAPTER 6 ADO.NET Entity Framework

Lesson 1: What Is the ADO.NET Entity Framework?

The EntityObject Generator (page 403-404)

<http://blogs.msdn.com/b/efdesign/archive/2009/01/22/customizing-entity-classes-with-t4.aspx>

Question: 68

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application. You use the ADO.NET Entity Framework Designer to model entities. You need to associate a previously deserialized entity named personl to an object context named model and persist changes to the database. Which code segment should you use?

- A. personl.AcceptChanges() model.SaveChanges()
- B. model.People.Attach(personl) model.SaveChanges()
- C. model.AttachTo("People", personl) model.SaveChanges()
- D. model.People.ApplyChanges(personl) model.SaveChanges()

Answer: C

Explanation:

Considerations from Attaching and Detaching objects (<http://msdn.microsoft.com/en-us/library/bb896271.aspx>):

The object that is passed to the Attach method must have a valid EntityKey value. If the object does not have a valid EntityKey value, use the AttachTo method to specify the name of the entity set.

- **Attach** Use the Attach method of ObjectContext where the method accepts a single typed entity parameter.
- **AttachTo** The AttachTo method of ObjectContext accepts two parameters. The first parameter is a string containing the name of the entity set.

The second parameter's type is object and references the entity you want to add.

- **Attach** The Attach method of ObjectSet, which is the entity set's type, accepts a single typed parameter containing the entity to be added to the ObjectSet.

CHAPTER 6 ADO.NET Entity Framework

Lesson 2: Querying and Updating with the Entity Framework

Attaching Entities to an ObjectContext(page 437)

Attaching and Detaching objects

(<http://msdn.microsoft.com/en-us/library/bb896271.aspx>)

[http://msdn.microsoft.com/en-us/library/bb896248\(v=vs.90\).aspx](http://msdn.microsoft.com/en-us/library/bb896248(v=vs.90).aspx)

<http://msdn.microsoft.com/en-us/library/bb896248.aspx>

Question: 69

You use Microsoft .NET Framework 4 and the Entity Framework to develop an application. You create an Entity Data Model that has an entity named Customer. You set the optimistic concurrency option for Customer. You load and modify an instance of Customer named loadedCustomer, which is attached to an ObjectContext named context. You need to ensure that if a concurrency conflict occurs during a save, the application will load up-to-date values from the database while preserving local changes. Which code segment should you use?

A. Try

```
context.SaveChanges() Catch ex As EntitySqlException  
context.Refresh(RefreshMode.StoreWins, loadedCustomer) End Try
```

B. Try

```
context.SaveChanges()  
Catch ex As OptimisticConcurrencyException  
context.Refresh(RefreshMode.ClientWins, loadedCustomer)  
End Try
```

C. Try

```
context.SaveChanges()  
Catch ex As EntitySqlException  
context.Refresh(RefreshMode.ClientWins, loadedCustomer)  
End Try
```

D. Try

```
context.SaveChanges()  
Catch ex As OptimisticConcurrencyException  
context.Refresh(RefreshMode.StoreWins, loadedCustomer)  
End Try
```

Answer: B

Explanation:

EntitySqlException Represents errors that occur when parsing Entity SQL command text.

This exception is thrown when syntactic or semantic rules are violated.

System.Object
System.Exception
System.SystemException
System.Data.DataException
System.Data.EntityException
System.Data.EntitySqlException
OptimisticConcurrencyException The exception that is thrown when an optimistic concurrency violation occurs.
System.Object
System.Exception
System.SystemException
System.Data.DataException
System.Data.UpdateException
System.Data.OptimisticConcurrencyException
Optimistic Concurrency (ADO.NET)
<http://msdn.microsoft.com/en-us/library/aa0416cz.aspx>
<http://msdn.microsoft.com/en-us/library/system.data.objects.refreshmode.aspx>
<http://msdn.microsoft.com/en-us/library/bb738618.aspx>

Question: 70

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application that uses the Entity Framework. Entity types in the model are generated by the Entity Data Model generator tool (EdmGen.exe).

You write the following code. (Line numbers are included for reference only.)

```
01 Dim stream As MemoryStream = New HemoryStream()  
02 Dim query = context.Contacts.Include(  
"SalesOrderHeaders.SalesOrderDetails")  
03 Dim contact = query.Where("it.LastName = @lastName",  
New ObjectParameter("lastnarae", lastName)).First() 04
```

You need to serialize the contact and all of its related objects to the MemoryStream so that the contact can be deserialized back into the model. Which code segment should you insert at line 04?

- A. Dim formatter = New XmlSerializer(GetType(Contact),
New Type() { GetType(SalesOrderHeader),
GetType(SalesOrderDetail) })
formatter.Serialize(stream, contact)
- B. Dim formatter = New BinaryFormatter()
formatter.Serialize(stream, contact)
- C. Dim formatter = New XmlSerializer(GetType(Contact))
formatter.Serialize(stream, contact)
- D. Dim formatter = New SoapFormatter()
formatter.Serialize(stream, contact)

Answer: A

Explanation:

```
public XmlSerializer(Type type, Type[] extraTypes)
```

Initializes a new instance of the System.Xml.Serialization.XmlSerializer class that can serialize objects of the specified type into XML documents,

and deserialize XML documents into object of a specified type. If a property or field returns an array, the extraTypes parameter specifies objects that can be inserted into the array.

type:

The type of the object that this System.Xml.Serialization.XmlSerializer can serialize.extraTypes:

A System.Type array of additional object types to serialize.

XmlSerializer Constructor (Type, Type[])

(<http://msdn.microsoft.com/en-us/library/e5aakyae.aspx>)

Question: 71

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application that connects to a Microsoft SQL Server 2008 database. You use the ADO.NET Entity Framework Designer to model entities. You add the following stored procedure to the database, and you add a function import to the model.

```
CREATE PROCEDURE [dbo].[InsertDepartment]
```

```
@Name nvarchar(50), @ID int NULL OUTPUT
```

```
AS
```

```
INSERT INTO Department (Name) VALUES (@Name)
```

```
SELECT @ID = SCOPE_IDENTITY()
```

You need to insert a new department and display the generated ID.

Which code segment should you use?

A. Using context As New SchoolEntities()

```
Dim id As ObjectParameter = Nothing context.InsertDepartment("Department 1", id) Console.WriteLine(id.Value) End Using
```

B. Using context As New SchoolEntities()

```
Dim id = New ObjectParameter("ID", GetType(Integer)) context.InsertDepartment("Department 1", id) Console.WriteLine(id.Value) End Using
```

C. Using context As New SchoolEntities()

```
Dim id = New ObjectParameter("ID", Nothing) context.InsertDepartment("Department 1", id) Console.WriteLine(id.Value) End Using
```

D. Using context As New SchoolEntities()

```
Dim id = context.InsertDepartment("Department 1", Nothing)
```

```
Console.WriteLine(id)
```

```
End Using
```

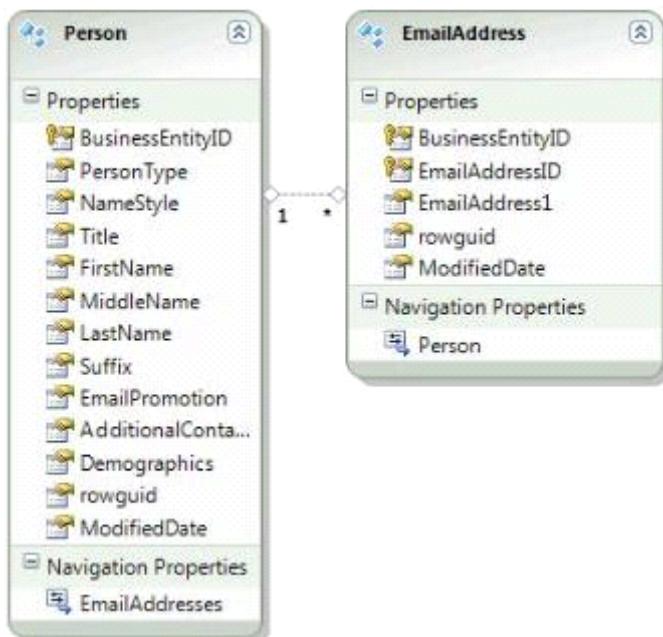
Answer: B

Explanation:

<http://blogs.microsoft.co.il/blogs/gilf/archive/2010/05/09/how-to-retrieve-stored-procedure-output-parameters-in-entity-framework.aspx>

Question: 72

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application that uses the ADO.NET Entity Framework to model entities. You create an entity model as shown in the following diagram. You need to ensure that all Person entities and their associated EmailAddresses are loaded.



Which code segment should you use?

- A. Dim people = contextc.People.Include ("EmailAddresses").ToList()
- B. Dim people = contextc.People.Except
(New ObjectQuery(Of Person)(“Person.EmailAddresses”, context)).ToList()
- C. Dim people = context.People.Except
(New ObjectQuery(Of Person)(“EmailAddresses”/ context)).ToList()
- D. Dim people = contextc.People.Include (“Person.EmailAddresses”).ToList()

Answer: A

Explanation:

CHAPTER 6 ADO.NET Entity Framework

Lesson 1: What Is the ADO.NET Entity Framework?

Lazy Loading vs. Explicit Loading vs. Eager Loading (page 384)

<http://msdn.microsoft.com/en-us/library/bb896272.aspx>

Question: 73

You use Microsoft .NET Framework 4 to develop an application that connects to a local Microsoft SQL Server 2008 database. The application can access a high-resolution timer. You need to display the elapsed time, in sub-milliseconds (<1 millisecond), that a database query takes to execute. Which code segment should you use?

- A. Dim Start As Integer = Environment.TickCount
command.ExecuteNonQuery()
Dim Elapsed As Integer = (Environment.TickCount) - Start
Console.WriteLine("Time Elapsed: {0:N3} ms", Elapsed)
- B. Dim sw As Stopwatch = New Stopwatch() sw.Start()
command.ExecuteNonQuery() sw.Stop()
Console.WriteLine("Time Elapsed: {0:N3} ms", sw.ElapsedMilliseconds)
- C. Dim sw As Stopwatch = Stopwatch.StartNew() command.ExecuteNonQuery() sw.Stop()
Console.WriteLine("Time Elapsed: {0:N3} ms", sw.Elapsed.TotalMilliseconds)
- D. Dim Start As DateTime = DateTime.UtcNow command.ExecuteNonQuery()

```
Dim Elapsed As TimeSpan = DateTime.UtcNow - Start
Console.WriteLine("Time Elapsed: <0:N3> ms",
ElapsedMilliseconds)
```

Answer: B

Explanation:

Stopwatch Class

(<http://msdn.microsoft.com/en-us/library/system.diagnostics.stopwatch.aspx>)

Question: 74

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application that uses the Entity Framework. The application defines the following Entity Data Model.



Within the .edmx file, the following function is defined.

```
<Function Name="Round" ReturnType="Decimal">
<Parameter Name="val" Type="Decimal" />
<DefiningExpression> CAST(val As Edm.Int32)
</DefiningExpression>
</Function>
```

The application includes the following LINQ query.

```
Dim query = From detail In context.SalesOrderDetails Select detail.LineTotal.Round()
```

You need to ensure that the Round function executes on the database server when the query is executed. Which code segment should you use?

A. Module DecimalHelper

```
<EdmFunction("SqlServer", "Round")>
<Extension()>
Public Function Round(ByVal Amt As Decimal) As Decimal
Throw New NotSupportedException() End Function
End Module
```

B. Module DecimalHelper

```
<EdmFunction("Edm", "Round")>
<Extension()>
Public Function Round(ByVal Amt As Decimal) As Decimal
Throw New NotSupportedException() End Function
End Module
```

C. Module DecimalHelper

```
<Extension()> Public Function Round( ByVal input As Decimal) As SqlDecimal Return SqlDecimal.Round(input, 0) End
```

```

Function
End Module
D. Module PecimalHelper
<Extension()>
Public Function Round(ByVal Input As Decimal) As Decimal
Return Convert.ToDecimal(Convert.ToInt32(Input)) End Function
End Module

```

Answer: B

Explanation:

EdmFunctionAttribute Class

(<http://msdn.microsoft.com/en-us/library/system.data.objects.dataclasses.edmfunctionattribute.aspx>)

How to: Call Model-Defined Functions in Queries

(<http://msdn.microsoft.com/en-us/library/dd456857.aspx>)

The model-defined function has been created in the conceptual model, but you still need a way to connect your code to it. To do so, add a function into your C# code, which will have to be annotated with the EdmFunctionAttribute attribute. This function can be another instance method of the class itself, but best practice is to create a separate class and define this method as static.

Question: 75

You use Microsoft .NET Framework 4 to develop an application. You write the following code to update data in a Microsoft SQL Server 2008 database. (Line numbers are included for reference only,)

```

01 Private Sub ExecuteUpdate(ByVal cmd As SqlCommand, ByVal connString As String, ByVal updateStrat As String)
02
03 End Sub

```

You need to ensure that the update statement executes and that the application avoids connection leaks. Which code segment should you insert at line 02?

- A. Dim conn As SqlConnection = New SqlConnection(connString)
conn.Open()
cmd.Connection = conn
cmd.CommandText = updateStmt
cmd.ExecuteNonQuery()
cmd.Connection.Close()
- B. Using conn As New SqlConnection(connString)
cmd.Connection = conn
cmd.CommandText = updateStmt
cmd.ExecuteNonQuery()
cmd.Connection.Close()
- C. Using conn As New SqlConnection(connString)
conn.Open() cmd.Connection = conn
cmd.CommandText = updateStmt
cmd.ExecuteNonQuery()
End Using
- D. Dim conn As SqlConnection = New SqlConnection(connString)
conn.Open()
cmd.Connection = conn
cmd.CommandText = updateStmt

cmd.ExecuteNonQuery()

Answer: C

Explanation:

<http://www.w3enterprises.com/articles/using.aspx>

<http://msdn.microsoft.com/en-us/library/system.data.sqlclient.sqlconnection.aspx>

Question: 76

You use Microsoft .NET Framework 4 to develop an ASP.NET 4 Web application. You need to encrypt the connection string information that is stored in the web.config file. The application is deployed to multiple servers. The encryption keys that are used to encrypt the connection string information must be exportable and importable on all the servers. You need to encrypt the connection string section of the web.config file so that the file can be used on all of the servers. Which code segment should you use?

A. Dim config As Configuration =

```
WebConfigurationManager.OpenMachineConfiguration("~/")
Dim seccion As ConnectionStringsSection =
DirectCast(config.GetSection("connectionStrings"),
ConnectionStringsSection)
section.SectionInformation.ProtectSection(
"DpapiProtectedConfigurationProvider")
config.Save()
```

B. Dim config As Configuration =

```
WebConfigurationManager.OpenMachineConfiguration("~/")
Dim section As ConnectionStringsSection =
DirectCast(config.GetSection("connectionStrings"),
ConnectionStringsSection)
section.SectionInformation.ProtectSection(
"RsaProtectedConfigurationProvider")
config.Save()
```

C. Dim config As Configuration =

```
WebConfigurationManager.OpenWebConfiguration("~/")
Dim section As ConnectionStringsSection =
DirectCast(config.GetSection("connectionStrings"),
ConnectionStringsSection)
section.SectionInformation.ProtectSection(
"RsaProtectedConfigurationProvider")
config.Save()
```

D. Dim config As Configuration =

```
WebConfigurationManager.OpenWebConfiguration("~/")
Dim section As ConnectionStringsSection =
DirectCast(config.GetSection("connectionStrings"),
ConnectionStringsSection)
section.SectionInformation.ProtectSection(
"DpapiProtectedConfigurationProvider")
config.Save()
```

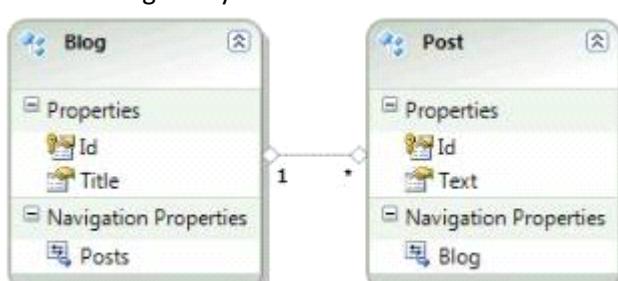
Answer: C

Explanation:

You encrypt and decrypt the contents of a Web.config file by using System.Configuration . DPAPIProtectedConfigurationProvider from the System.Configuration.dll assembly, which uses the Windows Data Protection API (DPAPI) to encrypt and decrypt data, or by using System.Configuration.RSAProtectedConfigurationProvider, which uses the RSA encryption algorithm to encrypt and decrypt data. When you use the same encrypted configuration file on many computers in a web farm, only System.Configuration.RSAProtectedConfigurationProvider enables you to export the encryption keys that encrypt the data and import them on another server. This is the default setting.

