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70-487

Developing Windows Azure and Web Services

Testlet 1

Background

You are developing an ASP.NET MVC application in Visual Studio 2012 that will be used to process orders.

Business Requirements

The application contains the following three pages.

- A page that queries an external database for orders that are ready to be processed. The user can then process the order. ▪

A page to view processed orders.

- A page to view vendor information.

The application consumes three WCF services to retrieve external data.

Technical Requirements

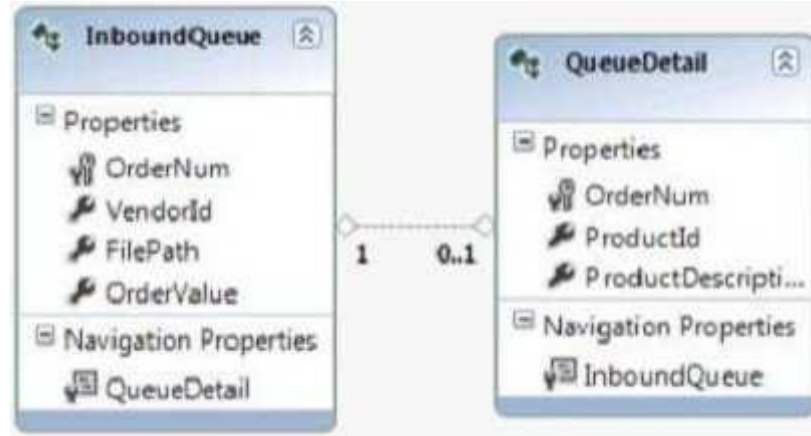
Visual Studio Solution:

The solution contains the following four projects.

- ExternalQueue: A WCF service project used to communicate with the external order database.
- OrderProcessor: An ASP.NET MVC project used for order processing and logging order metadata.
- OrderUpload: A WCF service project used to submit order data to an external data source. ▪
- Shipping: A WCF service project used to acquire shipping information.

ExternalQueue Project:

Entity Framework is used for data access. The entities are defined in the ExternalOrders.edmx file as shown in the following diagram.



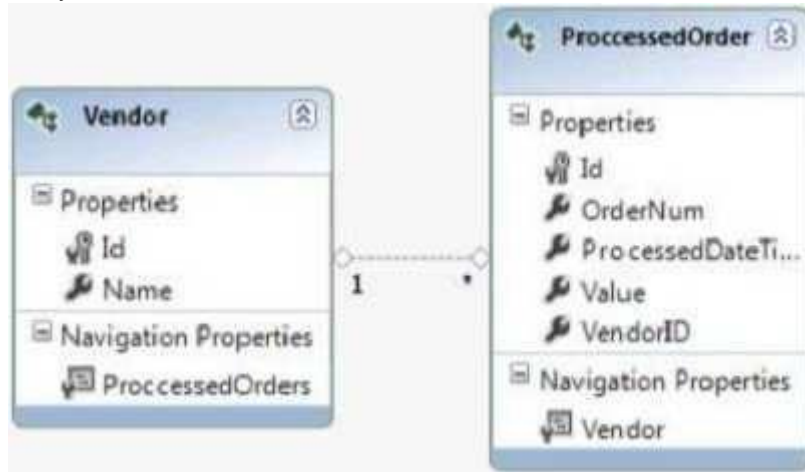
The project contains two services defined in the following files.

- IExternalQueueService.es
- ExternalQueueService.svc.

The ExternalQueue.Helpers namespace contains a definition for a class named OrderNotFound Exception.

OrderProcessor Project:

Entity Framework is used for data access. The entities are defined in the ProcessedOrders.edmx file as shown in the following diagram.



The classes are contained in the OrderProcessor.Entities namespace. The project contains the following two controllers. ▪

- InboundQueueController.es
- ProcessedOrderController.es

WCF service proxies to the ExternalQueue, Shipping and OrderUpload services have been generated by using the command prompt. The ExecuteCommandProcedure() method in the ExternalQueueService.svc file must run asynchronously.

The ProcessedOrderController controller has the following requirements.

- The GetVendorPolicy() method must enforce a 10 minute absolute cache expiration policy.
- The GetProcessedOrders() method must return a view of the 10 most recently processed orders.

OrderUpload Project:

The project contains two services defined in the following files.

- IUploadCallbackService.es

- UploadCallbackService.svc

Data Access is maintained in a file named UploadOrder.es.

Shipping Project:

Entity Framework is used for data access. The entities are defined in the ExternalOrders.edmx file as shown in the following diagram.



The Custom Tool property for ExternalOrders.edmx has been removed.

POCO classes for the Entity Model are located in the ShippingAddress.es file. The POCO entity must be loaded by using lazy loading.

The project contains two services defined in the following files. ▪ IShippingService.es ▪ ShippingService.svc.

The IShippingService contract must contain an operation that receives an order number as a parameter. The operation must return a class named ShippingInfo that inherits from a class named State.

Application Structure

ExternalQueue\IExternalQueueService.cs

```
IQ01 using System.Collections.Generic;
IQ02 using System.ServiceModel;
IQ03 using ExternalQueue.Helpers;
IQ04
IQ05 namespace ExternalQueue
IQ06 {
IQ07     [ServiceContract]
IQ08     public interface IExternalQueueService
IQ09     {
IQ10         [OperationContract]
IQ11         List<Entities.InboundQueue> GetExternalOrders();
IQ12
IQ13         [FaultContract(typeof(OrderNotFoundException))]
IQ14         [OperationContract]
IQ15         void DeleteExternalOrder(int orderNum);
IQ16
IQ17         [OperationContract]
IQ18         Entities.InboundQueue GetExternalOrder(int orderNum);
IQ19     }
IQ20 }
```

OrderProcessor\IExternalQueueService.svc

```
EQ01 using System;
EQ02 using System.Collections.Generic;
EQ03 using System.Linq;
EQ04 using System.Data.EntityClient;
EQ05 using System.Data;
EQ06 using ExternalQueue.Entities;
EQ07 using System.Data.Objects;
EQ08 using ExternalQueue.Helpers;
EQ09 using System.ServiceModel;
EQ10 using System.Threading.Tasks;
EQ11
EQ12 namespace ExternalQueue
EQ13 {
EQ14     public class ExternalQueueService : IExternalQueueService
EQ15     {
EQ16         public List<Entities.InboundQueue> GetExternalOrders()
EQ17         {
EQ18             List<InboundQueue> queueItems = new List<InboundQueue>();
EQ19             return queueItems;
EQ20         }
EQ21
EQ22         public void DeleteExternalOrder(int orderNum)
EQ23         {
EQ24             using (var context = new ExternalOrdersEntities())
EQ25             {
EQ26                 var orders = context.InboundQueues.Where(i => i.OrderNum ==
orderNum).ToList();
EQ27                 if (orders.Count() > 0)
EQ28                 {
EQ29                     using (EntityCommand cmd = new EntityCommand())
EQ30                     {
EQ31                         cmd.CommandText = "ExternalOrdersEntities.uspInboundQueueDelete";
EQ32                         cmd.CommandType = CommandType.StoredProcedure;
EQ33                         EntityParameter param = new EntityParameter();
EQ34                         param.Value = orderNum;
EQ35                         param.ParameterName = "orderNum";
EQ36                         cmd.Parameters.Add(param);
EQ37                         ExecuteCommandProcedure(cmd);
EQ38                     }
EQ39                 }
EQ40             else
EQ41             {
EQ42                 OrderNotFoundException ex = new OrderNotFoundException();
```

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ExternalQueue\ProcessedOrderController.cs

```
PC01 using System;
PC02 using System.Collections.Generic;
PC03 using System.Linq;
PC04 using System.Runtime.Caching;
PC05 using System.Web.Mvc;
PC06 using OrderProcessor.Entities;
PC07 using OrderProcessor.Helpers;
PC08 using System.Configuration;
PC09
PC10 namespace OrderProcessor.Controllers
PC11 {
PC12     public class ProcessedOrderController : Controller
PC13     {
PC14         public ActionResult GetProcessedOrders()
PC15         {
PC16             using (var context = new ProcessedOrders())
PC17             {
PC18                 List<Entities.ProcessedOrder> orders = new List<ProcessedOrder>();
PC19                 return View(orders);
PC20             }
PC21         }
PC22
PC23         private ObjectCache cache {get { return MemoryCache.Default; }}
PC24
PC25         public ActionResult GetVendors()
PC26         {
PC27             List<Entities.Vendor> vendors = cache.Get
PC28             ("vendorKey") as List<Entities.Vendor>;
PC29             if (vendors == null)
PC30             {
PC31                 using (var context = new ProcessedOrders())
PC32                 {
PC33                     vendors = context.Vendors.ToList();
PC34                 }
PC35             }
PC36             return View(vendors);
PC37         }
PC38
PC39         private CacheItemPolicy GetVendorPolicy()
PC40         {
PC41             CacheItemPolicy vendorPolicy = new CacheItemPolicy();
```


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OrderProcessor\InboundQueueController.cs

```
IC01 using System;
IC02 using System.Collections.Generic;
IC03 using System.Web.Mvc;
IC04 using OrderProcessor.Entities;
IC05 using ExternalQueue.Entities;
IC06 using System.ServiceModel;
IC07 using System.Collections;
IC08 using ExternalQueue.Helpers;
IC09 using OrderProcessor.Helpers;
IC10 using System.Linq;
IC11
IC12 namespace OrderProcessor.Controllers
IC13 {
IC14     public class InboundQueueController : Controller
IC15     {
IC16         public ActionResult GetQueueItems()
IC17         {
IC18             IEnumerable<InboundQueue> inboundOrders = Enumerable.Empty<InboundQueue>();
IC19             return View(inboundOrders);
IC20         }
IC21
IC22         public ActionResult ProcessOrder(int orderNum)
IC23         {
IC24             ExternalQueueServiceClient qService = new ExternalQueueServiceClient();
IC25             InboundQueue externalOrder = qService.GetExternalOrder(orderNum);
IC26             if (externalOrder != null)
IC27             {
IC28                 using (var context = new ProcessedOrders())
IC29                 {
IC30                     ProcessedOrder order = new ProcessedOrder();
IC31                     order.OrderNum = externalOrder.OrderNum;
IC32                     order.Value = Convert.ToDouble(externalOrder.OrderValue);
IC33                     order.VendorID = Convert.ToInt32(externalOrder.VendorId);
IC34                     order.ProcessedDateTime = DateTime.Now;
IC35                     context.ProcessedOrders.Add(order);
IC36                     context.SaveChanges();
IC37                 }
IC38                 qService.DeleteExternalOrder(orderNum);
IC39             }
IC40             return RedirectToAction("GetQueueItems");
IC41         }
IC42     }
```

OrderUpload\IUploadCallbackService.cs

```
IU01 using System.ServiceModel;
IU02
IU03 namespace OrderUpload
IU04 {
IU05     [ServiceContract(CallbackContract = typeof(IUploadCallback))]
IU06     public interface IUploadCallbackService
IU07     {
IU08         [OperationContract]
IU09         void UploadOrder(int orderNum);
IU10     }
IU11
IU12     public interface IUploadCallback
IU13     {
IU14         [OperationContract]
IU15         decimal GetOrderValue(int orderNum);
IU16     }
IU17 }
```

OrderUpload\UploadCallbackService.svc

```
US01 using System.ServiceModel;
US02
US03 namespace OrderUpload
US04 {
US05     public class UploadCallbackService : IUploadCallbackService
US06     {
US07         public void UploadOrder(int orderNum)
US08         {
US09         }
US10     }
US11 }
```

Shipping\IShippingService.cs

```
IS01 using System.Runtime.Serialization;
IS02 using System.ServiceModel;
IS03
IS04 namespace Shipping
IS05 {
IS06     public interface IShippingService
IS07     {
IS08     }
IS09 }
IS10 }
```

Shipping\ShippingAddress.cs

```
SA01 using System.Collections.Generic;
SA02 using System.Data.Objects;
SA03
SA04 namespace Shipping.POCO
SA05 {
SA06     public class ShippingAddress
SA07     {
SA08         public int VendorId { get; set; }
SA09         public string Address { get; set; }
SA10         public string City { get; set; }
SA11         public int StateId { get; set; }
SA12         public string Zip { get; set; }
SA13         public State State { get; set; }
SA14     }
SA15
SA16     public class State
SA17     {
SA18         public int StateId { get; set; }
SA19         public string StateName { get; set; }
SA20         public List<ShippingAddress> ShippingAddresses { get; set; }
SA21     }
SA22 }
```

QUESTION 1

You need to regenerate the service proxies to include task-based asynchronous method signatures.

