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Number: 70-487  
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70-487



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### Developing Windows Azure and Web Services

#### Testlet 1

#### Background

You are developing a flight information consolidation service. The service retrieves flight information from a number of sources and combines them into a single data set. The consolidated flight information is stored in a SQL Server database. Customers can query and retrieve the data by using a REST API provided by the service.

The service also offers access to historical flight information. The historical flight information can be filtered and queried in an ad hoc manner.

The service runs on a Windows Azure Web Role. SSL is not used.

### **Business Requirements**

- A new data source for historical flight information is being developed by a contractor located on another continent.
  - If a time zone is not specified, then it should be interpreted as Coordinated Universal Time (UTC).
  - When you upgrade a service from a staging deployment to a production deployment, the time that the service is unavailable must be minimized. ▪
- The default port must be used for HTTP.

### **Technical Requirements**

The existing sources of flight information and the mechanism of exchange are listed below.

- Blue Yonder Airlines provides flight information in an XML file.
- Consolidated Messenger provides flight information in a Microsoft Access database that is uploaded every 12 hours to the service using SFTP. The company uses port 22 for SFTP.
- Margie's Travel provides and consumes flight information using serialized ADO.NET DataSets. Data is periodically synced between the service and Margie's Travel.
- Trey Research provides data from multiple sources serialized in proprietary binary formats. The data must be read by using .NET assemblies provided by Trey Research. The assemblies use a common set of dependencies. The current version of the Trey Research assemblies is 1.2.0.0. All assemblies provided by Trey Research are signed with a key pair contained in a file named Trey.snk, which Trey Research also supplies. ▪ The application specification requires that any third-party assemblies must have strong names.

### **Application Structure**

### FlightInfo.cs

```
public class FlightInfo
{
    string DataSource { get; set; }
    public string Airline { get; set; }
    public string Flight { get; set; }
    public DateTimeOffset Arrival { get; set; }
    public int Seats { get; set; }
    public bool WasLate { get; set; }
}
```

### BlueYonderLoader.cs

```
public class BlueYonderLoader
{
    public IEnumerable<RawFlightData> LoadFlights(XDocument feed)
    {
        ...
    }

    private RawFlightData Parse(XElement flightElement)
    {
        ...
    }
}
```

### HistoricalDataLoader.cs

```
public class HistoricalDataLoader
{
    public static IEnumerable<HistoricalFlightInfo> LoadHistoricalFlights()
    {
        ...
    }

    public void StreamHistoricalFlights(XmlWriter responseWriter, string airline)
    {
        ...
    }

    private XElement ConvertToHistoricalFlight(XElement flight)
    {
        return new XElement("Flight", flight);
    }

    private string GetAirline(XElement flightName)
    {
        return flightName.Value.Substring(0, 2);
    }

    IEnumerable<XElement> RemoteDataStream()
    {
        return XDocument.Load("").Elements();
    }
}
```



### MargiesTravelSync.cs

```
public class MargiesTravelSync
{
    public void Sync()
    {
        ...
    }

    private DataSet LoadLocal()
    {
        var dataSet = new DataSet();
        dataSet.ReadXml("local");
        return dataSet;
    }

    private StreamWriter SendStream()
    {
        return new StreamWriter("SendStream");
    }

    private StreamReader ReceiveStream()
    {
        return new StreamReader("ReceiveStream");
    }
}
```



### FlightInfoContext.cs

```
public class FlightInfoContext : DbContext
{
    public DbSet<FlightInfo> FlightInfo { get; set; }

    public override int SaveChanges()
    {
        return base.SaveChanges();
    }

    private bool IsTransient(int ex)
    {
        var errors = new[] { 10053, 10054, 64 };
        return errors.Contains(ex);
    }
}
```

### FlightDataController.cs

```
public class FlightDataController : ApiController
{
    FlightInfoContext _Context;

    public FlightDataController()
    {
        _Context = new FlightInfoContext();
    }

    [HttpGet]
    public IEnumerable<FlightInfo> GetFlightInfo()
    {
        return _Context.FlightInfo.Select(x => x).AsEnumerable();
    }

    private IEnumerable<HistoricalFlightInfo> LoadHistorical()
    {
        return HistoricalDataLoader.LoadHistoricalFlights();
    }
}
```

**QUESTION 1**

Errors occasionally occur when saving data using the FlightInfoContext ADO.NET Entity Framework context. Updates to the data are being lost when an error occurs.

You need to ensure that data is still saved when an error occurs by retrying the operation. No more than five retries should be performed.

Which code segment should you use as the body of the SaveChanges() method in the FlightInfoContext.es file?



C A. 

```
for (var i = 0; i < 5; i++)
{
    try
    {
        return base.SaveChanges();
    }
    catch (SqlException ex)
    {
        if (IsTransient(ex.Number))
        {
            continue;
        }
    }
}
return base.SaveChanges();
```

C B. 

```
var exception = new EntitySqlException();
while (exception.Data != 0 && exception.Data.Count < 5)
{
    try
    {
        return base.SaveChanges();
    }
    catch (EntitySqlException ex)
    {
        if (IsTransient(ex.HResult))
        {
            exception = ex;
        }
    }
}
return base.SaveChanges();
```



C C. 

```
for (var i = 0; i < 5; i++)
{
    try
    {
        return base.SaveChanges();
    }
    catch (SqlException ex)
    {
        if (IsTransient(ex.Number))
        {
            break;
        }
    }
}
return base.SaveChanges();
```

C D. 

```
for (var i = 0; i < 5; i++)
{
    try
    {
        return base.SaveChanges();
    }
    catch (SqlException ex)
    {
        if (!IsTransient(ex.Number))
        {
            continue;
        }
    }
}
return base.SaveChanges();
```



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

**Correct Answer:** A **Section:** [none]

**Explanation****Explanation/Reference:****QUESTION 2**

Data provided by Consolidated Messenger is cached in the HttpContext.Cache object. You need to ensure that the cache is correctly updated when new data arrives.

What should you do?

- A. Ensure that the EffectivePrivateBytesLimit value is greater than the size of the database file.
- B. Change the sliding expiration of the cache item to 12 hours.
- C. Use the SqlCacheDependency type configured with a connection string to the database file.
- D. Use the CacheDependency type configured to monitor the SFTP target folder.

**Correct Answer:** D

**Section:** [none]

**Explanation****Explanation/Reference:****QUESTION 3**

You need to load flight information provided by Consolidated Messenger.

Which should you use?

- A. SQL Server Data Transformation Services (DTS)
- B. EntityTransaction and EntityCommand
- C. Office Open XML
- D. OleDbConnection and OleDbDataReader

**Correct Answer:** D

**Section:** [none]

**Explanation****Explanation/Reference:****QUESTION 4**

You are adding a new REST service endpoint to the FlightDataController controller that returns the total number of seats for each airline.

You need to write a LINQ to Entities query to extract the required data.  
Which code segment should you use?



- C A. 

```
var query = from flight in _Context.FlightInfo
group flight by flight.Seats into agg
let airline = agg.First()
select new
{
    TotalSeats = agg.Key,
    Airline = airline,
};
```
- C B. 

```
var query = from flight1 in _Context.FlightInfo
from flight2 in _Context.FlightInfo
where flight1.Airline == flight2.Airline
select new
{
    Airline = flight1.Airline,
    TotalSeats = Math.BigMul(flight1.Seats, flight2.Seats),
};
```
- C C. 

```
var query = from flight in _Context.FlightInfo
from airline in flight.Airline
group airline by airline into agg
select new
{
    Airline = agg.Key,
    TotalSeats = agg.Sum(x => Convert.ToInt32(x)),
};
```
- C D. 

```
var query = from flight in _Context.FlightInfo
group flight by flight.Airline into agg
select new
{
    Airline = agg.Key,
    TotalSeats = agg.Sum(x => x.Seats),
};
```



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

**Correct Answer:** D

**Section:** [none]

**Explanation**

**Explanation/Reference:**



#### QUESTION 5

You need to load flight information provided by Consolidated Messenger.

What should you use?

- A. Office Open XML
- B. COM interop
- C. OleDbConnection and OleDbDataReader
- D. EntityConnection and EntityDataReader

**Correct Answer:** C

**Section:** [none]

**Explanation**

**Explanation/Reference:**

**QUESTION 6**

Historical flight information data will be stored in Windows Azure Table Storage using the FlightInfo class as the table entity.

There are millions of entries in the table. Queries for historical flight information specify a set of airlines to search and whether the query should return only late flights. Results should be ordered by flight name.

You need to specify which properties of the FlightInfo class should be used at the partition and row keys to ensure that query results are returned as quickly as possible.

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

- A. Use the WasLate property as the row key.
- B. Use the Airline property as the row key.
- C. Use the WasLate property as the partition key
- D. Use the Arrival property as the row key.
- E. Use the Airline property as the partition key.
- F. Use the Flight property as the row key.

**Correct Answer:** EF

**Section:** [none]

**Explanation**



**Explanation/Reference:**

**QUESTION 7**

Errors occasionally occur when saving data using the FlightInfoContext ADO.NET Entity Framework context. Updates to the data are being lost when an error occurs.

You need to ensure that data is still saved when an error occurs by retrying the operation. No more than five retries should be performed.

With which code segment should you replace the body of the SaveChanges() method in the FlightInfoContext.es file?