CHAPTER 8 Developing Reliable Applications**Lesson 3: Protecting Your Data****Storing Encrypted Connection Strings in Web Applications (page 555)****Question: 77**

You use Microsoft .NET Framework 4 to develop an application that uses WCF Data Services to persist entities from the following Entity Data Model.



You create a new Blog instance named newBlog and a new Post instance named newPost as shown in the following code segment. (Line numbers are included for reference only.)

```

01 Dim newBlog As Blog = New Blog()
02 Dim newPost As Post = New Post()
03 —
04 Dim serviceUri As Uri = New Uri("—")
05 Dim context As BlogsEntities =
06 New BlogsEntities(serviceUri)
  
```

You need to ensure that newPost is related to newBlog through the Posts collection property and that newPost and newBlog are sent to the service. Which code segment should you insert at line 07?

- A. newBlog.Posts.Add(newPost)
context.AttachTo("Blogs", newBlog)
context.AttachTo("Posts", newPost)
context.SaveChanges(SaveChangesOptions.Batch)
- B. newBlog.Posts.Add(newPost)
context.UpdateObject(newBlog)
context.UpdateObject(newPost)
context.SaveChanges(SaveChangesOptions.Batch)
- C. newBlog.Posts.Add(newPost)
context.AddToBlogs(newBlog)
context.AddToPosts(newPost)
context.SaveChanges(SaveChangesOptions.Batch)
- D. context.AttachLink(newBlog, "Posts", newPost) context.SaveChanges(SaveChangesOptions.Batch)

Answer: A

Explanation:

Attaching and Detaching objects
(<http://msdn.microsoft.com/en-us/library/bb896271.aspx>)

Question: 78

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application. You use the ADO.NET Entity Framework Designer to model entities. You need to retrieve an entity, and you must ensure that the entity is loaded in a detached state. Which MergeOption enumeration value should you use to retrieve the entity?

- A. PreserveChanges
- B. AppendOnly
- C. OverwriteChanges
- D. NoTracking

Answer: D

Explanation:

AppendOnly - Objects that do not exist in the object context are attached to the context. If an object is already in the context, the current and original values of object's properties in the entry are not overwritten with data source values. The state of the object's entry and state of properties of the object in the entry do not change.

AppendOnly is the default merge option.

OverwriteChanges - Objects that do not exist in the object context are attached to the context. If an object is already in the context, the current and original values of object's properties in the entry are overwritten with data source values.

The state of the object's entry is set to Unchanged, no properties are marked as modified.

PreserveChanges - Objects that do not exist in the object context are attached to the context.

If the state of the entity is Unchanged, the current and original values in the entry are overwritten with data source values.

The state of the entity remains Unchanged and no properties are marked as modified.

If the state of the entity is Modified, the current values of modified properties are not overwritten with data source values.

The original values of unmodified properties are overwritten with the values from the data source.

NoTracking - Objects are maintained in a Detached state and are not tracked in the ObjectStateManager.

However, Entity Framework-generated entities and POCO entities with proxies maintain a reference to the object context to facilitate loading of related objects.

MergeOption Enumeration

(<http://msdn.microsoft.com/en-us/library/system.data.objects.mergeoption.aspx>)

Question: 79

You use Microsoft .NET Framework 4 to develop an application that connects to a Microsoft SQL Server 2008 database. You populate a SqlDataAdapter by using the following code. (Line numbers are included for reference only.)

```
01 Dim dataAdapter1 As SqlDataAdapter = New SqlDataAdapter()  
"SELECT * FROM [BlogEntries] " &  
"ORDER BY CreationDate", connection)  
02 cmdBuilder = New SqlCommandBuilder(dataAdapter1)  
03 dataAdapter1.Fill(BlogEntryDataSet, "BlogEntries") 04  
05 connection.Close()
```

You need to update the blog owner for all BlogEntry records.
Which code segment should you insert at line 04?

- A. Dim dataAdapter2 As SqlDataAdapter = New SqlDataAdapter()
dataAdapter1.UpdateCommand)
dataAdapter2.Fill(BlogEntryDataSet, "BlogEntries")
- B. For Each row As DataRow In BlogEntryDataSet.Tables(_
"BlogEntries").Rows row.Item("BlogOwner") = "New Owner" Next dataAdapter1.Update(BlogEntryDataSet,
"BlogEntries")
- C. For Each row As DataRow In BlogEntryDataSet.Tables(
"BlogEntries").Rows
row.Item("BlogOwner") = "New Owner"
Next
dataAdapter1.Fill(BlogEntryDataSet, "BlogEntries")
- D. Dim dataAdapter2 As SqlDataAdapter = New SqlDataAdapter()
"UPDATE [BlogEntries] SET [BlogOwner = 'New 'Owner']"
connection)
dataAdapter2.Update(BlogEntryDataSet, "BlogEntries")

Answer: B

Explanation:

SqlDataAdapter.Update() - Calls the respective INSERT, UPDATE, or DELETE statements for each inserted, updated, or deleted row in the System.Data.DataSet with the specified System.Data.DataTable name.
(<http://msdn.microsoft.com/en-us/library/system.data.sqlclient.sqlcommandbuilder.aspx>)

Question: 80

You use Microsoft .NET Framework 4 to develop an application that connects to a Microsoft SQL Server 2008 database. You need to prevent dirty or phantom reads. Which IsolationLevel should you use?

- A. ReadCommitted
- B. Serializable
- C. Snapshot
- D. ReadUncommitted

Answer: C

Explanation:

Unspecified A different isolation level than the one specified is being used, but the level cannot be determined. When using OdbcTransaction, if you do not set IsolationLevel or you set IsolationLevel to Unspecified, the transaction executes according to the isolation level that is determined by the driver that is being used.

Chaos The pending changes from more highly isolated transactions cannot be overwritten.

ReadUncommitted A dirty read is possible, meaning that no shared locks are issued and no exclusive locks are honored.

ReadCommitted Shared locks are held while the data is being read to avoid dirty reads, but the data can be changed before the end of the transaction, resulting in non-repeatable reads or phantom data.

RepeatableRead Locks are placed on all data that is used in a query, preventing other users from updating the data. Prevents non-repeatable reads but phantom rows are still possible.

Serializable A range lock is placed on the DataSet, preventing other users from updating or inserting rows into the dataset until the transaction is complete.

Snapshot Reduces blocking by storing a version of data that one application can read while another is modifying the same data.

Indicates that from one transaction you cannot see changes made in other transactions, even if you requery.

IsolationLevel Enumeration

(<http://msdn.microsoft.com/en-us/library/system.data.isolationlevel.aspx>)

Isolation Levels in Database Engine

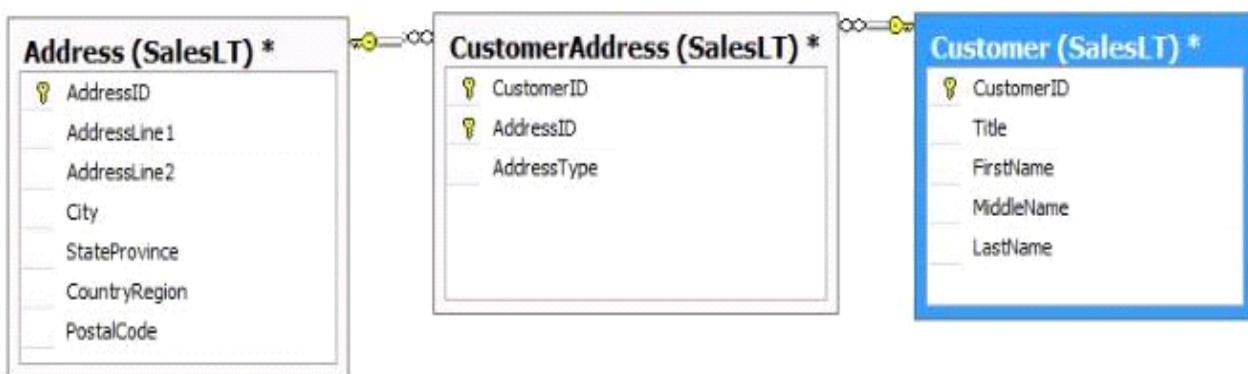
(<http://msdn.microsoft.com/en-us/library/ms189122.aspx>)

SET TRANSACTION ISOLATION LEVEL (Transact-SQL)

(<http://msdn.microsoft.com/ru-ru/library/ms173763.aspx>)

Question: 81

You use Microsoft Visual Studio 2010 to create a Microsoft .NET Framework 4 application. You create an Entity Data Model for the database tables shown in the following diagram.



You need to modify the .edmx file so that a many-to-many association can exist between the Address and Customer entities. Which storage Model section of the .edmx file should you include?

- A. <EntityType Name="CustomerAddress">
<Key>
<PropertyRef Name="CustomerID" />
<PropertyRef Name="AddressID" />
</Key>
<Property Name="CustomerID" Type="int" Nullable="false" />
<Property Name="AddressID" Type="int" Nullable="false" />
<Property Name="AddressType" Type="nvarchar" Nullable="false" MaxLength="50" />
</EntityType>
- B. <EntityType Name="CustomerAddress">
<Key>
<PropertyRef Name="CustomerID" />
<PropertyRef Name="AddressID" />
</Key>
<Property Name="CustomerID" Type="int" Nullable="false" />
<Property Name="AddressID" Type="int" Nullable="false" />
<Property Name="AddressType" Type="nvarchar" Nullable="false" MaxLength="50" DefaultValue="Home" />
</EntityType>
- C. <EntityType Name="CustomerAddress">
<Key>

```

<PropertyRef Name="CustomerAddressID" />
</Key> <Property Name="CustomerAddressID" Type="int"
Nullable="false" StoreGeneratedPattern="Identity" />
<Property Name="CustomerID" Type="int" Nullable="false"/>
<Property Name="AddressID" Type="int" Nullable="false"/>
<Property Name="AddressType" Type="nvarchar"
Nullable="false" MaxLength="50"/>
</EntityType>
D. <EntityType Name="CustomerAddress">
<Key>
<PropertyRef Name="CustomerAddressID" />
<PropertyRef Name="CustomerID" />
<PropertyRef Name="AddressID" />
</Key>
<Property Name="CustomerAddressID" Type="int"
Nullable="false" StoreGeneratedPattern="Identity" />
<Property Name="CustomerID" Type="int" Nullable="false"/>
<Property Name="AddressID" Type="int" Nullable="false"/>
<Property Name="AddressType" Type="nvarchar"
Nullable="false" MaxLength="50'7">
</EntityType>

```

Answer: A

Question: 82

You use Microsoft .NET Framework 4 to develop an application that connects to a Microsoft SQL Server 2008 database. You add the following stored procedure to the database.

```

CREATE PROCEDURE dbo.GetClossAndStudents
AS
BEGIN
SELECT * FROM ctoo.Class
SELECT * FROM dbo.Student
END

```

You create a SqlConnection named conn that connects to the database. You need to fill a DataSet from the result that is returned by the stored procedure. The first result set must be added to a DataTable named Class, and the second result set must be added to a DataTable named Student. Which code segment should you use?

- A. Dim ds As DataSet = New DataSet()
Dim ad As SqlDataAdapter = New SqlDataAdapter(
"GetClassAndStudents", conn)
ad.TableMappings.Add("Table", "Class")
ad.TableMappings.Add("Table1", "Student")
ad.Fill(ds)
- B. Dim ds As DataSet = New DataSet()
Dim ad As SqlDataAdapter = New SqlDataAdapter(
"GetClassAndStudents", conn)
ad.MissingMappingAction = MissingMappingAction.Ignore ad.Fill(ds, "Class") ad.Fill(ds, "Student")
- C. Dim ds As DataSet = New DataSet()
Dim ad As SqlDataAdapter = New SqlDataAdapter(
"GetClassAndStudents", conn)

```
ds.Tables . Add ("Class")
ds.Tables.Add("Student") ad.Fill(ds)
D. Dim ds As DataSet = New DataSet()
Dim ad As SqlDataAdapter = New SqlDataAdapter(
"GetClassAndStudents", conn)
ad.Fill(ds)
```

Answer: A

Explanation:

Table Mapping in ADO.NET

(<http://msdn.microsoft.com/en-us/library/ms810286.aspx>)

Question: 83

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application. A file named books.xml contains the following XML.

```
<bib>
<book title="Programming in Unix" year="1992">
<author>Author1</author>
<author>Author2</author>
<author> Author 3 </out hor>
</book>
</bib>
```

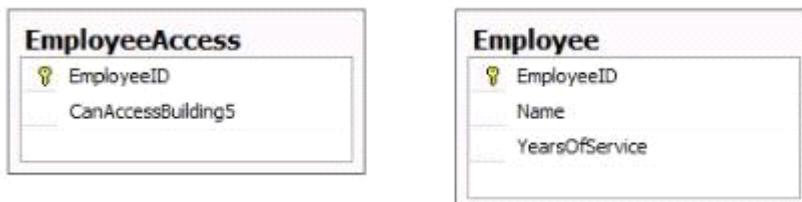
The application must generate an XML result that contains an XML element named BookTitle for each book. The text content of the element must contain the title of the book. You need to create a query that generates the new XML result.

```
A. Dim document As XDocument = XDocument. Load ("books.xml")
Dim query = From node In document.Descendants()
Where node.Name.LocalName = "book"
Select New XElement("BookTitle", node.FirstAttribute.Value)
B. Dim document As XDocument = XDocument.Load("books.xml")
Dim query = From node In document.DescendantNodes()
Where node.ToString()= "book"
Select New XText("BookTitle" & node.ToString())
C. Dim document As XDocument = XDocument.Load("books.xml")
Dim query = From node In document.Descendants()
Uhere node.Name.LocalName = "book"
Select New XElement("BookTitle").Value -
node.FirstAttribute.Value
D. Dim document As XDocument = XDocument.Load("books.xml")
Dim query = From node In document.DescendantNodes()
Where node.ToString() = "book"
Select New XElement("BookTitle",
node.ToString())
```

Answer: A

Question: 84

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application that connects to a database by using the Entity Framework. You create an Entity Data Model (EDM) by using the Generate from Database Wizard for the following tables.



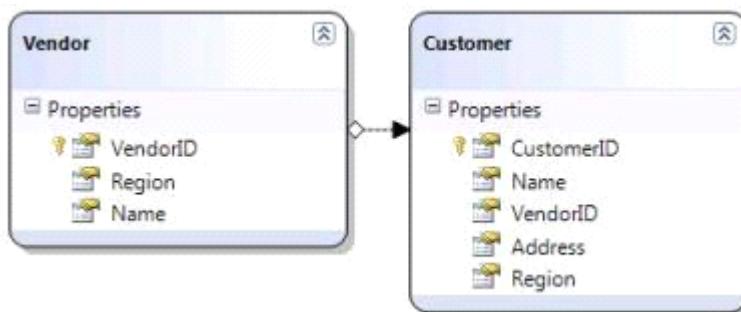
You need to ensure that the EDM contains an entity type named Employee that contains all of the data from both tables. What should you do?

- Delete the EmployeeAccess entity, create a new property named CanAccessBuildings on the Employee entity, and add a mapping for the new property.
- Create an inheritance relationship between the Employee and EmployeeAccess entities, and use CanAccessBuildings as an inheritance condition.
- Modify the .edmx file to include the following line of code.
`<navigationproperty name="type" FromRole="EmployeeAccess" ToRole="Employee" />`
- Create a one-to-one association named ACanAccessBuildingsAssociation between the EmployeeAccess entity and the Employee entity.

Answer: A

Question: 85

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application that uses LINQ to SQL. The application contains the following model.



