

MCSD Programming in C# v1.0 (70-483) - Full Access

Question 1 (Volume A)



You are developing an application that includes a class named Order. The application will store a collection of Order objects.

The collection must meet the following requirements:

- > Use strongly typed members.
- > Process Order objects in first-in-first-out order.
- > Store values for each Order object.
- > Use zero-based indices.

You need to use a collection type that meets the requirements.

Which collection type should you use?

- A. Queue<T>
- B. SortedList
- C. LinkedList<T>
- D. HashTable
- E. Array<T>

Answer : A

Explanation:

Queues are useful for storing messages in the order they were received for sequential processing. Objects stored in a Queue<T> are inserted at one end and removed from the other.

References:

<http://msdn.microsoft.com/en-us/library/7977ey2c.aspx>

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Question 2 (Volume A)



You are developing an application. The application calls a method that returns an array of integers named employeeIds. You define an integer variable named employeeIdToRemove and assign a value to it. You declare an array named filteredEmployeeIds.

You have the following requirements:

- > Remove duplicate integers from the employeeIds array.
- Sort the array in order from the highest value to the lowest value.



-> Remove the integer value stored in the employeeIdToRemove variable from the employeeIds array.

You need to create a LINQ query to meet the requirements.

Which code segment should you use?

- A. int[] filteredEmployeeIds = employeeIds.Where(value => value != employeeIdToRemove).OrderBy(x => x).ToArray();
- B. int[] filteredEmployeeIds = employeeIds.Where(value => value != employeeIdToRemove).OrderByDescending(x => x).ToArray();
- C. int[] filteredEmployeeIds = employeeIds.Distinct().Where(value => value != employeeIdToRemove).OrderByDescending(x => x).ToArray();
- D. int[] filteredEmployeeIds = employeeIds.Distinct().OrderByDescending(x => x).ToArray();

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

Answer : C

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Question 3 (Volume A)



You are developing an application that includes the following code segment. (Line numbers are included for reference only.)

```

01 class Animal
02 {
03     public string Color { get; set; }
04     public string Name { get; set; }
05 }
06 private static IEnumerable<Animal> GetAnimals(string sqlConnectionString)
07 {
08     var animals = new List<Animal>();
09     SqlConnection sqlConnection = new SqlConnection(sqlConnectionString);
10     using (sqlConnection)
11     {
12         SqlCommand sqlCommand = new SqlCommand("SELECT Name, ColorName FROM Animals", sqlConnection);
13         using (SqlDataReader sqlDataReader = sqlCommand.ExecuteReader())
14         {
15             while (sqlDataReader.Read())
16             {
17                 var animal = new Animal();
18                 animal.Name = (string)sqlDataReader["Name"];
19                 animal.Color = (string)sqlDataReader["ColorName"];
20                 animals.Add(animal);
21             }
22         }
23     }
24 }
25 return animals ;
26 }
```

The GetAnimals() method must meet the following requirements:

- > Connect to a Microsoft SQL Server database.
- > Create Animal objects and populate them with data from the database.
- > Return a sequence of populated Animal objects.

You need to meet the requirements.

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

NOTE: Each correct selection is worth one point.

- A. Insert the following code segment at line 16: while(sqlDataReader.NextResult())
- B. Insert the following code segment at line 13: sqlConnection.Open();
- C. Insert the following code segment at line 13: sqlConnection.BeginTransaction();
- D. Insert the following code segment at line 16: while(sqlDataReader.Read())
- E. Insert the following code segment at line 16: while(sqlDataReader.GetValues())

Answer : BD

Explanation:

- > SqlConnection.Open - Opens a database connection with the property settings specified by the ConnectionString.
- > SqlDataReader.Read - Advances the SqlDataReader to the next record.

References:

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

Next Question

Question 4 (Volume A)



DRAG DROP -

You are developing a custom collection named LoanCollection for a class named Loan class.

You need to ensure that you can process each Loan object in the LoanCollection collection by using a foreach loop.

How should you complete the relevant code? (To answer, drag the appropriate code segments to the correct 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:

```

: IComparable
: IEnumerable
: IDisposable
public IEnumerator GetEnumerator()
public int CompareTo(object obj)
public void Dispose()
_loanCollection[0].Amount++;
return obj == null ? 1 : _loanCollection.Length;
return _loanCollection.GetEnumerator();
}

public class LoanCollection
{
    private readonly Loan[] _loanCollection;
    public LoanCollection(Loan[] loanArray)
    {
        _loanCollection = new Loan[loanArray.Length];
        for (int i = 0; i < loanArray.Length; i++)
        {
            _loanCollection[i] = loanArray[i];
        }
    }
}

```

Answer :

```
: IComparable
: IDisposable
public int CompareTo(object obj)
public void Dispose()
_loanCollection[0].Amount++;
return obj == null ? 1 : _loanCollection.Length;
```

```
public class LoanCollection : IEnumerable
{
    private readonly Loan[] _loanCollection;
    public LoanCollection(Loan[] loanArray)
    {
        _loanCollection = new Loan[loanArray.Length];

        for (int i = 0; i < loanArray.Length; i++)
        {
            _loanCollection[i] = loanArray[i];
        }
    }

    public IEnumerator GetEnumerator()
    {
        return _loanCollection.GetEnumerator();
    }
}
```

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Question 5 (Volume A)



You are developing an application that uses the Microsoft ADO.NET Entity Framework to retrieve order information from a Microsoft SQL Server database. The application includes the following code. (Line numbers are included for reference only.)

```
01 public DateTime? OrderDate;
02 IQueryable<Order> LookupOrdersForYear(int year)
03 {
04     using (var context = new NorthwindEntities())
05     {
06         var orders =
07             from order in context.Orders
08
09             select order;
10         return orders.ToList().AsQueryable();
11     }
12 }
```

The application must meet the following requirements:

- > Return only orders that have an OrderDate value other than null.
- > Return only orders that were placed in the year specified in the OrderDate property or in a later year.

You need to ensure that the application meets the requirements.

Which code segment should you insert at line 08?