Which command should you use?

- A. `aspnet_regiis.exe /t:code http://localhost:62965/UploadCallbackService.svc`
- B. `svcutil.exe /t:code http://localhost:62965/UploadCallbackService.svc`
- C. `aspnet_compiler.exe /t:code http://localhost:62965/UploadCallbackService.svc`
- D. `aspnet_regiis.exe /t:code http://localhost:62965/UploadService.svc`
- E. `svcutil.exe /t:code http://localhost:62965/UploadService.svc`

Correct Answer: B

Section: [none]

Explanation

Explanation/Reference:

<http://msdn.microsoft.com/en-us/library/aa347733.aspx>

QUESTION 2

DRAG DROP

You need to modify the ExecuteCommandProcedure() method to meet the technical requirements.

Which code segment should you use?



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Select and Place:

Answer area

```
await connection.OpenAsync();
```

```
await command.ExecuteNonQueryAsync();
```

```
connection.OpenAsync();
```

```
command.OpenAsync();
```

```
await command.QueryAsync();
```

```
private async Task ExecuteCommandProcedure (EntityCommand command)
{
    using (EntityConnection connection
        = new EntityConnection("name=ExternalOrdersEntities"))
    {
        command.Connection = connection;
        // 
    }
}
```

Correct Answer:

Section: [none]

Explanation

Explanation/Reference:

QUESTION 3

Answer area

`connection.OpenAsync();`

`command.OpenAsync();`

`await command.QueryAsync();`

```
private async Task ExecuteCommandProcedure (EntityCommand command)
{
    using (EntityConnection connection
        = new EntityConnection("name=ExternalOrdersEntities"))
    {
        command.Connection = connection;
        await connection.OpenAsync();
        await command.ExecuteNonQueryAsync();
    }
}
```

The GetVendors() action in the ProcessedOrderController controller is querying the database each time it is run. The GetVendors() action must query the database only if the cache is null.

You need to add code to the action at line PC33 to cache the data.

Which code segment can you use? (Each correct answer presents a complete solution. Choose all that apply.)

- A. `cache.Set(new CacheItem("vendorKey", vendors), GetVendorPolicy());`
- B. `cache.Add("vendors", vendors, new CacheItemPolicy());`
- C. `cache.Add(new CacheItem("vendorKey", vendors), GetVendorPolicy());`
- D. `cache.AddOrUpdateExisting("vendorKey", context, new CacheItemPolicy());`

Correct Answer: AC

Section: [none]

Explanation

Explanation/Reference:

QUESTION 4

The QueueDetail entity type must inherit from the InboundQueue entity type in the ExternalQueue service project using table-per-type inheritance.

You need to modify the entities in the designer.

What should you do? (Each correct answer presents part of the solution. Choose all that apply.)

- A. Remove the OrderNum property in InboundQueue.
- B. Remove the OrderNum property in QueueDetail.
- C. Set the QueueDetail BaseType to InboundQueue.
- D. Remove the association between the entities.
- E. Set the InboundQueue BaseType to QueueDetail

Correct Answer: BCD

Section: [none]

Explanation

Explanation/Reference:

Explanation:

References: <http://www.robbagby.com/entity-framework/entity-framework-modeling-table-per-type-inheritance/>

Testlet 1

Background

You are developing an online bookstore web application that will be used by your company's customers.

Technical Requirements

General requirements:

- The web store application must be an ASP.NET MVC application written in Visual Studio.
- The application must connect to a Microsoft SQL database.
- TheGetTop100Books()method is mission critical and must return data as quickly as possible. It should take advantage of fast, forward-only, read-only methods of reading data.
- TheImportBooks()method must keep a copy of the data that can be accessed while new books are being imported without blocking reads.
- TheCreateMonthlyTotalsReport()method must lock the data and prevent others from updating or inserting new rows until complete.

- The college textbook area of the web application must get data from a daily updated CSV file.
- The children's book area of the web application must get data directly from a local database. It must use a connection string. It must also support access to the stored procedures on a database. Further, it is required to have strongly typed objects. Finally, it will require access to databases from multiple vendors and needs to support more than one-to-one mapping of database tables.
- The cookbook functionality is contained within a client-side application that must connect to the server using HTTP and requires access to the data using JavaScript.
- TheBookApiControllerclass must have a method that is able to perform ad-hoc queries using OData.

The RESTful API of the bookstore must expose the following endpoint.

Action: Get a list of all books

HTTP method: GET

Relative URI: /books

Action: Get a book by id

HTTP method: GET

Relative URI: /books/id

Action: Create a new book

HTTP method: POST

Relative URI: /books

Action: Update a book

HTTP method: PUT

Relative URI: /books/id

Action: Delete a book

HTTP method: DELETE

Relative URI: /books/id

Application Structure

Main

```
public class Book
{
    public int Id { get; set; }
    public string Name { get; set; }
    public string Title { get; set; }
    public decimal Price { get; set; }
    public DateTime PublishDate { get; set; }
    public int Sales { get; set; }
    public static void SaveFeaturedBooks(IEnumerable<Book> books, string file)
    {
        ...
    }
}
```

```

public class BookApiController : ApiController
{
    private readonly IBookRepository bookRepository;
    public BookApiController(IBookRepository bookRepository)
    {
        this.bookRepository = bookRepository;
    }
    public List<Book> Get(int id)
    {
        var book = bookRepository.Find(id);
        if (book == null)
        {
            throw new HttpResponseMessage(HttpStatusCode.NotFound);
        }
        return new List<Book> { book };
    }
    public HttpResponseMessage Post(Book value)
    {
        if (ModelState.IsValid)
        {
            bookRepository.InsertOrUpdate(value);
            bookRepository.Save();
            var response = new HttpResponseMessage(HttpStatusCode.Created);
            string uri = Url.Route(null, new { id = value.Id });
            response.Headers.Location = new Uri(Request.RequestUri, uri);
            return response;
        }
        throw new HttpResponseMessage(HttpStatusCode.BadRequest);
    }
    public HttpResponseMessage Put(int id, Book value)
    {
        if (ModelState.IsValid)
        {
            bookRepository.InsertOrUpdate(value);
            bookRepository.Save();
            return new HttpResponseMessage(HttpStatusCode.NoContent);
        }
        throw new HttpResponseMessage(HttpStatusCode.BadRequest);
    }
    public void Delete(int id)
    {
        var book = bookRepository.Find(id);
        if (book == null)
        {
            throw new HttpResponseMessage(HttpStatusCode.NotFound);
        }
        bookRepository.Delete(id);
    }
}

```

```

private static void ImportBooks()
{
    using (SqlConnection connection = new SqlConnection(_connectionString))
    {
        connection.Open();
        SqlCommand command = connection.CreateCommand();
        SqlTransaction transaction = connection.BeginTransaction();
        command.Connection = connection;
        command.Transaction = transaction;
        try
        {
            command.CommandText = _commandText;
            command.ExecuteNonQuery();
            transaction.Commit();
        }
        catch (Exception ex)
        {
            transaction.Rollback();
        }
    }
}

private static void CreateMonthlyTotalsReports()
{
    using (SqlConnection connection = new SqlConnection(_connectionString))
    {
        connection.Open();
        SqlCommand command = connection.CreateCommand();
        SqlTransaction transaction = connection.BeginTransaction();
        command.Connection = connection;
        command.Transaction = transaction;
        try
        {
            command.CommandText = _reportCommandText;
            command.ExecuteNonQuery();
            transaction.Commit();
        }
        catch (Exception ex)
        {
            transaction.Rollback();
        }
    }
}

```

PurchaseOrders.xml

PurchaseOrders.xml

```
<?xml version="1.0"?>
<aw:PurchaseOrder>
  aw:PurchaseOrderNumber="99503"
  aw:OrderDate="1999-10-20"
  xmlns:aw="http://www.adventure-works.com">
    <aw:Address aw:Type="Shipping">
      <aw:Name>Ellen Adams</aw:Name>
      <aw:Street>123 Maple Street</aw:Street>
      <aw:City>Mill Valley</aw:City>
      <aw:State>CA</aw:State>
      <aw:Zip>10999</aw:Zip>
      <aw:Country>USA</aw:Country>
    </aw:Address>
    <aw:Address aw:Type="Billing">
      <aw:Name>Tai Yee</aw:Name>
      <aw:Street>8 Oak Avenue</aw:Street>
      <aw:City>Old Town</aw:City>
      <aw:State>PA</aw:State>
      <aw:Zip>95819</aw:Zip>
      <aw:Country>USA</aw:Country>
    </aw:Address>
    <aw:DeliveryNotes> Please leave packages in shed by driveway.</aw:DeliveryNotes>
    <aw:Items>
      <aw:Item aw:PartNumber="872-AA">
        <aw:ProductName>Lawnmower</aw:ProductName>
        <aw:Quantity>1</aw:Quantity>
        <aw:USPrice>148.95</aw:USPrice>
        <aw:Comment>Confirm this is electric</aw:Comment>
      </aw:Item>
      <aw:Item aw:PartNumber="926-AA">
        <aw:ProductName>Baby Monitor</aw:ProductName>
        <aw:Quantity>2</aw:Quantity>
        <aw:USPrice>39.98</aw:USPrice>
        <aw:ShipDate>1999-05-21</aw:ShipDate>
      </aw:Item>
    </aw:Items>
  </aw:PurchaseOrder>
```


FeaturedBooks.xml

FeaturedBooks.xml

```
<?xml version="1.0" encoding="utf-8" ?>
<featured>
  <book>
    <id>1</id>
    <title>Science</title>
  </book>
  <book>
    <id>1</id>
    <title>Math</title>
  </book>
  <book>
    <id>1</id>
    <title>History</title>
  </book>
</featured>
```

QUESTION 1

You need to update the CreateMonthlyTotalsReports() method to use database transactions. Which code segment should you use?