Each region contains a single vendor. Customers order parts from the vendor that is located in their region. You need to ensure that each row in the Customer table references the appropriate row from the Vendor table. Which code segment should you use?

- ```

A. Dim dc As SalesDataContext = New SalesDataContext("...")
Dim query = From c In dc.Customers
Join v In dc.Vendors On c.Region Equals v.Region
Select New With {.Customer = c, -Vendor = v}
For Each u In query
u.Vendor.VendorID = u.Customer.VendorID
Next
dc.SubmitChanges()

```

B. Dim dc As SalesDataContext - New SalesDataContext ( "..." )  
Dim query = From v In dc.Vendors  
Join c In dc.Customers On v.Region Equals c.Region  
Select New With {.Vendor = v, -Customer = c} For Each u In query  
u.Customer.VendorID = u.Vendor.VendorID  
Next  
dc.SubmitChanges()  
C. Dim dc As SalesDataContext = New SalesDataContext( "..." )  
Dim query = From c In dc.Customers  
Join v In dc.Vendors On c.VendorID Equals v.VendorID  
Select New With {.Customer = c, -Vendor = v}  
For Each u In query  
u.Vendor.Region = u.Customer.Region  
Next  
dc.SubmitChanges()  
D. Dim dc As SalesDataContext - New SalesDataContext( "..." )  
Dim query = From v In dc.Vendors  
Join c In dc.Customers On v.VendorID Equals c.VendorID Select New With {.Vendor = v, .Customer = c} For Each u In query  
u.Customer.Region = u.Vendor.Region  
Next  
dc.SubmitChanges()

---

**Answer: B**

---

**Question: 86**

---

You use Microsoft .NET Framework 4 to develop an application that connects to a Microsoft SQL Server 2008 database. The application uses nested transaction scopes. An inner transaction scope contains code that inserts records into the database. You need to ensure that the inner transaction can successfully commit even if the outer transaction rolls back. What are two possible TransactionScope constructors that you can use for the inner transaction to achieve this goal? (Each correct answer presents a complete solution. Choose two.)

- A. TransactionScope(TransactionScopeOption.Required)
- B. TransactionScope ()
- C. TransactionScope(TransactionScopeOption.RequiresNew)
- D. TransactionScope(TransactionScopeOption.Suppress)

---

**Answer: CD**

---

**Question: 87**

---

You use Microsoft .NET Framework 4 to develop an application that uses LINQ to SQL. The LINQ to SQL model contains the Product entity. A stored procedure named GetActiveProducts performs a query that returns the set of active products from the database.

You need to invoke the stored procedure to return the active products, and you must ensure that the LINQ to SQL context can track changes to these entities. What should you do?

- A. Navigate to the GetActiveProducts stored procedure in Server Explorer, and drag the procedure onto the Product entity in the LINQ to SQL model designer surface.

- B. Add a property named GetActiveProducts to the Product entity.
- C. Select the Product entity, view the 'entity's property window, and change the Name for the entity to GetActiveProducts.
- D. Select the Product entity, view the entity's property window, and change the Source for the entity to GetActiveProducts.

---

**Answer: A**

---

Explanation:

<http://weblogs.asp.net/scottgu/archive/2007/08/16/linq-to-sql-part-6-retrieving-data-using-stored-procedures.aspx>

---

### **Question: 88**

---

You use Microsoft .NET Framework 4 to develop an application that connects to a Microsoft SQL Server 2008 database. You add the following table to the database.

```
CREATE TABLE Orders(
ID numeric(18, 0) NOT NULL,
OrderName varchar(50) NULL,
OrderTime time (7) NULL,
OrderDate date NULL)
```

You write the following code to retrieve data from the OrderTime column. (Line numbers are included for reference only.)

```
01 Dim conn As SqlConnection = New SqlConnection("****")
02 conn.Open()
03 Dim cmd As SqlCommand = New SqlCommand(
"SELECT ID, OrderTime FROM Orders", conn)
04 Dim rdr As SqlDataReader = cmd.ExecuteReader()
05
06 While rdr.Read()
07
08 End While
```

You need to retrieve the OrderTime data from the database. Which code segment should you insert at line 07?

- A. Dim time As DateTime = DirectCast (rdr (1), DateTime)
- B. Dim time As TimeSpan = DirectCast(rdr(1), TimeSpan)
- C. Dim time As Timer = DirectCast(rdr(1), Timer)
- D. Dim time As String = DirectCast(rdr(1), String)

---

**Answer: B**

---

Explanation:

Pay attention to the fact that it goes about Microsoft SQL Server 2008 in the question.

Types date and time are not supported in Microsoft SQL Server Express.

time (Transact SQL)

(<http://msdn.microsoft.com/en-us/library/bb677243.aspx>)

Using date and time data

(<http://msdn.microsoft.com/en-us/library/ms180878.aspx>)

date and time functions

(<http://msdn.microsoft.com/en-us/library/ms186724.aspx>)

SQL Server Data Type Mappings (ADO.NET)

(<http://msdn.microsoft.com/en-us/library/cc716729.aspx>)

### Question: 89

---

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application. You use the ADO.NET Entity Framework Designer to model entities. You need to create a Plain Old CLR Object (POCO) class that can be used with the `ObjectContext.CreateObject` method to create a proxy. What should you do?

- A. Create a custom data class that has a Protected constructor that does not have parameters.
- B. Create a custom data class in which all properties and methods are Overridable.
- C. Create a custom data class that is MustInherit.
- D. Create a custom data class that is NotInheritable.

---

**Answer: A**

---

Explanation:

Requirements for Creating POCO Proxies

(<http://msdn.microsoft.com/en-us/library/dd468057.aspx>)

### Question: 90

---

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server database. You create a `DataSet` object in the application. You add two `DataTable` objects named `App_Products` and `App_Categories` to the `DataSet`.

You add the following code segment to populate the `DataSet` object. (Line numbers are included for reference only.)

```
01 Public Sub Filicnx As SqlConnection, ds As DataSet)
02 Dim cmd As var = cnx.CreateCommand()
03 cmd.CommandText = "SELECT * FROM dbo.Products;" + "SELECT * FROM dbo.Categories"
04 Dim adapter As var = New SqlDataAdapter(cmd) 05
05 End Sub
```

You need to ensure that `App_Products` and `App_Categories` are populated from the `dbo.Products` and `dbo.Categories` database tables. Which code segment should you insert at line 05?

- A. `adapter.TableMappings.Add("Products", "App_Products") adapter.TableHappings.Add("Categories", "App_Categories")`  
`adapter.Fill(ds)`
- B. `adapter.Fill(ds, "Products")`  
`adapter.Fill(ds, "Categories")`
- C. `adapter.TableMappings.Add("Table", "App_Products") adapter.TableMappings.Add("Table1", "App_Categories")`  
`adapter.Fill(ds)`
- D. `adapter.Fill(ds.Tables("App_Products"))`  
`adapter.Fill(ds.Tables("App Categories"))`

---

**Answer: C**

---

Table Mapping in ADO.NET

(<http://msdn.microsoft.com/en-us/library/ms810286.aspx>)

### Question: 91

---

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create a Windows Communication Foundation (WCF) Data Services service. You deploy the service to the following URL:  
<http://contoso.com/Northwind.svc>.

You want to query the WCF Data Services service to retrieve a list of customer objects.

You need to ensure that the query meets the following requirements:

- Only customers that match the following filter criteria are retrieved: City="Seattle" AND Level > 200.
- Data is sorted in ascending order by the ContactName and Address properties.

Which URL should you use for the query?

- A. [http://contoso.com/Northwind.svc/Customers?filter=City eq 'Seattle' and Level gt 200 & \\$orderby=ContactName and Address](http://contoso.com/Northwind.svc/Customers?filter=City eq 'Seattle' and Level gt 200 & $orderby=ContactName and Address)
- B. [http://contoso.com/Northwind.svc/Customers?filter=City eq 'Seattle' and Level gt 200 & \\$orderby=ContactName, Address](http://contoso.com/Northwind.svc/Customers?filter=City eq 'Seattle' and Level gt 200 & $orderby=ContactName, Address)
- C. [http://contoso.com/Northwind.svc/Customers?City=Seattle a Level gt 200 & \\$orderby=ContactName and Address](http://contoso.com/Northwind.svc/Customers?City=Seattle a Level gt 200 & $orderby=ContactName and Address)
- D. [http://contoso.com/Northwind.svc/Customers?City=Seattle 8c Level gt 200 & \\$orderby=ContactName, Address](http://contoso.com/Northwind.svc/Customers?City=Seattle 8c Level gt 200 & $orderby=ContactName, Address)

---

**Answer: B**

---

Explanation:

CHAPTER 7 WCF Data Services

Lesson 1: What Is WCF Data Services?

Working with Filters (page 474)

Accessing the Service from a Web Browser (WCF Data Services Quickstart)

(<http://msdn.microsoft.com/en-us/library/dd728279.aspx>)

Accessing Data Service Resources (WCF Data Services)

(<http://msdn.microsoft.com/en-us/library/dd728283.aspx>)

---

**Question: 92**

---

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server 2008 database. You need to ensure that the application calls a stored procedure that accepts a table-valued parameter. You create a SqlParameter object. What should you do next?

- A. Set the SqlDbType of SqlParameter to Udt.
- B. Set the SqlDbType of SqlParameter to Structured. Set the TypeName of SqlParameter to the type name of the table-valued parameter.
- C. Set the ParameterDirection of SqlParameter to Output.
- D. Set the SqlDbType of SqlParameter to Variant.

---

**Answer: B**

---

Explanation:

SqlParameter.DbType Gets or sets the SqlDbType of the parameter.

SqlParameter.TypeName Gets or sets the type name for a table-valued parameter.

SqlDbType.Structured A special data type for specifying structured data contained in table-valued parameters.

Udt A SQL Server 2005 user-defined type (UDT).

Spatial types

(<http://msdn.microsoft.com/en-us/library/ff848797.aspx>)

Types of Spatial Data

(<http://msdn.microsoft.com/en-us/library/bb964711.aspx>)

**Question: 93**

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server database. The Data Definition Language (DDL) script of the database contains the following code segment.

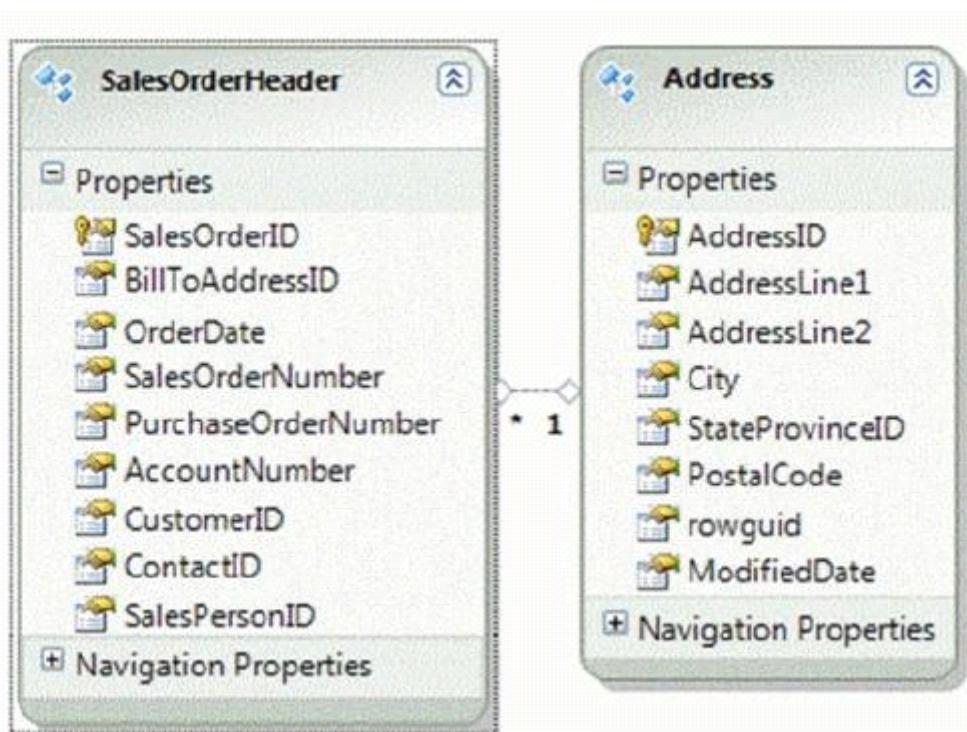
```
CREATE TABLE [Sales].[SalesOrderHeader](
 [SalesOrderID] [int] IDENTITY(1,1) NOT NULL,
 [BillToAddressID] [int] NOT NULL,
 ...
 CONSTRAINT [PK_SalesOrderHeader_SalesOrderID]
 PRIMARY KEY CLUSTERED ([SalesOrderID] ASC)
)
ALTER TABLE [Sales].[SalesOrderHeader]
WITH CHECK ADD CONSTRAINT [FK_SalesOrderHeader_Address]
FOREIGN KEY([BillToAddressID])
REFERENCES [Person].[Address]([AddressID])
```

You create an ADO.NET Entity Framework model.

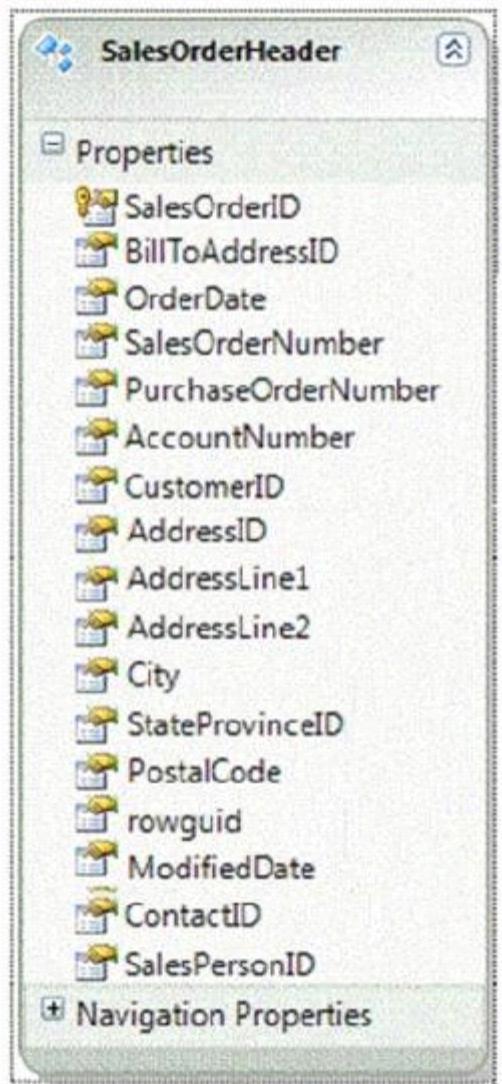
You need to ensure that the entities of the model correctly map to the DDL of the database.

What should your model contain?

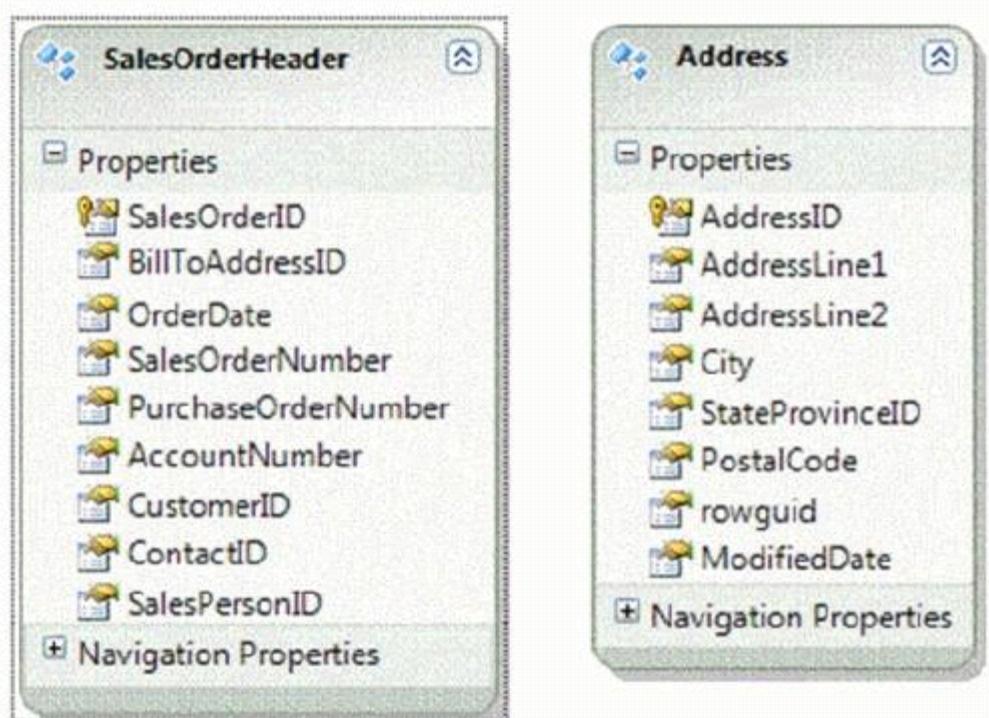
A.