- A. Where order.OrderDate.Value != null && order.OrderDate.Value.Year >= year
- B. Where order.OrderDate.Value == null && order.OrderDate.Value.Year == year
- C. Where order.OrderDate.HasValue && order.OrderDate.Value.Year == year
- D. Where order.OrderDate.Value.Year == year

Answer : A

Explanation:

-> For the requirement to use an OrderDate value other than null use:

OrderDate.Value != null -

-> For the requirement to use an OrderDate value for this year or a later year use:

OrderDate.Value >= year -

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Question 6 (Volume A)**DRAG DROP -**

You are developing an application by using C#. The application includes an array of decimal values named loanAmounts. You are developing a LINQ query to return the values from the array.

The query must return decimal values that are evenly divisible by two. The values must be sorted from the lowest value to the highest value.

You need to ensure that the query correctly returns the decimal values.

How should you complete the relevant code? (To answer, drag the appropriate code segments to the correct 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 :

Explanation:

Note: In a query expression, the orderby clause causes the returned sequence or subsequence (group) to be sorted in either ascending or descending order.

Examples:

// Query for ascending sort.

IEnumerable<string> sortAscendingQuery =

from fruit in fruits

orderby fruit //"ascending" is default

select fruit;

// Query for descending sort.

IEnumerable<string> sortDescendingQuery =

from w in fruits

orderby w descending

select w;

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Question 7 (Volume A)

You are developing an application. The application includes a method named ReadFile that reads data from a file. The ReadFile() method must meet the following requirements:

- > It must not make changes to the data file.
- > It must allow other processes to access the data file.
- > It must not throw an exception if the application attempts to open a data file that does not exist.

You need to implement the ReadFile() method.

Which code segment should you use?

- A. var fs = File.Open(Filename, FileMode.OpenOrCreate, FileAccess.Read,FileShare.ReadWrite);
- B. var fs = File.Open(Filename, FileMode.Open, FileAccess.Read,FileShare.ReadWrite);
- C. var fs = File.Open(Filename, FileMode.OpenOrCreate, FileAccess.Read,FileShare.Write);
- D. var fs = File.ReadAllLines(Filename);
- E. var fs = File.ReadAllBytes(Filename);

Answer : A

Explanation:

FileMode.OpenOrCreate - Specifies that the operating system should open a file if it exists; otherwise, a new file should be created. If the file is opened with FileAccess.Read, FileIOPermissionAccess.Read permission is required. If the file access is FileAccess.Write, FileIOPermissionAccess.Write permission is required. If the file is opened with FileAccess.ReadWrite, both FileIOPermissionAccess.Read and FileIOPermissionAccess.Write permissions are required.

FileShare.ReadWrite - Allows subsequent opening of the file for reading or writing. If this flag is not specified, any request to open the file for reading or writing (by this process or another process) will fail until the file is closed. However, even if this flag is specified, additional permissions might still be needed to access the file.

References:

<http://msdn.microsoft.com/pl-pl/library/system.io.fileshare.aspx> <http://msdn.microsoft.com/en-us/library/system.io.filemode.aspx>

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Question 8 (Volume A)

An application receives JSON data in the following format:

```
{ "FirstName" : "David",
  "LastName" : "Jones",
  "Values" : [0, 1, 2] }
```

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

```
01 public class Name
02 {
03     public int [] Values {get; set; }
04     public string FirstName {get; set; }
05     public string LastName {get; set; }
06 }
07 public static Name ConvertToName (string json)
08 }
09 var ser = new JavaScriptSerializer();
10
11 }
```

You need to ensure that the ConvertToName() method returns the JSON input string as a Name object.

Which code segment should you insert at line 10?

- A. Return ser.ConvertToType<Name>(json);
- B. Return ser.DeserializeObject(json);
- C. Return ser.Deserialize<Name>(json);
- D. Return (Name)ser.Serialize(json);

Answer : C

Explanation:

JavaScriptSerializer.Deserialize<T> - Converts the specified JSON string to an object of type T.

References:

<http://msdn.microsoft.com/en-us/library/bb355316.aspx>

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Question 9 (Volume A)

You are developing an application. The application converts a Location object to a string by using a method named WriteObject. The WriteObject() method accepts two parameters, a Location object and an XmlObjectSerializer object.

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

```

01 public enum Compass
02 {
03     North,
04     South,
05     East,
06     West
07 }
08 [DataContract]
09 public class Location
10 {
11     [DataMember]
12     public string Label { get; set; }
13     [DataMember]
14     public Compass Direction { get; set; }
15 }
16 void DoWork()
17 {
18     var location = new Location { Label = "Test", Direction = Compass.West };
19     Console.WriteLine(WriteObject(location,
20
21     ));
22 }
```

You need to serialize the Location object as a JSON object.

Which code segment should you insert at line 20?

- A. New DataContractSerializer(typeof(Location))
- B. New XmlSerializer(typeof(Location))
- C. New NetDataContractSerializer()
- D. New DataContractJsonSerializer(typeof(Location))

Answer : D

Explanation:

The DataContractJsonSerializer class serializes objects to the JavaScript Object Notation (JSON) and deserializes JSON data to objects.

Use the DataContractJsonSerializer class to serialize instances of a type into a JSON document and to deserialize a JSON document into an instance of a type.

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Question 10 (Volume A)

You are developing an application by using C#. The application includes the following code segment. (Line numbers are included for reference only.)

```

01 public interface IDataContainer
02 {
03     string Data { get; set; }
04 }
05 void DoWork(object obj)
06 {
07
08     if (dataContainer != null)
09     {
10         Console.WriteLine(dataContainer.Data);
11     }
12 }

```

The DoWork() method must not throw any exceptions when converting the obj object to the IDataContainer interface or when accessing the Data property.

You need to meet the requirements. Which code segment should you insert at line 07?

- A. var dataContainer = (IDataContainer)obj;
- B. dynamic dataContainer = obj;
- C. var dataContainer = obj is IDataContainer;
- D. var dataContainer = obj as IDataContainer;

Answer : D

Explanation:

As - The as operator is like a cast operation. However, if the conversion isn't possible, as returns null instead of raising an exception.

Reference:

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

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Question 11 (Volume A)



You are creating an application that manages information about zoo animals. The application includes a class named Animal and a method named Save.

The Save() method must be strongly typed. It must allow only types inherited from the Animal class that uses a constructor that accepts no parameters.

You need to implement the Save() method.

Which code segment should you use?