- A. SqlConnection.BeginTransaction(IsolationLevel.Chaos);
- B. SqlConnection.BeginTransaction(IsolationLevel.Serializable);
- C. SqlConnection.BeginTransaction(IsolationLevel.ReadCommitted);
- D. SqlConnection.BeginTransaction(IsolationLevel.ReadUncommitted);

Correct Answer: B

Section: [none]

Explanation

Explanation/Reference:

Explanation:

Scenario: The CreateMonthlyTotalsReport() method must lock the data and prevent others from updating or inserting new rows until complete.

The highest isolation level, Serializable, provides a high degree of protection against interruptive transactions, but requires that each transaction complete before any other transactions are allowed to operate on the data.

With Serializable volatile data can be read but not modified, and no new data can be added during the transaction.

QUESTION 2

You need to create an OData query expression to return the ten books with the smallest number of sales.

Which query expression should you use?

- A. /books?orderby=sales desc&\$count=10
- B. /search?orderby=sales asc&\$count=10
- C. /search?orderby=sales desc&\$top=10
- D. /books?orderby=sales asc&\$top=10

Correct Answer: D

Section: [none]

Explanation

Explanation/Reference:

Explanation:

To get the smallest number of sales we should use ascending (asc) ordering.

From scenario: RESTful API endpoints include:

Action: Get a list of all books

HTTP method: GET

Relative URI: /books

QUESTION 3

You need to choose the appropriate data access technology for the children's book area of the web application.

Which data access technology should you choose?



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- A. ADO.NET Entity Framework
- B. WCF Data Services

C. LINQ to SQLD. Web Service

Correct Answer: A

Section: [none]

Explanation

Explanation/Reference:

Explanation:

Scenario: The children's book area of the web application must get data directly from a local database. It must use a connection string. It must also support access to the stored procedures on a database. Further, it is required to have strongly typed objects. Finally, it will require access to databases from multiple vendors and needs to support more than one-to-one mapping of database tables.

QUESTION 4

You need to create an OData filter expression that returns books that match the following characteristics: ▪

Published after 1/1/2000

▪ Have "Science" as the first word

Which filter statement should you use?

- A. /books?\$filter=PublishDate gt datetime'2000-1-1' and startswith(Title, 'Science')
- B. /books?\$filter=PublishDate greaterthan datetime'2000-1-1' and startswith(Title, 'Science')
- C. /search?\$filter=PublishDate greaterthan datetime'2000-1-1' and beginswith (Title, 'Science')
- D. /search?\$filter=PublishDate gt datetime'2000-1-1' and beginswith(Title, 'Science')

Correct Answer: A

Section: [none]

Explanation

Explanation/Reference:

Explanation:

The gt keyword is used for the greater than comparison.

The startswith keyword is used to compare the beginning of a string.

Example: Returns entry numbers 611 and higher.

filter= Entry_No gt 610

Example: Returns all customers names beginning with "S".

filter=startswith(Name, 'S')

References: [https://msdn.microsoft.com/en-us/library/ee169248\(v=nav.90\).aspx](https://msdn.microsoft.com/en-us/library/ee169248(v=nav.90).aspx)

QUESTION 5

You need to return the list of the top 100 books for the GetTopBooks() method.

Which type should you use to retrieve the data?

- A. DataTable
- B. SqlDataReader
- C. DataView
- D. DataSet

Correct Answer: B

Section: [none]

Explanation

Explanation/Reference:

Explanation:

From scenario: TheGetTop100Books() method is mission critical and must return data as quickly as possible. It should take advantage of fast, forward-only, readonly methods of reading data.

A SqlDataReader is a type that is good for reading data in the most efficient manner possible.

References: <http://csharp-station.com/Tutorial/AdoDotNet/Lesson04>

QUESTION 6

You are preparing to write the data access code for the children's book area of the web site.

You need to review the requirements and identify the appropriate data access technology.

What should you do?

- A. Use LINQ to SQL
- B. Use the WCF Data Services.
- C. Use a Web Service.
- D. Use ADO.NET Entity Framework.

Correct Answer: D

Section: [none]

Explanation

Explanation/Reference:

<https://www.gratisexam.com/>

Using the Entity Framework, developers issue queries using LINQ, then retrieve and manipulate data as strongly typed objects.

From scenario: The children's book area of the web application must get data directly from a local database. It must use a connection string. It must also support access to the stored procedures on a database. Further, it is required to have strongly typed objects. Finally, it will require access to databases from multiple vendors and needs to support more than one-to-one mapping of database tables. References: <http://www.entityframeworktutorial.net/what-is-entityframework.aspx>

Testlet 1

General Overview

Adventure Works Cycles is a travel agency for cycling enthusiasts. In recent years, Adventure Works Cycles has begun renting exotic cars to its clients. You are developing a new web application that will provide Adventure Works Cycle customers with the ability to locate and rent exotic throughout the world.

Application Overview

The web application will be hosted in Azure. The application will provide users with the ability to search for a car by using advanced filtering options, such as the car brand, model, year, and price. All of this information will be stored as strings and will be displayed as drop-down lists.

The brand and model lists that will be displayed on the home page of the web application will be retrieved from Windows Communication Foundation (WCF) services hosted in the on-premises environment.

The home page will be named `home.aspx` and will be developed by using Microsoft ASP.NET MVC. The business logic will be developed by using ASP.NET Web API.

The MVC front-end layer and the Web API will communicate by using JSON. The business logic will have a call to an assembly named `CarBusinessLogic.dll`. For responding, you are creating a worker role named `ReportApp` in Azure that will collect data from all of the searches made by using the web application. The application will communicate with `ReportApp` by using messages.

Requirements

Security Requirements

Adventure Works Cycles identifies the following security requirements for the web application:

- The Web API must only accept one data format.
- The `CarBusinessLogic.dll` assembly must be strongly-named.
- Communication between the on-premises WCF service and Azure must be encrypted. **Logging**

Requirements

In the Web API, you plan to create a controller named `CarController`. Before any action in `CarController` is executed, the following line of code must execute first.

```
Debug.WriteLine("pre-processing logging");
```

Performance Requirements

Adventure Works Cycles identifies the following performance requirements for the web application:

- After the initial deployment, any changes to the business logic of the Web API must cause minimal downtime to the web application in the production environment.
- The action in the Web API that returns the car brand must be asynchronous, while all other actions must be synchronous.
- When `home.aspx` is displayed, the rendered page must be cached for 10 minutes.
- The web application will be deployed to multiple instances.

Financial Requirements

ReportApp will shut down every night. However, data from the searches performed during the night must still be collected.

QUESTION 1

You need to compile CarBusinesLogic.dll by using Microsoft Visual Studio.

Which attribute should you add before you compile the dynamic-link library (DLL)?

- A. System.Reflection.AssemblyConfigurationAttribute
- B. System.Reflection.AssemblyKeyFileAttribute
- C. AssemblyFlagsAttribute
- D. System.Reflection.AssemblyAlgorithmIdAttribute

Correct Answer: B

Section: [none]

Explanation

Explanation/Reference:

Explanation:

Scenario: The CarBusinessLogic.dll assembly must be strongly-named.

One way to sign an assembly with a strong name is by using assembly attributes to insert the strong name information into your code. You can use either the AssemblyKeyFileAttribute or the AssemblyKeyNameAttribute attribute, depending on where the key file to be used is located.

Note: To sign an assembly with a strong name by using attributes

- Add the System.Reflection.AssemblyKeyFileAttribute or AssemblyKeyNameAttribute attribute to your source code file, and specify the name of the file or container that contains the key pair to use when signing the assembly with a strong name.
- Compile the source code file normally.

References:[https://msdn.microsoft.com/en-us/library/xc31ft41\(v=vs.110\).aspx](https://msdn.microsoft.com/en-us/library/xc31ft41(v=vs.110).aspx)

QUESTION 2

You need to identify a solution to display the car brands.

What should you include in the solution?

- A. Azure Automation
- B. Azure RemoteApp
- C. the Service Bus queue
- D. a virtual private network (VPN)

Correct Answer: C

Section: [none]

Explanation

Explanation/Reference:

Explanation:

Azure Service Bus Messaging can safely use the QueueClient object for sending messages from concurrent asynchronous operations and multiple threads.

Scenario: The action in the Web API that returns the car brand must be asynchronous, while all other actions must be synchronous.

References: <https://docs.microsoft.com/en-us/azure/service-bus-messaging/service-bus-performance-improvements>

QUESTION 3

You need to perform the initial deployment of the web application. You must ensure that the application meets the performance requirements.

Which file should you modify before you deploy the application?



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- A. the service definition file (.csdef)
- B. the application configuration file (app.config)
- C. the packages configuration file (packages.config)
- D. the Global.asax file (.asax)

Correct Answer: A

Section: [none]

Explanation

Explanation/Reference:

Explanation:

You use cscfg file to define various settings related to your cloud application (in ConfigurationSettings section). Like app.config file, you get to define other things (e.g.number of instances of your cloud application) in the cscfg file. You could change the settings in a cscfg file on the fly using either the portal or Service Management API without having to repackage and redeploy the application.

Scenario: After the initial deployment, any changes to the business logic of the Web API must cause minimal downtime to the web application in the production environment.

QUESTION 4

You need to recommend a solution to meet the performance requirements for home.aspx.

What should you recommend?

- A. ViewState
- B. MemoryCache
- C. OutputCache
- D. ApplicationCache

Correct Answer: C

Section: [none]

Explanation

Explanation/Reference:

Explanation:

Scenario: When home.aspx is displayed, the rendered page must be cached for 10 minutes.

Page output caching

The output of an action method on a controller can be cached using the [OutputCache] attribute on the method. Actions methods that return views will have the rendered page cached, while methods returning JSON data will have that data saved. A number of properties on the OutputCacheAttribute class control how data is cached.

CacheProfile- If a number of methods will have the same cache settings, it makes sense to use the web.config file to create a cache profile that can be used across all these methods.

The Duration attribute of the CacheProfile determines how long, in seconds, the output should be cached. To save an item for 10 minutes, duration would be set to 600.

[OutputCache(Duration=600)]

References: <http://failedturing.blogspot.se/2014/10/microsoft-70-486-design-caching-strategy.html>

Question Set 1

QUESTION 1

You are developing an ASP.NET MVC web application that contains the following HTML.

<table id= "customer" ></table>

You also have an ASP.NET Web API application that contains a call for retrieving customers.

You must send and retrieve the data in the most compact format possible.

You need to update the HTML for the customers table to contain data from the Web API application.

Which script segment should you use?

C A. `<script>`
 `$(function () {`
 `var $customers = $("#customers");`
 `$.ajax({`
 `url: "api/customers",`
 `dataType: "json",`
 `success: function (data) {`
 `...`
 `}`
 `});`
 `});`
`</script>`

C B. `<script>`
 `$(function () {`
 `var $customers = $("#customers");`
 `$.xml({`
 `url: "api/customers",`
 `dataType: "ajax",`
 `success: function (data) {`
 `...`
 `}`
 `});`
 `});`
`</script>`

C C. `<script>`
 `$(function () {`
 `var $customers = $("#customers");`
 `$.json({`
 `url: "api/customers",`
 `dataType: "ajax",`
 `success: function (data) {`
 `...`
 `}`
 `});`
 `});`
`</script>`

C D. `<script>`
 `$(function () {`
 `var $customers = $("#customers");`
 `...`



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

Correct Answer: A

Section: [none]

Explanation

Explanation/Reference:

QUESTION 2

DRAG DROP

You are developing an ASP.NET MVC Web API image management application.