C A. 

```
var result = FlightInfo.SqlQuery("UPDATE WITH RETRY", FlightInfo, "IsTransient", 5);
if (result.Count() > 5)
{
    result.AsNoTracking();
    return -1;
}
return 0;
```

C B. 

```
try
{
    return base.SaveChanges();
}
catch (EntityCommandExecutionException ex)
{
    if (ex.Data.Keys.Cast<int>().Any(x => IsTransient(x)))
    {
        return 5 & SaveChanges();
    }
    return -1;
}
```

C C. 

```
for (var i = 0; i < 5; i++)
{
    try
    {
        return base.SaveChanges();
    }
    catch (SqlException ex)
    {
        if (IsTransient(ex.Number))
        {
            continue;
        }
    }
}
return base.SaveChanges();
```

C D. 

```
var exception = new EntitySqlException();
while (exception.HResult != 0 && exception.Data.Count < 5)
{
    try
    {
        return base.SaveChanges();
    }
    catch (EntitySqlException ex)
    {
        if (IsTransient(ex.HResult))
```

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

**Correct Answer:** C

**Section:** [none]

**Explanation**

**Explanation/Reference:**





## 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

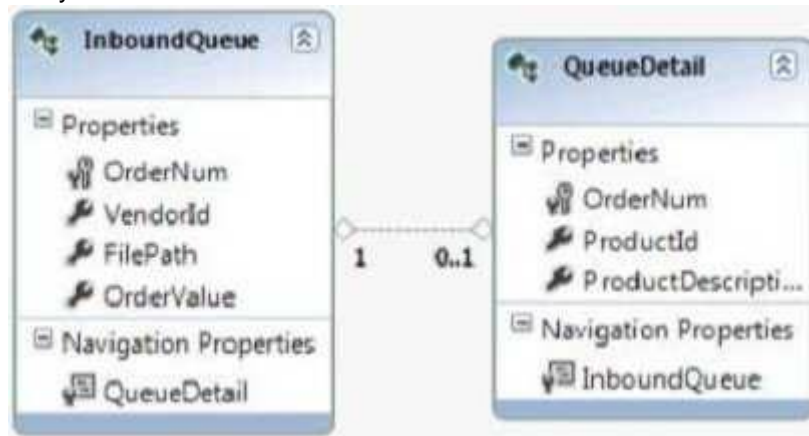
#### Visual Studio Solution:

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.



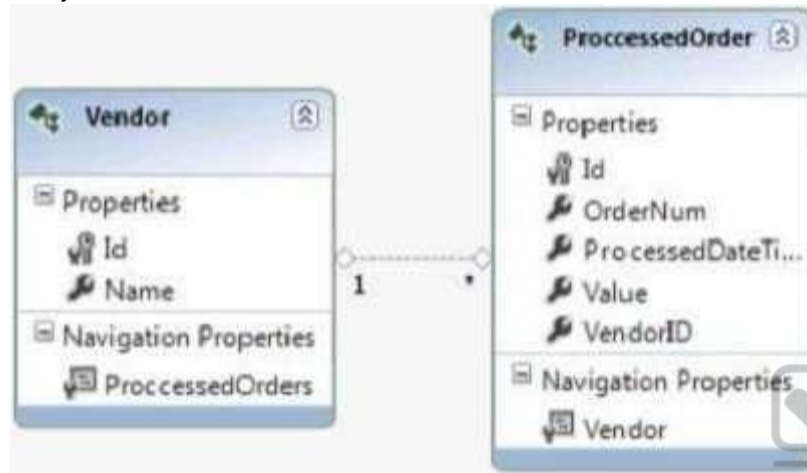
The project contains two services defined in the following files.

- 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             }
EQ41             OrderNotFoundException ex = new OrderNotFoundException();
EQ42         }
```

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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

The DeleteExternalOrder() method in the ExternalQueueService service is not throwing a FaultException exception as defined by the FaultContractAttribute attribute in the IExternalQueueService.cs file.

You need to throw the FaultException exception.

Which code segments can you insert at line EQ45 to achieve this goal? (Each correct answer presents a complete solution. Chose all that apply)

- ☐ A. `throw new FaultException<OrderNotFoundException>(ex.ExceptionMessage);`
- ☐ B. `throw new FaultException<OrderNotFoundException>(ex, new  
    FaultReason("Order not found."));`
- ☐ C. `throw new FaultException<OrderNotFoundException>(ex);`
- ☐ D. `throw new FaultException  
    (new OrderNotFoundException(new Exception(ex.ExceptionMessage)), "Order not  
    found.");`

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

**Correct Answer:** BC

**Section:** [none]

**Explanation**

**Explanation/Reference:**

## QUESTION 2

The GetExternalOrder() method in the ExternalQueueService service is throwing a runtime error. The method must query the database for a record that matches the orderNum parameter passed to the method.

You need to modify the queryString string to retrieve the record.

With which code segment should you replace line EQ64?





- ☐ A. `string queryString = @"SELECT q.OrderNum, q.VendorId, q.FilePath, q.OrderValue  
FROM ExternalOrdersEntities.InboundQueues AS q WHERE q.OrderNum = @orderNum";`
- ☐ B. `string queryString = @"SELECT * FROM ExternalOrdersEntities.InboundQueues  
WHERE OrderNum = @orderNum";`
- ☐ C. `string queryString = @"SELECT VALUE q FROM ExternalOrdersEntities.InboundQueues AS q  
WHERE q.OrderNum = @orderNum";`
- ☐ D. `string queryString = @"SELECT VALUE FROM ExternalOrdersEntities.InboundQueues  
WHERE OrderNum = @orderNum";`

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



**Correct Answer:** C

**Section:** [none]

**Explanation**

**Explanation/Reference:**

### QUESTION 3

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 4

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.AddOrGetExisting("vendorKey", context, new CacheItemPolicy());`

**Correct Answer:** AC

**Section:** [none]

**Explanation**

**Explanation/Reference:**

#### QUESTION 5

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/>

### **QUESTION 6**

**DRAG DROP**

The UploadOrder() method in the UploadCallbackService service is not implementing the callback behavior defined in the IUploadCallBackService interface.

You need to modify the class to implement the required callback behavior.

What should you do? (To answer, drag the appropriate code segments to the correct location or locations in the answer area. Each code segments 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:**



Multiple

Single

GetOrderValue

UploadCallbackService

IUploadCallback

### Answer area

```
[ServiceBehavior(ConcurrencyMode =  
ConcurrencyMode.  )]  
public class UploadCallbackService : IUploadCallbackService  
{  
    public void UploadOrder(int orderNum)  
    {  
         callback = OperationContext  
            .Current.GetCallbackChannel< >();  
        decimal value = callback.  orderNum);  
        UploadDB.UploadOrder.Upload(orderNum, value);  
    }  
}
```



Correct Answer:

Multiple  
Single  
GetOrderValue  
UploadCallbackService  
IUploadCallback

### Answer area

```
[ServiceBehavior(ConcurrencyMode =  
ConcurrencyMode. Single )]  
  
public class UploadCallbackService : IUploadCallbackService  
{  
    public void UploadOrder(int orderNum)  
    {  
        IUploadCallback callback = OperationContext  
            .Current.GetCallbackChannel< IUploadCallback >();  
        decimal value = callback. GetOrderValue (orderNum);  
        UploadDB.UploadOrder.Upload(orderNum, value);  
    }  
}
```

Section: [none]

Explanation

Explanation/Reference:

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 choose the appropriate data access technology for the children's book area of the web application. Which data access technology should you choose?

- 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 2

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/hh169248\(v=nav.90\).aspx](https://msdn.microsoft.com/en-us/library/hh169248(v=nav.90).aspx)

## QUESTION 3

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



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

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 4

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:**

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>

## QUESTION 5

You need to create an OData query expression to return the ten books with the largest 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 asc&\$top=10
- D. /books?orderby=sales desc&\$top=10

**Correct Answer:** D

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

\$top determines the maximum number of records to return.

From scenario:

Action: Get a list of all books

HTTP method: GET

Relative URI: /books

References: [https://msdn.microsoft.com/en-us/library/gg309461\(v=crm.7\).aspx](https://msdn.microsoft.com/en-us/library/gg309461(v=crm.7).aspx)

### **QUESTION 6**

You need to implement the Get() method in the bookstore Web API application to be able to find books by using an ad hoc query.

Which method should you use?



```
public IQueryable<Book> Get()
{
    return bookRepository.All;
}

public Book Get(int id)
{
    var book = bookRepository.Find(id);
    if (book == null)
    {
        throw new HttpResponseException(HttpStatusCode.NotFound);
    }
    return new List<Book> { book };
}

public IEnumerable<Book> Get()
{
    return bookRepository.All;
}

public List<Book> Get(int id)
{
    var book = bookRepository.Find(id);
    if (book == null)
    {
        throw new HttpResponseException(HttpStatusCode.NotFound);
    }
    return new List<Book> { book };
}
```



A.

B.

C.

D.

**Correct Answer:** B

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:



Compare to the Delete method from the scenario:

```
public void Delete(int id)
{
    var book = bookRepository.Find(id);
    if (book == null)
    {
        throw new HttpResponseMessage(HttpStatusCode.NotFound);
    }
    bookRepository.Delete(id);
}
```

**QUESTION 7**

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 8**

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:

The 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



## 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 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?

- 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 2

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 3

You need to implement a solution that meets the logging requirements.

Which class should you use?

- A. RouteAttribute
- B. RoutePrefixAttribute
- C. AcceptVerbsAttribute
- D. ActionFilterAttribute

**Correct Answer:** D

**Section:** [none]

**Explanation**

**Explanation/Reference:**


**QUESTION 4**  
DRAG DROP

You need to build the connection from ReportApp to read the search data. The solution must minimize development effort.

Which three actions should you perform in sequence? To answer, move the appropriate actions from the list of actions to the answer area and arrange them in the correct order.

**Select and Place:**

Actions	Answer Area
Obtain the shared secret issuer name from the Service Bus Connection Information.	
Use a SubscriptionClient object to receive messages.	
Use an HttpClient object to receive messages.	
Obtain the Shared Access Signature (SAS) key from the Service Bus Connection Information.	
Create a service namespace.	
Update the .cscfg file.	



**Correct Answer:**

Actions	Answer Area
Obtain the shared secret issuer name from the Service Bus Connection Information.	Create a service namespace.
Use an HttpClient object to receive messages.	Obtain the Shared Access Signature (SAS) key from the Service Bus Connection Information.
	Use a SubscriptionClient object to receive messages.
Update the .cscfg file.	

**Section:** [none]

**Explanation**

**Explanation/Reference:**

References:

<https://docs.microsoft.com/en-us/azure/service-bus-messaging/service-bus-dotnet-get-started-with-queues> <https://docs.microsoft.com/en-us/azure/service-bus-messaging/service-bus-queues-topics-subscriptions>

#### QUESTION 5

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 6

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)
- E. the Service Bus topics
- F. the Service Bus relay
- G. ExpressRoute

**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>





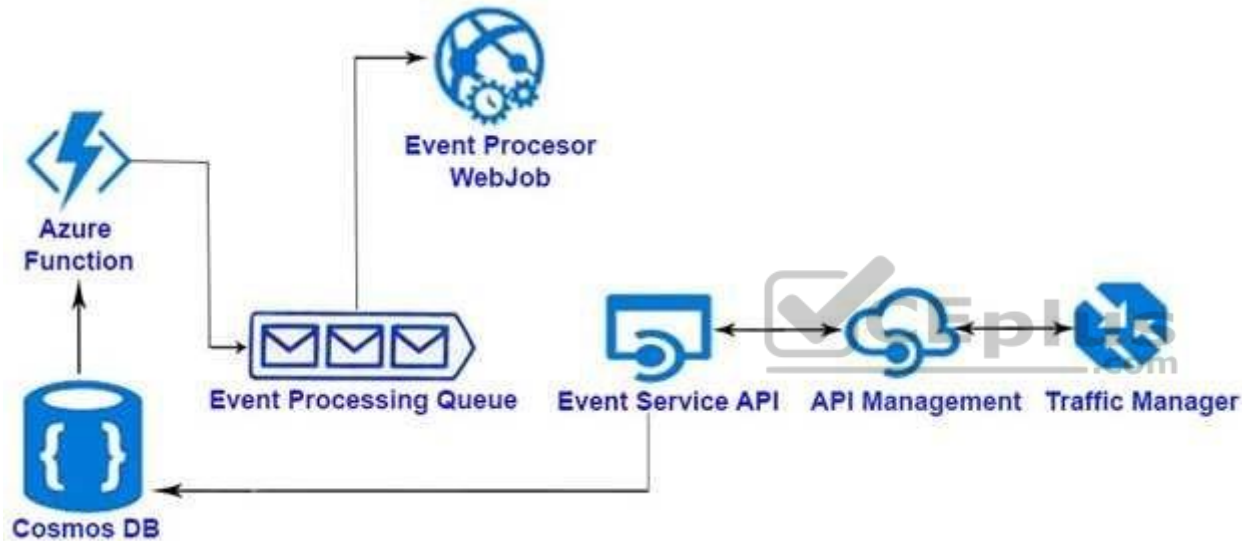
## Testlet 1

### Overview

Trey Research Inc. is a Software-as-a-Service (SaaS) company that provides hosted solutions for business partners around the world. The company is developing a solution that will allow business partners to manage events, including shareholder meetings and trade shows.

You hold meetings with key partners to identify requirements and constraints for the solution. You must minimize costs where possible.

You work with an Azure solutions architect to design the logical structure for the solution. The solution will use the following architecture:



### Solution components

The solution will use Azure Traffic Manager to distribute traffic. The solution will use API Management to provide caching for the Event Service. Partner companies will interact with the solution by using the Event Service API. This API will be implemented as an ASP.NET Core Web API that runs as an Azure Web App. Event data will be stored in Cosmos DB using the Document API.

The solution will be highly available. You define regional Azure outages as periods of 60 seconds or more where the Event Service is not available.

An Azure WebJob named EventJob will be deployed with the Event Service Web App. The WebJob:

- Creates new computed events when partner events are created.

- Must be active whenever the Event Service is running. ▪
- Is updated once a quarter.

Trey Research Inc. has developer teams that work with a variety of operating systems including Windows, Linux, and MacOS.

### **Event Service**

Individual events must be immutable. Event data can be up to 800 kilobytes (KB) in size. The Event Service must meet the following requirements:

- Use REST-based design
- Cache data whenever possible.
- Support both JSON and XML-based data.
- Log customer information whenever data is modified.
- Include the X-Customer header in all calls to identify the partner.

### **Regional access to the Event Service API**

Data for partners in Germany and Brazil must be served from Azure datacenters in their respective geographies unless there is a regional Azure outage. All other partners must use the US West Azure datacenter.

### **Testing**

All testing must interact directly with the Web App backend. Automated testing of the solution is performed using a remote third-party testing solution.

### **Event data**

You identify the following requirements for the event data store:

- Each partner's event data must be stored in a Collection that is specific to the partner.
- Event data must be available if a regional Azure outage occurs.
- Event read and write operations for a single partner must always store events in the correct order.

### **Event API**

Relevant portions of the app files are shown below. Line numbers are included for reference only and include a two-character prefix that denotes the specific file to which they belong.

### Event.cs

```
EE01 public class Event
EE02 {
EE03     public string Name { get; set; }
EE04 }
```

### IEventDB

```
IE01 public interface IEventDB
IE02 {
IE03     IEnumerable<Event> LoadEvents();
IE04     void SaveEvent (Event @event);
IE05     string CurrentCustomer { get; set; }
IE06 }
```



## EventDB.cs

```
ED01 public class EventDB : IEventDB
ED02 {
ED03     private DocumentClient client;
ED04     public IEnumerable<Event> LoadEvents ()
ED05     {
ED06         . . .
ED07     }
ED08     public void SaveEvent(Event @event)
ED09     {
ED10         . . .
ED11     }
ED12     public string CurrentCustomer { get; set; }
ED13 }
```



#### EventController.cs

```
EC01 [Route("api/events")]
EC02 public class EventsController : Controller
EC03 {
EC04     public IFileProvider FileProvider { get; }
EC05     public IEventDB EventDB { get; }
EC06     public EventsController(IFileProvider fileProvider, IEventDB eventDB)
EC07 {
EC08         FileProvider = fileProvider;
EC09         EventDB = eventDB;
EC10 }
EC11
EC12 [HttpGet]
EC13 public IEnumerable<Event> GetEvents()
EC14 {
EC15     return EventDB.LoadEvents();
EC16 }
EC17
EC18
EC19 }
```



#### Event processing

Relevant portions of the app files are shown below. Line numbers are included for reference only and include a two-character prefix that denotes the specific file to which they belong.

#### Program.cs

```
PR01 using System
PR02 using System.Collections.Generic;
PR03 using System.Linq;
PR04 using System.Text;
PR05 using System.Threading.Tasks;
PR06 using Microsoft.Azure.WebJobs;
PR07 namespace EventJob
PR08 {
PR09     class Program
PR10     {
PR11         static void Main()
PR12         {
PR13             var config = new JobHostConfiguration();
PR14             var host = new JobHost(config);
PR15             host.RunAndBlock();
PR16         }
PR17     }
PR18 }
```

#### ComputedEventProcessor.cs

```
CE01 public class ComputedEventProcessorBebJob
CE02 {
CE03     public static void ProcessQueueMessage ([QueueTrigger ("eventprocess")] string message, TextWriter log)
CE04     {
CE05         . . .
CE06     }
CE07 }
```

Relevant portions of the app files are shown below. Line numbers are included for reference only and include a two-character prefix that denotes the specific file to which they belong.

### Startup.cs

```
SU01 public class Startup
SU02 {
SU03     public Startup(IConfiguration configuration)
SU04     {
SU05         Configuration = configuration;
SU06     }
SU07     public IConfiguration Configuration { get; }
SU08     public void ConfigureServices(IServiceCollection services)
SU09     {
SU10
SU11
SU12
SU13
SU14     }
SU15     public void Configure(IApplicationBuilder app, IHostingEnvironment env)
SU16     {
SU17         app.UseMvc();
SU18         app.UseMiddleware<CustomerMiddleware>();
SU19     }
SU20 }
```

CustomerMiddleware.cs