- A. `public static void Save<T>(T target) where T : new(), Animal`
`{`
 `...`
`}`
- B. `public static void Save<T>(T target) where T : Animal`
`{`
 `...`
`}`
- C. `public static void Save<T>(T target) where T : Animal, new()`
`{`
 `...`
`}`
- D. `public static void Save(Animal target)`
`{`
 `...`
`}`
- E. `public static void Save<T>(T target) where T : new()`
`{`
 `...`
`}`

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

Answer : C

Explanation:

When you define a generic class, you can apply restrictions to the kinds of types that client code can use for type arguments when it instantiates your class. If client code tries to instantiate your class by using a type that is not allowed by a constraint, the result is a compile-time error. These restrictions are called constraints. Constraints are specified by using the where contextual keyword.

References:

<http://msdn.microsoft.com/en-us/library/d5x73970.aspx>

Next Question

Question 12 (Volume A)



DRAG DROP -

You are developing a class named ExtensionMethods.

You need to ensure that the ExtensionMethods class implements the IsEmail() method on string objects.

How should you complete the relevant code? (To answer, drag the appropriate code segments to the correct 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:

```
public static class ExtensionMethods
{
    public class ExtensionMethods
    {
        this String str
        String str
    }
}

protected static class ExtensionMethods
{
    public static bool IsUrl(
    {
        var regex = new Regex(
            "(https://)?([A-Za-z0-9-]+\\.)?([A-Za-z0-9-]+)" +
            "\\.[A-Za-z0-9]*/?.*");
        return regex.IsMatch(str);
    }
}
```

Answer :

```

public class ExtensionMethods
{
    String str
    protected static class ExtensionMethods
    {
        public static class ExtensionMethods
        {
            public static bool IsUrl(
                this String str
            )
            {
                var regex = new Regex(
                    "(https://)?([A-Za-z0-9-]*\\.)?([A-Za-z0-9-]*)" +
                    "\\.[A-Za-z0-9-]*/?.*");
                return regex.IsMatch(str);
            }
        }
    }
}

```

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Question 13 (Volume A)



You are developing an application. The application includes classes named Employee and Person and an interface named IPerson. The Employee class must meet the following requirements:

- > It must either inherit from the Person class or implement the IPerson interface.
- > It must be inheritable by other classes in the application.

You need to ensure that the Employee class meets the requirements.

Which two code segments can you use to achieve this goal? (Each correct answer presents a complete solution. Choose two.)

A. `sealed class Employee : Person`
`{`
 `...`
`}`

B. `abstract class Employee : Person`
`{`
 `...`
`}`

C. `sealed class Employee : IPerson`
`{`
 `...`
`}`

D. `abstract class Employee : IPerson`
`{`
 `...`
`}`

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

Answer : BD

Explanation:

Sealed - When applied to a class, the sealed modifier prevents other classes from inheriting from it.

References:

[http://msdn.microsoft.com/en-us/library/88c54tsw\(v=vs.110\).aspx](http://msdn.microsoft.com/en-us/library/88c54tsw(v=vs.110).aspx)

Next Question

Question 14 (Volume A)



You are developing an application that will convert data into multiple output formats.

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

```
01 public class TabDelimitedFormatter : IOutputFormatter<string>
02 {
03     readonly Func<int, char> suffix = col => col % 2 == 0 ? '\n' : '\t';
04     public string GetOutput(IEnumerator<string> iterator, int recordSize)
05     {
06
07     }
08 }
```

You are developing a code segment that will produce tab-delimited output. All output routines implement the following interface:

```
public interface IOutputFormatter<T>
{
    string GetOutput(IEnumerator<T> iterator, int recordSize);
}
```

You need to minimize the completion time of the GetOutput() method.

Which code segment should you insert at line 06?

- A.

```
string output = null;
for (int i = 1; iterator.MoveNext(); i++)
{
    output = string.Concat(output, iterator.Current, suffix(i));
}
return output;
```
- B.

```
var output = new StringBuilder();
for (int i = 1; iterator.MoveNext(); i++)
{
    output.Append(iterator.Current);
    output.Append(suffix(i));
}
return output.ToString();
```
- C.

```
string output = null;
for (int i = 1; iterator.MoveNext(); i++)
{
    output = output + iterator.Current + suffix(i);
}
return output;
```
- D.

```
string output = null;
for (int i = 1; iterator.MoveNext(); i++)
{
    output += iterator.Current + suffix(i);
}
return output;
```

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

Answer : B

Explanation:

A String object concatenation operation always creates a new object from the existing string and the new data.

A StringBuilder object maintains a buffer to accommodate the concatenation of new data. New data is appended to the buffer if room is available; otherwise, a new, larger buffer is allocated, data from the original buffer is copied to the new buffer, and the new data is then appended to the new buffer.

The performance of a concatenation operation for a String or StringBuilder object depends on the frequency of memory allocations. A String concatenation operation always allocates memory, whereas a StringBuilder concatenation operation allocates memory only if the StringBuilder object buffer is too small to accommodate the new data. Use the String class if you are concatenating a fixed number of String objects. In that case, the compiler may even combine individual concatenation operations into a single operation. Use a StringBuilder object if you are concatenating an arbitrary number of strings; for example, if you're using a loop to concatenate a random number of strings of user input.

References:

[http://msdn.microsoft.com/en-us/library/system.text.stringbuilder\(v=vs.110\).aspx](http://msdn.microsoft.com/en-us/library/system.text.stringbuilder(v=vs.110).aspx)

[Next Question](#)

Question 15 (Volume A)



You are developing an application by using C#.

The application includes an object that performs a long running process.

You need to ensure that the garbage collector does not release the object's resources until the process completes.

Which garbage collector method should you use?

- A. ReRegisterForFinalize()
- B. SuppressFinalize()
- C. Collect()
- D. WaitForFullGCApproach()

Answer : B

[Next Question](#)

Question 16 (Volume A)



DRAG DROP -

You are developing a class named ExtensionMethods.

You need to ensure that the ExtensionMethods class implements the IsUrl() extension method on string objects.

You have the following code:

```
Target 1
{
    public static bool IsUrl(
        Target 2
    )

    {
        var regex = new Regex(
            "(https?://)?([A-Za-z0-9-]+\\.)?([A-Za-z0-9-]+)" +
            "\\.[A-Za-z0-9]*/?.*");
        return regex.IsMatch(str);
    }
}
```

Which code segments should you include in Target 1 and Target 2 to complete the code? (To answer, drag the

appropriate code segments to the correct targets 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.)

NOTE: Each correct selection is worth one point.