The application must meet the following requirements:

- It must send or receive image data without the use of a buffer.
- It must allow up to 4 MB of image data to be received. ▪

It must allow up to 3 MB of image data to be sent.

You need to complete the code to meet the requirements.

What should you do? (To answer, drag the appropriate code segments to the correct location or locations in the answer area. Each code segment may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.) **Select and Place:**

Answer area

config

server

MaxBufferSize

MaxReceivedMessageSize

MaxConcurrentRequests

Streamed

Buffered



```
class Program
{
    private static string _baseAddress = "http://localhost:8080/";

    static void Main(string[] args)
    {
        var config = new HttpSelfHostConfiguration(_baseAddress);
        config.Routes.MapHttpRoute(
            name: "DefaultApi",
            routeTemplate: "api/{controller}/{id}",
            defaults: new { id = RouteParameter.Optional }
        );
```

. = 1024 * 1024 * 3;

. = 1024 * 1024 * 4;

.TransferMode =

TransferMode. ;

```
var server = new HttpSelfHostServer(config);
server.OpenAsync().Wait();
```

```
}
```

Correct Answer:

Answer area

config

server

MaxBufferSize

MaxReceivedMessageSize

MaxConcurrentRequests

Streamed

Buffered

```
class Program
{
    private static string _baseAddress = "http://localhost:8080/";

    static void Main(string[] args)
    {
        var config = new HttpSelfHostConfiguration(_baseAddress);
        config.Routes.MapHttpRoute(
            name: "DefaultApi",
            routeTemplate: "api/{controller}/{id}",
            defaults: new { id = RouteParameter.Optional }
        );
    }
}
```

config . MaxBufferSize = 1024 * 1024 * 3;

config . MaxReceivedMessageSize = 1024 * 1024 * 4;

config . TransferMode =

TransferMode. Streamed ;

```
var server = new HttpSelfHostServer(config);
server.OpenAsync().Wait();
}
```

Section: [none]
Explanation

Explanation/Reference:

The config, not Buffered or Streamed, object is used to change attributes.

The TransferMode should be set to Streamed.

References: [https://msdn.microsoft.com/en-us/library/ms731913\(v=vs.110\)](https://msdn.microsoft.com/en-us/library/ms731913(v=vs.110))

QUESTION 3

You are planning to migrate websites from IIS 6 to IIS 7.5.

You do not have access to SSH or a VPN.

You need to select a deployment tool to securely migrate the websites.

Which tool should you use?

- A. RoboCopy
- B. Web Deploy
- C. Microsoft command-line FTP
- D. xCopy

Correct Answer: B

Section: [none]

Explanation

Explanation/Reference:

References: <https://www.iis.net/downloads/microsoft/web-deploy>

QUESTION 4

You are developing an ASP.NET MVC application.

Applications can be deployed to remote servers only by administrators who have elevated privileges. The administrators do not have access to Visual Studio 2012.

You need to select a deployment tool to deploy the application to remote servers for testing.

Which tool should you use?

- A. Copy Web Site Tool
- B. One-Click Publish
- C. Publish Web Site Tool
- D. Web Deployment Package

Correct Answer: D

Section: [none]

Explanation

Explanation/Reference:

QUESTION 5

You are preparing to develop a set of libraries for a company.

The libraries must be shared across the company.

You need to create a remote NuGet feed that exposes the libraries.

What should you do? (Each answer presents part of the solution. Choose all that apply.)

- A. Install the NuGet.Feed Package.
- B. Install the NuGet.Server Package.
- C. Create a new Empty Web Site in Visual Studio.
- D. Configure the Packages folder located in the appSettings section of the web application's Web.config.
- E. Add packages to the Packages folder.
- F. Create a new Empty Web Application in Visual Studio.

Correct Answer: BDEF

Section: [none]

Explanation

Explanation/Reference:

Explanation:

B: NuGet.Server is a package provided by the .NET Foundation that creates an ASP.NET application that can host a package feed on any server that runs IIS.

The process is as follows:

- (F) Create an empty ASP.NET Web application in Visual Studio and add the NuGet.Server package to it.
- (E) Configure the Packages folder in the application and add packages.
- Deploy the application to a suitable server.

D: Configuring the Packages folder

With NuGet.Server 1.5 and later, you can more specifically configure the package folder using the appSetting/packagesPath value in web.config:

```
<appSettings>
```

```
<!-- Set the value here to specify your custom packages folder. -->
```

<https://www.gratisexam.com/>

```
<add key="packagesPath" value="C:\MyPackages" />
</appSettings>
```

References: <https://docs.microsoft.com/en-us/nuget/hosting-packages/nuget-server>

QUESTION 6

You develop an ASP.NET MVC application that is secured by using SSL. You are ready to deploy the application to production.

The deployment package must include the installation of the SSL certificate.

You need to configure the deployment package to meet the requirement.

What should you do?

- A. Create a web publish pipeline target file with a custom web deploy target.
- B. In the Package/Publish settings of the project, select the All Files in this project option.
- C. Extend the CopyAllFilesToSingleFolder target in the project file.
- D. In the Build Events settings of the project, configure a pre-build event to include the SSL certificate.

Correct Answer: A

Section: [none]

Explanation

Explanation/Reference:

Explanation:

Extending the Web Publishing Pipeline

The Web Publishing Pipeline (WPP) is the process that Visual Studio uses when you create a deployment package or use one-click publish.

Some aspects of the WPP can be extended by modifying the XML files that control MSBuild behavior. For example, tasks that that you can handle by modifying XML files include the following:

- * Installing SSL certificates on the destination server.
- * Excluding specific Web application files or folders from the package.
- * Precompiling the Web application before the package is created.
- * Installing application assemblies in the GAC on the destination server. * Updating registry keys on the destination server.

References: [https://msdn.microsoft.com/en-us/library/dd394698\(v=vs.100\)](https://msdn.microsoft.com/en-us/library/dd394698(v=vs.100))

QUESTION 7

You are developing a library to support multiple ASP.NET MVC web applications on a shared server. The library provides implementations of security algorithms.

If a problem with any of the security algorithms is discovered, a new version of the library must be created and deployed. Application downtime during the update must be minimized.

You need to ensure that the new version of the library will be used by all applications as soon as possible.

What should you do?



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- A. Build the web applications and include the security assembly as an embedded resource.
When an update is needed, copy the new assembly to the bin directory for the application.
- B. Sign all assemblies in each application with the same key used to sign the security assembly. When an update is needed, create a new key pair and re-sign all assemblies.
- C. Build the security assembly as a netmodule in a shared location.
Use the assembly linker to merge the netmodule into the assemblies for the application.
When an update is needed, update the netmodule in the shared location.
- D. Install the security assembly in the Global Assembly Cache (GAC). When an update is needed, update the assembly in the GAC.

Correct Answer: D

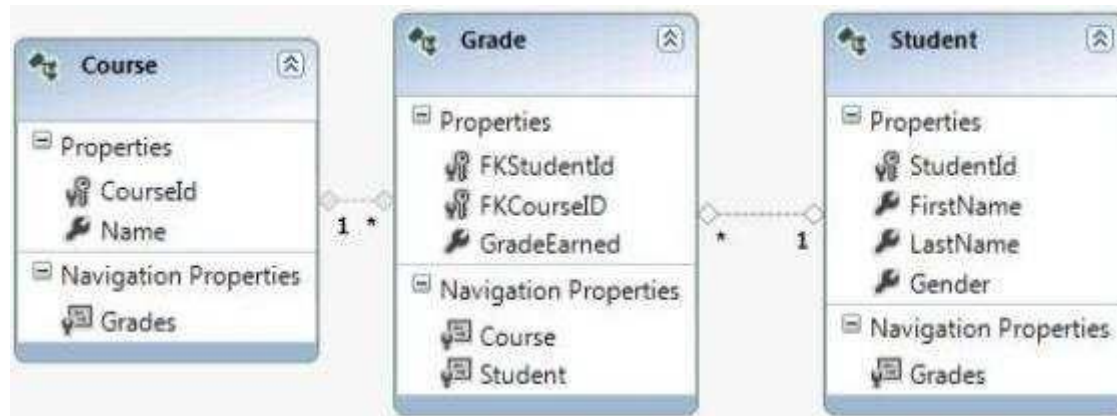
Section: [none]

Explanation

Explanation/Reference:

QUESTION 8

You are developing an application in Visual Studio 2012 to display student information. The application contains the following Entity Framework model.



The application contains a WCF data service named DirectoryService.svc.

You need to create a query expression to display all of the grades for students whose first name is "John"

How should you build the expression?

- A. `http://localhost:54946/DirectoryService.svc/Students?$filter=FirstName eq 'John' &$expand=Grades`
- B. `http://localhost:54946/DirectoryService.svc/Students?$filter=FirstName eq 'John'/Grades`
- C. `http://localhost:54946/DirectoryService.svc/Students?$filter=FirstName = 'John' &$expand=Grades`
- D. `http://localhost:54946/DirectoryService.svc/Grades/Students?$filter=FirstName eq 'John'`

Correct Answer: A

Section: [none]

Explanation

Explanation/Reference:

QUESTION 9

You are developing an ASP.NET MVC application that reads and writes data from a SQL Server database.

You need to prevent the application from reading data that is locked by other transactions. You also need to prevent exclusive range locks.

Which isolation level should you use?

- A. ReadCommitted
- B. Serializable

- C. Repeatable
- D. ReadUncommitted

Correct Answer: A

Section: [none]

Explanation

Explanation/Reference:

QUESTION 10

DRAG DROP

You are developing a Windows Azure based web application that provides users the ability to rent training videos. The application is deployed to hosted services in Asia and Europe.