```
CM01 public class CustomerMiddleware
CM02 {
CM03     private readonly RequestDelegate _next;
CM04     public CustomerMiddleware (RequestDelegate next)
CM05     {
CM06         _next = next;
CM07     }
CM08     public async Task Invoke(HttpContext httpContext, IEventDB store)
CM09     {
CM10         var user = httpContext.Request.Headers["X-Customer"];
CM11         store.CurrentCustomer = user;
CM12         await _next(httpContext);
CM12     }
CM14 }
```

### QUESTION 1

You need to ensure that computed events are processed correctly.

What should you do?

- A. Move the WebJob to a different App Service plan.
- B. Select a deployment slot for the WebJob.
- C. Disable WebJobs during deployments.
- D. Create an additional upgrade domain.

**Correct Answer:** B

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

Scenario: An Azure WebJob named EventJob will be deployed with the Event Service Web App. The WebJob:

- Creates new computed events when partner events are created.



- Must be active whenever the Event Service is running.
- Is updated once a quarter.

References: <https://stackify.com/azure-deployment-slots/>

## QUESTION 2

You need to configure DNS for the Event service.

How many DNS entries should you create?

- A. 1
- B. 2
- C. 3
- D. 4

**Correct Answer:** C

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

Scenario: Regional access to the Event Service API

Data for partners in Germany and Brazil must be served from Azure datacenters in their respective geographies unless there is a regional Azure outage. All other partners must use the US West Azure datacenter.

## QUESTION 3

**Note:** This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

**After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.**

You need to ensure that testing, development, and end user access requirements are met.

Solution: Add Web App backend endpoints to Azure Traffic Manager and use weighted routing.

Does the solution meet the goal?

- A. Yes

B. No

**Correct Answer:** B

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

Scenario: All testing must interact directly with the Web App backend. Automated testing of the solution is performed using a remote third-party testing solution.

#### QUESTION 4

**Note:** This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

**After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.**

You need to ensure that testing, development, and end user access requirements are met.

Solution: Secure the Web App backend by using certificates.



<https://www.vceplus.com/> Does

the solution meet the goal?

A. Yes

B. No

**Correct Answer:** B

**Section:** [none]

**Explanation**

**Explanation/Reference:**

References: <https://docs.microsoft.com/en-us/azure/api-management/api-management-howto-mutual-certificates>

### QUESTION 5

#### DRAG DROP

You need to add code to line SU12 to implement the customer identification requirement.

How should you complete the code? To answer, drag the appropriate code segments to the correct locations. 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.

**NOTE:** Each correct selection is worth one point.

**Select and Place:**

Method names	Answer area
<div>Scoped</div> <div>Session</div> <div>Identity</div> <div>Singleton</div>	<div>services.Add</div> <div>Method name</div> <div>Generic type</div>
<b>Generic types</b> <div>()</div> <div>&lt;IEventDB, EventDB&gt;()</div> <div>&lt;EventDB&gt;()</div>	

**Correct Answer:**

Method names	Answer area
<input type="text" value="Scoped"/> <input type="text" value="Session"/> <input type="text" value="Singleton"/>	<pre>services.Add Identity &lt;EventDB&gt;();</pre>
<b>Generic types</b> <input type="text" value="()"/> <input type="text" value="&lt;IEventDB, EventDB&gt;()"/>	
<input type="text" value=""/>	

Section: [none]

Explanation

Explanation/Reference:



#### QUESTION 6

**Note:** This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

**After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.**

You need to ensure that testing, development, and end user access requirements are met.

Solution: Move the Web App backend to a private VNet.

Does the solution meet the goal?

- A. Yes
- B. No

**Correct Answer:** A

Section: [none]

Explanation

**Explanation/Reference:**

Explanation:

Scenario: All testing must interact directly with the Web App backend. Automated testing of the solution is performed using a remote third-party testing solution.

**QUESTION 7**

**Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.**

**After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.**

You need to ensure that testing, development, and end user access requirements are met.

Solution: Secure the Web App backend by using Azure Active Directory (Azure AD).

Does the solution meet the goal?

- A. Yes
- B. No

**Correct Answer: B**

**Section: [none]**

**Explanation**

**Explanation/Reference:**

Explanation:

Instead, move the Web App backend to a private VNet.

Scenario: All testing must interact directly with the Web App backend. Automated testing of the solution is performed using a remote third-party testing solution.

**QUESTION 8**

You need to configure the WebJob.

What should you do?

- A. Set the type to **Triggered**. Set the Scale to **Single Instance**.
- B. Set the type to **Continuous**. Set the Scale to **Multiple Instance**.
- C. Set the type to **Triggered**. Set the Scale to **Multiple Instance**.
- D. Set the type to **Continuous**. Set the Scale to **Single Instance**.

**Correct Answer:** A

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

Scenario: An Azure WebJob named EventJob will be deployed with the Event Service Web App. The

WebJob: ▪ Creates new computed events when partner events are created. ▪ Must be active whenever the Event Service is running.

Triggered WebJobs Starts only when triggered manually or on a schedule. Runs on a single instance that Azure selects for load balancing.

References:

<https://docs.microsoft.com/en-us/azure/app-service/webjobs-create>

### Question Set 1

#### QUESTION 1

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?

- 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

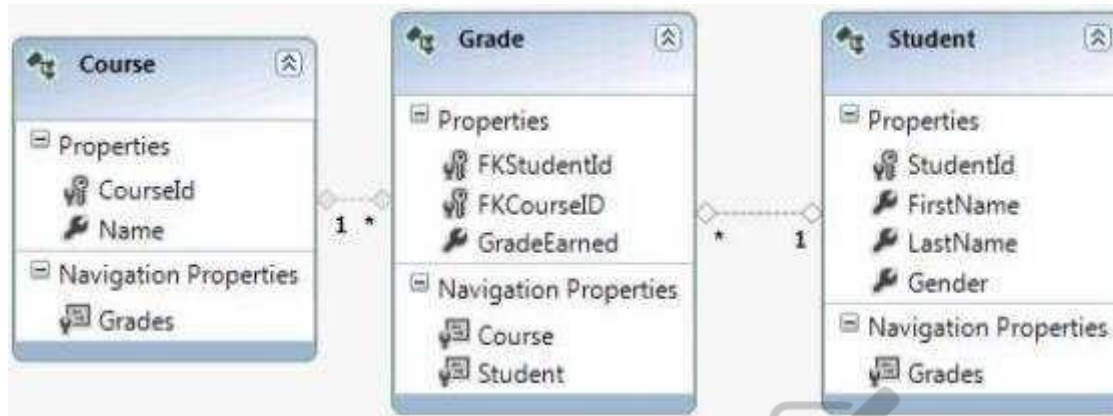
**Section:** [none]

**Explanation**

**Explanation/Reference:**

## QUESTION 2

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 3

#### DRAG DROP

You are developing a WCF Data Services service in Visual Studio 2012 to display movie information from a SQL Server database that changes every 24 hours. The service is defined in the following class.

```
public class MovieService : DataService<MovieEntities>
{
    public static void InitializeService(DataServiceConfiguration config)
    {
        config.SetEntitySetAccessRule("Movies", EntitySetRights.AllRead);
        config.DataServiceBehavior.MaxProtocolVersion = DataServiceProtocolVersion.V2;
    }
}
```

The application contains the following Entity Framework model.



The service must only return data for movies that are currently in theaters.

You need to add a method to the MovieService class to filter the data.

How should you build the method? (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

ChangeInterceptor

QueryInterceptor

"Movies"

"MovieEntities"

Expression

Filter

```
public class MovieService : DataService<MovieEntities>
{
    public static void InitializeService(DataServiceConfiguration config)
    {
        config.SetEntitySetAccessRule("Movies", EntitySetRights.AllRead);
        config.DataServiceBehavior.MaxProtocolVersion =
            DataServiceProtocolVersion.V2;
    }

    { }

    public <Func<Movie, bool>> ApplyTheaterFilter()
    {
        return movie => movie.IsInTheaters == true;
    }
}
```

Correct Answer:

### Answer area

ChangeInterceptor

"MovieEntities"

Filter

```
public class MovieService : DataService<MovieEntities>
{
    public static void InitializeService(DataServiceConfiguration config)
    {
        config.SetEntitySetAccessRule("Movies", EntitySetRights.AllRead);
        config.DataServiceBehavior.MaxProtocolVersion =
            DataServiceProtocolVersion.V2;
    }

    { QueryInterceptor ( "Movies" ) }

    public Expression <Func<Movie, bool>> ApplyTheaterFilter()
    {
        return movie => movie.IsInTheaters == true;
    }
}
```

Section: [none]

Explanation

Explanation/Reference:

#### QUESTION 4

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 5

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 6

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.



<https://www.vceplus.com/> 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 7

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:**

Explanation:

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 8**

**DRAG DROP**

You are developing a WCF service.

The WCF service requires implementations of the new data contracts to validate against the old schema.

You need to develop a new data contract without breaking current functionality.

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

`[DataContract(Validate = "Profile")]`

`[DataContract(Identifier = "Profile")]`

`[DataContract(Name = "Profile")]`

`[DataContract(TypeID = "Profile")]`

`[DataContract(ID = "Profile")]`

```
public class ProfileV1
{
    [DataMember]
    public string Username;
}
```

```
public class ProfileV2
{
    [DataMember]
    public string Username;
    [DataMember]
    public string Email;
}
```

Correct Answer:

## Answer area

```
[DataContract(Validate = "Profile")]
```

```
[DataContract(Identifier = "Profile")]
```

```
[DataContract(Name = "Profile")]
```

```
[DataContract(TypeID = "Profile")]
```

```
[DataContract(ID = "Profile")]
```

```
[DataContract(Name = "Profile")]
```

```
public class ProfileV1  
{  
    [DataMember]  
    public string Username;  
}
```