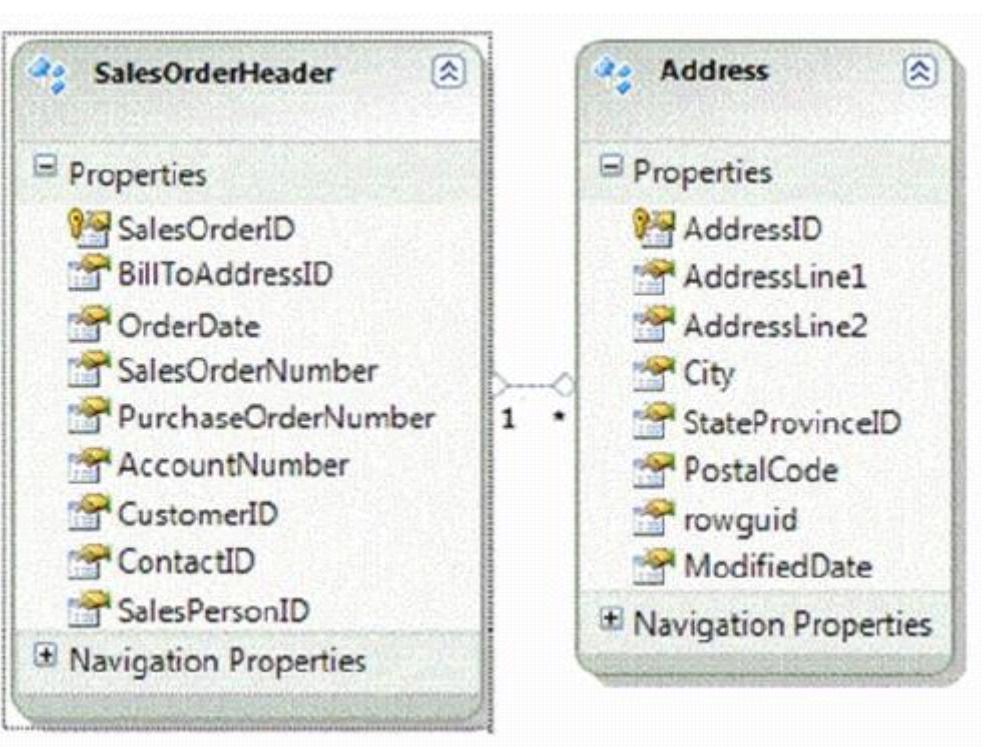
B.



C.



D.



- Exhibit A
- Exhibit B
- Exhibit C
- Exhibit D

**Answer: A**

---

**Question: 94**

---

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. You use Plain Old CLR objects (POCO) to model your entities. The application communicates with a Windows Communication Foundation (WCF) Data Services service. You need to ensure that entities can be sent to the service as XML. What should you do?

- A. Apply the [Serializable] attribute to the entities.
- B. Apply the [DataContract(IsReference = true)] attribute to the entities.
- C. Apply the [DataContract(IsReference = false)] attribute to the entities.
- D. Apply the virtual keyword to the entity properties.

---

**Answer: B**

---

Explanation:

**DataContractAttribute** Specifies that the type defines or implements a data contract and is serializable by a serializer, such as the **DataContractSerializer**. To make their type serializable, type authors must define a data contract for their type.

**IsReference** Gets or sets a value that indicates whether to preserve object reference data.

---

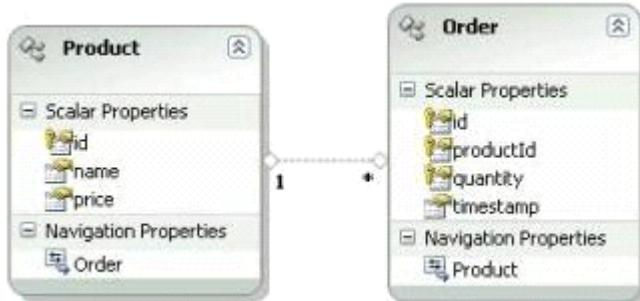
**Question: 95**

---

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. You create stored procedures by using the following signatures:

- CREATE procedure [dbo].[Product\_Insert] (@name varchar(50) / 6pri.ce float)
- CREATE procedure [dbo].[Product\_Update] (@id int, Bname varchar(50), @price float)
- CREATE procedure [dbo].[Product\_Delete] (@ id int)
- CREATE procedure [dbo] .[Order\_Insert] (@productId int, @quantity int)
- CREATE procedure [dbo] .[Order\_Update] (@id int, Gquantity int,@originalTimestamp timestamp)
- CREATE procedure [dbo].[Order\_Delete](@id int)

You create a Microsoft ADO.NET Entity Data Model (EDM) by using the Product and Order entities as shown in the exhibit. (Click the Exhibit button.)



You need to map the Product and Order entities to the stored procedures. To which two procedures should you add the QproductId parameter? (Each correct answer presents part of the solution. Choose two.)

- A. Order\_Update
- B. Order\_Delete
- C. Product\_Delete
- D. Product\_Update

---

**Answer: AB**

---

Explanation:

@productId parameter resides in the order table...

### Question: 96

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application. You use the ADO.NET Entity Framework Designer to model entities. You retrieve an entity from an object context. A different application updates the database. You need to update the entity instance to reflect updated values in the database. Which line of code should you use?

- A. context.LoadProperty(entity, "Client", MergeOption.OverwriteChanges)
- B. context.AcceptAllChanges()
- C. context.LoadProperty(entity, "Server", Merge Option. OverunteChanges)
- D. context.Refresh(RefreshMode.StoreWins, entity)

**Answer: D**

Explanation:

LoadProperty(Object, String) Explicitly loads an object related to the supplied object by the specified navigation property and using the default merge option.

AcceptAllChanges Accepts all changes made to objects in the object context.

Refresh(RefreshMode, Object) Updates an object in the object context with data from the data source.

ObjectContext.Refresh Method (RefreshMode, Object)

(<http://msdn.microsoft.com/en-us/library/bb896255.aspx>)

### Question: 97

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application that uses LINQ to SQL. The application contains the following model.



You write the following code. (Line numbers are included for reference only.)

```

01 Shared Sub Insert()
02
03 Dim dc As NorthwindDataContext -
New NorthwindDataContext ("...")
04 Dim neuCustomer As Customer = New Customer()
05 newCustomer.Firstname = "Todd"
06 newCustomer.Lastname = "Meadows"
07 newCustomer.Email = "tmeadous@contoso.com"
08

```

```
09 dc.SubmitChanges()
10 End Sub
```

A product named Bike Tire exists in the Products table. The new customer orders the Bike Tire product. You need to ensure that the correct product is added to the order and that the order is associated with the new customer. Which code segment should you insert at line 08?

- A. Dim newProduct As Product = New Product()  
newProduct.ProductName = "Bike Tire"  
Dim newOrder As Order = New Order()  
newOrder.Product = newProduct  
newCustomer.Orders.Add(newOrder)
- B. Dim newProduct As Product = New Product()  
newProduct.ProductName = "Bike Tire"  
Dim newOrder As Order = New Order()  
newOrder.Product = newProduct
- C. Dim newOrder As Order = New Order()  
newOrder.Product = (From p in dc.Products  
Where p.ProductName = "Bike Tire"  
Select p).First()
- D. Dim newOrder As Order = New Order()  
newOrder.Product = (From p in dc.Products  
Where p.ProductName = "Bike Tire"  
Select p).First() newCustomer.Orders.Add(newOrder)

---

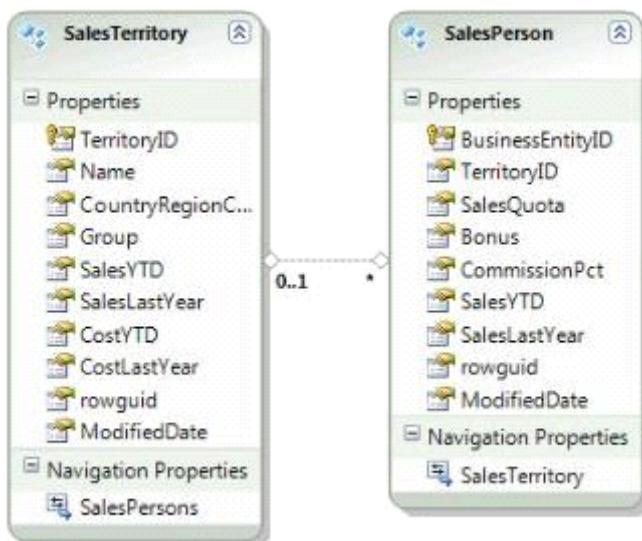
**Answer: D**

---

### Question: 98

---

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application that uses the Entity Framework. The application has the entity model shown in the following diagram.



The application must create a projection of the unique set of names and year-to-date sales for territories where at least one sales person had sales last year of more than \$100,000. The projection must consist of properties named Sales and Name. You need to write a query that will generate the required projection. Which code segment should you use?

A. (From person In model.Salespersons  
Where (person.SalesLastYear > 100000)  
Select New With {  
person.SalesTerritory.Name, \_  
.Soles = person.SalesTerritory.SalesYTD)). \_  
Distinct()  
B. (From person In model.Salespersons  
Where (person.SalesLastYear > 100000)  
Select New With\_  
.Name + person.SalesTerritory.Name,  
.Sales = person.SalesTerritory.SalesYTD  
}  
C. model.SalesTerritories. \_  
Where(Function(territory) territory.Salespersons.Any(  
Function(person) person.SalesLastYear > 100000)).  
Select(Function(territory) New With {territory.Name,  
territory.SalesYTD})  
. Distinct()  
D. model.SalesTerritories. \_  
Where(Function(territory) territory.Salespersons.Any(  
Function(person) person.SalesLastYear > 100000)\_  
. Select(Function(territory) New With {territory.Name,  
Sales = territory.SalesYTD}))

---

**Answer: A**

---

### **Question: 99**

---

You use Microsoft .NET Framework 4 to develop an application. You use the XmlReader class to load XML from a location that you do not control. You need to ensure that loading the XML will not load external resources that are referenced in the XML. Which code segment should you use?

- A. Dim settings As XmlReaderSettings = New XmlReaderSettings()  
settings.ValidationType = ValidationType.None  
Dim reader As XmlReader  
XmlReader.Create("data.xml", settings)  
B. Dim settings As XmlReaderSettings = New XmlReaderSettings()  
settings.XmlResolver = Nothing  
Dim reader As XmlReader =  
XmlReader.Create("data.xml", settings)  
C. Dim settings As XmlReaderSettings = New XmlReaderSettings()  
settings.ConformanceLevel = ConformanceLevel.Auto  
Dim reader As XmlReader =  
XmlReader.Create("data.xml", settings)  
D. Dim settings As XmlReaderSettings = New XmlReaderSettings()  
settings.CheckCharacters = True  
Dim reader As XmlReader =  
XmlReader.Create("data.xml", settings)

---

**Answer: B**

Explanation:

CheckCharacters Gets or sets a value indicating whether to do character checking.

ConformanceLevel Gets or sets the level of conformance which the XmlReader will comply.

ValidationType Gets or sets a value indicating whether the XmlReader will perform validation or type assignment when reading.

XmlResolver Sets the XmlResolver used to access external documents.

XmlReaderSettings Class

(<http://msdn.microsoft.com/en-us/library/system.xml.xmlreadersettings.aspx>)

<http://stackoverflow.com/questions/215854/prevent-dtd-download-when-parsing-xml>

<http://msdn.microsoft.com/en-us/library/x1h1125x.aspx>

---

## **Question: 100**

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application. You use the ADO.NET Entity Framework to model entities. The model contains an entity type named Product. You need to ensure that a stored procedure will be invoked when the ObjectContext.SaveChanges method is executed after an attached Product has changed. What should you do in the ADO.NET Entity Framework Designer?

- A. Add a complex type named Product that is mapped to the stored procedure.
- B. Add a function import for the Product entity type.
- C. Add a stored procedure mapping for the Product entity type.
- D. Add a new entity that has a base class of Product that is mapped to the stored procedure.

---

**Answer: C**

Explanation:

The ObjectContext class exposes a SaveChanges method that triggers updates to the underlying database.

By default, these updates use SQL statements that are automatically generated, but the updates can use stored procedures that you specify.

The good news is that the application code you use to create, update, and delete entities is the same whether or not you use stored procedures to update the database.

To map stored procedures to entities, in the Entity Framework designer, right-click the entity and choose Stored Procedure Mapping.

In the Mapping Details window assign a stored procedure for insert, update, and delete.

CHAPTER 6 ADO.NET Entity Framework

Lesson 1: What Is the ADO.NET Entity Framework?

Mapping Stored Procedures(page 387-388)

Stored Procedures in the Entity Framework

(<http://msdn.microsoft.com/en-us/data/gg699321>)

---

## **Question: 101**

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an ASP.NET Web application that uses the Entity Framework. The build configuration is set to Release. The application must be published by using Microsoft Visual Studio 2010, with the following requirements:

- The database schema must be created on the destination database server.
- The Entity Framework connection string must be updated so that it refers to the destination database server.

You need to configure the application to meet the requirements.

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

- A. Generate the DDL from the Entity Framework Designer and include it in the project. Set the action for the DDL to ApplicationDefinition.
- B. Set Items to deploy in the Package/Publish Web tab to All files in this Project Folder for the release configuration.
- C. Use the web.config transform file to modify the connection string for the release configuration.
- D. Include the source database entry in the Package/Publish SQL tab and update the connection string for the destination database.

---

**Answer: C, D**

---

### **Question: 102**

---

You use Microsoft .NET Framework 4 to develop an application that connects to a Microsoft SQL Server 2008 database. You add the following stored procedure to the database.

```
CREATE PROCEDURE dtao.InsertTag
BName nvarchar (15)
AS
INSERT INTO Tags (Name) VALUES(@Name)
RETURN @@ROWCOUNT
```

You need to invoke the stored procedure by using an open SqlConnection named conn. Which code segment should you use?

- A. Dim cmd As SqlCommand =
New SqlCommand("EXEC InsertTag", conn)
cmd.CommandType = CommandType.Text
cmd.Parameters.AddWithValue("eName", "New Tag 1")
cmd.ExecuteNonQuery()
- B. Dim cmd As SqlCommand =
New SqlCommand("EXEC InsertTag", conn)
cmd.CommandType = CommandType.StoredProcedure cmd.Parameters.AddWithValue("eName", "New Tag 1")
cmd.ExecuteNonQuery()
- C. Dim cmd As SqlCommand = New SqlCommand("InsertTag", conn)
cmd.CommandType = CommandType.Text
cmd.Parameters.AddWithValue("BName", "New Tag 1")
cmd.ExecuteNonQuery()
- D. Dim cmd As SqlCommand = New SqlCommand ("InsertTag", conn)
cmd.CommandType = CommandType. StoredProcedure
cmd. Parameters.AddlithValue ("GName", "New Tag 1")
cmd.ExecuteNonQuery()

---

**Answer: D**

---

Explanation:

[http://msdn.microsoft.com/en-us/library/yy6y35y8\(v=vs.71\).aspx](http://msdn.microsoft.com/en-us/library/yy6y35y8(v=vs.71).aspx)

### **Question: 103**

---

You use Microsoft .NET Framework 4 to develop an ASP.NET Web application that connects to a Microsoft SQL Server 2008 database. The application uses Integrated Windows authentication in Internet Information Services (IIS) to

authenticate users. A connection string named connString defines a connection to the database by using integrated security. You need to ensure that a SqlCommand executes under the application pool's identity on the database server. Which code segment should you use?

A. Using conn As New SqlConnection()  
conn.ConnectionString = connString  
Dim cmd = New SqlCommand("SELECT \* FROM BLOG", conn)  
Using HostingEnvironment.Impersonate()  
conn.Open()  
End Using  
Dim result = cmd.ExecuteScalar()  
End Using

B. Using conn As New SqlConnection()  
Using HostingEnvironment.Impersonate()  
conn.ConnectionString = connString End Using  
Dim cmd = New SqlCommand("SELECT \* FROM BLOG", conn)  
conn.Open()  
Dim result = cmd.ExecuteScalar()  
End Using

C. Using conn = New SqlConnection(connString)  
Dim cmd \* New SqlCommand("SELECT \* FROM BLOG", conn)  
conn.Open()  
Using HostingEnvironment.Impersonate()  
Dim result = cmd.ExecuteScalar()  
End Using  
End Using

D. Using conn As New SqlConnection()  
conn.ConnectionString = connString  
Dim cmd As SqlCommand = Nothing  
Using HostingEnvironment.Impersonate()  
cmd = New SqlCommand("SELECT \* FROM BLOG", conn)  
End Using  
conn.Open()  
Dim result = cmd.ExecuteScalar()  
End Using

---

**Answer: A**

---

#### **Question: 104**

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application. You use the ADO.NET Entity Framework Designer to model entities. You need to retrieve an entity, and you must ensure that the entity is loaded in a detached state. Which MergeOption enumeration value should you use to retrieve the entity?