Select and Place:

Code Segments	Answer Area
<code>public static class ExtensionMethods</code>	Target 1: <input type="text"/> Code Segment
<code>public class ExtensionMethods</code>	Target 2: <input type="text"/> Code Segment
<code>this String str</code>	
<code>String str</code>	
<code>protected static class ExtensionMethods</code>	

Answer :

Code Segments	Answer Area
<code>public class ExtensionMethods</code>	Target 1: <input checked="" type="text"/> <code>public static class ExtensionMethods</code>
<code>String str</code>	Target 2: <input checked="" type="text"/> <code>this String str</code>
<code>protected static class ExtensionMethods</code>	

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Question 17 (Volume A)



You are implementing a method named Calculate that performs conversions between value types and reference types. The following code segment implements the method. (Line numbers are included for reference only.)

```
01 public static void Calculate(float amount)
02 {
03     object amountRef = amount;
04
05     Console.WriteLine(balance);
06 }
```

You need to ensure that the application does not throw exceptions on invalid conversions.

Which code segment should you insert at line 04?

- A. int balance = (int) (float)amountRef;
- B. int balance = (int)amountRef;
- C. int balance = amountRef;
- D. int balance = (int) (double) amountRef;

Answer : A

[Next Question](#)

Question 18 (Volume A)



You are creating a console application by using C#.
You need to access the application assembly.
Which code segment should you use?

- A. Assembly.GetAssembly(this);
- B. this.GetType();
- C. Assembly.Load();
- D. Assembly.GetExecutingAssembly();

Answer : D

Explanation:

- > Assembly.GetExecutingAssembly - Gets the assembly that contains the code that is currently executing.
- > Assembly.GetAssembly - Gets the currently loaded assembly in which the specified class is defined.

References:

<http://msdn.microsoft.com/en-us/library/system.reflection.assembly.getassembly.aspx> [http://msdn.microsoft.com/en-us/library/system.reflection.assembly.getexecutingassembly\(v=vs.110\).aspx](http://msdn.microsoft.com/en-us/library/system.reflection.assembly.getexecutingassembly(v=vs.110).aspx)

Next Question

Question 19 (Volume A)



HOTSPOT -

You are implementing a library method that accepts a character parameter and returns a string.

If the lookup succeeds, the method must return the corresponding string value. If the lookup fails, the method must return the value "invalid choice."

You need to implement the lookup algorithm.

How should you complete the relevant code? (To answer, select the correct keyword in each drop-down list in the answer area.)

Hot Area:

Work Area

```
public string GetResponse(char letter)
{
    string response;
    □(letter)
    case
    if
    switch
    {
        □ 'a':
        case
        default
        else
        if
            response = "animal";
            break;
        □ 'm':
        case
        default
        else
        if
            response = "mineral";
            break;
        □ :
        case
        default
        else
        if
            response = "invalid choice";
```

Answer :

Work Area

```
public string GetResponse(char letter)
{
    string response;
     (letter)
    case
    if
    switch
    {
         'a':
        case
        default
        else
        if
            response = "animal";
            break;
    }
}
```

Question 20 (Volume B)



DRAG DROP -

You have the following code:

```
string[] vehicles = { "Airplane", "Boat", "Car" };
Target 1<string> aVehicles =
(Target 2 vehicle in vehicles
Target 3 vehicle.StartsWith("A")
Target 4 vehicle).ToList<string>();
foreach (var vehicle in aVehicles)
{
    Console.WriteLine(vehicle);
}
```

You need to display all of the vehicles that start with the letter “A”.

How should you complete the code? To answer, drag the appropriate code elements to the correct targets.

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.

NOTE: Each correct selection is worth one point.

Select and Place:

Code Segments
Array
From
Include
List
Select
Where

Answer Area	
Target 1:	<input type="text"/>
Target 2:	<input type="text"/>
Target 3:	<input type="text"/>
Target 4:	<input type="text"/>

Answer :

The interface shows two main sections: 'Code Segments' on the left and 'Answer Area' on the right. The 'Code Segments' section contains several empty text boxes. The 'Answer Area' section has four targets labeled Target 1 through Target 4, each with a corresponding text input box. The first target's input box contains 'List', the second contains 'from', the third contains 'where', and the fourth contains 'select'.

References:

<https://docs.microsoft.com/en-us/dotnet/csharp/language-reference/keywords/select-clause>

Next Question

Question 21 (Volume A)



You are modifying an application that processes leases. The following code defines the Lease class. (Line numbers are included for reference only.)

```
01 public class Lease
02 {
03
04     private int _term;
05     private const int MaximumTerm = 5;
06     private const decimal Rate = 0.034m;
07     public int Term
08     {
09         get
10         {
11             return _term;
12         }
13         set
14         {
15             if (value <= MaximumTerm)
16             {
17                 _term = value;
18             }
19             else
20             {
21
22             }
23         }
24     }
25 }
26 public delegate void MaximumTermReachedHandler(object source, EventArgs e);
```

Leases are restricted to a maximum term of 5 years. The application must send a notification message if a lease request exceeds 5 years.

You need to implement the notification mechanism.

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

A. Insert the following code segment at line 03:

```
public event MaximumTermReachedHandler OnMaximumTermReached;
```

B. Insert the following code segment at line 21:

```
if (OnMaximumTermReached != null)
{
    OnMaximumTermReached(this, new EventArgs());
}
```

C. Insert the following code segment at line 21:

```
value = MaximumTerm;
```

D. Insert the following code segment at line 03:

```
public string MaximumTermReachedEvent { get; set; }
```

E. Insert the following code segment at line 03:

```
private string MaximumTermReachedEvent;
```

F. Insert the following code segment at line 21:

```
value = 5;
```

- A. Option A
- B. Option B
- C. Option C
- D. Option D
- E. Option E
- F. Option F

Answer : AB

[Next Question](#)

Question 22 (Volume A)



DRAG DROP -

You have a class named Product that has a property named Name.
You have the following code.

```
Product oneProduct = new Product();
oneProduct.Name = "aName";

string productName = oneProduct.Target 1 ().Target 2 ().First(
prop => prop.Name == "Name" ). Target 3 (Target 4 ).ToString();
```

You need to get the Name property of oneProduct.

How should you complete the code? To answer, drag the appropriate code elements to the correct targets. 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.