```
[DataContract(Name = "Profile")]
```

```
public class ProfileV2  
{  
    [DataMember]  
    public string Username;  
    [DataMember]  
    public string Email;  
}
```

Section: [none]

Explanation

Explanation/Reference:

### QUESTION 9

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 10

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 11

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 12**

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 13**

HOTSPOT

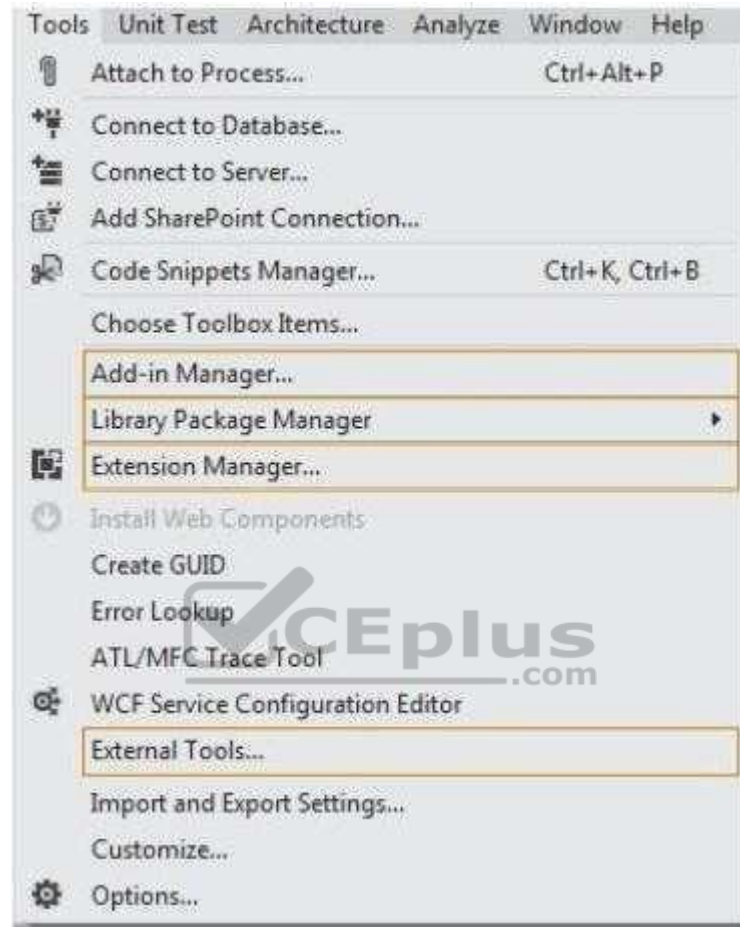
You are supporting an application that uses the ADO.NET Entity Framework to query and access data.

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

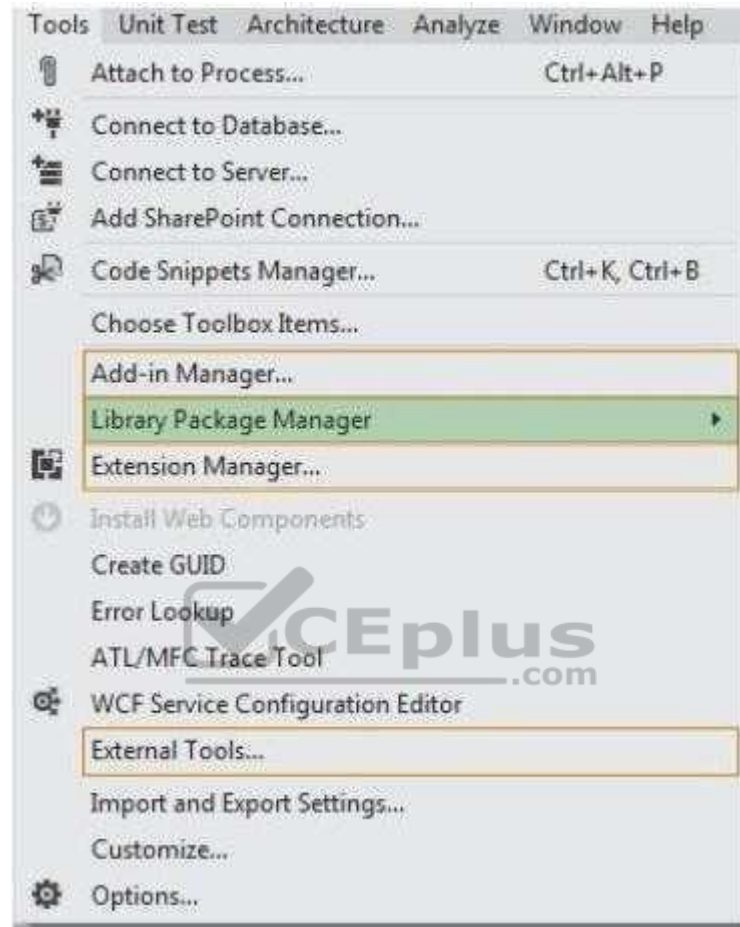
You need to update Entity Framework.

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 14

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 15

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 16

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 17

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 18****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]

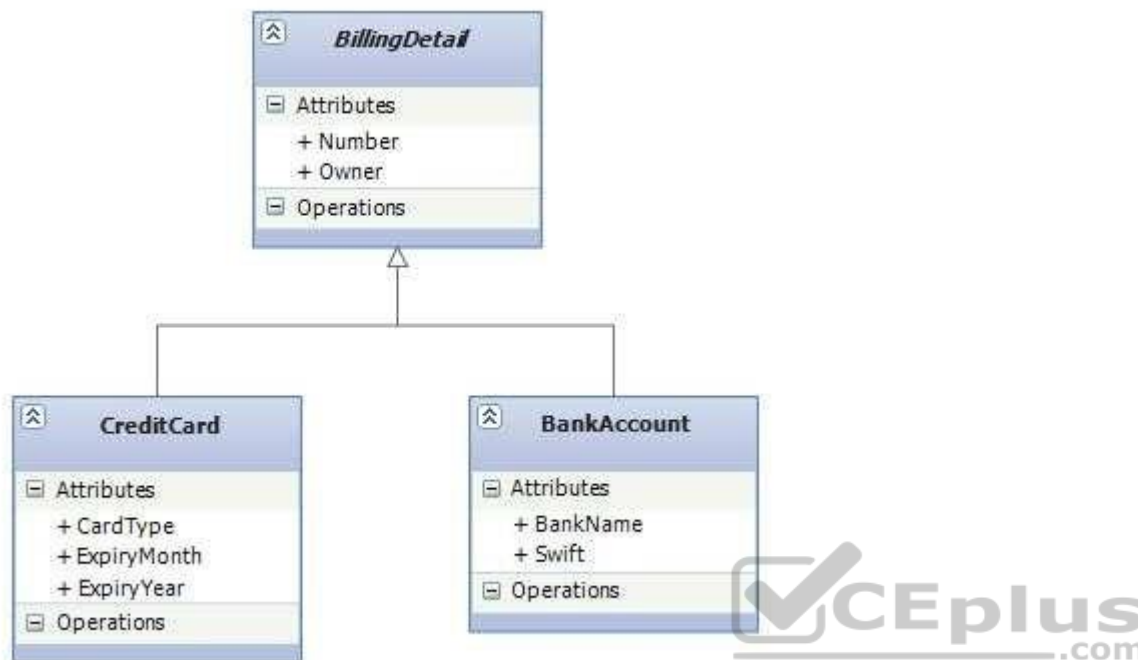
Explanation

**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 19

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 20**

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 21

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 22

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 23**

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 24

You have the following code.

```
String xmlString =  
    @"C:\file.xml";
```

File.xml contains the following XML markup.

```
<?xml version='1.0'?>  
<!-- This is a sample XML document -->  
<Items>  
    <Item>Item1</Item>  
</Items> ;
```

You need to write code to display Item1 in the console output.

Which five code blocks should you use? Develop the solution by selecting and arranging the required code blocks in the correct order.

NOTE: You will need all of the code blocks.

Select and Place:

### Code Blocks

```
while (reader.Read())
{

}

using (XmlReader reader =
XmlReader.Create
(new StringReader(xmlString)))
{

}

while (!reader.Read())
{

}

using (XmlReader reader =
XmlReader.Create (xmlString))
{

}

}

}

Console.WriteLine(reader.Value);

if (reader.NodeType ==
XmlNodeType.Text)
```

### Answer Area



Correct Answer:

### Code Blocks


```
using (XmlReader reader =
XmlReader.Create
(new StringReader(xmlString)))
{
while (!reader.Read())
{

```

### Answer Area

```
using (XmlReader reader =
XmlReader.Create (xmlString))
{
while (reader.Read())
{
if (reader.NodeType ==
XmlNodeType.Text)
{
Console.WriteLine(reader.Value);
}
}

```



Section: [none]

Explanation

Explanation/Reference:

#### QUESTION 25

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:



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

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>

## QUESTION 26

**Note:** This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

**After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.**

You are developing a RESTful API that uses ASP.NET Core. You plan to host the API in Azure App Services. You provision a development environment in the application service.

Developers must be able to deploy the API to the development environment. You must not share the Azure account credentials with developers.

You need to ensure that developers can deploy the API to the development environment.

Solution: Download the Publish profile for the application service and share it with the developers. Use Microsoft Visual Studio Publishing.

Does the solution meet the goal?

- A. Yes
- B. No

**Correct Answer:** A

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

To configure deployment for a web project in Visual Studio, you create one or more publish profiles using the Publish Web wizard. A publish profile specifies the server you are deploying to, the credentials needed to log on to the server, the databases to deploy, and other deployment options. When you are ready to publish, you choose the profile you want to use and click the Publish button in the wizard or in the Web One Click Publish toolbar.

References: [https://msdn.microsoft.com/en-us/library/dd465337\(v=vs.110\).aspx](https://msdn.microsoft.com/en-us/library/dd465337(v=vs.110).aspx)



#### QUESTION 27

**Note:** This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

**After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.**

You are developing a RESTful API that uses ASP.NET Core. You plan to host the API in Azure App Services. You provision a development environment in the application service.

Developers must be able to deploy the API to the development environment. You must not share the Azure account credentials with developers.

You need to ensure that developers can deploy the API to the development environment.

Solution: Share the Publish profile for the application service with the developers. Use Web Matrix 2 for publishing.

Does the solution meet the goal?

- A. Yes

B. No

**Correct Answer:** B

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

You should use a Publishing Profile with Microsoft Visual Studio Publishing as WebMatrix enables developers to build websites, while Visual Studio Publishing is used to develop computer programs for Microsoft Windows, as well as web sites, web applications and web services.

References: [https://msdn.microsoft.com/en-us/library/dd465337\(v=vs.110\).aspx](https://msdn.microsoft.com/en-us/library/dd465337(v=vs.110).aspx)

#### **QUESTION 28**

**Note:** This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

**After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.**

You are developing a RESTful API that uses ASP.NET Core. You plan to host the API in Azure App Services. You provision a development environment in the application service.

Developers must be able to deploy the API to the development environment. You must not share the Azure account credentials with developers.

You need to ensure that developers can deploy the API to the development environment.

Solution: Add the developers to the same Azure Active Directory (Azure AD) as the Azure subscription in which the App Service is provisioned. Use XCopy to deploy to the App Service.

Does the solution meet the goal?

A. Yes

B. No

**Correct Answer:** B

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

You should use a Publishing Profile with Microsoft Visual Studio Publishing.

References:

[https://msdn.microsoft.com/en-us/library/dd465337\(v=vs.110\).aspx](https://msdn.microsoft.com/en-us/library/dd465337(v=vs.110).aspx)

#### QUESTION 29

**Note:** This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

**After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.**

You have a web application in a Docker container image. You set the tag for the image as **myapp**. You plan to deploy the application to Azure Container Services.

You run the following commands. All commands complete successfully.

```
az acr create --resource-group myResourceGroup --name myRegistry --sku Basic
az acr login --name myRegistry
```

You need to ensure that the image can be run on an Azure Container Service cluster.

Solution: You run the following commands:

```
docker tag myapp myregistry.azurecr.io/samples/myapp
docker push myregistry.azurecr.io/samples/myapp
```

Does the solution meet the goal?

- A. Yes
- B. No

**Correct Answer:** A

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

First tag the image, and then push it into your private registry.

References: <https://medium.com/@pjbpf/azure-kubernetes-service-aks-pulling-private-container-images-from-azure-container-registry-acr-9c3e0a0a13f2>

### QUESTION 30

**Note:** This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have a web application in a Docker container image. You set the tag for the image as **myApp**. You plan to deploy the application to Azure Container Services.

You run the following commands. All commands complete successfully.