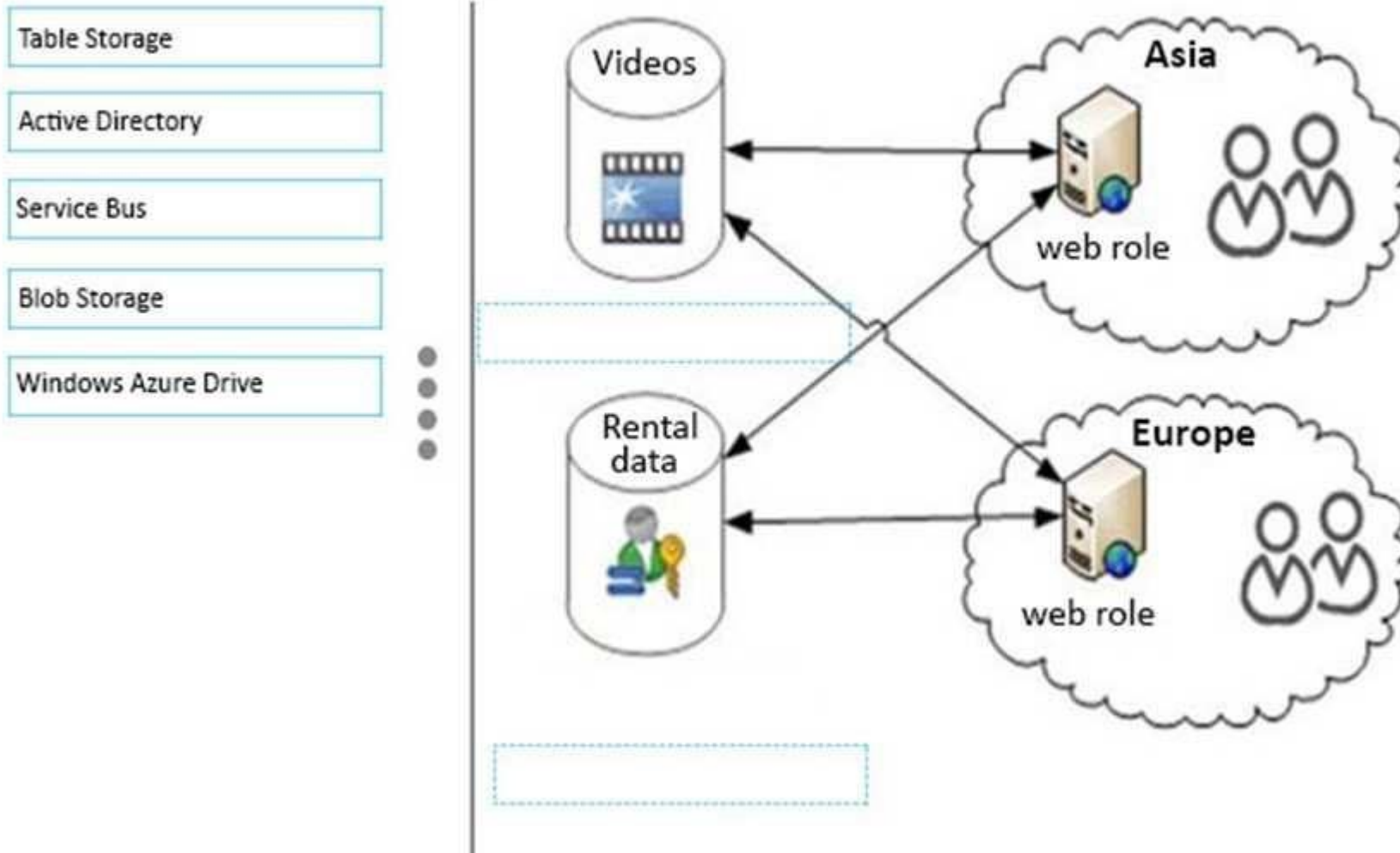
The web application must meet the following requirements:

- Video files are large and must be able to be streamed.
- Streaming videos requires low latency network connections.
- Rental data contains structured information about the user and the video.
- Rental permissions are checked every five seconds during video playback.

You need to recommend a storage architecture for the application.

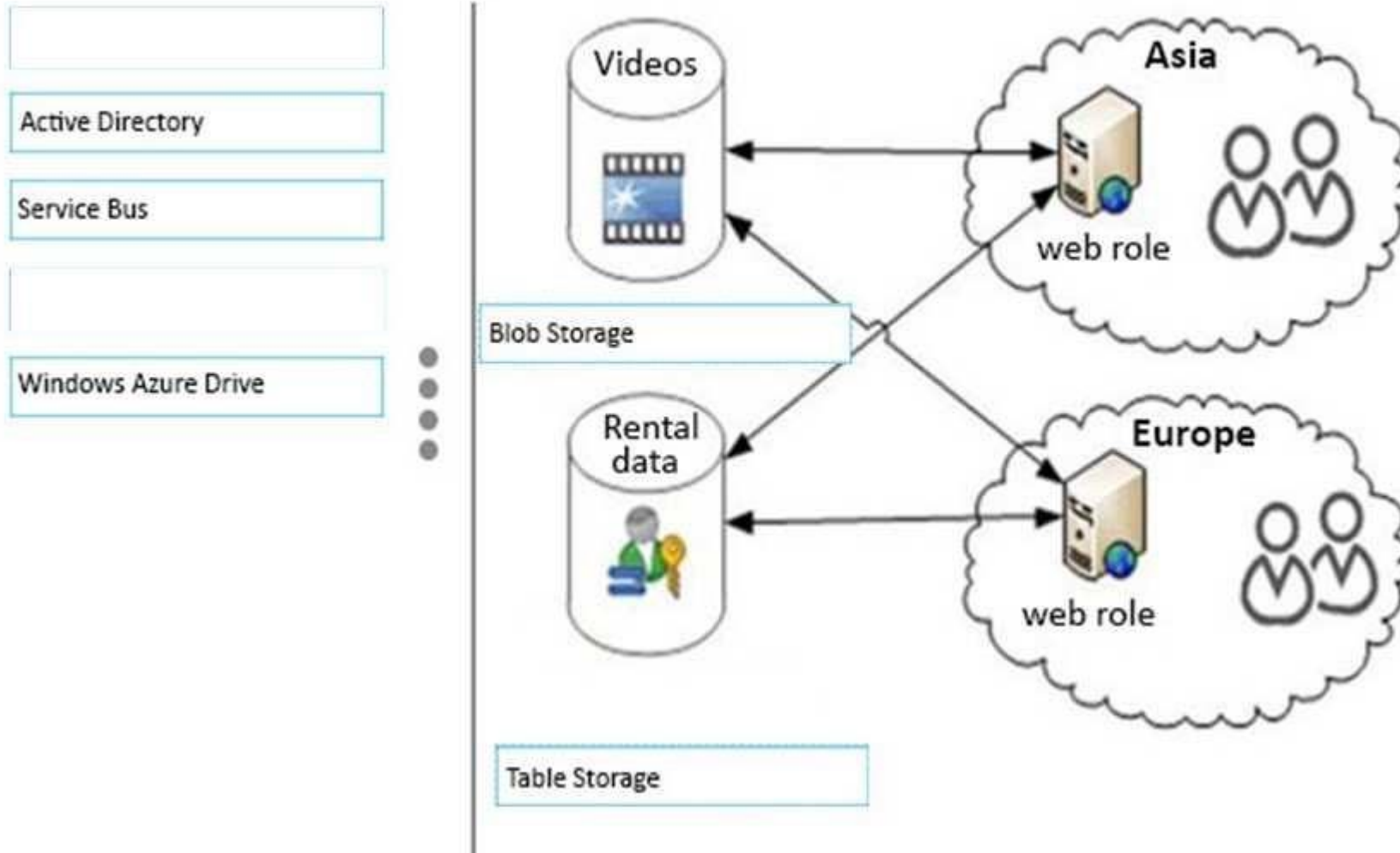
What should you do? (To answer, drag the appropriate technologies to the correct location or locations in the answer area. Each technology may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.) **Select and Place:**

Answer area



Correct Answer:

Answer area



Section: [none]

Explanation

Explanation/Reference:

QUESTION 11**DRAG DROP**

You are developing a self-hosted WCF service that returns stock market information.

The service must be discoverable by any client application. You need to build the service host.

How should you build the host? (To answer, drag the appropriate code segments to the correct location or locations in the answer area. Each code segment may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.) **Select and Place:**

Answer area

UdpDiscoveryEndpoint

DiscoveryEndpoint

ServiceBehaviorAttribute

ServiceDiscoveryBehavior

ServiceHost

```
static void Main(string[] args)
{
    Uri StockURI = new Uri("http://localhost:8733/StockTicker");
    var mytype = typeof(StockTickerService);

    using ( [ ] host
        = new [ ] (mytype, StockURI))
    {
        host.AddServiceEndpoint(typeof(ISTockTickerService),
            new WSHttpBinding(), "");

        host.Description.Behaviors.Add(new [ ] ());

        host.AddServiceEndpoint(new [ ] ());

        host.Open();
        Console.ReadLine();
        host.Close();
    }
}
```

Correct Answer:

Answer area

UdpDiscoveryEndpoint

DiscoveryEndpoint

ServiceBehaviorAttribute

ServiceDiscoveryBehavior

ServiceHost

```
static void Main(string[] args)
{
    Uri StockURI = new Uri("http://localhost:8733/StockTicker");
    var mytype = typeof(StockTickerService);

    using (ServiceHost host
        = new ServiceHost(mytype, StockURI))
    {
        host.AddServiceEndpoint(typeof(ISTockTickerService),
            new WSHttpBinding(), "");

        host.Description.Behaviors.Add(new ServiceDiscoveryBehavior());

        host.AddServiceEndpoint(new UdpDiscoveryEndpoint());

        host.Open();
        Console.ReadLine();
        host.Close();
    }
}
```

Section: [none]

Explanation

Explanation/Reference:

QUESTION 12

You are developing a WCF service that compares several data sources. The service takes a long time to complete.

The service must meet the following requirements:

- The client must be able to continue processing while the service is running.
- The service must initiate communication with the client application when processing is complete.

You need to choose a message pattern to meet the requirements.

Which message pattern should you choose?

- A. One Way
- B. Streaming
- C. Duplex
- D. Request/Reply

Correct Answer: C

Section: [none]

Explanation

Explanation/Reference:

QUESTION 13

DRAG DROP

You are developing a WCF service.

You need to implement transport security by using NTLM authentication and NetTcpBindings.

You have the following markup:

```

<system.serviceModel>
  <protocolMapping>
    <add scheme="https" Target 1/>
  </protocolMapping>
  <bindings>
    <netTcpBinding>
      <binding>
        <security Target 2>
          <transport Target 3/>
        </security>
      </binding>
    </netTcpBinding>
  </bindings>
</system.serviceModel>

```

Which configuration values should you include in Target 1, Target 2, and Target 3 to complete the markup? (To answer, drag the appropriate configuration values to the correct location or locations in the answer area. Each configuration value may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.)

Select and Place:

Configuration Values

```
binding="netTcpBinding"
```

```
binding="Transport"
```

```
binding="Ntlm"
```

```
mode="netTcpBinding"
```

```
mode="Transport"
```

```
mode="Ntlm"
```

```
clientCredentialType="netTcpBinding"
```

```
clientCredentialType="Transport"
```

```
clientCredentialType="Ntlm"
```

Answer Area

Target 1:

Code Segment

Target 2:

Code Segment

Target 3:

Code Segment

Correct Answer:

Configuration Values

```
binding="Transport"
```

```
mode="netTcpBinding"
```

```
mode="Ntlm"
```

```
clientCredentialType="netTcpBinding"
```

```
clientCredentialType="Transport"
```

```
clientCredentialType="Ntlm"
```

Answer Area

Target 1:

```
binding="netTcpBinding"
```

Target 2:

```
mode="Transport"
```

Target 3:

```
binding="Ntlm"
```

Section: [none]

Explanation

Explanation/Reference:

QUESTION 14

You are developing a WCF service.

A new service instance must be created for each client session.

You need to choose an instancing mode.

Which instance mode should you use?

- A. PerCall
- B. Single
- C. Multiple
- D. PerSession
- E. PerRequest

Correct Answer: D

Section: [none]

Explanation

Explanation/Reference:

PerSession: A new InstanceContext (and therefore service object) is created for each new client session and maintained for the lifetime of that session (this requires a binding that supports sessions).

Incorrect: Answers

A: PerCall: A new InstanceContext (and therefore service object) is created for each client request.

B: Single: A single InstanceContext (and therefore service object) handles all client requests for the lifetime of the application.

References: [https://msdn.microsoft.com/en-us/library/ms731193\(v=vs.110\)](https://msdn.microsoft.com/en-us/library/ms731193(v=vs.110))

QUESTION 15

You are developing a WCF service.