NOTE: Each correct selection is worth one point.

Select and Place:

Code Segments

- GetProperties
- GetType
- GetValue
- oneProduct
- "oneProduct"

Answer Area

Target 1:

Target 2:

Target 3:

Target 4:

Answer :

Code Segments

-
-
- oneProduct
-

Answer Area

Target 1:

Target 2:

Target 3:

Target 4:

Next Question

Question 23 (Volume A)



You are developing an application that includes a class named UserTracker. The application includes the following code segment. (Line numbers are included for reference only.)

```
01 public delegate void AddUserCallback(int i);
02 public class UserTracker
03 {
04     List<User> users = new List<User>();
05     public void AddUser(string name, AddUserCallback callback)
06     {
07         users.Add(new User(name));
08         callback(users.Count);
09     }
10 }
11
12 public class Runner
13 {
14
15     UserTracker tracker = new UserTracker();
16     public void Add(string name)
17     {
18
19     }
20 }
```

You need to add a user to the UserTracker instance.

What should you do?

A. Insert the following code segment at line 14:

```
private static void PrintUserCount(int i)
{
    ...
}
```

Insert the following code segment at line 18:

```
AddUserCallback callback = PrintUserCount;
```

B. Insert the following code segment at line 11:

```
delegate void AddUserDelegate(UserTracker userTracker);
```

Insert the following code segment at line 18:

```
AddUserDelegate addDelegate = (userTracker) =>
{
    ...
};
addDelegate(tracker);
```

C. Insert the following code segment at line 11:

```
delegate void AddUserDelegate(string name, AddUserCallback callback);
```

Insert the following code segment at line 18:

```
AddUserDelegate adder = (i, callback) =>
{
    ...
};
```

D. Insert the following code segment at line 18:

```
tracker.AddUser(name, delegate(int i)
{
    ...
});
```

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

Answer : D

Next Question

Question 24 (Volume A)



DRAG DROP -

You develop an application that displays information from log files when errors occur. The application will prompt the user to create an error report that sends details about the error and the session to the administrator.

When a user opens a log file by using the application, the application throws an exception and closes.

The application must preserve the original stack trace information when an exception occurs during this process.

You have the following code:

```

Target 1
{
    try
    {
        string line;
        while ((line = sr.ReadLine()) != null)
        {
            Console.WriteLine(line);
        }
    }
    catch (FileNotFoundException e)
    {
        Console.Write(e.ToString());
        Target 2
    }
}

```

Which code segments should you include in Target 1 and Target 2 to complete the code? To answer, drag the appropriate code segments to the correct targets.

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:

Code Segments	Answer Area
<code>using(StringReader sr = new StringReader("log.txt"))</code>	Target 1: <input type="text"/>
<code>using(StreamReader sr = new StreamReader("log.txt"))</code>	Target 2: <input type="text"/>
<code>throw new FileNotFoundException();</code>	
<code>throw;</code>	

Answer :

Code Segments	Answer Area
<input type="text"/>	Target 1: <input type="text"/>
<code>using(StreamReader sr = new StreamReader("log.txt"))</code>	Target 2: <input type="text"/>
<input type="text"/>	
<code>throw;</code>	

Explanation:

Box1: `StringReader` -

-> `StringReader` - Implements a `TextReader` that reads from a string.

-> `StreamReader` - Implements a `TextReader` that reads characters from a byte stream in a particular encoding.

Box2: `Throw new FileNotFoundException();`

Once an exception is thrown, part of the information it carries is the stack trace. The stack trace is a list of the method call hierarchy that starts with the method that throws the exception and ends with the method that catches the exception. If an exception is re-thrown by specifying the exception in the `throw` statement, the stack trace is restarted at the current method and the list of method calls between the original method that threw the exception and the current method is lost. To keep the original stack trace information with the exception, use the `throw` statement without specifying the exception.

References:

[http://msdn.microsoft.com/en-us/library/system.io.stringreader\(v=vs.110\).aspx](http://msdn.microsoft.com/en-us/library/system.io.stringreader(v=vs.110).aspx) [http://msdn.microsoft.com/en-us/library/system.io.streamreader\(v=vs.110\).aspx](http://msdn.microsoft.com/en-us/library/system.io.streamreader(v=vs.110).aspx) [http://msdn.microsoft.com/en-us/library/ms182363\(v=vs.110\).aspx](http://msdn.microsoft.com/en-us/library/ms182363(v=vs.110).aspx)

Next Question



DRAG DROP -

You are developing an application that includes a class named Kiosk. The Kiosk class includes a static property named Catalog. The Kiosk class is defined by the following code segment. (Line numbers are included for reference only.)

```

01 public class Kiosk
02 {
03     static Catalog _catalog = null;
04     static object _lock = new object();
05     public static Catalog Catalog
06     {
07         get
08         {
09
10             return _catalog;
11         }
12     }
13 }
```

You have the following requirements:

- > Initialize the _catalog field to a Catalog instance.
- > Initialize the _catalog field only once.
- > Ensure that the application code acquires a lock only when the _catalog object must be instantiated.

You need to meet the requirements.

Which three code segments should you insert in sequence at line 09? (To answer, move the appropriate code segments from the list of code segments to the answer area and arrange them in the correct order.)

Select and Place:

.....

lock (_lock)

if (_catalog != null) _catalog = new Catalog();

if (_catalog != null)

if (_catalog == null) _catalog = new Catalog();

if (_catalog == null)

Answer :

.....

if (_catalog == null)

lock (_lock)

if (_catalog == null) _catalog = new Catalog();

if (_catalog == null)

Explanation:

After taking a lock you must check once again the _catalog field to be sure that other threads didn't instantiated it in the meantime.

[Next Question](#)

Question 26 (Volume A)

**DRAG DROP -**

You are developing an application that will include a method named GetData. The GetData() method will retrieve several lines of data from a web

service by object.

You have the following requirements:

-> The GetData() method must return a string value that contains the first line of the response from the web service.

-> The application must remain responsive while the GetData() method runs.

You need to implement the GetData() method.