```
az acr create --resource-group myResourceGroup --name myRegistry --sku Basic
az acr login --name myRegistry
```

You need to ensure that the image can be run on an Azure Container Service cluster.

Solution: You run the following commands:

```
docker tag myapp myregistry.azurecr.io/samples/myapp
docker pull myregistry.azurecr.io/samples/myapp
```

Does the solution meet the goal?

- A. Yes
- B. No

**Correct Answer:** B

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

You need to push the image into your private registry, not pull it.

References: <https://medium.com/@pjbpf/azure-kubernetes-service-aks-pulling-private-container-images-from-azure-container-registry-acr-9c3e0a0a13f2>

### QUESTION 31



**Note:** This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

**After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.**

You have a web application in a Docker container image. You set the tag for the image as **myApp**. You plan to deploy the application to Azure Container Services.

You run the following commands. All commands complete successfully.

```
az acr create --resource-group myResourceGroup --name myRegistry --sku Basic
az acr login --name myRegistry
```

You need to ensure that the image can be run on an Azure Container Service cluster.

Solution: You run the following commands:

```
docker run -d -p 5000:80 myregistry.azurecr.io/samples/myapp
docker push myregistry.azurecr.io/samples/myapp
```

Does the solution meet the goal?

- A. Yes
- B. No



**Correct Answer:** B

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

First tag the image, and then push it into your private registry.

References: <https://medium.com/@pjbfg/azure-kubernetes-service-aks-pulling-private-container-images-from-azure-container-registry-acr-9c3e0a0a13f2>

## QUESTION 32

**Note:** This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

**After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.**

You have developed a .NET Standard Library.

You need to produce a NuGet package.

Solution: Run the dotnet pack command

Does the solution meet the goal?

A. Yes

B. No

**Correct Answer: A**

**Section: [none]**

**Explanation**

**Explanation/Reference:**

Explanation:

Package the component with the NuGet pack command. The dotnet pack command and msbuild -t:pack may be used as alternates.

References:

<https://docs.microsoft.com/en-us/nuget/tools/cli-ref-pack> <https://docs.microsoft.com/en-us/nuget/guides/create-net-standard-packages-vs2015>

### QUESTION 33

**Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.**

**After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.**

You have developed a .NET Standard Library.

You need to produce a NuGet package.

Solution: Run the msbuild command with the publish target specified.

Does the solution meet the goal?

- A. Yes
- B. No

**Correct Answer:** A

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

Package the component with the NuGet pack command. The dotnet pack command and msbuild -t:pack may be used as alternates.

References:

<https://docs.microsoft.com/en-us/nuget/reference/msbuild-targets> <https://docs.microsoft.com/en-us/nuget/guides/create-net-standard-packages-vs2015>

#### QUESTION 34

**Note:** This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.

You have developed a .NET Standard Library.

You need to produce a NuGet package.

Solution: Run the NuGet pack command

Does the solution meet the goal?

- A. Yes
- B. No

**Correct Answer:** A

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

Package the component with the NuGet pack command, for example:  
nuget pack AppLogger.nuspec

This generates AppLogger.YOUR\_NAME.1.0.0.nupkg.

References: <https://docs.microsoft.com/en-us/nuget/guides/create-net-standard-packages-vs2015>

### QUESTION 35

**Note:** This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

**After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.**

You develop a REST API that uses Node.js. The API will store data in Azure Cosmos DB. You plan to deploy the API to a new Azure App Services Web App. You create a new Web App by using the Azure portal.

The API must be deployed by using SFTP.

You need to provide the proper deployment credentials to deploy the API.

Solution: Use your Azure Cosmos DB master key and resource token.

Does the solution meet the goal?

- A. Yes
- B. No

**Correct Answer:** B

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

Get FTP publishing profile and query for publish URL and credentials

References: <https://docs.microsoft.com/en-us/azure/app-service/scripts/app-service-cli-deploy-ftp>

### QUESTION 36

**Note:** This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

**After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.**

You develop a REST API that uses Node.js. The API will store data in Azure Cosmos DB. You plan to deploy the API to a new Azure App Services Web App. You create a new Web App by using the Azure portal.

The API must be deployed by using SFTP.

You need to provide the proper deployment credentials to deploy the API.

Solution: Download the. PublishSettings file and enter the username and password located in the file.

Does the solution meet the goal?

- A. Yes
- B. No

**Correct Answer: A**

**Section: [none]**

**Explanation**

**Explanation/Reference:**

Explanation:

Example:

```
# Get FTP publishing profile and query for publish URL and credentials creds=$(az webapp deployment list-publishing-profiles --name $webappname --resource-group myResourceGroup \
--query "[?contains(publishMethod, 'FTP')].[publishUrl,userName,userPWD]" --output tsv)) --query "[?contains(publishMethod, 'FTP')].
[publishUrl,userName,userPWD]" --output tsv))
```

References: <https://docs.microsoft.com/en-us/azure/app-service/scripts/app-service-cli-deploy-ftp>

### QUESTION 37

**Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.**

**After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.**

You develop a REST API that uses Node.js. The API will store data in Azure Cosmos DB. You plan to deploy the API to a new Azure App Services Web App. You create a new Web App by using the Azure portal.

The API must be deployed by using SFTP.

You need to provide the proper deployment credentials to deploy the API.

Solution: Use your assigned Azure Active Directory (Azure AD) credentials.

Does the solution meet the goal?

- A. Yes
- B. No

**Correct Answer: B**

**Section: [none]**

**Explanation**

**Explanation/Reference:**

Explanation:

Get FTP publishing profile and query for publish URL and credentials.

References: <https://docs.microsoft.com/en-us/azure/app-service/scripts/app-service-cli-deploy-ftp>

### QUESTION 38

**Note: This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.**

**After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.**

You deploy an ASP.NET Core web application to Azure App Services. You are using Azure Event Hubs to collect the telemetry data for the application.

You need to configure Event Hubs to automatically deliver the telemetry data stream to a persistent data store.

Solution: Configure Event Hubs Capture to deliver data to Azure Blob storage.

Does the solution meet the goal?

- A. Yes
- B. No

**Correct Answer: A**

**Section: [none]**

**Explanation**

**Explanation/Reference:**

Explanation:

Azure Event Hubs Capture enables you to automatically deliver the streaming data in Event Hubs to an Azure Blob storage or Azure Data Lake Store account of your choice, with the added flexibility of specifying a time or size interval.

References: <https://docs.microsoft.com/en-us/azure/event-hubs/event-hubs-capture-overview>

**QUESTION 39**

**Note:** This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

**After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.**

You deploy an ASP.NET Core web application to Azure App Services. You are using Azure Event Hubs to collect the telemetry data for the application.

You need to configure Event Hubs to automatically deliver the telemetry data stream to a persistent data store.

Solution: Configure Azure Event Hubs Capture to deliver data to Azure SQL Database.

Does the solution meet the goal?

- A. Yes
- B. No



**Correct Answer:** B

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

Use Azure Blob storage to store the telemetry data.

References: <https://docs.microsoft.com/en-us/azure/event-hubs/event-hubs-capture-overview>

**QUESTION 40**

**Note:** This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

**After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.**

You deploy an ASP.NET Core web application to Azure App Services. You are using Azure Event Hubs to collect the telemetry data for the application.

You need to configure Event Hubs to automatically deliver the telemetry data stream to a persistent data store.

Solution: Configure Azure Event Hubs Capture to deliver data to Azure File Service.

Does the solution meet the goal?

- A. Yes
- B. No

**Correct Answer:** B

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

Use Azure Blob storage to store the telemetry data.

References: <https://docs.microsoft.com/en-us/azure/event-hubs/event-hubs-capture-overview>

#### QUESTION 41

You are developing an ASP.NET Core web application by using an Entity Framework code-first approach. The application uses a SQLite database.

You make changes to the classes in the model. You must apply the changes to the database.

You need to suggest an approach to reliably handle the Entity Framework migrations.

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

**NOTE:** Each correct selection is worth one point.

- A. Modify the scaffolded migration script to drop the modified tables.
- B. Run the following command: **dotnet ef database update**
- C. Modify the scaffolded migration script to create new tables with the migration changes.
- D. Modify the scaffolded migration script to drop the existing database and create the new database.
- E. Run the following command: **dotnet ef migrations add**

**Correct Answer:** CDE



**Section: [none]**

**Explanation**

**Explanation/Reference:**

Explanation:

E: Run dotnet ef migrations add InitialCreate to scaffold a migration and create the initial set of tables for the model.

C: You can workaround some of the SQLite limitations by manually writing code in your migrations to perform a table rebuild. A table rebuild involves renaming the existing table, creating a new table, copying data to the new table, and dropping the old table.

D: SQLite does not support all migrations (schema changes) due to limitations in SQLite. For new development, consider dropping the database and creating a new one rather than using migrations when your model changes.

References: <https://docs.microsoft.com/en-us/ef/core/get-started/netcore/new-db-sqlite>  
<https://docs.microsoft.com/en-us/ef/core/providers/sqlite/limitations>

**QUESTION 42**

You are developing an order processing application that uses the Entity Framework against a SQL Server database. Lazy loading has been disabled. The application displays orders and their associated order details. Order details are filtered based on the category of the product in each order.



The Order class is shown below.

```
public partial class Order
{
    ...
    public int Order ID { get; set; }
    ...
    public virtual ICollection<OrderDetail> OrderDetails { get; set; }
    ...
}
```

The OrderDetail class is shown below.

```
public partial class OrderDetail
{
    [Key, Column(Order = 1)]
    public int OrderID { get; set; }
    [Key, Column(Order = 2)]
    public int ProductID { get; set; }
    ...
    public virtual Order Order { get; set; }
    public virtual Product Product { get; set; }
}
```

The Product class is shown below.

```
public partial class Product
{
    ...
    public int ProductID { get; set; }
    public string ProductName { get; set; }
    ...
    public Nullable<int> CategoryID { get; set; }
    ...
    public virtual Category Category { get; set; }
    ...
}
```

The Category class is shown below.

```
public partial class Category
```

You need to return orders with their filtered list of order details included in a single round trip to the database.

Which code segment should you use?