A new service instance must be created for each client request.

You need to choose an instancing mode.

Which instancing mode should you use?

- A. Single
- B. PerRequest
- C. PerCall
- D. Multiple
- E. PerSession

Correct Answer: C

Section: [none]

Explanation

Explanation/Reference:

Explanation:

PerCall: A new InstanceContext (and therefore service object) is created for each client request.

QUESTION 16

DRAG DROP

You are creating a WCF service.

The service endpoints must be exposed to the Microsoft Azure Service Bus. The service bus has a namespace named RestaurantSB. The key provider is "owner".

You need to modify the web.config file to expose the endpoints.

You have the following markup in the web.config file:

```
<services>
  <service name="RestaurantService.MenuService">
    <endpoint Target 1="RestaurantService.IMenuService"
      binding="netTcpRelayBinding"
      address="sb://RestaurantServiceBus.servicebus.windows.net/Menu"
      behaviorConfiguration="sbBehavior"/>
  </service>
</services>
<behaviors>
  <endpointBehaviors>
    <behavior name="sbBehavior">
      <transportClientEndpointBehavior>
        <tokenProvider>
          <sharedSecret
            Target 2="owner"
            Target 3="1oAFgNsbaN8+UIN737K="/>
        </tokenProvider>
      </transportClientEndpointBehavior>
    </behavior>
  </endpointBehaviors>
</behaviors>
```

Which attributes should you include in Target 1, Target 2 and Target 3 to complete the markup? (To answer, drag the appropriate attributes to the correct targets or locations in the answer area. Each attribute may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.)

Select and Place:

Attributes

issuerName
contract
issuerKey
user
issuerSecret



Answer Area

Target 1:

Attribute

Target 2:

Attribute

Target 3:

Attribute

Correct Answer:

Attributes

issuerKey
user



Answer Area

Target 1:

contract

Target 2:

issuerName

Target 3:

issuerSecret

Section: [none]

Explanation

Explanation/Reference:

QUESTION 17

DRAG DROP

You are developing an ASP.NET MVC Web API application.

The application must meet the following requirements:

- It must send or receive data without the use of a buffer.
- It must allow up to 1 MB of data to be received.



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- It must allow up to 2 MB of data to be sent.

You need to complete the code to meet the requirements.

What should you do? (To answer, drag the appropriate code segments to the correct location or locations in the answer area. Each code segment may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.) **Select and Place:**

Answer area

config

server

MaxBufferSize

MaxReceivedMessageSize

MaxConcurrentRequests

Streamed

Buffered

```
class Program
{
    private static string _baseAddress = "http://localhost:8080/";

    static void Main(string[] args)
    {
        var config = new HttpSelfHostConfiguration(_baseAddress);
        config.Routes.MapHttpRoute(
            name: "DefaultApi",
            routeTemplate: "api/{controller}/{id}",
            defaults: new { id = RouteParameter.Optional }
        );

        [ ] . [ ] = 1024 * 1024 * 2 ;

        [ ] . [ ] = 1024 * 1024 ;

        [ ] . TransferMode =

        TransferMode . [ ] ;

        var server = new HttpSelfHostServer(config);
        server.OpenAsync().Wait();
    }
}
```

Correct Answer:

Answer area

config

server

MaxBufferSize

MaxReceivedMessageSize

MaxConcurrentRequests

Streamed

Buffered

```
class Program
{
    private static string _baseAddress = "http://localhost:8080/";

    static void Main(string[] args)
    {
        var config = new HttpSelfHostConfiguration(_baseAddress);
        config.Routes.MapHttpRoute(
            name: "DefaultApi",
            routeTemplate: "api/{controller}/{id}",
            defaults: new { id = RouteParameter.Optional }
        );
```

config . MaxBufferSize = 1024 * 1024 * 2 ;

config . MaxReceivedMessageSize = 1024 * 1024 ;

config . TransferMode =

TransferMode . Streamed ;

```
var server = new HttpSelfHostServer(config);
server.OpenAsync().Wait();
```

```
}
}
```

Section: [none]

Explanation

Explanation/Reference:

The config, not Buffered or Streamed, object is used to change attributes.

The TransferMode should be set to Streamed.

References:[https://msdn.microsoft.com/en-us/library/ms731913\(v=vs.110\)](https://msdn.microsoft.com/en-us/library/ms731913(v=vs.110))

QUESTION 18

DRAG DROP

You are developing an ASP.NET Web API action method.

The action method must return the following JSON in the message body.

```
{"Name": "Fabrikam", "VendorId" :9823, Items": ["Dogs", "Cats"]} >
```

You need to return an anonymous object that is serialized to JSON.

What should you do? (To answer, drag the appropriate code segments to the correct location or locations in the answer area. Each code segment may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.) **Select and Place:**

Answer area

"Fabrikam", VendorNumber = 9823,

"Fabrikam", VendorNumber = "9823",

new List<string> { "Dogs", "Cats" }

new List<string> { "Dogs", "Cats" }

return new List<string>

return new

```
public object Get()  
{
```

```
{
```

Name =

Items =

```
};
```

```
}
```

Correct Answer:

Answer area

"Fabrikam", VendorNumber = "9823",

new List<string> { "Dogs", "Cats" }

return new List<string>

```
public object Get()  
{
```

```
    return new
```

```
    {  
        Name = "Fabrikam", VendorNumber = 9823,
```

```
        Items = new List<string> { "Dogs", "Cats" }
```

```
    };
```

```
}
```

Section: [none]

Explanation

Explanation/Reference:

QUESTION 19

You are designing an ASP.NET Web API application.

You need to select an HTTP verb to allow blog administrators to remove a comment.

Which HTTP verb should you use?

A. PUT

- B. DELETE
- C. POST
- D. GET

Correct Answer: B

Section: [none]

Explanation

Explanation/Reference:

QUESTION 20

You are developing an ASP.NET MVC application. The application is an order processing system that uses the ADO.NET Entity Framework against a SQL Server database. It has a controller that loads a page that displays all orders along with customer information. Lazy loading has been disabled.

The Order class is shown below.

```
public partial class Order
{
    ...
    public string CustomerID { get; set; }
    ...
    public virtual Customer Customer { get; set; }
}
```

You need to return the orders and customer information in a single round trip to the database.

Which code segment should you use?

- ☒ A.

```
public ActionResult Index()
{
    IQueryable<Order> orders = db.Orders;
    orders = orders.Include("Customer");
    return View(orders.ToList());
}
```
- ☐ B.

```
public ActionResult Index()
{
    IQueryable<Order> orders = db.Orders.Include("Order.Customer");
    return View(orders.ToList());
}
```
- ☐ C.

```
public ActionResult Index()
{
    IQueryable<Order> orders = db.Orders;
    orders.Select(o => o.Customer).Load();
    return View(orders.ToList());
}
```
- ☐ D.

```
public ActionResult Index()
{
    IQueryable<Order> orders = db.Orders;
    return View(orders.ToList());
}
```

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

Correct Answer: A

Section: [none]

Explanation

Explanation/Reference:

QUESTION 21

You are developing an ASP.NET MVC application that reads and writes data from a SQL Server database.

You need to maintain data integrity in all situations that use transactions.

- A. ReadUncommitted
- B. Repeatable
- C. Serializable
- D. ReadCommitted

Correct Answer: C

Section: [none]

Explanation

Explanation/Reference:

Explanation:

The highest isolation level, serializable, guarantees that a transaction will retrieve exactly the same data every time it repeats a read operation.

References:[https://technet.microsoft.com/en-us/library/ms189122\(v=sql.105\)](https://technet.microsoft.com/en-us/library/ms189122(v=sql.105))

QUESTION 22

HOTSPOT

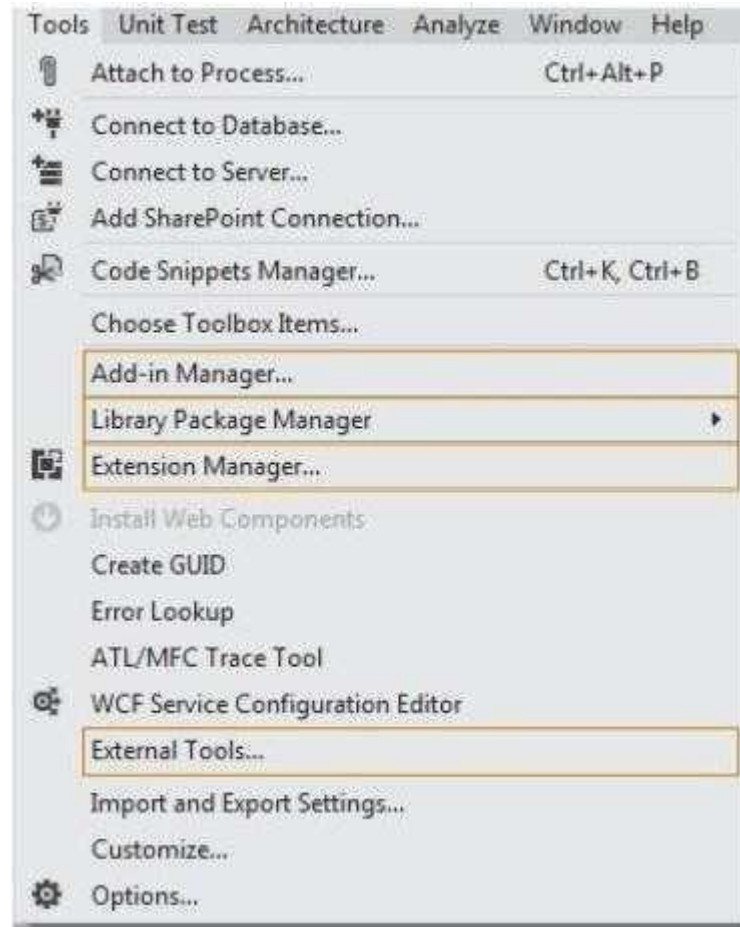
You are supporting an application that uses the ADO.NET Entity Framework to query and access data.

The latest version of Entity Framework contains bug fixes that will improve performance.

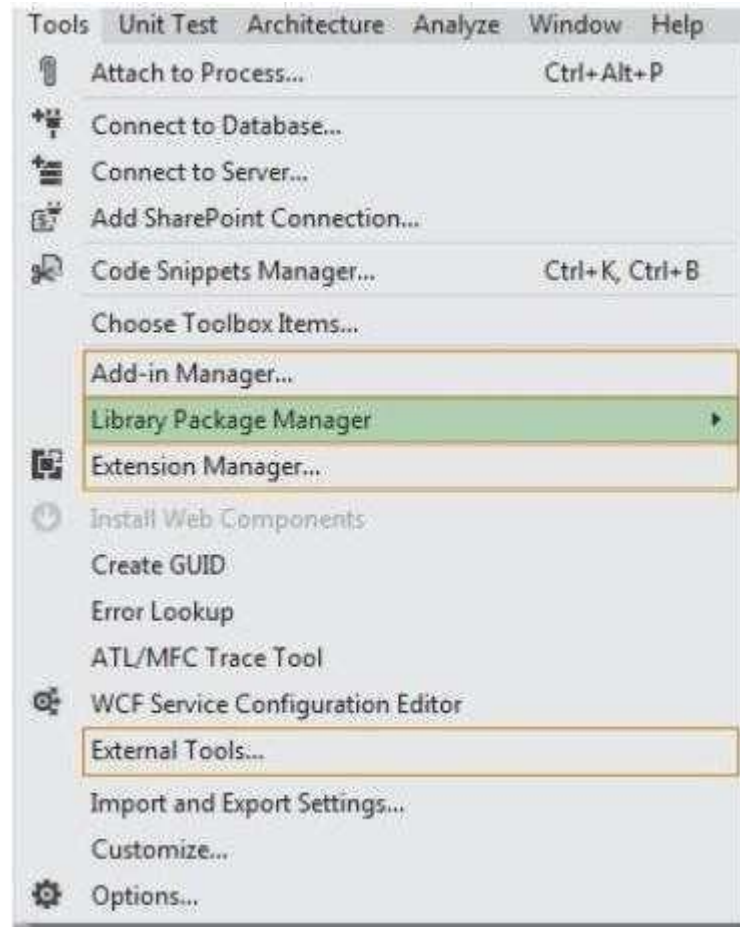
You need to update Entity Framework.