How should you complete the relevant code? (To answer, drag the appropriate objects to the correct locations in the answer area. Each object 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:

```

private [ ] void GetData(WebResponse response)
{
    var streamReader = new StreamReader(response.GetResponseStream());

    urlText.Text = [ ] streamReader.[ ];
}

[ ] ReadLine();
[ ] ReadToEnd();
[ ] ToString();

```

Answer :

```

private [ ] void GetData(WebResponse response)
{
    var streamReader = new StreamReader(response.GetResponseStream());

    urlText.Text = await [ ] streamReader.[ ];
}

[ ] ReadLine();
[ ] ReadToEnd();
[ ] ToString();

```

[Next Question](#)

Question 27 (Volume A)



You are adding a public method named UpdateScore to a public class named ScoreCard.

The code region that updates the score field must meet the following requirements:

-> It must be accessed by only one thread at a time.

-> It must not be vulnerable to a deadlock situation.

You need to implement the UpdateScore() method.

What should you do?

- A. Place the code region inside the following lock statement:


```
lock (this)
{
    ...
}
```
- B. Add a private object named **lockObject** to the **ScoreCard** class. Place the code region inside the following lock statement:


```
lock (lockObject)
{
    ...
}
```
- C. Apply the following attribute to the **UpdateScore()** method signature:


```
[MethodImpl(MethodImplOptions.Synchronized)]
```
- D. Add a public static object named **lockObject** to the **ScoreCard** class. Place the code region inside the following lock statement:


```
lock (typeof(ScoreCard))
{
    ...
}
```

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

Answer : B

References:

<http://blogs.msdn.com/b/bclteam/archive/2004/01/20/60719.aspx>

[Next Question](#)

Question 28 (Volume A)



You are developing a C# application that has a requirement to validate some string input data by using the Regex class. The application includes a method named ContainsHyperlink. The ContainsHyperlink() method will verify the presence of a URI and surrounding markup.

The following code segment defines the ContainsHyperlink() method. (Line numbers are included for reference only.)

```
01 bool ContainsHyperLink(string inputData)
02 {
03     string regExPattern = "href\\s*=\\s*(?:\"(?<1>[^\""]*)\"|(?<1>\\S+))";
04
05     return evaluator.IsMatch(inputData);
06 }
```

The expression patterns used for each validation function are constant.

You need to ensure that the expression syntax is evaluated only once when the Regex object is initially instantiated.

Which code segment should you insert at line 04?

```
var evaluator = new Regex(regExPattern, RegexOptions.CultureInvariant);
```

A.

```
var evaluator = new Regex(inputData);
```

B.

```
var assemblyName = "Validation";
var compilationInfo = new RegexCompilationInfo(inputData, RegexOptions.IgnoreCase,
"href", assemblyName, true);
Regex.CompileToAssembly(new[] { compilationInfo }, new AssemblyName(assemblyName));
var evaluator = new Regex(regExPattern, RegexOptions.CultureInvariant);
```

C.

```
var evaluator = new Regex(regExPattern, RegexOptions.Compiled);
```

D.

Answer : D

Explanation:

RegexOptions.Compiled - Specifies that the regular expression is compiled to an assembly. This yields faster execution but increases startup time. This value should not be assigned to the Options property when calling the CompileToAssembly method.

References:

<http://msdn.microsoft.com/en-us/library/system.text.regularexpressions.regexoptions.aspx> <http://stackoverflow.com/questions/513412/how-does-regexoptions-compiled-work>

[Next Question](#)

Question 29 (Volume A)



You are developing an application by using C#.

You have the following requirements:

- > Support 32-bit and 64-bit system configurations.
- > Include pre-processor directives that are specific to the system configuration.
- > Deploy an application version that includes both system configurations to testers.
- > Ensure that stack traces include accurate line numbers.

You need to configure the project to avoid changing individual configuration settings every time you deploy the application to testers.

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

- A. Update the platform target and conditional compilation symbols for each application configuration.
- B. Create two application configurations based on the default Release configuration.
- C. Optimize the application through address rebasing in the 64-bit configuration.
- D. Create two application configurations based on the default Debug configuration.

Answer : BD

[Next Question](#)

Question 30 (Volume A)



HOTSPOT -

You plan to implement the following interfaces:

```
interface IFahrenheit
{
    double Temp();
}

interface iCelsius
{
    double Temp();
}
```

You have the following methods:

returns the temperature in Celsius.

getCelsiusFromKelvin



returns the temperature in Fahrenheit.

-> getFahrenheitFromKelvin

You need to implement both interfaces within a class named TempControl. The TempControl class must return the Celsius temperature as the default temperature if the following code executes.

```
TempControl t = new TempControl();
var celsiusTemp = t.Temp();
```

How should you implement the interfaces? To answer, select the appropriate options in the answer area.

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

• • • • •

```
partial class TempControl:
{
    double kelvin;
    public double
    {
        return getCelsiusFromKelvin();
    }
    double
    {
        return getFahrenheitFromKelvin();
    }
}
```

Answer :

Answer Area

```

partial class TempControl:
{
    double kelvin;
    public double
    {
        ICelcius.Temp()
        IFarenheit.Temp()
        Temp()
        return getCelsiusFromKelvin();
    }
    double
    ICelcius.Temp()
    IFarenheit.Temp()
    Temp()
    return getFahrenheitFromKelvin();
}

```

**Question 31 (Volume A)**

You are developing an application that will transmit large amounts of data between a client computer and a server. You need to ensure the validity of the data by using a cryptographic hashing algorithm. Which algorithm should you use?

- A. HMACSHA256
- B. RNGCryptoServiceProvider
- C. DES
- D. Aes
- E. RSA
- F. Rfc2898DeriveBytes

Answer : A

Explanation:

Explanation:

The .NET Framework provides the following classes that implement hashing algorithms:

- > HMACSHA1.
- > MACTripleDES.
- > MD5CryptoServiceProvider.
- > RIPEMD160.
- > SHA1Managed.
- > SHA256Managed.
- > SHA384Managed.
- > SHA512Managed.

HMAC variants of all of the Secure Hash Algorithm (SHA), Message Digest 5 (MD5), and RIPEMD-160 algorithms.

CryptoServiceProvider implementations (managed code wrappers) of all the SHA algorithms.

Cryptography Next Generation (CNG) implementations of all the MD5 and SHA algorithms.

References:

http://msdn.microsoft.com/en-us/library/92f9ye3s.aspx#hash_values

Next Question

**Question 32 (Volume A)**

DRAG DROP -

You are testing an application. The application includes methods named CalculateInterest and LogLine. The CalculateInterest() method calculates loan interest. The LogLine() method sends diagnostic messages to a console window.