```
var orders = db.Orders.SelectMany(o => o.OrderDetails.  
    Where(od => od.Product.category.CategoryName == categoryName)).  
    Select(od => new {order = od.Order, detail = od }). ToList ().  
    Select(r => r.order);
```

```
var orders = db.Orders.SelectMany(o => o.OrderDetails.  
    Where(od => od.Product.category.CategoryName == categoryName)).  
    Select(od => new {order = od.Order, detail = od }).  
    Select(r => r.order);
```

```
var orders = db.Orders.SelectMany(o => o.OrderDetails.  
    Where(od => od.Product.category.CategoryName == categoryName)). ToList ();  
List<int> orderIDs = orderDetails.Select(od => od.OrderID). ToList();  
var orders = db.Orders.Where(o => orderIDs.Contains(o.OrderID));  
var orders = db.Orders.SelectMany(o => o.OrderDetails.  
    Where(od => od.Product.category.CategoryName == categoryName));  
List<int> orderIDs = orderDetails.Select(od => od.OrderID). ToList();  
var orders = db.Orders.Where(o => orderIDs.Contains(o.OrderID));
```

A.

B.

C.

D.

**Correct Answer:** C

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

Eager loading is the process whereby a query for one type of entity also loads related entities as part of the query. Eager loading is achieved by use of the Include method. For example, the queries below will load blogs and all the posts related to each blog.

```
using (var context = new BloggingContext())
{
    // Load all blogs and related posts

    var blogs1 = context.Blogs
        .Include(b => b.Posts)
        .ToList();
```



It is also possible to eagerly load multiple levels of related entities.

References: [https://msdn.microsoft.com/en-us/library/jj574232\(v=vs.113\).aspx](https://msdn.microsoft.com/en-us/library/jj574232(v=vs.113).aspx)

#### **QUESTION 43 HOTSPOT**

You are creating an application that retrieves Microsoft SQL Server data from two tables named Product and ProductModel.

You need to store in two separate lists all the names of the products and the product models for later use by the application.

How should you complete the code? To answer, select the appropriate options in the answer area.

**NOTE:** Each correct selection is worth one point.

**Hot Area:**

**Correct Answer:**

**Section: [none]**

**Explanation**

**Explanation/Reference:**

Explanation:

Box 1:

Two Select statements to get two results.

Box 2: (Reader.Read());

The SqlDataReader.Read Method advances the SqlDataReader to the next record. The default position of the SqlDataReader is before the first record. Therefore, you must call Read to begin accessing any data.

Return Value

Type: System.Boolean true if there are more rows; otherwise false.

Box 3: Reader.NextResult();

The SqlDataReader.NextResult method advances the data reader to the next result, when reading the results of batch Transact-SQL statements. Used to process multiple results, which can be generated by executing batch Transact-SQL statements.

By default, the data reader is positioned on the first result.

Box 4: (Reader.Read());

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

#### **QUESTION 44**

You deploy a RESTful ASP.NET Web API to manage order processing.

You are developing an Azure App Services Web App to consume the API and allow customers to order products. You use the HttpClient object to process order entries. The API throws SocketException errors when the Web App experiences a high volume of concurrent users.

You need to resolve the errors.

What should you do?

A. Implement a Using statement block when declaring the HttpClient object.

- B. Increase the value of the Timeout property when declaring the HttpClient object.
- C. Use the static modifier to declare the HttpClient object.
- D. Create a new HttpClient instance for each API request and use asynchronous method calls.

**Correct Answer:** C

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

If the class that wraps the external resource is shareable and thread-safe, create a shared singleton instance or a pool of reusable instances of the class.

The following example uses a static HttpClient instance, thus sharing the connection across all requests.

```
public class SingleHttpClientInstanceController : ApiController
{
    private static readonly HttpClient httpClient;

    static SingleHttpClientInstanceController()
    {
        httpClient = new HttpClient();
    }

    // This method uses the shared instance of HttpClient for every call to GetProductAsync.
    public async Task<Product> GetProductAsync(string id)
    {
        var hostName = HttpContext.Current.Request.Url.Host;
        var result = await httpClient.GetStringAsync(string.Format("http://{0}:8080/api/...", hostName));
        return new Product { Name = result };
    }
}
```

References: <https://docs.microsoft.com/en-us/azure/architecture/antipatterns/improper-instantiation/>

#### QUESTION 45

You are developing an ASP.NET Core web application by using an Entity Framework code-first approach. The application uses an Azure SQL Database. The codefirst migration is configured to run as part of a continuous integration build.

You must add an Azure MySQL Database. This database must use the same schema as the existing Azure SQL Database instance.

You need to configure the migration to ensure that the existing TFS build definition remains unchanged.

What are two possible ways to achieve this goal? Each correct answer presents a complete solution.

**NOTE:** Each correct selection is worth one point.

- A. Use the ActiveProvider property to specify the provider to which the migration is applied.
- B. Create a new type that derives from DbContext and override the ActiveProvider object. Then, add or apply migrations using this type.
- C. Use the Entity Framework Core Fluent API to identify database providers.
- D. Create a separate Migration Assembly than the one containing the DbContext and switch the active provider during build.

**Correct Answer:** BC

**Section:** [none]

**Explanation**

**Explanation/Reference:** References: [https://medium.com/@rc\\_dos\\_santos/how-configure-asp-net-core-web-api-project-with-mysql-database-b7a64a247a99](https://medium.com/@rc_dos_santos/how-configure-asp-net-core-web-api-project-with-mysql-database-b7a64a247a99)

#### QUESTION 46

You have a web server that hosts several web applications.

From Microsoft Visual Studio, you create an assembly that is signed.

You need to make the assembly available to all of the web applications on the web server. The solution must minimize the number of copies of the assembly.

Which tool should you run?

- A. **gacutil.exe**
- B. **sn.exe**
- C. **tlbimp.exe**
- D. **regasm.exe**

**Correct Answer:** B

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

Strong Name Scenario

The following scenario outlines the process of signing an assembly with a strong name and later referencing it by that name.

Assembly A is created with a strong name using one of the following methods:

- Using a development environment that supports creating strong names, such as Visual Studio 2005.
- Creating a cryptographic key pair using the Strong Name tool (Sn.exe) and assigning that key pair to the assembly using either a command-line compiler or the Assembly Linker (Al.exe). The Windows Software Development Kit (SDK) provides both Sn.exe and Al.exe.

References: <https://docs.microsoft.com/en-us/dotnet/framework/app-domains/create-and-use-strong-named-assemblies>

**QUESTION 47**

You are developing a Microsoft Azure web application. The application will be deployed to 10 web role instances. A minimum of 8 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:** B

**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 8 VMs, that means you'll have 2 UD's.

**QUESTION 48**

You are developing a web application by using Microsoft .NET Framework 4.5.

You are creating a web client for the application. The web client will make REST calls to several web services.



You need to ensure that the web client meets the following requirements:

- Uses the Task class to perform asynchronous operations ▪

Reuses recently resolved DNS lookups

Which object should you include in the solution?

- A. ServiceClient
- B. WebClient
- C. HttpClient
- D. WebRequest

**Correct Answer:** C

**Section:** [none]

**Explanation**

**Explanation/Reference:**

References: <https://www.c-sharpcorner.com/article/calling-web-api-using-httpclient/>

#### QUESTION 49

You have a Web.config file that contains the following markup.



```
<?xml version="1.0"?>
<configuration>
  <appSettings>
    <add key="Key1" value="Value1" />
    <add key="Key2" value="Value2" />
    <add key="Key3" value="Value3" />
  </appSettings>
</configuration>
```

You need to use an XSLT transformation to remove the add tag for Key3.

Which markup should you use?

- A. `<add key="Key3" xdt: Transform="Remove" />`
- B. `<add key="Key3" xdt: Transform="Remove" xdt: Locator="Match (/configuration/appSettings/add[@key='Key3']) "/>`
- C. `<add xdt: Transform="Remove" />`
- D. `<add key="Key3" xdt: Transform="Remove" xdt: Locator="Match (key) " />`

**Correct Answer:** D

**Section:** [none]

**Explanation**

**Explanation/Reference:**

References: [https://msdn.microsoft.com/en-us/library/dd465326\(v=vs.110\).aspx](https://msdn.microsoft.com/en-us/library/dd465326(v=vs.110).aspx)

#### QUESTION 50

You have a Microsoft Visual Studio project named Project1 that is deployed as an Azure web app. The Azure web app uses an Azure SQL Database.

You plan to deploy updates to the Azure web app by using a Web Deploy Package.

The password for the Azure SQL Database was changed since you first published the Azure web app.

You need to deploy the package by using Windows PowerShell.

Which file should you modify before running the PowerShell deployment script?

- A. WebApiConfig.cs from the App\_Start folder
- B. IdentityConfig.cs from the App\_Start folder
- C. App.config from the Web Application folder
- D. Project1-waws-dev.json from the Configurations folder

**Correct Answer:** A

**Section:** [none]

**Explanation**

**Explanation/Reference:**

#### QUESTION 51

You need to choose the appropriate data access technology for the cookbook area of the web application.

Which data access technology should you choose?

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

**Correct Answer:** A

**Section:** [none]

**Explanation**

**Explanation/Reference:**

References: <https://docs.microsoft.com/en-us/dotnet/framework/data/wcf/wcf-data-services-overview>

#### QUESTION 52

You create a web application.

You deploy the application by using a Web Deploy Package.



You need to identify which setting will be created automatically in the SetParameters.xml file during the package generation.

Which three settings should you identify? Each correct answer presents part of the solution.

- A. the connection strings in the Web.config file
- B. the destination IIS web application path and name
- C. the service endpoints of the Web.config file
- D. the connection strings of any databases you add to the Package/Publish SQL tab on the Properties page of the project
- E. the application settings of the Web.config file

**Correct Answer:** ABD

**Section:** [none]

**Explanation**

**Explanation/Reference:**

References: <https://docs.microsoft.com/en-us/aspnet/web-forms/overview/deployment/web-deployment-in-the-enterprise/configuring-parameters-for-web-packagedeployment>

### QUESTION 53

You are building an ADO.NET Entity Framework application.

You need to validate the conceptual schema definition language (CSDL), store schema definition language (SSDL), and mapping specification language (MSL) files.

Which Entity Data Model tool can you use? (Each correct answer presents a complete solution. Choose all that apply.)

- A. EDM Generator (EdmGen.exe)
- B. ADO.NET Entity Data Model Designer
- C. Entity Data Model Wizard
- D. Update Model Wizard

**Correct Answer:** AB

**Section:** [none]

**Explanation**

**Explanation/Reference:**

<http://msdn.microsoft.com/en-us/library/bb387165.aspx>



### QUESTION 54

You are designing an ASP.NET Web API application.

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

Which HTTP verb should you use?

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

**Correct Answer:** D

**Section: [none]**

**Explanation**

**Explanation/Reference:**

Explanation:

To edit/update/moderate an entry you use PUT.

UsePUT when you can update a resource completely through a specific resource.

References: <http://restcookbook.com/HTTP%20Methods/put-vs-post/>

### QUESTION 55

DRAG DROP

You are developing an ASP.NET Web API application for currency conversion that will be consumed by a web browser by using a composite application that is served from another web domain.

You need to configure the Web API.

You have the following markup:

```
<httpProtocol>
  <customHeaders>
    <add name="Access-Control-Allow-Origin"
      value="Target 1" />
    <add name="Target 2"
      value="PUT, DELETE" />
    <add name="Target 3"
      value="Target 4" />
  </customHeaders>
</httpProtocol>
```



Which XML elements should you include in Target 1, Target 2, Target 3 and Target 4 to complete the markup?

**Select and Place:**

### XML Elements

Access-Control-Allow-Origin
Access-Control-Allow-Headers
Access-Control-Allow-Methods
Access-Control-Allow-Request-Method
Access-Control-Allow-Request-Headers
*
POST, GET
Content-Type



### Answer Area

Target 1:	Code Segment
Target 2:	Code Segment
Target 3:	Code Segment
Target 4:	Code Segment

**Correct Answer:**

### XML Elements

Access-Control-Allow-Origin

Access-Control-Allow-Request-Method

Access-Control-Allow-Request-Headers

POST, GET

### Answer Area

Target 1:

\*

Target 2:

Access-Control-Allow-Methods

Target 3:

Access-Control-Allow-Headers

Target 4:

Content-Type

**Section:** [none]

**Explanation**

**Explanation/Reference:**

#### QUESTION 56

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");
  ...
});
</script>
```

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

**Correct Answer:** A

**Section:** [none]

**Explanation**

**Explanation/Reference:**

#### **QUESTION 57**

**Note:** This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

**After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.**

You develop a REST API that uses Node.js. The API will store data in Azure Cosmos DB. You plan to deploy the API to a new Azure App Services Web App. You create a new Web App by using the Azure portal.

The API must be deployed by using SFTP.

You need to provide the proper deployment credentials to deploy the API.

Solution: Enter the user-level credentials that you configured when you created the Web App.

Does the solution meet the goal?

- A. Yes
- B. No

**Correct Answer:** B

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

Get FTP publishing profile and query for publish URL and credentials.

References: <https://docs.microsoft.com/en-us/azure/app-service/scripts/app-service-cli-deploy-ftp>

#### QUESTION 58

**Note:** This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

**After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.**

You deploy an ASP.NET Core web application to Azure App Services. You are using Azure Event Hubs to collect the telemetry data for the application.

You need to configure Event Hubs to automatically deliver the telemetry data stream to a persistent data store.

Solution: Configure Event Hubs Capture to deliver data to Azure Data Lake Store.

Does the solution meet the goal?

- A. Yes
- B. No

**Correct Answer:** B

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

Use Azure Blob storage to store the telemetry data.

References: <https://docs.microsoft.com/en-us/azure/event-hubs/event-hubs-capture-overview>

#### QUESTION 59

**Note:** This question is part of a series of questions that present the same scenario. Each question in the series contains a unique solution that might meet the stated goals. Some question sets might have more than one correct solution, while others might not have a correct solution.

**After you answer a question in this section, you will NOT be able to return to it. As a result, these questions will not appear in the review screen.**

You have developed a .NET Standard Library.

You need to produce a NuGet package.

Solution: Run the msbuild command with the pack target specified.

Does the solution meet the goal?

- A. Yes
- B. No

**Correct Answer:** A

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

Package the component with the NuGet pack command. The dotnet pack command and msbuild -t:pack may be used as alternates.

References: <https://docs.microsoft.com/en-us/nuget/tools/cli-ref-pack>

<https://docs.microsoft.com/en-us/nuget/guides/create-net-standard-packages-vs2015>

#### **QUESTION 60**

You add a .NET application to a Docker container and deploy the container to Azure Service Fabric. You use a corporate base image that includes Microsoft SQL Server for storing data.

You deploy the application to development and staging environments. No issues are reported. You deploy the application to your production environment. Data is not persisted in the production environment.

You need to resolve the issue.

What should you do?

- A. Install Docker tools in the container.
- B. In the docker-compose.override.yml file, configure the db service to start before the web application.
- C. Update the connection string in the web.config file to point to the SQL Server database in the container.
- D. Remove SQL Server from the base image and convert the database to Azure SQL Database. **Correct Answer:** C

**Section: [none]**

**Explanation**

**Explanation/Reference:**

References: <https://docs.microsoft.com/en-us/azure/service-fabric/service-fabric-host-app-in-a-container>

**QUESTION 61**

You are developing a Windows Communication Foundation (WCF) service for a company. The service will be used for bidirectional communications between the company's physical offices.

You plan to implement Azure Service Bus.

You need to configure the WCF service.

Which type of binding should you use?

- A. BasicHttpBinding
- B. NetTcpRelayBinding
- C. NetTcpBinding
- D. NetEventRelayBinding



**Correct Answer: B**

**Section: [none]**

**Explanation**

**Explanation/Reference:** References: <https://docs.microsoft.com/en-us/azure/service-bus-relay/service-bus-relay-tutorial>

**QUESTION 62**

You are developing an order processing application that uses the Entity Framework against a SQL Server database. The application has a method that returns orders filtered by date.

The Order class is shown below.

```
public partial class Order
{
    ...
    public Nullable<System.DateTime> OrderDate { get; set; }
    ...
}
```

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

You need to return orders more recent than the entered date.

Which code segment should you use?

```
IQueryable<Order> orders = db.Orders.ToList().AsQueryable();
orders = orders.Where(o => o.OrderDate >= date);
IQueryable<Order> orders = db.Orders;
orders = orders.Where(o => o.OrderDate >= date);
IEnumerable<Order> orders = db.Orders;
orders = orders.Where(o => o.OrderDate >= date);
IEnumerable<Order> orders = db.Orders.ToList().AsQueryable();
orders = orders.Where(o => o.OrderDate >= date);
```

A.

B.

C.

D.

**Correct Answer:** D

**Section:** [none]

**Explanation**

**Explanation/Reference:**

References: <https://docs.microsoft.com/en-us/dotnet/api/system.collections.generic.ienumerable-1?view=netframework-4.7.2>

### QUESTION 63

You are developing a ASP.NET Core MVC web application that processes sensitive data.

Users in an Azure Active Directory (Azure AD) group named DataAdmins must be able to see all data in human readable form. Sensitive data must be masked from all other users that handle the data store.

You need to implement storage for the application.

What should you implement?

- A. Azure SQL Database
- B. Azure Cosmos DB
- C. Azure Database for MySQL
- D. Azure Database for PostgreSQL
- E. Azure Storage Tables

**Correct Answer:** E

**Section:** [none]

**Explanation**

**Explanation/Reference:**

References: <https://docs.microsoft.com/en-us/aspnet/core/security/authentication/identity-custom-storage-providers?view=aspnetcore-2.2>

### QUESTION 64

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 65

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 66

You develop a Universal Windows Platform (UWP) application for Windows 10 Internet of Things (IoT) Core. The application uses Entity Framework Core and a SQLite database to store data.

You use the SQLite EF Core database provider to migrate data from an on-premises database to SQLite. The migration process throws an exception.

You need to resolve the exception.



What are two possible ways to achieve this goal? Each correct answer presents a complete solution.

**NOTE:** Each correct selection is worth one point.

- A. Clone the on-premises database to a schema-less database
- B. Convert the application to use .NET Standard
- C. Limit all of SQLite processes to one server
- D. Limit the number of concurrent processes that write to the SQLite database

**Correct Answer:** AD

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

A: The common relational library (shared by Entity Framework relational database providers) defines APIs for modelling concepts that are common to most relational database engines. A couple of these concepts are not supported by the SQLite provider: Schemas, Sequences, Computed columns.

The SQLite database engine does not support a number of schema operations that are supported by the majority of other relational databases. If you attempt to apply one of the unsupported operations to a SQLite database then a `NotSupportedException` will be thrown.

D: SQLite allows multiple processes to have the database file open at once, and for multiple processes to read the database at once. When any process wants to write, it must lock the entire database file for the duration of its update.

References: <https://docs.microsoft.com/en-us/ef/core/providers/sqlite/limitations>

#### **QUESTION 67**

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. Web Deploy

D. DACPAC

**Correct Answer:** C

**Section:** [none]

**Explanation**

**Explanation/Reference:**

Explanation:

Web Deploy is an extensible client-server tool for syncing content and configuration to IIS. Web Deploy is used primarily in two scenarios:

- Developers use it to sync (aka 'publish') a compiled web applications (ASP .Net, PHP etc) from developer tools (Visual Studio, WebMatrix, etc) to IIS
- IT professionals use it to migrate websites & applications

Web Deploy is often compared to technologies like FTP, XCOPY or RoboCopy. While these technologies are useful, Web Deploy offers several benefits:

- Web Deploy can publish databases. Web Deploy has out-of-box support for scripting out SQL Server, MySQL Server, Sqlite and SQL Server Compact databases and applying the resulting script during the sync. This can be very handy if your app needs a database to function.

Incorrect Answers:

A: When you need to export a database for archiving or for moving to another platform, you can export the database schema and data to a BACPAC file.

D: DACPAC is a single file which contains database model i.e. all files represent database objects. It's a binary representation of database project compatible with SSDT.

References: <https://docs.microsoft.com/en-us/iis/publish/using-web-deploy/introduction-to-web-deploy>



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