Which Visual Studio 2012 menu item should you choose? (To answer, select the appropriate menu item in the answer area.)

Hot Area:



Correct Answer:



Section: [none]

Explanation

Explanation/Reference:

QUESTION 23

You are developing an ASP.NET MVC application.

Deployment administrators do not have access to Visual Studio 2102, but will have the elevated permissions required to deploy the application to the servers.

You need to select a deployment tool for use by the deployment administrators.

Which tool should you use?

- A. Publish Web Site Tool
- B. Web Deployment Package
- C. One-Click Publish
- D. Deployment Package Editor

Correct Answer: B

Section: [none]

Explanation

Explanation/Reference:

QUESTION 24

You are developing an ASP.NET MVC application. The application has a page that searches for and displays an image stored in a database. Members of the EntityClient namespace are used to access an ADO.NET Entity Framework data model. Images and associated metadata are stored in a database table.

You need to run a query that returns only the image while minimizing the amount of data that is transmitted.

Which method of the EntityCommand type should you use?

- A. ExecuteScalar
- B. ExecuteDbDataReader
- C. ExecuteReader
- D. ExecuteNonQuery

Correct Answer: A

Section: [none]

Explanation

Explanation/Reference:

Explanation:

The SqlCommand.ExecuteScalar method executes the query, and returns the first column of the first row in the result set returned by the query. Additional columns or rows are ignored.

References: [https://msdn.microsoft.com/en-us/library/system.data.entityclient.entitycommand\(v=vs.110\).aspx](https://msdn.microsoft.com/en-us/library/system.data.entityclient.entitycommand(v=vs.110).aspx)

QUESTION 25

DRAG DROP

You have an Azure SQL Database that contains two tables named Country and City.

You need to insert a country into the Country table and a city into the City table. The solution must meet the following requirements:

- If an error occurs while attempting to add the country, the city must NOT be added. ▪

If an error occurs while attempting to add the city, the country must NOT be added.

How should you complete the code? To answer, drag the appropriate code blocks to the correct locations in the answer area. Each code block may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.

Select and Place:

Code Blocks

Commit();

Dispose();

Rollback("Beginning");

Rollback("Inserted");

Save("Beginning");

Save("Inserted");

Answer Area

```
using (SqlConnection connection = new SqlConnection(connectionString))
{
    connection.Open();
    SqlCommand command = connection.CreateCommand();
    command.Connection = connection;
    SqlTransaction transaction = connection.BeginTransaction("Beginning");
    command.Transaction = transaction;
    try
    {
        command.CommandText = "INSERT INTO Country (CountryName) VALUES ('Country1')";
        command.ExecuteNonQuery();

        transaction. Code block

        try
        {
            command.CommandText = "INSERT INTO City (CityName) VALUES ('City1')";
            command.ExecuteNonQuery();
        }
        catch (Exception ex)
        {
            transaction. Code block
        }

        transaction. Code block
    }
    catch (Exception ex)
    {
        transaction. Code block
    }
}
```

Correct Answer:

Code Blocks

Commit();

Dispose();

Rollback("Beginning");

Rollback("Inserted");

Save("Beginning");

Save("Inserted");

Answer Area

```
using (SqlConnection connection = new SqlConnection(connectionString))
{
    connection.Open();
    SqlCommand command = connection.CreateCommand();
    command.Connection = connection;
    SqlTransaction transaction = connection.BeginTransaction("Beginning");
    command.Transaction = transaction;
    try
    {
        command.CommandText = "INSERT INTO Country (CountryName) VALUES ('Country1')";
        command.ExecuteNonQuery();

        transaction. Save("Inserted");

        try
        {
            command.CommandText = "INSERT INTO City (CityName) VALUES ('City1')";
            command.ExecuteNonQuery();
        }
        catch (Exception ex)
        {
            transaction. Rollback("Beginning");
        }

        transaction. Commit();
    }
    catch (Exception ex)
    {
        transaction. Rollback("Beginning");
    }
}
```

Section: [none]

Explanation

Explanation/Reference:

References: [https://msdn.microsoft.com/en-us/library/system.data.sqlclient.sqltransaction\(v=vs.110\).aspx](https://msdn.microsoft.com/en-us/library/system.data.sqlclient.sqltransaction(v=vs.110).aspx)

<https://www.gratisexam.com/>

QUESTION 26

You are developing an ASP.NET MVC application that displays a report. The report includes large images that are stored in a database. Members of the EntityClient namespace are used to access the database through the ADO.NET Entity Framework data model.

You need to prevent memory exceptions while generating a report using the EntityDataReader type.

Which CommandBehavior type should you use?

- A. SequentialAccess
- B. SingleRow
- C. SingleResult
- D. FastForwardReadOnly

Correct Answer: A

Section: [none]

Explanation

Explanation/Reference:

Explanation:

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.

QUESTION 27

You are developing a library management application that uses the ADO.NET Entity Framework against a SQL Server database.

The application has a method that returns check outs filtered by date.

The Book class is shown below.

```
public partial class Book
{
    ...
    public Nullable<System.DateTime> CheckoutDate { get; set; }
    ...
}
```

You must filter the data on the SQL server before it is returned to the application server.

You need to return books checked out more recently than the entered date.

Which code segment should you use?

A)

```
IEnumerable<Book> books = db.Books;  
books = books.Where(b => b.CheckoutDate >= date);
```

B)

```
IEnumerable<Book> books = db.Books.ToList().AsQueryable();  
books = books.Where(b => b.CheckoutDate >= date);
```

C)

```
IQueryable<Book> books = db.Books.ToList().AsQueryable();  
books = books.Where(b => b.CheckoutDate >= date);
```

D)

```
IQueryable<Book> books = db.Books;  
books = books.Where(b => b.CheckoutDate >= date);
```

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

Correct Answer: D

Section: [none]

Explanation

Explanation/Reference:

Explanation:

IQueryable should be used when we want to filter the data.

QUESTION 28

HOTSPOT

You are developing a web application that will store data in an Azure SQL Database.

The application will contain three classes named Vehicle, Car, and SportsCar. Car will inherit the Vehicle class. SportsCar will inherit the Car class.

You plan to create the table structure for the three classes by using mapping strategies in the Entity Framework.

You need to identify how many tables will be created by each mapping strategy.

How many tables should you identify? To answer, select the appropriate options in the answer area.

Hot Area:

Answer Area

Table-per-type:

	▲▼
0	
1	
2	
3	

Table-per-hierarchy:

	▲▼
0	
1	
2	
3	

Table-per-concrete class:

	▲▼
0	
1	
2	
3	

Correct Answer:

Answer Area

Table-per-type:

	▲▼
0	
1	
2	
3	

Table-per-hierarchy:

	▲▼
0	
1	
2	
3	

Table-per-concrete class:

	▲▼
0	
1	
2	
3	

Section: [none]

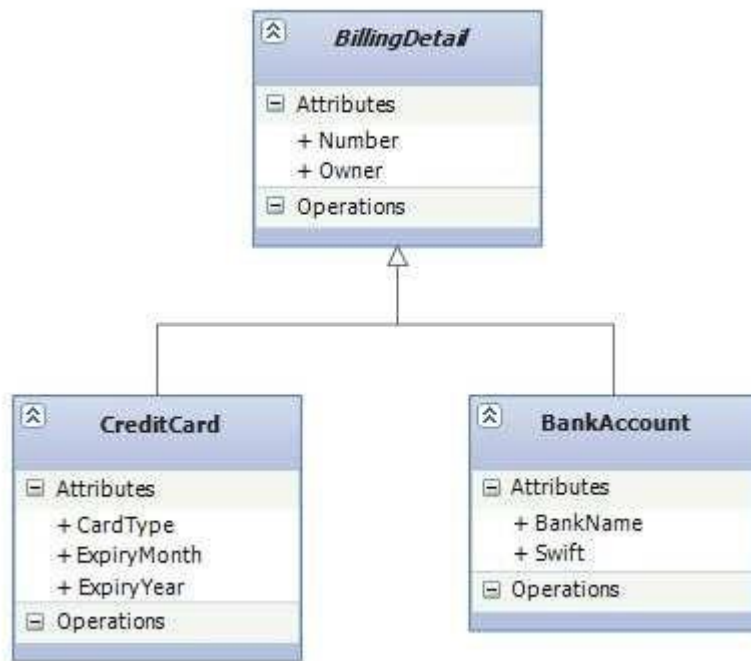
Explanation

Explanation/Reference:

Explanation:

Box 1: Table-per-type: 3

Table per Type is about representing inheritance relationships as relational foreign key associations. Every class/subclass that declares persistent properties—including abstract classes—has its own table. The table for subclasses contains columns only for each noninherited property (each property declared by the subclass itself) along with a primary key that is also a foreign key of the base class table. This approach is shown in the following figure:



Box 2: Table-per-hierarchy: 1

Table-per-hierarchy (TPH) inheritance uses one database table to maintain data for all of the entity types in an inheritance hierarchy.

Box 3: Table-per-concrete class: 2

In Table per Concrete type (aka Table per Concrete class) we use exactly one table for each (nonabstract) class.

Vehicle is an abstract class, while car and sportscar and nonabstract classes.

References:

<https://weblogs.asp.net/manavi/inheritance-mapping-strategies-with-entity-framework-code-first-ctp5-part-1-table-per-hierarchy-tph> [https://msdn.microsoft.com/en-us/library/jj618292\(v=vs.113\).aspx](https://msdn.microsoft.com/en-us/library/jj618292(v=vs.113).aspx)

QUESTION 29

You are developing multiple web applications that will retrieve information for a Windows Communication Foundation (WCF) service

You need to intercept and inspect messages received by and sent from the WCF service.

Which three actions should you perform? Each correct answer presents part of the solution.

- A. Create a class that inherits from the IDispatchMessageInspector interface.
- B. Implement the BeforeSendReply method.
- C. Implement the BeforeSendRequest method.
- D. Create a class that inherits from the IClientMessageInspector interface.
- E. Implement the AfterReceiveReply method.
- F. Implement the AfterReceiveRequest method.

Correct Answer: ABF

Section: [none]

Explanation

Explanation/Reference:

Explanation:

A: Service message inspectors implement the IDispatchMessageInspector interface.