You have the following requirements:

- > The CalculateInterest() method must run for all build configurations.
- > The LogLine() method must be called only for debug builds.

You need to ensure that the methods run correctly.

How should you complete the relevant code? (To answer, drag the appropriate code segments to the correct 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:

```

[Conditional("DEBUG")]
[Conditional("RELEASE")]
#if DEBUG
#region DEBUG
#endif
#endregion

private static decimal CalculateInterest(decimal loanAmount, int loanTerm, decimal loanRate)
{
    decimal interestAmount = loanAmount * loanRate * loanTerm;
    LogLine("Interest Amount : ", interestAmount.ToString("c"));
    return interestAmount;
}

public static void LogLine(string message, string detail)
{
    Console.WriteLine("Log: {0} = {1}", message, detail);
}

```

Answer :

```

[Conditional("DEBUG")]
[Conditional("RELEASE")]
#region DEBUG
#endregion

private static decimal CalculateInterest(decimal loanAmount, int loanTerm, decimal loanRate)
{
    decimal interestAmount = loanAmount * loanRate * loanTerm;
    #if DEBUG
    LogLine("Interest Amount : ", interestAmount.ToString("c"));
    #endif
    return interestAmount;
}

public static void LogLine(string message, string detail)
{
    Console.WriteLine("Log: {0} = {1}", message, detail);
}

```

[Next Question](#)

Question 33 (Volume A)



You are developing an assembly that will be used by multiple applications.

You need to install the assembly in the Global Assembly Cache (GAC).

Which two actions can you perform to achieve this goal? Each correct answer presents a complete solution.

NOTE: Each correct selection is worth one point.

- A. Use the Assembly Registration tool (regasm.exe) to register the assembly and to copy the assembly to the GAC.
- B. Use the Strong Name tool (sn.exe) to copy the assembly into the GAC.
- C. Use Microsoft Register Server (regsvr32.exe) to add the assembly to the GAC.
- D. Use the Global Assembly Cache tool (gacutil.exe) to add the assembly to the GAC.
- E. Use Windows Installer 2.0 to add the assembly to the GAC.

Answer : DE

Explanation:

There are two ways to deploy an assembly into the global assembly cache:

Use an installer designed to work with the global assembly cache. This is the preferred option for installing assemblies into the global assembly cache.

Use a developer tool called the Global Assembly Cache tool (Gacutil.exe), provided by the Windows

Software Development Kit (SDK).

Note:

In deployment scenarios, use Windows Installer 2.0 to install assemblies into the global assembly cache. Use the Global Assembly Cache tool only in development scenarios, because it does not provide assembly reference counting and other features provided when using the Windows Installer.

References:

<http://msdn.microsoft.com/en-us/library/yf1d93sz%28v=vs.110%29.aspx>

[Next Question](#)



Question 34 (Volume A)

You are debugging an application that calculates loan interest. The application includes the following code. (Line numbers are included for reference only.)

```
01 private static decimal CalculateInterest(decimal loanAmount, int loanTerm, decimal loanRate)
02 {
03     decimal interestAmount = loanAmount * loanRate * loanTerm;
04
05     return interestAmount;
06 }
07 }
```

You need to ensure that the debugger breaks execution within the CalculateInterest() method when the loanAmount variable is less than or equal to zero in all builds of the application.

What should you do?

- A. Insert the following code segment at line 03:Trace.Assert(loanAmount > 0);
- B. Insert the following code segment at line 03:Debug.Assert(loanAmount > 0);
- C. Insert the following code segment at line 05:Debug.WriteLine(loanAmount > 0);
- D. Insert the following code segment at line 05:Trace.WriteLine(loanAmount > 0);

Answer : A

Explanation:

By default, the Debug.Assert method works only in debug builds. Use the Trace.Assert method if you want to do assertions in release builds. For more information, see Assertions in Managed Code.

References:

<http://msdn.microsoft.com/en-us/library/kssw4w7z.aspx>

[Next Question](#)



Question 35 (Volume A)

You are developing an application that accepts the input of dates from the user.

Users enter the date in their local format. The date entered by the user is stored in a string variable named inputDate. The valid date value must be placed in a

DateTime variable named validatedDate.

You need to validate the entered date and convert it to Coordinated Universal Time (UTC). The code must not cause an exception to be thrown.

Which code segment should you use?

- A bool validDate = DateTime.TryParse(inputDate, CultureInfo.CurrentCulture, DateTimeStyles.AdjustToUniversal | DateTimeStyles.AssumeLocal, out validatedDate);
- B bool validDate = DateTime.TryParse(inputDate, CultureInfo.CurrentCulture, DateTimeStyles.AssumeUniversal, out validatedDate);
- C bool validDate = true;


```
try
{
    validatedDate = DateTime.Parse(inputDate);
}
catch
{
    validDate = false;
}
```
- D validatedDate = DateTime.ParseExact(inputDate, "g", CultureInfo.CurrentCulture, DateTimeStyles.AdjustToUniversal | DateTimeStyles.AssumeUniversal);

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

Answer : A

Explanation:

AdjustToUniversal parses s and, if necessary, converts it to UTC.

Note: The DateTime.TryParse method converts the specified string representation of a date and time to its DateTime equivalent using the specified culture-specific format information and formatting style, and returns a value that indicates whether the conversion succeeded.

[Next Question](#)

Question 36 (Volume A)



DRAG DROP -

You are developing an application by using C#. The application will process several objects per second.

You need to create a performance counter to analyze the object processing.

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:

Add the CounterCreationData objects to the collection by calling the Add() method of the collection.	
Create a PerformanceCounterPermissionEntryCollection collection.	
Call the Create() method of the PerformanceCounterCategory class and pass the collection to the method.	
Get the CategoryName property of the PerformanceCounterPermissionEntry class.	
Create a CounterCreationDataCollection collection. Then create the counters as CounterCreationData objects and set the necessary properties.	

Answer :

Create a PerformanceCounterPermissionEntryCollection collection.	
	Create a CounterCreationDataCollection collection. Then create the counters as CounterCreationData objects and set the necessary properties.
Get the CategoryName property of the PerformanceCounterPermissionEntry class.	
	Add the CounterCreationData objects to the collection by calling the Add() method of the collection.
	Call the Create() method of the PerformanceCounterCategory class and pass the collection to the method.