- A. PreserveChanges
- B. OverwriteChanges
- C. AppendOnly
- D. NoTracking

---

**Answer: D**

**Explanation:**

AppendOnly - Objects that do not exist in the object context are attached to the context. If an object is already in the context, the current and original values of object's properties in the entry are not overwritten with data source values. The state of the object's entry and state of properties of the object in the entry do not change.

AppendOnly is the default merge option.

OverwriteChanges - Objects that do not exist in the object context are attached to the context. If an object is already in the context, the current and original values of object's properties in the entry are overwritten with data source values.

The state of the object's entry is set to Unchanged, no properties are marked as modified.

PreserveChanges - Objects that do not exist in the object context are attached to the context.

If the state of the entity is Unchanged, the current and original values in the entry are overwritten with data source values.

The state of the entity remains Unchanged and no properties are marked as modified.

If the state of the entity is Modified, the current values of modified properties are not overwritten with data source values.

The original values of unmodified properties are overwritten with the values from the data source.

NoTracking - Objects are maintained in a Detached state and are not tracked in the ObjectStateManager.

However, Entity Framework-generated entities and POCO entities with proxies maintain a reference to the object context to facilitate loading of related objects.

MergeOption Enumeration

(<http://msdn.microsoft.com/en-us/library/system.data.objects.mergeoption.aspx>)

---

## **Question: 105**

---

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application. You use the ADO.NET Entity Framework Designer to model entities. You need to ensure that the entities are self-tracking. What should you do in the ADO.NET Entity Framework Designer?

- A. Add an ADO.NET EntityObject Generator to the model.
- B. Change the Transform Related Text Templates On Save option to False.
- C. Change the Code Generation Strategy option from Default to None.
- D. Add an ADO.NET Self-Tracking Entity Generator to the model.

---

**Answer: D**

---

**Explanation:**

The ADO.NET Self-Tracking Entity Generator text template generates the object-layer code that consists of a custom typed ObjectContext and entity classes that contain self-tracking state logic so that the entities themselves keep track of their state instead of ObjectContext doing so.

Probably the best usage of self-tracking entities is when working with N-tier applications.

CHAPTER 6 ADO.NET Entity Framework

Lesson 1: What Is the ADO.NET Entity Framework?

The Self-Tracking Entity Generator (page 405)

ADO.NET Self-Tracking Entity Generator Template

(<http://msdn.microsoft.com/en-us/library/ff477604.aspx>)

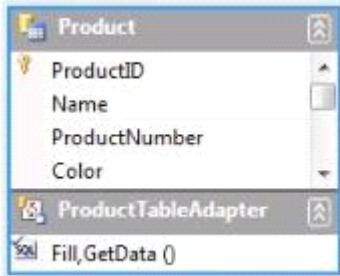
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## **Question: 106**

---

You use Microsoft .NET Framework 4 to develop an application that connects to a Microsoft SQL Server 2008

database. The application includes a table adapter named taStore, which has the following DataTable.



There is a row in the database that has a ProductID of 680. You need to change the Name column in the row to "New Product Name". Which code segment should you use?

- A. Dim dt = New taStore.ProductDataTable()  
 Dim ca = New taStoreTableAdapters.ProductTableAdapter()  
 ca.Fill(dc)  
 Dim dv = New DataView()  
 dv.RowFilter = "680"  
 dv(0)("Name") = "New Product Name"  
 ta.Update(dt)
- B. Dim dt = New taStoreTableAdapters.ProductTableAdapter()  
 Dim dt = ta.GetData()  
 Dim row = dt.Select("680")  
 row(0)("Name") = "New Product Name"  
 ta.Update(row)
- C. Dim dt = New taStore.ProductDataTable()  
 Dim row = dt.NewProductRow()  
 row.ProductID = 680  
 row.Name = "New Product Name"  
 dt.Rows.Add(row)
- D. Dim dt = New taStore.ProductDataTable()  
 Dim ta = New taStoreTableAdapters.ProductTableAdapter()  
 ta.Fill(dt)  
 Dim row As taStore.ProductRow =  
 DirectCast(dt.Rows.Find(680), taStore.ProductRow)  
 row.Name = "New Product Name"  
 ta.Update(row)

---

**Answer: D**

---

**Explanation:**

DataRowCollection.Find() Method To use the Find method, the DataTable object to which the DataRowCollection object belongs to must have at least one column designated as a primary key column. See the PrimaryKey property for details on creating a PrimaryKey column, or an array of DataColumn objects when the table has more than one primary key.

```
var dt = new CustomersDS.CustomersDataTable();
var ta = new CustomersDSTableAdapters.CustomersTableAdapter();
ta.Fill(dt);
CustomersDS.CustomersRow row = (CustomersDS.CustomersRow)dt.Rows.Find(4);
row.Name = "A. Found Customer Id";
ta.Update(row);
```

`DataTable.Select()` Method Gets an array of all `DataRow` objects that match the filter criteria. To create the `filterExpression` argument, use the same rules that apply to the  `DataColumn` class's `Expression` property value for creating filters.

```
var ta = new CustomersDSTableAdapters.CustomersTableAdapter();
var dt = ta.GetData();
var row = dt.Select("CustomerID > 2");
row[0]["Name"] = "B. Found Customer Id";
ta.Update(row);
TableAdapter Overview

http://msdn.microsoft.com/en-us/library/bz9tthwx\(v=vs.80\).aspx
```

## Question: 107

You use Microsoft .NET Framework 4 to develop an application that connects to a Microsoft SQL Server 2008 database. The database contains a `ClassStudent` table that contains the `StudentID` for students who are enrolled in the classes. You add the following stored procedure to the database.

```
CREATE PROCEDURE dbo.GetNumEnrolled
```

```
 @ClassID INT,
 @NumEnrolled INT OUTPUT
AS
BEGIN
 SET NOCOUNT ON
 SELECT GNumEnrolled = COUNT(StudentID)
 FROM ClassStudent
 WHERE (ClassID = @ClassID)
END
```

You write the following code. (Line numbers are included for reference only.)

```
01 Private Function GetNumberEnrolled(
ByVal classID As String) As Integer 02
03 Using conn As New SqlConnection(GetConnectionString())
04
05 Dim cmd As SqlCommand = New SqlCommand(
"GetNumEnro1led", conn)
06 cmd.CommandType = CommandType.StoredProcedure
07 Dim parClass As SqlParameter = cmd.Parameters.Add(
"8ClassID", SqlDbType.Int, 4, classID)
08 Dim parNum As SqlParameter = cmd.Parameters.Add(
"@NumEnrolled", SqlDbType.Int)
09
10 conn.Open()
11
12 End Using
11 End Function
```

You need to ensure that the `GetLMumberEnrolled` method returns the number of students who are enrolled for a specific class. Which two actions should you perform? (Each correct answer presents part of the solution. Choose two.)

A. Insert the following code at line 09.

```
parNum.Direction = ParameterDirection.Input
```

B. Insert the following code at line 09.

parNum.Direction = ParameterDirection.Output  
C. Insert the following code at line 11.  
Dim numEnrolled As Integer = 0  
Dim reader As SqlDataReader = cmd.ExecuteReader()  
While reader.Read()  
numEnrolled = numEnrolled +  
DirectCast(cmd.Parameters("@NumEnrolled").Value\_  
Integer)  
End  
While Return numEnrolled  
D. Insert the following code at line 11.  
cmd.ExecuteNonQuery()  
Return DirectCast (parNum.Value, Integer)

---

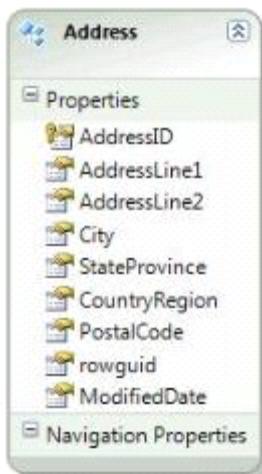
**Answer: B, D**

---

### Question: 108

---

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to develop an application. You use the Entity Framework Designer to create the following Entity Data Model.



You write a method named ValidatePostalCode to validate the postal code for the application. You need to ensure that the ValidatePostalCode method is called before the PostalCode property set method is completed and before the underlying value has changed. Which code segment should you place in the entity's partial class?

- A. Public Property ValidatedPostalCode As String  
Get  
Return \_PostalCode  
End Get  
Set(ByVal value As String)  
PostalCode - StructuralObject.SetValidValue( \_  
"ValidatePostalCode", False)  
End Set  
End Property  
B. Private Sub OnPostalCodeChanging(ByVal value As String)  
ValidatePostalCode(value)  
End Sub  
C. Public Property ValidatedPostalCode As String

```
Get
Return _PostalCode
End Get
Set(ByVal value As String)
ValidatePostalCode(value)
PostalCode = value
End Set
End Property
D. Private Sub OnPostalCodeChanged(ByVal value As String)
PostalCode = GetValidValue(Of String)
(value, "ValidatePostalCode", False, True)
End Sub
```

---

**Answer: B**

---

**Explanation:**

Another area of extensibility is with the partial methods created on each entity type. There is a pair of partial methods called `OnXxxChanging` and `OnXxxChanged` for each property, in which `Xxx` is the name of the property. The `OnXxxChanging` method executes before the property has changed, and the `OnXxxChanged` method executes after the property has changed. To implement any of the partial methods, create a partial class and add the appropriate partial method with implementation code.

**CHAPTER 6 ADO.NET Entity Framework**

**Lesson 1: What Is the ADO.NET Entity Framework?**

Partial Classes and Methods(page 390)

How to: Execute Business Logic During Scalar Property Changes

(<http://msdn.microsoft.com/en-us/library/cc716747.aspx>)

---

**Question: 109**

---

You develop a Microsoft .NET Framework 4 application that uses the Entity Framework to store entities in a Microsoft SQL Server 2008 database. While the application is disconnected from the database, entities that are added or modified are serialized to a local file. The next time the application connects to the database, it retrieves a Customer entity from the database by using an object context named `context` and stores the entity in a variable named `remoteCustomer`. The application then deserializes the Customer entity from the local file and stores the entity in a variable named `localCustomer`. The `remoteCustomer` and the `localCustomer` variables have the same entity key. You need to ensure that the offline changes to the Customer entity are persisted in the database when the `ObjectContext.SaveChanges()` method is called. Which line of code should you use?

- A. `context.ApplyOriginalValues("Customers", remoteCustomer)`
- B. `context.ApplyCurrentValues("Customers", localCustomer)`
- C. `context.ApplyCurrentValues("Customers", remoteCustomer)`
- D. `context.ApplyOriginalValues("Customers", localCustomer)`

---

**Answer: B**

---

Reference: <http://msdn.microsoft.com/en-us/library/dd487246.aspx>

---

**Question: 110**

---

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application

connects to a Microsoft SQL Server database. The application stores encrypted credit card numbers in the database. You need to ensure that credit card numbers can be extracted from the database. Which cryptography provider should you use?

- A. MDSCryptoServiceProvider
- B. AESCryptoServiceProvider
- C. SHA1CryptoServiceProvider
- D. DSACryptoServiceProvider

---

**Answer: B**

---

**Explanation:**

AESCryptoServiceProvider Performs symmetric encryption and decryption using the Cryptographic Application Programming Interfaces (CAPI) implementation of the Advanced Encryption Standard (AES) algorithm.

DSACryptoServiceProvider Defines a wrapper object to access the cryptographic service provider (CSP) implementation of the DSA algorithm. This class cannot be inherited.

MD5CryptoServiceProvider Computes the MD5 hash value for the input data using the implementation provided by the cryptographic service provider (CSP). This class cannot be inherited.

SHA1CryptoServiceProvider Computes the SHA1 hash value for the input data using the implementation provided by the cryptographic service provider (CSP). This class cannot be inherited.

DSACryptoServiceProvider

(<http://msdn.microsoft.com/en-us/library/system.security.cryptography.dsacryptoserviceprovider.aspx>)

AESCryptoServiceProvider

(<http://msdn.microsoft.com/en-us/library/system.security.cryptography.aescryptoserviceprovider.aspx>)

MD5CryptoServiceProvider

(<http://msdn.microsoft.com/en-us/library/system.security.cryptography.md5cryptoserviceprovider.aspx>)

SHA1CryptoServiceProvider Class

(<http://msdn.microsoft.com/en-us/library/system.security.cryptography.sha1cryptoserviceprovider.aspx>)

---

### **Question: 111**

---

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application uses the ADO.NET Entity Framework to model persistence-ignorant entities. The application operates in a disconnected mode. You need to ensure that changes made to local entities while the application is in the disconnected mode are correctly persisted. Which method should you call before persisting changes?

- A. ObjectStateEntry.SetModifiedProperty
- B. ObjectStateEntry.AcceptChanges
- C. DataContext.AcceptAllChanges
- D. ObjectContext.Refresh

---

**Answer: A**

---

**Explanation:**

ObjectStateEntry.SetModifiedProperty(string propertyName) Method Marks the specified property as modified.

---

### **Question: 112**

---

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to two different Microsoft SQL Server 2008 database servers named Server1 and Server2. A string named

sql1contains a connection string to Server1. A string named sql2contains a connection string to Server2.

```

01 Using scope As New
02
03 Using cnl As New SqlConnection(sql1)
04 Try
05 Catch ex As Exception
06 End Try
07 End Using
08 End Using
09 scope.Complete()
10 End Using

```

You need to ensure that the application meets the following requirements:

- There is a SqlConnection named cn2 that uses sql2.
- The commands that use cnl are initially enlisted as a lightweight transaction.
- The cn2 SqlConnection is enlisted in the same TransactionScope only if commands executed by cnl do not throw an exception.

What should you do?

A. Insert the following code segment at line 02.

Transacti onScope (TransactionScopeOption. RequiresNew)

Insert the following code segment at line 05.

```

cnl. Open ()
Using cn2 As New SqlConnection(sql2) Try

```

```
cn2 .Open() Catch ex As Excepcion
```

```
End Try
```

```
End Using
```

B. Insert the following code segment at line 02. TransaccionScope(TransaccionScopeOption.Suppress)

Insert the following code segment at line 05.

```

cnl .Open()
```

```
Using cn2 As New SqlConnection(sql2) Try
```

```
cn2-Open()
```

```
Catch ex As Exception
```

```
End Try
```

```
End Using
```

C. Insert the following code segment at line 02.

TransactionScope(TransactionScopeOption.Suppress)

Insert the following code segment at line 05.

```

Using cn2

```

```
As New
```

```
SqlConnection(sql2)
```

```
Try
```

```
cn2 . Open()
```

```
cnl .Open ()
```

```
Catch ex As Exception E
```

```
nd Try
```

```
End Using
```

D. Insert the following code segment at line 02.

TransactionScope(TransactionScopeOption.RequiresNeW)

Insert the following code segment at line 05.

```

Using cn2 As New SqlConnection(sql2)

```

```
Try
```

```
cn2 .Open ()
```

```
cnl. Open {}
```

```
Catch ex As Exception
End Try
End Using
```

---

**Answer: B**

---

Explanation:

Reference:

[http://msdn.microsoft.com/en-us/library/ms172152\(v=vs.90\).aspx](http://msdn.microsoft.com/en-us/library/ms172152(v=vs.90).aspx)

---

### **Question: 113**

---

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server database. You load records from the Customers table into a DataSet object named dataset. You need to retrieve the value of the City field from the first and last records in the Customers table. Which code segment should you use?

- A. Dim dt As DataTable = dataset.Tables("Customers")  
Dim first As String = dt.Rows(0)("City").ToString()  
Dim last As String = dt.Rows(dt.Rows.Count - 1)("City").ToString()
- B. Dim dc As DataTable = dataset.Tables("Customers")  
Dim first As String = dt.Rows(0)("City").ToString()  
Dim last As String = dt.Rows(dt.Rows.Count)(“City”).ToStringO
- C. Dim relationFirst As DataRelation = dataset.Relations(0)  
Dim relationLast As DataRelation = dataset.Relations(dataset.Relations.Count)  
Dim first As String = relationFirst.childTable.Columns("City").ToString()  
Dim last As String = relationLast.childTable.Columns("City").ToString()
- D. Dim relationFirst As DataRelation = dataset.Relations(0)  
Dim relationLast As DataRelation = dataset.Relations(dataset.Relations.Count - 1)  
Dim first As String = relationFirst.childTable.Columns("City").ToString()  
Dim last As String = relationLast.childTable.Columns("City").ToString()

---

**Answer: A**

---

---

### **Question: 114**

---

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application connects to several SQL Server databases. You create a function that modifies customer records that are stored in multiple databases. All updates for a given record are performed in a single transaction. You need to ensure that all transactions can be recovered. What should you do?