BF: Any service (dispatcher) message inspector must implement the two IDispatchMessageInspector methods AfterReceiveRequest and BeforeSendReply (Message, Object).

QUESTION 30

HOTSPOT

You are developing a WCF service.

The service must be interoperable with ASP.NET web service clients. In addition, it must be a time-out of three hours.

You need to configure the service to meet the requirements.

You have the following markup:


```

<?xml version="1.0" encoding="utf-8" ?>
<configuration>
  <system.serviceModel>
    <services>
      <service name="MyNamespace.OrderService">
        <endpoint address=""
          contract="MyNamespace.IOrderservice"
          binding="Target 1"
          bindingConfiguration="Target 2">
        </endpoint>
      </service>
    </services>
    <bindings>
      <Target 3>
        <binding name="Target 4">
          Target 5="Target 6"/>
        </Target 7>
      </bindings>
    </system.serviceModel>
  </configuration>

```

Which markup segments should you include in Target 1, Target 2, Target 3, Target 4, Target 5, Target 6 and Target 7 to complete the markup? (To answer, select the appropriate markup segment from each drop-down list in the answer area.)

Hot Area:

Answer Area

Target 1:

	▼
basicHttpBinding	
closeTimeout	
timeout	
wsHttpBinding	

Target 2:

	▼
basicHttpBinding	
closeTimeout	
timeout	
wsHttpBinding	

Target 3:

	▼
basicHttpBinding	
closeTimeout	
timeout	
wsHttpBinding	

Target 4:

	▼
basicHttpBinding	
closeTimeout	
timeout	
wsHttpBinding	

Target 5:

	▼
basicHttpBinding	
closeTimeout	
timeout	
wsHttpBinding	

Target 6:

	▼
03:00:00	
00:03:00	
00:00:03	

Correct Answer:

Answer Area

Target 1:

	▼
basicHttpBinding	
closeTimeout	
timeout	
wsHttpBinding	

Target 2:

	▼
basicHttpBinding	
closeTimeout	
timeout	
wsHttpBinding	

Target 3:

	▼
basicHttpBinding	
closeTimeout	
timeout	
wsHttpBinding	

Target 4:

	▼
basicHttpBinding	
closeTimeout	
timeout	
wsHttpBinding	

Target 5:

	▼
basicHttpBinding	
closeTimeout	
timeout	
wsHttpBinding	

Target 6:

	▼
03:00:00	
00:03:00	
00:00:03	

Section: [none]

Explanation

Explanation/Reference:

Explanation:

Target 1: wsHTTPBinding wsHttpBinding is the full-blown binding, which supports a ton of WS-* features and standards. It has lots more security features: you can use sessionful connections, you can use reliable messaging, you can use transactional control.

Incorrect: Not basicHttpBinding: basicHttpBinding is the very basic binding (SOAP 1.1). It is not much in terms of security, not much else in terms of features, but compatible to just about any SOAP client out there. It is great for interoperability, but weak on features and security.

Target 2: timeout

Bindingconfiguration (Target 2) and Binding name (Target 4) must be the same. Timeout is not use elsewhere and is an appropriate choice.

Target 3: WSHttpBinding

Target 4: timeout

Bindingconfiguration (Target 2) and Binding name (Target 4) must be the same. Timeout is not use elsewhere and is an appropriate choice.

Target 5: CloseTimeout

The following timeouts are available on WCF bindings: OpenTimeout, CloseTimeout, SendTimeout, and ReceiveTimeout.

Target 6: 03:00:00

3 hours, 0 minutes, and 0 seconds.

Target 7: WSHttpBinding

Reference:[https://msdn.microsoft.com/en-us/library/hh924831\(v=vs.110\).aspx](https://msdn.microsoft.com/en-us/library/hh924831(v=vs.110).aspx)

QUESTION 31

You are developing an Azure web app by using Microsoft ASP.NET MVC.

From Microsoft Visual Studio, you use the Web Deploy Package publish method to create a deployment package for the web app.

You need to deploy the package.

What should you run?

- A. themsbuilt.exe command
- B. theSet-AzureWebSitecmdlet
- C. theSave-AzureServiceProjectPackagecmdlet
- D. themdeploy.exe command

Correct Answer: D

Section: [none]

Explanation

Explanation/Reference:

Explanation:

Deploying an ASP.NET web application.

The first step is to create a simple web application.

The second step is to create the package to deploy the web app to Azure. Msbuild can be used at this step.

The third stage is to deploy the package, created in step 2, with the help of Msdeploy.

QUESTION 32

DRAG DROP

You are developing an assembly.

You need to set the current version of the assembly to 4.3.2.1.



<https://vceplus.com/>

How should you complete the code? To answer, drag the appropriate code blocks to the correct locations. Each block may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.

Select and Place:

Code Blocks

<code>"4.3.2.1"</code>
<code>assembly</code>
<code>AssemblyConfiguration</code>
<code>AssemblyVersion</code>
<code>Guid</code>
<code>namespace</code>
<code>using</code>



Answer Area

[`Code block` : `Code block` (`Code block`)]

Correct Answer:

Code Blocks

AssemblyConfiguration

Guid

namespace

using

Answer Area

```
[ assembly : AssemblyVersion ( "4.3.2.1" )
```

Section: [none]

Explanation

Explanation/Reference:

To set the version number for the assembly.

[assembly:AssemblyVersionAttribute("4.3.2.1")]

References: [https://msdn.microsoft.com/en-us/library/4w8c1y2s\(v=vs.110\).aspx](https://msdn.microsoft.com/en-us/library/4w8c1y2s(v=vs.110).aspx)

QUESTION 33

DRAG DROP

You have a UI element library.

You need to build a NuGet package to integrate the library into your projects.

What should you do? (To answer, drag the appropriate code elements to the correct location or locations in the answer area. Each code element may be used once, more than once, or not at all. You may need to drag the split bar between panes or scroll to view content.) **Select and Place:**

Code Elements

nupkg	nuspec
Build	Pack

Answer Area

1. Define the package in a . `Code element` file.
2. Build the package with the following command.
NuGet `Code element` MyPackage. `Code element`

Correct Answer:

Code Elements

nupkg	nuspec
Build	Pack

Answer Area

1. Define the package in a . `nuspec` file.
2. Build the package with the following command.
NuGet `Pack` MyPackage. `nuspec`

Section: [none]
Explanation

Explanation/Reference:
Explanation:

Box 1: nuspec

A .nuspec file is an XML manifest that contains package metadata. This is used both to build the package and to provide information to consumers. The manifest is always included in a package.

Box 2: Pack

Box 3: nuspec

When creating a package, the nuget pack command will replace \$-delimited tokens in the .nuspec file's <metadata> node with values that come from either a project file or the pack command's -properties switch.

References: <https://docs.microsoft.com/en-us/nuget/schema/nuspec>

QUESTION 34

You are developing a Microsoft Azure web application. The application will be deployed to 20 web role instances. A minimum of 18 running instances is needed to meet scaling requirements.

You need to configure the application so that upgrades are performed as quickly as possible, but do not violate scaling requirements.

How many upgrade domains should you use?

- A. 1
- B. 2
- C. 5
- D. 10

Correct Answer: C

Section: [none]

Explanation

Explanation/Reference:

Explanation:

The .csdef is only used for Cloud Services, not for VMs. So regardless of what you set or even how you try to do it, Azure VM UD's come in groups of 5. With 18 VMs, that means you'll have 5 UD's. UD0 – to – UD4 like the following:

VMUpdate Domain

VM00

VM11

VM22

VM33

VM44

VM50

VM61

VM72

VM83
VM94
VM100
VM111
VM122
VM133
VM144
VM150
VM161
VM172

QUESTION 35

You are developing an application that reads and writes data from a SQL Server database.

You need to ensure transactional data integrity.

Which isolation level should you use?

- A. Serializable
- B. ReadCommitted
- C. ReadUncommitted
- D. Normal

Correct Answer: C

Section: [none]

Explanation

Explanation/Reference:

Explanation:

Serializable provides the highest level of data integrity.

References: [https://msdn.microsoft.com/en-us/library/system.data.isolationlevel\(v=vs.110\)](https://msdn.microsoft.com/en-us/library/system.data.isolationlevel(v=vs.110))

QUESTION 36 HOTSPOT

You are creating a streamed Windows Communication Foundation (WCF) service.

You implement the following service methods.

```

[ServiceContract]
public interface IEmployee
{
    [OperationContract]
    Stream EmployeeMethod1(string string1);

    [OperationContract]
    bool EmployeeMethod2(Message msg1);

    [OperationContract]
    IXmlSerializable EmployeeMethod3(Stream stream1, string string1);

    [OperationContract]
    int EmployeeMethod4(bool bool1, Message msg1);
}

```

For each of the following statements, select Yes if the statement is true. Otherwise, select No.

Hot Area:

Answer Area

Statement	Yes	No
The input for EmployeeMethod3 is streamed.	<input type="radio"/>	<input type="radio"/>
The output for EmployeeMethod3 is streamed.	<input type="radio"/>	<input type="radio"/>
The input for EmployeeMethod4 is streamed.	<input type="radio"/>	<input type="radio"/>
The output for EmployeeMethod4 is streamed.	<input type="radio"/>	<input type="radio"/>

Correct Answer:

Answer Area

Statement	Yes	No
The input for EmployeeMethod3 is streamed.	<input type="radio"/>	<input checked="" type="radio"/>
The output for EmployeeMethod3 is streamed.	<input checked="" type="radio"/>	<input type="radio"/>
The input for EmployeeMethod4 is streamed.	<input type="radio"/>	<input checked="" type="radio"/>
The output for EmployeeMethod4 is streamed.	<input type="radio"/>	<input checked="" type="radio"/>

Section: [none]

Explanation

Explanation/Reference:

Explanation:

To enable streaming, define the OperationContract appropriately and enable streaming at the transport level.

To stream data, the OperationContract for the service must satisfy two requirements:

- The parameter that holds the data to be streamed must be the only parameter in the method. For example, if the input message is the one to be streamed, the operation must have exactly one input parameter. Similarly, if the output message is to be streamed, the operation must have either exactly one output parameter or a return value.
- At least one of the types of the parameter and return value must be either Stream, Message, or IXmlSerializable.

References: <https://docs.microsoft.com/en-us/dotnet/framework/wcf/feature-details/how-to-enable-streaming>

QUESTION 37

You have a web application that was developed by using Microsoft ASP.NET MVC. The application is deployed to an Azure web app and uses an Azure SQL Database.

From a development environment, you use Microsoft Visual Studio to change the application code, and you modify the schema of the database.

You need to deploy the changes to Azure.

Which publishing method should you use?

- A. BACPAC
- B. FTP
- C. Msdeploy
- D. Robocopy

Correct Answer: A

Section: [none]

Explanation

Explanation/Reference:

Explanation:

You can deploy a .bacpac file to an Azure SQL Database using an Azure Resource Manager Template. .bacpac contains the schema and data necessary to deploy your database.

Note: A BACPAC file is a ZIP file with an extension of BACPAC containing the metadata and data from a SQL Server database. A BACPAC file can be stored in Azure blob storage or in local storage in an on-premises location and later imported back into Azure SQL Database or into a SQL Server on-premises installation.

References: <https://docs.microsoft.com/en-us/azure/sql-database/sql-database-export>



<https://vceplus.com/>