- A. Call the RecoveryComplete method of the TransactionManager class.
- B. Call the Reenlist method of the TransactionManager class.
- C. Call the EnlistDurable method of the Transaction class.
- D. Call the EnlistVolatile method of the Transaction class.

---

**Answer: C**

---

Explanation:

Enlisting Resources as Participants in a Transaction

(<http://msdn.microsoft.com/en-us/library/ms172153.aspx>)

Implementing a Resource Manager

(<http://msdn.microsoft.com/en-us/library/ms229975.aspx>)

Committing a Transaction in Single-Phase and Multi-Phase

(<http://msdn.microsoft.com/en-us/library/ckawh9ct.aspx>)

---

Resource managers with a durable enlistment must be able to perform recovery if they experience a failure.

Implementing a Resource Manager

(<http://msdn.microsoft.com/en-us/library/ms229975.aspx>)

TransactionManager.Renlist() Reenlists a durable participant in a transaction. A resource manager facilitates resolution of durable enlistments in a transaction by reenlisting the transaction participant after resource failure.

Transaction.EnlistVolatile() Enlists a volatile resource manager to participate in a transaction. Volatile resource managers cannot recover from failure to complete a transaction in which they were participating. For more information on volatile and durable resources, as well as how to enlist a resource, see Implementing A Resource Manager.

Transaction.EnlistDurable() Enlists a durable resource manager to participate in a transaction.

TransactionManager.RecoveryComplete() Notifies the transaction manager that a resource manager recovering from failure has finished reenlisting in all unresolved transactions. All durable resource managers should do recovery when they first start up by calling the Reenlist method for each outstanding transaction.

Only when all of the reenlistments are done should the resource manager call RecoveryComplete.

TransactionManager.Renlist() Method

(<http://msdn.microsoft.com/en-us/library/system.transactions.transactionmanager.reenlist.aspx>)

Transaction.EnlistVolatile() Method

(<http://msdn.microsoft.com/en-us/library/system.transactions.transaction.enlistvolatile.aspx>)

Transaction.EnlistDurable()

(<http://msdn.microsoft.com/en-us/library/system.transactions.transaction.enlistdurable.aspx>)

TransactionManager.RecoveryComplete() Method

(<http://msdn.microsoft.com/en-us/library/system.transactions.transactionmanager.recoverycomplete.aspx>)

You use Microsoft Visual Studio 2010 and the Microsoft .NET Framework 4 to create an application. The application connects to a Microsoft SQL Server database. The application uses DataContexts to query the database. You define a foreign key between the Customers and Orders tables in the database. You need to ensure that when you delete a customer record, the corresponding order records are deleted. You want to achieve this goal by using the minimum amount of development effort. What should you do?

- A. Remove the foreign key between the Customers and Orders tables.
- B. Use the ExecuteDynamicDelete method of the DataContext object.
- C. Override the Delete operation of the customer entity.
- D. Modify the foreign key between the Customers and Orders tables to enable the ON DELETE CASCADE option.

Answer: D

Explanation:

DataContext.ExecuteDynamicDelete Method

(<http://msdn.microsoft.com/en-us/library/system.data.linq.datacontext.executedynamicdelete.aspx>)

---

## Question: 115

---

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. You use the ADO.NET Entity Framework to model your entities. The application connects to a Microsoft SQL Server 2008 database named AdventureWorks by using Windows Authentication. Information about the required Entity Data Model (EDM) is stored in the following files:

- model.csdl
- model.ssdl

- model.msl

These files are embedded as resources in the MyCompanyData.dll file. You need to define the connection string that is used by the application. Which connection string should you add to the app.config file?

A. <add name="AdventureUorksEntitie3"  
connectionString="metadata=res://MyCompany.Data,Culture=neutral,PublicKeyToken=null/model.csdl|  
res: //MyCompany.Data,Culture=neutral,PublicKeyToken=null/model.ssdl|  
res: //MyCompany.Data,Culture=neutral,PublicKeyToken=null/model.msl;  
provider=System.Data.EntityClient;provider connection string='Data Source=localhost;  
Initial Catalog=AdventureTJorks; Integrated Security=True;multipleactiveresultsets=true' "  
providerName="System.Data.SqlClient" />  
B. <add name="AdventureUorksEntities"  
connectionString="metadata=res://MyCompany. Data, Culture=neutral, PublicKeyToken=null/model .csdl |  
res: //MyCompany. Data,Culture=neutral, PublicKeyToken=null/model. ssdl |  
res: //MyCompany.Data,Culture=neutral,PublicKeyToken=null/model.msl;  
provider=System.Data.SqlClient;provider connection string='Data Source=locaihost;  
Initial Catalog=AdventureWorks; Integrated Security=True;multipleactiveresultsets=true' "  
providerName="System. Data. EntityClient" />  
C. <add name="AdventureUorksEntities"  
connectionString="metadata=res://MyCompany.Data.model.csdl| res: //MyCompany.Data.model.ssdl| res:  
//MyCompany.Data.model.msl;  
provider=System.Data.SqlClient;provider connection string='Data Source=localhost; Initial  
Catalog=AdventureUorks;Integrated Security\*SSPI;multipleactiveresultsets\*true'"  
providerName="System.Data.EntityClient" />  
D. <add name="AdventureUorksEntities"  
connectionString="metadata=  
res: //MyCompany.Data,Culture=neutral,PublicKeyToken=null/model.csdl|  
res: //MyCompany.Data,Culture=neutral,PublicKeyToken=null/model.ssdl|  
res: //MyCompany.Data,Culture=neutral,PublicKeyToken=null/model.msl;  
provider=System.Data.OleDbClient;provider connection string='  
Provider=sqloledb;Data Source=localhost;  
Initial Catalog=AdventureWorks;Integrated Security=SSPI;multipleactiveresultsets=true'"  
providerName="System.Data.EntityClient" />

---

## **Answer: B**

---

**Explanation:**

Answering this question pay attention to fact that Entity Framework is used, so settings provider="System.Data.SqlClient" and providerName="System.Data.EntityClient" shold be set.  
Connection Strings

(<http://msdn.microsoft.com/en-us/library/cc716756.aspx>)

---

## **Question: 116**

---

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create a Windows Communication Foundation (WCF) Data Services service. The service connects to a Microsoft SQL Server 2008 database. The service is hosted by an Internet Information Services (IIS) 6.0 server. You need to ensure that applications authenticate against user information stored in the database before the application is allowed to use the service. Which two actions should you perform? (Each correct answer presents part of the solution. Choose two.)

- A. Configure IIS to require Windows authentication.

- B. Configure IIS to allow anonymous access.
- C. Configure IIS to require basic authentication.
- D. Enable the WCF Authentication Service.
- E. Modify the Data Services service to use a Microsoft ASP.NET membership provider.

---

**Answer: B, E**

---

### **Question: 117**

---

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create a Microsoft Windows Forms application,

You plan to deploy the application to several shared client computers.

You write the following code segment. (Line numbers are included for reference only.)

```
01 Dim config As Configuration = ConfigurationManager.OpenExeConfiguration(exeConfigName)
02
03 config.Save()
04 ...
```

You need to encrypt the connection string stored in the .config file.

Which code segment should you insert at line 02?

- A. Dim section As ConnectionStringsSection \_  
TryCast(config.GetSection("connectionString"), ConnectionStringsSection)  
section.SectionInformation.ProtectSection("DataProtectionConfigurationProvider")
- B. Dim section As ConnectionStcingsSection =  
TryCast(config.GetSecion("connectionStrings"), ConnectionStringsSection)  
section.SectionInformation.ProtectSection("RsaProtectedConf igureationProvider")
- C. Dim section As ConnectionStringsSection =  
TryCast(config.GetSection("connectionString")  
section.SectionInformation.ProtectSection("RsaProtectedConfigurationProvider") ConnectionStringsSection)
- D. Dim section As ConnectionStringsSection =  
TryCast(config.GetSection("connectionStrings"),  
section.SectionInformation.ProtectSection("DataProtectionConfigurationProvider") ConnectionStringsSection)

---

**Answer: B**

---

**Explanation:**

You encrypt and decrypt the contents of a Web.config file by using System.Configuration .

DPAPIProtectedConfigurationProvider, which uses the Windows Data Protection API (DPAPI) to encrypt and decrypt data, or System.Configuration.

RSAProtectedConfigurationProvider, which uses the RSA encryption algorithm to encrypt and decrypt data. When you use the same encrypted configuration file on many computers in a Web farm, only System.Configuration.RSAProtectedConfigurationProvider enables you to export the encryption keys that encrypt the data and import them on another server. This is the default setting.

CHAPTER 2 ADO.NET Connected Classes

Lesson 1: Connecting to the Data Store

Storing Encrypted Connection Strings in Web Applications (page 76)

Securing Connection Strings

([http://msdn.microsoft.com/en-us/library/89211k9b\(v=vs.80\).aspx](http://msdn.microsoft.com/en-us/library/89211k9b(v=vs.80).aspx))

---

### **Question: 118**

---

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4.0 to create an application. The application connects to a Microsoft SQL Server 2008 database. You need to ensure that the application calls a stored procedure that accepts a table-valued parameter. You create a SqlParameter object. What should you do next?

- A. Set the SqlDbType of SqlParameter to Udt.
- B. Set the SqlDbType of SqlParameter to Structured. Set the TypeName of SqlParameter to the type name of the table-valued parameter.
- C. Set the ParameterDirection of SqlParameter to Output.
- D. Set the SqlDbType of SqlParameter to Variant.

---

**Answer: B**

---

Explanation:

SqlParameter.DbType Gets or sets the SqlDbType of the parameter.

SqlParameter.TypeName Gets or sets the type name for a table-valued parameter.

SqlDbType.Structured A special data type for specifying structured data contained in table-valued parameters.

Udt A SQL Server 2005 user-defined type (UDT).

Spatial types

(<http://msdn.microsoft.com/en-us/library/ff848797.aspx>)

Types of Spatial Data

(<http://msdn.microsoft.com/en-us/library/bb964711.aspx>)

---

### **Question: 119**

---

You use Microsoft .NET Framework 4 to develop an application that uses LINQ to SQL. The Product entity in the LINQ to SQL model contains a field named ProductImage. The ProductImage field holds a large amount of binary data. You need to ensure that the ProductImage field is retrieved from the database only when it is needed by the application. What should you do?

- A. Set the Update Check property on the ProductImage property of the Product entity to Never.
- B. Set the Auto-Sync property on the ProductImage property of the Product entity to Never.
- C. Set the Delay Loaded property on the ProductImage property of the Product entity to True.
- D. When the context is initialized, specify that the ProductImage property should not be retrieved by using DataLoadOptions

---

**Answer: C**

---

Explanation:

Lazy loading is configured in the LINQ to SQL designer by selecting an entity and then, in the Properties window, setting the Delay Loaded property to true. The Delay Loaded property indicates that you want lazy loading of the column.

CHAPTER 4 LINQ to SQL

Lesson 1: What Is LINQ to SQL?

Eager Loading vs. Lazy Loading (page 254)

<http://geekswithblogs.net/AzamSharp/archive/2008/03/29/120847.aspx>

<http://weblogs.asp.net/scottgu/archive/2007/05/29/linq-to-sql-part-2-defining-our-data-model-classes.aspx>

---

### **Question: 120**

---

You use Microsoft Visual Studio 2010 and Microsoft .NET Framework 4 to create an application. The application uses the ADO.NET Entity Framework to model entities. You define a Category class by writing the following code segment. (Line numbers are included for reference only.)

```
01 public class Category
02 {
03 public int CategoryID { get; set; }
04 public string CategoryName { get; set; }
05 public string Description { get; set; }
06 public byte[] Picture { get; set; }
07
08 }
```

You need to add a collection named Products to the Category class. You also need to ensure that the collection supports deferred loading. Which code segment should you insert at line 07?

- A. public static List <Product> Products { get; set; }
- B. public virtual List <Product> Products { get; set; }
- C. public abstract List <Product> Products { get; set; }
- D. protected List <Product> Products { get; set; }

---

**Answer: B**

---

Explanation:

One of the requirements for lazy loading proxy creation is that the navigation properties must be declared virtual (Overridable in Visual Basic).

If you want to disable lazy loading for only some navigation properties, then make those properties non-virtual.

Loading Related Objects (Entity Framework)

([http://msdn.microsoft.com/en-us/library/gg715120\(v=vs.103\).aspx](http://msdn.microsoft.com/en-us/library/gg715120(v=vs.103).aspx))

## 70-516VB Case Study

### Case Study: 1

#### Background

You are updating an existing Microsoft .NET Framework 4 application that includes a data layer built with ADO.NET Entity Framework 4. The application communicates with a Microsoft SQL Server 2008 instance named INST01 on a server named SQL01. The application stores data in a database named Contoso in the INST01 instance.

You need to update the existing technology and develop new functionality by using Microsoft Visual Studio 2010.

#### Application and Database Storage

The application tracks bicycle parts as they pass through a factory. Parts are represented by the abstract Part entity and its associated partial classes. Each part has a name stored in the Name field and a unique identifier stored in the Id field.

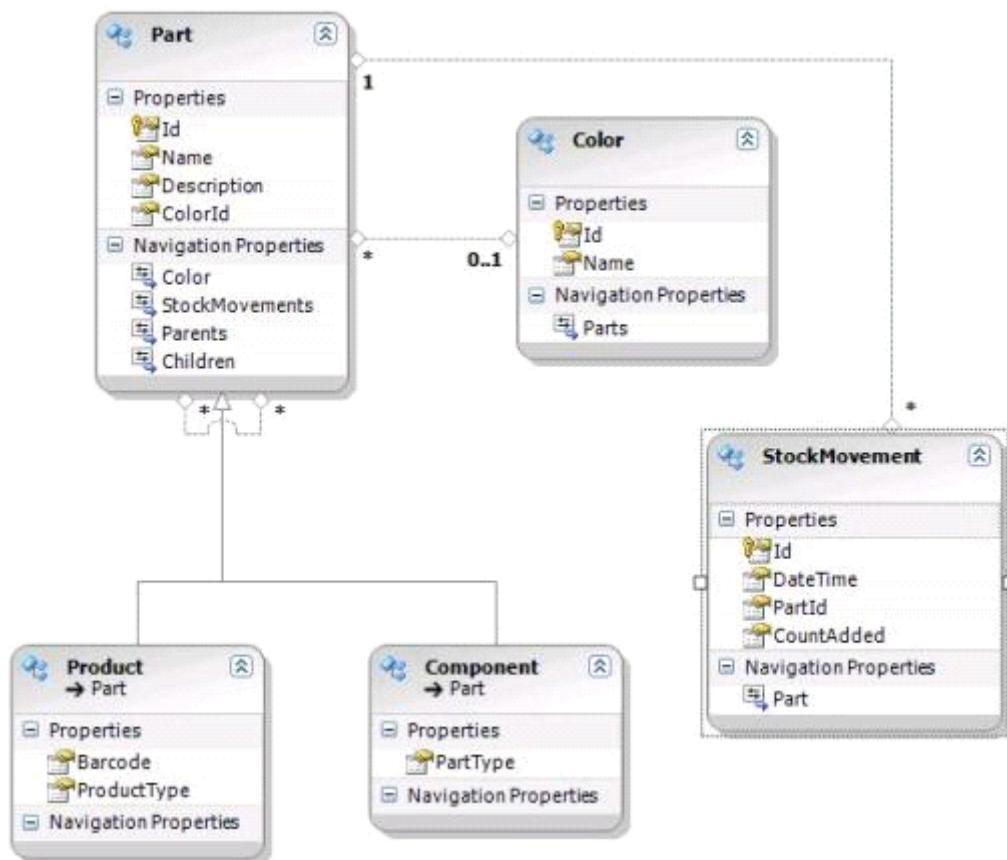
Parts are either component s (represented by the Component class) such as chains, wheels, and frames, or finished product s (represented by the Product class) such as completed bicycles. The Component class and the Product class derive from the Part class and may contain additional class-specific properties.

Parts may have a color (represented by the Color class), but not all parts have a color. Parts may be

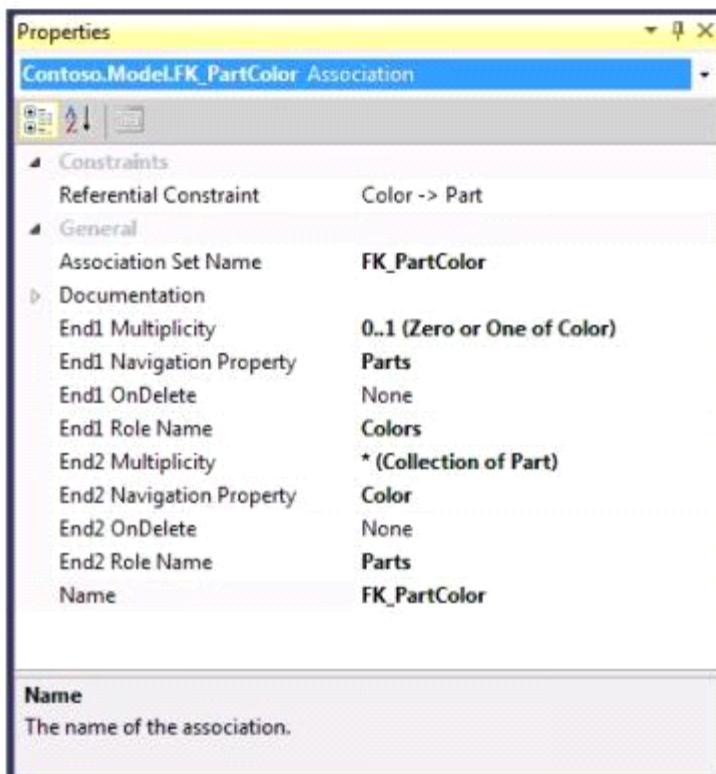
composed of other parts, and those parts may in turn be composed of other parts ; any part represents a tree of the parts that are used to build it, The lowest level of the tree consists of components that do not contain other components.

A product is a part that has been completed and is ready to leave the factory. A product typically consists of many components (forming a tree of child parts) but can also be constructed by combining other products and/or components to form a bundled product, such as a bicycle and a helmet that are sold together. Components and products are stored in a database table named Parts by using a table-per-hierarchy (TPH) mapping. Components have a null ProductType field and a non-null PartType field. Products have a non-null ProductType field and a null PartType field.

The following diagram illustrates the complete Entity data model diagram (EDMX diagram),



The following graphic illustrates details of the Part-Color Association.



The following code segments show relevant portions of the files referenced by the case study items. (Line numbers in the samples below are included for reference only and include a two-character prefix that denotes the specific file to which they belong.)

### Extension Methods.vb

```

XX01 Imports System
XX02 Imports System.Collections.Generic
XX03 Imports System.Linq
XX04 Imports Contoso.Model
XX05
XX06 Namespace Contoso
XX07
XX08 Module ExtensionMethods
XX09
XX10 <System.Runtime.CompilerServices.Extension()> _
XX11 Public Function GetColors(ByVal parts As IEnumerable(Of Part)) As IEnumerable(Of Color)
XX12
XX13 Return parts.[Select](Function(part) part.Color).Distinct()
XX14 End Function
XX15
XX16 End Module
XX17
XX18 End Namespace

```

### Model.edmx

```

...
EX228 <EntitySetMapping Name="Parts">
EX229 <EntityTypeMapping TypeName="IsTypeOf(Contoso.Model.Part)">
EX230 <MappingFragment StoreEntitySet="Parts">
EX231 <ScalarProperty Name="Id" ColumnName="Id" />
EX232 <ScalarProperty Name="Name" ColumnName="Name" />
EX233 <ScalarProperty Name="Description" ColumnName="Description" />
EX234 <ScalarProperty Name="ColorId" ColumnName="ColorId" />
EX235 </MappingFragment>
EX236 </EntityTypeMapping>
EX237 <EntityTypeMapping TypeName="IsTypeOf(Contoso.Model.Product)">
EX238 xmlns="http://schemas.microsoft.com/ado/2008/09/mapping/cs">
EX239 <MappingFragment StoreEntitySet="Parts">
EX240 <ScalarProperty Name="ProductType" ColumnName="ProductType" />
EX241 <ScalarProperty Name="Barcode" ColumnName="Barcode" />
EX242 <ScalarProperty Name="Id" ColumnName="Id" />
EX243 ...
EX244 </MappingFragment>
EX245 </EntityTypeMapping>
EX246 <EntityTypeMapping TypeName="IsTypeOf(Contoso.Model.Component)">
EX247 <MappingFragment StoreEntitySet="Parts">
EX248 <ScalarProperty Name="PartType" ColumnName="PartType" />
EX249 <ScalarProperty Name="Id" ColumnName="Id" />
EX250 ...
EX251 </MappingFragment>
EX252 </EntityTypeMapping>
EX253 </EntitySetMapping>
...

```

**Model/Color.vb**

```

CL01 Imports System
CL02 Imports System.Collections.Generic
CL03 Imports System.Linq
CL04 Imports System.Text
CL05
CL06 Namespace Contoso.Model
CL07
CL08 Partial Public Class Color
CL09 Implements IName
CL10
CL11 Public Overrides Function ToString() As String
CL12 Return "(" & Color & " : " & Convert.ToString(Me.Name) & ")"
CL13 End Function
CL14
CL15 End Class
CL16
CL17 End Namespace

```

**Model/Component.vb**

```

CT01 Imports System
CT02 Imports System.Collections.Generic
CT03 Imports System.Linq
CT04 Imports System.Text
CT05 Imports System.Xml.Linq
CT06
CT07 Namespace Contoso.Model
CT08
CT09 Partial Public Class Component
CT10
CT11 Public Overrides Function Create XElementSingle() As XElement
CT12
CT13 ...
CT14 End Function
CT15
CT16 End Class
CT17
CT18 End Namespace

```

**ModelContosoEntities.vb**

```

CEO1 Imports System
CEO2 Imports System.Collections.Generic
CEO3 Imports System.Linq
CEO4
CEO5 Namespace Contoso.Model
CEO6
CEO7 Partial Public Class ContosoEntities
CEO8
CEO9 Public Function LoadOrCreate(ByVal name As String) As Color
CEO10
CEO11 Dim result As Color = If(Me.Colors.SingleOrDefault(Function(c) c.Name = name), New Color
CEO12 () With {
CEO13 .Name = name})
CEO14 Return result
CEO15
CEO16 End Function
CEO17
CEO18 End Class
CEO19
CEO19 End Namespace

```

**Model IName.vb**

```

IMO1 Namespace Contoso.Model
IMO2
IMO3 public Public Interface IName
IMO4 ReadOnly Property Name() As String
IMO5 End Interface
IMO6
IMO7 End Namespace

```

**Model Part.vb**

```

PA01 Imports System
PA02 Imports System.Collections.Generic
PA03 Imports System.Linq
PA04 Imports System.Text
PA05 Imports System.Diagnostics
PA06 Imports System.Xml.Linq
PA07
PA08 Namespace Contoso.Model
PA09
PA10 Partial Public Class Part
PA11 Implements IName
PA12
PA13 Public Sub New()
PA14
PA15 End Sub
PA16
PA17 Public ReadOnly Property Descendants() As IEnumerable(Of Part)
PA18
PA19 Get
PA20
PA21 Dim result = New List(Of Part)()
PA22 For Each child In Me.Children
PA23 result.AddRange(child.Descendants())
PA24 Next
PA25 Return result
PA26
PA27 End Get
PA28 End Property
PA29
PA30 Public ReadOnly Property SelfAndDescendants() As IEnumerable(Of Part)
PA31
PA32 Get
PA33 Dim result = New List(Of Part)(Me.Children)
PA34 For Each child In Me.Children
PA35 result.AddRange(child.Descendants())
PA36 Next
PA37 Return result
PA38
PA39 End Get
PA40 End Property
PA41
PA42 Public MustOverride Function Create XElementSingle() As XElement
PA43
PA44 Public Overridable Function Create XElement() As XElement
PA45
PA46 Dim [single] = Me.Create XElementSingle()
PA47 [single].Add(Me.Children.[Select](Function(p) p.Create XElement()).ToArray())
PA48 Return [single]
PA49 End Function
PA50
PA51 Public Sub AddOrRemoveStock(ByVal amount As Integer)
PA52
PA53 Using context = New ContosoEntities()
PA54
PA55 Dim stockMovement As New StockMovement() With
PA56 {
PA57 .CountAdded = amount,
PA58 .DateTime = DateTime.UtcNow,
PA59 .PartId = Me.Id
PA60 }
PA61 context.StockMovements.AddObject(stockMovement)
PA62 context.SaveChanges()
PA63
PA64 End Using
PA65 End Sub
PA66
PA67 End Class
PA68 End Namespace

```

**Model Product.vb**

```

PRO1 Imports System
PRO2 Imports System.Collections.Generic
PRO3 Imports System.Linq
PRO4 Imports System.Text
PRO5 Imports System.Diagnostics
PRO6 Imports System.Xml.Linq
PRO7 Imports System.Transactions
PRO8 Imports System.Data
PRO9
PR10 Namespace Contoso.Model
PR11
PR12 public Partial Public Class Product
PR13
PR14 Public Overrides Function Create XElementSingle() As XElement
PR15 ...
PR16 End Function
PR17
PR18 End Class
PR19
PR20 End Namespace

sp_FindObsolete
PRO1 Imports System
PRO2 Imports System.Collections.Generic
PRO3 Imports System.Linq
PRO4 Imports System.Text
PRO5 Imports System.Diagnostics
PRO6 Imports System.Xml.Linq
PRO7 Imports System.Transactions
PRO8 Imports System.Data
PRO9
PR10 Namespace Contoso.Model
PR11
PR12 public Partial Public Class Product
PR13
PR14 Public Overrides Function Create XElementSingle() As XElement
PR15 ...
PR16 End Function
PR17
PR18 End Class
PR19
PR20 End Namespace

```

## Question: 1

---

The database contains orphaned Color records that are no longer connected to Part records. You need to clean up the orphaned records. You have an existing ContosoEntities context object named context. Which code segment should you use?

- A. Dim unusedColors = context.Colors.Where(Function(c) Not c.Parts.Any())
 context.DeleteObject(unusedColors)
 context.SaveChanges()
- B. Dim unusedColors = context.Colors.Where(Function(c) Not c.Parts.Any()).ToList()
 For Each unused As Color In unusedColors
 context.DeleteObject(unused)
 Next
 context.SaveChanges()
- C. context.Colors.ToList().RemoveAll(Function(c) Not c.Parts.Any())

```
context.SaveChanges()
D. context.Colors.TakeWhile(Function(c) Not c.Parts.Any())
context.SaveChanges()
```

---

**Answer: B**

---

## **Question: 2**

---

Refer to the following lines in the case study: PA42 in \Model\Part.vb, PR16 in \Model\Product.vb, and CT14 in \Model\Component.vb. The application must create XML files that detail the part structure for any product. The XML files must use the following format:

```
<?xml version="1.0" encoding="utf-8"?>
<product name="Brush" description="Brush product" productType="1">
 <component name="Handle" description="Handle" partType="2">
 <component name="Screw" description="Screw" partType="3" />
 <component name="Wood" description="Wooden shaft" partType="45" />
 </component>
 <component name="Head" description="Head" partType="5">
 <component name="Screw" description="Screw" partType="3" />
 <component name="Bristles" description="Bristles" partType="4" />
 </component></product>
```

You need to update the application to support the creation of an XElement object having a structure that will serialize to the format shown above. What should you do? (Each correct answer presents part of the solution. Choose two.)

A. Insert the following code segment at line PR16 in \Model\Product.cs:

```
return new XElement("product", new XAttribute("name", this.Name),
new XElement("description", this.Description),
new XElement("productType", this.ProductType));
```

B. Insert the following code segment at line CT14 in \Model\Component.cs:

```
return new XElement("component", new XElement("name", this.Name),
new XElement("description", this.Description),
new XElement("partType", this.PartType));
```

C. Insert the following code segment at line PR16 in \Model\Product.cs:

```
return new XElement("product", new XElement("name", this.Name),
new XElement("description", this.Description),
new XElement("productType", this.ProductType));
```

D. Insert the following code segment at line PR16 in \Model\Product.cs:

```
return new XElement("product", new XAttribute("name", this.Name),
new XAttribute("description", this.Description),
new XAttribute("productType", this.ProductType));
```

E. Insert the following code segment at line CT14 in \Model\Component.cs:

```
return new XElement("component", new XAttribute("name", this.Name),
new XElement("description", this.Description),
new XElement("partType", this.PartType));
```

F. Insert the following code segment at line CT14 in \Model\Component.cs:

```
return new XElement("component", new XAttribute("name", this.Name),
new XAttribute("description", this.Description),
new XAttribute("partType", this.PartType));
```

---

**Answer: D, F**

---

---

### Question: 3

---

You are adding a process to the application. The process performs the following actions:

1. Opens a ContosoEntities context object named context1.
2. Loads a Part object into a variable named part1.
3. Calls the Dispose() method on context1.
4. Updates the data in part1.

5. Updates the database by using a new ContosoEntities context object named context2.

You need to update the database with the changed data from part1.

What should you do?

- A. Add the following code segment before calling SaveChanges() on context2: context2.Attach(part1)  
context2.ApplyCurrentValues("Parts", part1)
- B. Add the following code segment before calling SaveChanges() on context2: context2.Attach(part1)  
context2.ObjectStateManager.ChangeObjectState(part1, System.Data.EntityState.Modified)
- C. Add the following code segment before calling SaveChanges() on context2: context2.ApplyCurrentValues("Parts", part1)
- D. Add the following code segment before calling SaveChanges() on context2: context2.ApplyOriginalValues("Parts", part1)

---

### Answer: B

---

Explanation:

How to: Apply Changes Made to a Detached Object

(<http://msdn.microsoft.com/en-us/library/bb896248.aspx>)

```
private static void ApplyItemUpdates(SalesOrderDetail originalItem, SalesOrderDetail updatedItem)
{
 using (AdventureWorksEntities context = new AdventureWorksEntities())
 {
 context.SalesOrderDetails.Attach(updatedItem);
 // Check if the ID is 0, if it is the item is new.
 // In this case we need to change the state to Added.
 if (updatedItem.SalesOrderDetailID == 0)
 {
 // Because the ID is generated by the database we do not need to
 // set updatedItem.SalesOrderDetailID.
 context.ObjectStateManager.ChangeObjectState(updatedItem, System.Data.EntityState.Added);
 }
 else
 {
 // If the SalesOrderDetailID is not 0, then the item is not new
 // and needs to be updated. Because we already added the
 // updated object to the context we need to apply the original values.
 // If we attached originalItem to the context
 // we would need to apply the current values:
 // context.ApplyCurrentValues("SalesOrderDetails", updatedItem);
 // Applying current or original values, changes the state
 // of the attached object to Modified.
 context.ApplyOriginalValues("SalesOrderDetails", originalItem);
 }
 }
}
```

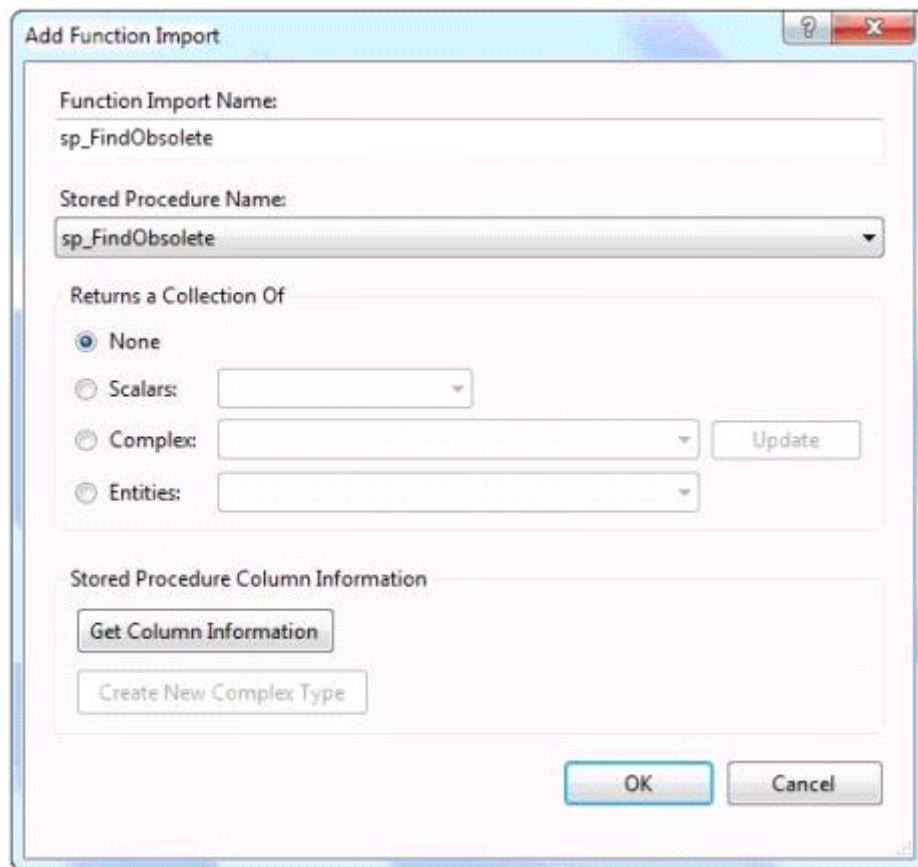
```

context.SaveChanges();
}
}

```

#### Question: 4

The entity data model must be configured to provide a way to call the sp\_FindObsolete stored procedure. The returned data must implement the Descendants property. In Visual Studio 2010, you open the Add Function Import dialog box from the EDMX diagram and enter the information shown in the following graphic.



You need to complete the configuration in the dialog box. What should you do?

- In the Returns a Collection Of area, click Scalars and then, in the Scalars list, click Int32.
- In the Returns a Collection Of area, click Scalars and then, in the Scalars list, click String.
- Click the Get Column Information button, click Create New Complex Type and then, in the Complex box, enter Parts.
- In the Returns a Collection Of area, click Entities and then, in the Entities list, click Component.

---

**Answer: D**

---

#### Question: 5

You have an existing ContosoEntities context object named context. Calling the SaveChanges() method on the context object generates an exception that has the following inner exception:

System.Data.SqlClient.SqlException: Cannot insert duplicate key row in object 'dbo.Colors' with unique index 'IX\_Colors'.

You need to ensure that a call to SaveChanges() on the context object does not generate this exception.

What should you do?

- A. Add a Try/Catch statement around every call to the SaveChanges() method.
- B. Override the SaveChanges() method on the ContosoEntities class, call the ObjectStateManager.GetObjectStateEntries(System.Data.EntityState.Added) method, and call the AcceptChanges() method on each ObjectStateEntry object it returns.
- C. Examine the code to see how Color objects are allocated. Replace any instances of the New Color() method with a call to the ContosoEntities.LoadOrCreate() method.
- D. Remove the unique constraint on the Name column in the Colors table.

---

**Answer: C**

---

### **Question: 6**

---

You add a table to the database to track changes to part names. The table stores the following row values:

- the username of the user who made the change
- a part ID
- the new
- part name
- a DateTime value

You need to enable detection of unauthorized changes to the row values. You also need to ensure that database users can view the original row values. What should you do?

- A. Add a column named signature.

Use System.Security.Cryptography.RSA to create a signature for all of the row values.

Store the signature in the signature column. Publish only the public key internally.

- B. Add a column named hash.

Use System.Security.Cryptography.MD5 to create an MD5 hash of the row values, and store in the hash column.

C. Use System.Security.Cryptography.RSA to encrypt all the row values. Publish only the key internally.

D. Use System.Security.Cryptography.DES to encrypt all the row values using an encryption key held by the application.

---

**Answer: A**

---

### **Question: 7**

---

You are developing a new feature in the application to display a list of all bundled products. You need to write a LINQ query that will return a list of all bundled products. Which query expression should you use?

- A. context.Parts().

Cast(Of Product)().

Where(Function(p) p.Descendants.Any(Function(d) TypeOf d Is Product))

- B. context.Parts.

Cast(Of Product)().

ToList().

Where(Function(p) p.Descendants.Any(Function(d) TypeOf d Is Product))

- C. context.Parts.

OfType(Of Product)().

Where(Function(p) p.Descendants.Any(Function(d) TypeOf d Is Product))

- D. context.Parts.

OfType(Of Product)().  
ToList().  
Where(Function(p) p.Descendants.Any(Function(d) TypeOf d Is Product))

---

**Answer: D**

Explanation:

OfType() Filters the elements of an IEnumerable based on a specified type.

Enumerable.OfType<TResult> Method

(<http://msdn.microsoft.com/en-us/library/bb360913.aspx>)

---

### **Question: 8**

The application user interface displays part names or color names in many places as '## Name ##'. You need to provide a method named FormattedName() to format part names and color names throughout the application. What should you do?

A. Add the following code segment to the Color class in Color.vb:

Public Function FormattedName() As String Return String.Format("## {0} ##", Me.Name) End Function

B. Add the following code segment to the ExtensionMethods class in ExtensionMethods.vb:  
<System.Runtime.CompilerServices.Extension()> \_ Public Function FormattedName(ByVal entity As IName) As String  
Return String.Format("## {0} ##", entity.Name) End Function

C. Add the following code segment to the ExtensionMethods class in ExtensionMethods.vb:  
<System.Runtime.CompilerServices.Extension()> Public Function FormattedName(ByVal entity As Color) As String  
Return String.Format("## {0} ##", entity.Name) End Function

D. Add the following code segment to the ExtensionMethods class in ExtensionMethods.vb:  
<System.Runtime.CompilerServices.Extension()> Public Function FormattedName(ByVal entity As Part) As String  
Return String.Format("## {0} ##", entity.Name) End Function

E. Add the following code segment to the Part class in Part.vb:

Public Function FormattedName() As String Return String.Format("## {0} ##", Me.Name) End Function

---

**Answer: B**

---

### **Question: 9**

A performance issue exists in the application. The following code segment is causing a performance bottleneck:

Dim colors = context.Parts.GetColors()

You need to improve application performance by reducing the number of database calls.

Which code segment should you use?

A. Dim colors = context.Parts.OfType(Of Product).Include("Product.Color").GetColors()

B. Dim colors = context.Parts.OfType(Of Product).Include("Colors").GetColors()

C. Dim colors = context.Parts.OfType(Of Product).Include("Parts.Color").GetColors()

D. Dim colors = context.Parts.OfType(Of Product).Include("Color").GetColors()

---

**Answer: D**

---

### **Question: 10**

You have a ContosoEntities context object named context and a Color object stored in a variable named color.

You write the following code:

```
context.Colors.DeleteObject(color)
context.SaveChanges()
```

When the code runs, it generates the following exception:

System.Data.UpdateException:

An error occurred while updating the entries. See the inner exception for details. --->  
System.Data.SqlClient.SqlException: The DELETE statement conflicted with the REFERENCE constraint "FK\_PartColor".  
The conflict occurred in database "Contoso", table "dbo.Parts", column 'ColorId'.

You need to resolve the exception without negatively impacting the rest of the application.

What should you do?

- A. Add code before the call to the DeleteObject() method to examine the collection of Part objects associated with the Color object and then assign null to the Color property for each Part object.
- B. Change the End1 OnDelete property of the FK\_PartColor association from None to Cascade.
- C. In the database, remove the foreign key association between the Parts table and the Colors table, and then update the entity data model.
- D. Add a transaction around the call to the SaveChanges() method and handle the exception by performing a retry.
- E. Change the End2 OnDelete property of the FK\_PartColor association from None to Cascade.

---

**Answer: A**

---

### Question: 11

---

DRAG DROP

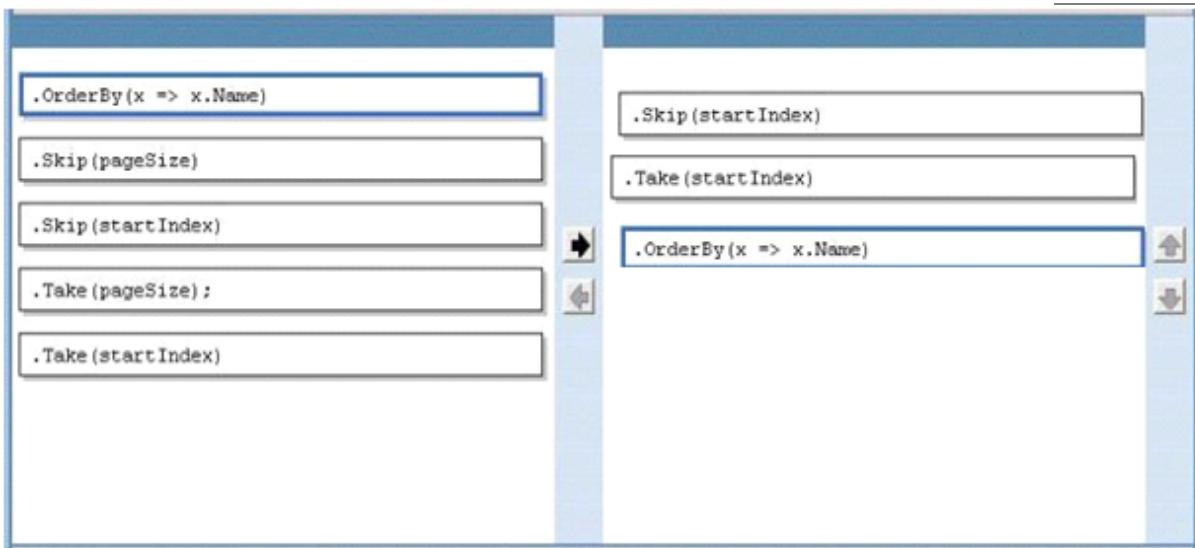
The user interface requires that a paged view be displayed of all the products sorted in alphabetical order. The user interface supplies a current starting index and a page size in variables named startIndex and pageSize of type Integer. You need to construct a LINQ expression that will return the appropriate Parts from the database from an existing ContosoEntities context object named context.

You begin by writing the following expression:

```
context.Paces
```

Which query parts should you use in sequence to complete the expression? (To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.)

---

Answer:

---

**Question: 12**

The application must be configured to run on a new development computer. You need to configure the connection string to point to the existing named instance. Which connection string fragment should you use?

- A. Initial Catalog= INST01\SQL01
- B. Initial Catalog= SQL01\INST01
- C. Data Source=INST01\SQL01
- D. Data Source=SQL01\INST01

---

**Answer: D**

---

**Question: 13**

You need to ensure that an exception is thrown when color names are set to less than two characters. What should you do?

- A. Add the following attribute to the Name property of the Color class in the entity designer file:  
`<StringLength(256, MinimumLength:=2)>`
- B. Add the following method to the Color partial class in Model\Color.vb:  
`Protected Overrides Sub OnPropertyChanged(ByVal [property] As String)  
If ([property] = "Name" AndAlso Me.Name.Length < 2) Then  
Throw New ArgumentOutOfRangeException("Name must be at least two characters")  
End If  
End Sub`
- C. Add the following code segment to the ContosoEntities partial class in Model\ContosoEntities.vb:  
`Public Overrides Function SaveChanges(ByVal options As System.Data.Objects.SaveOptions) As Integer  
Dim changes = Me.ObjectStateManager.GetObjectStateEntries(System.Data.EntityState.Added)  
For Each change In changes  
If (TypeOf change.Entity Is Color) Then  
If DirectCast(change.Entity, Color).Name.Length < 2 Then  
Throw New ArgumentException("Name too short")  
End If`

```
End If
Next
Return SaveChanges(options)
End Function
D. Add the following method to the Color partial class in Model\Color.vb:
Protected Overrides Sub OnPropertyChanging(ByVal [property] As String)
If ([property] = "Name" AndAlso Me.Name.Length < 2) Then
 Throw New ArgumentOutOfRangeException("Name must be at least two characters")
End If
End Sub
```

---

**Answer: D**

---

### **Question: 14**

---

The Entity Data Model file (.edmx file) must be updated to support inheritance mapping for Products and Components. You need to add the following code to the \Model\Model.edmx file:

- The code in line EX243 that maps the Product type
- the code in line EX250 that maps the Component type

What should you do?

A. Insert the following code at line EX243:

```
<Condition ColumnName="ProductType" IsNull="true" />
```

Insert the following code at line EX250:

```
<Condition ColumnName="PartType" IsNull="true" />
```

B. Insert the following code at line EX243:

```
<Condition ColumnName="ProductType" IsNull="true" />
```

Insert the following code at line EX250:

```
<Condition ColumnName="PartType" IsNull="true" />
```

C. Insert the following code at line EX243:

```
<Condition ColumnName="ProductType" IsNull="false" />
```

Insert the following code at line EX250:

```
<Condition ColumnName="PartType" IsNull="true" />
```

D. Insert the following code at line EX243:

```
<Condition ColumnName="ProductType" IsNull="false" />
```

Insert the following code at line EX250:

```
<Condition ColumnName="PartType" IsNull="false" />
```

---

**Answer: D**

---

### **Question: 15**

---

You are developing a new feature that displays an auto-complete list to users as they type color names. You have an existing ContosoEntities context object named context. To support the new feature you must develop code that will accept a string object named text containing a users partial input and will query the Colors database table to retrieve all color names that begin with that input. You need to create an Entity SQL (ESQL) query to meet the requirement. The query must not be vulnerable to a SQL injection attack. Which code segment should you use?

- A. Dim parameter = New ObjectParameter("text", HttpUtility.HtmlEncode(text) & "%")  
Dim result = context.CreateQuery(Of String)(

```
"SELECT (c.Name) FROM Colors AS c WHERE c.Name LIKE '@text'", parameter)
B. Dim parameter = New ObjectParameter("text", text & "%")
Dim result = context.CreateQuery(Of String)(
 "SELECT (c.Name) FROM Colors AS c WHERE c.Name LIKE @text", parameter)
C. Dim parameter = New ObjectParameter("text", text & "%")
Dim result = context.CreateQuery(Of String)(
 "SELECT VALUE (c.Name) FROM Colors AS c WHERE c.Name LIKE @text", parameter)
D. Dim parameter = New ObjectParameter("text", text & "%")
Dim result = context.CreateQuery(Of String)(
 "SELECT VALUE (c.Name) FROM Colors AS c WHERE c.Name LIKE '@text'", parameter)
```

---

**Answer: C**

---

Explanation:

Entity SQL supports two variants of the SELECT clause. The first variant, row select, is identified by the SELECT keyword, and can be used to specify one or more values that should be projected out.

Because a row wrapper is implicitly added around the values returned, the result of the query expression is always a multiset of rows.

Each query expression in a row select must specify an alias. If no alias is specified, Entity SQL attempts to generate an alias by using the alias generation rules.

The other variant of the SELECT clause, value select, is identified by the SELECT VALUE keyword. It allows only one value to be specified, and does not add a row wrapper.

A row select is always expressible in terms of VALUE SELECT, as illustrated in the following example.

ESQL Select

(<http://msdn.microsoft.com/en-us/library/bb399554.aspx>)

---

**Question: 16**

---

The application must provide a component part list for any product. The component part list must give the quantity of each distinct part that is required to manufacture that product. You need to create a LINQ expression that delivers a result of type IEnumerable(Of Tuple(Of Integer, Part)) to meet the requirements. Which expression should you use?

- A. Dim result As IEnumerable ( Of Tuple (Of Integer, Part)) = part.Descendants .  
ToDictionary ( Function(c) c ).  
Select(Function(d) Tuple.Create ( d.Value.Children.Count (), d.Key ))
- B. Dim result As IEnumerable ( Of Tuple (Of Integer, Part)) = part.Children .  
GroupBy ( Function(p) p ).  
Select(Function(g) Tuple.Create ( g.Count (), g.Key ))
- C. Dim result As IEnumerable ( Of Tuple (Of Integer, Part)) = part.Descendants .  
GroupBy ( Function(p) p ).  
Select(Function(g) Tuple.Create ( g.Count (), g.Key ))
- D. Dim result As IEnumerable ( Of Tuple (Of Integer, Part)) = part.Descendants .  
Distinct( ).  
GroupBy ( Function(p) p ).  
Select(Function(g) Tuple.Create ( g.Count (), g.Key ))
- E. Dim result As IEnumerable ( Of Tuple (Of Integer, Part)) = part.Children .  
Distinct( ).  
GroupBy ( Function(p) p ).  
Select(Function(g) Tuple.Create ( g.Count (), g.Key ))

---

**Answer: C**

---

**Question: 17**

---

You need to write a LINQ query that can be used against a ContosoEntities context object named context to find all parts that have a duplicate name. Which of the following queries should you use? (Each correct answer presents a complete solution. Choose two.)

- A. context.Parts.Where(Function(p) context.Parts.  
Any(Function(q) q.Name = p.Name AndAlso p.Id <> q.Id))
- B. context.Parts.GroupBy(Function(p) p.Name).  
Where(Function(g) g.Count() > 1).  
SelectMany(Function(x) x)
- C. context.Parts.SelectMany(Function(p) context.Parts.  
Select(Function(q) p.Name = q.Name AndAlso p.Id <> q.Id))
- D. context.Parts.  
Any(Function(p) context.Parts.  
Any(Function(q) p.Name = q.Name))

---

**Answer: A, B**

---