Explanation:

```
CounterCreationDataCollection counterDataCollection = new CounterCreationDataCollection(); // Box1
```

```
// Add the counter. Box 1
```

```
CounterCreationData averageCount64 = new CounterCreationData(); averageCount64.CounterType = PerformanceCounterType.AverageCount64;
averageCount64.CounterName = "AverageCounter64Sample"; counterDataCollection.Add(averageCount64);
```

```
// Add the base counter.
```

```
CounterCreationData averageCount64Base = new CounterCreationData(); averageCount64Base.CounterType =
PerformanceCounterType.AverageBase; averageCount64Base.CounterName = "AverageCounter64SampleBase";
counterDataCollection.Add(averageCount64Base); // Box 2
```

```
// Create the category. Box 3
```

```
PerformanceCounterCategory.Create("AverageCounter64SampleCategory",
"Demonescates usage of the AverageCounter64 performance counter type.",
PerformanceCounterCategoryType.SingleInstance, counterDataCollection);
```

[Next Question](#)**Question 37 (Volume A)**

You are developing an application by using C#. You provide a public key to the development team during development. You need to specify that the assembly is not fully signed when it is built.

Which two assembly attributes should you include in the source code? Each correct answer presents part of the solution.

NOTE: Each correct selection is worth one point.

- A. AssemblyKeyNameAttribute
- B. ObfuscateAssemblyAttribute
- C. AssemblyDelaySignAttribute
- D. AssemblyKeyFileAttribute
- E. AssemblyFlagsAttribute
- F. AssemblyConfigurationAttribute

Answer : CD

References:

[http://msdn.microsoft.com/en-us/library/t07a3dye\(v=vs.110\).aspx](http://msdn.microsoft.com/en-us/library/t07a3dye(v=vs.110).aspx)

[Next Question](#)**Question 38 (Volume A)**

DRAG DROP -

You are developing an application that includes a class named Warehouse. The Warehouse class includes a static property named Inventory- The Warehouse class is defined by the following code segment. (Line numbers are included for reference only.)

```
01 public class Warehouse
02 {
03     static Inventory _inventory = null;
04     static object _lock = new object();
05     public static Inventory Inventory
06     {
07         get
08         {
09             return _inventory;
10         }
11     }
12 }
13 }
```

You have the following requirements:

- > Initialize the _inventory field to an Inventory instance.
- > Initialize the _inventory field only once.
- > Ensure that the application code acquires a lock only when the _inventory object must be instantiated.

You need to meet the requirements.

Which three code segments should you insert in sequence at line 09? (To answer, move the appropriate code segments from the list of code segments to the answer area and arrange them in the correct order.)

Select and Place:

Code Segments

```
if (_inventory != null) _inventory = new Inventory();
lock (_lock)
if (_inventory == null) _inventory = new Inventory();
if (_inventory == null)
if (_inventory != null)
```

Answer Area

Answer :

Code Segments

```
if (_inventory != null) _inventory = new Inventory();
lock (_lock)
if (_inventory == null) _inventory = new Inventory();
if (_inventory != null)
```

Answer Area

```
if (_inventory == null)
lock (_lock)
if (_inventory == null) _inventory = new Inventory();
```

Explanation:

After taking a lock you must check once again the `_inventory` field to be sure that other threads didn't instantiated it in the meantime.

[Next Question](#)

Question 39 (Volume A)



You are adding a public method named `UpdateGrade` to a public class named `ReportCard`.

The code region that updates the grade field must meet the following requirements:

- > It must be accessed by only one thread at a time.
- > It must not be vulnerable to a deadlock situation.

You need to implement the `UpdateGrade()` method.

What should you do?

- A. Add a private object named `lockObject` to the `ReportCard` class. Place the code region inside the following lock statement:

```
lock (lockObject)
{
...
}
```

- B. Place the code region inside the following lock statement:

```
lock (this)
{
...
}
```

- C. Add a public static object named `lockObject` to the `ReportCard` class. Place the code region inside the following lock statement:

```
lock (typeof(ReportCard))
{
...
}
```

- D. Apply the following attribute to the `UpdateGrade()` method signature:

```
[MethodImpl(MethodImplOptions.Synchronized)]
```

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

Answer : A

[Next Question](#)



Question 40 (Volume A)

You are developing an application that includes a class named BookTracker for tracking library books. The application includes the following code segment. (Line numbers are included for reference only.)

```

01 public delegate void AddBookCallback(int i);
02 public class BookTracker
03 {
04     List<Book> books = new List<Book>();
05     public void AddBook(string name, AddBookCallback callback)
06     {
07         books.Add(new Book(name));
08         callback(books.Count);
09     }
10 }
11
12 public class Runner
13 {
14
15     BookTracker tracker = new BookTracker();
16     public void Add(string name)
17     {
18
19     }
20 }
```

You need to add a user to the BookTracker instance. What should you do?

- A. Insert the following code segment at line 14:

```
private static void PrintBookCount(int i)
{
    ...
}
```

Insert the following code segment at line 18:

```
AddBookCallback callback = PrintBookCount;
```

- B. Insert the following code segment at line 18:

```
tracker.AddBook(name, delegate(int i)
{
    ...
});
```

- C. Insert the following code segment at line 11:

```
delegate void AddBookDelegate(BookTracker bookTracker);
```

Insert the following code segment at line 18:

```
AddBookDelegate addDelegate = (bookTracker) =>
{
    ...
};
addDelegate(tracker);
```

- D. Insert the following code segment at line 11:

```
delegate void AddBookDelegate(string name, AddBookCallback callback);
```

Insert the following code segment at line 18:

```
AddBookDelegate adder = (i, callback) =>
{
    ...
};
```

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

Answer : B

Next Question



Question 41 (Volume A)

DRAG DROP -

You are implementing a method that creates an instance of a class named User and adds the user to the users list. The User class contains a public event named Renamed. The following code segment defines the Renamed event:

Public event EventHandler<RenameEventArgs> Renamed;

You need to create an event handler for the Renamed event by using a lambda expression.

You have the following code:

```
List< User > users = new List< User >();
public void ADDUser(string name)
{
    User user = new User (name);
    Target 1
    {
        Log("User {0} was renamed to {1}", e.oldName, e.Name);
    };
    Target 2
}
```

Which code segments should you include in Target 1 and Target 2 to complete the code? To answer, drag the appropriate code segments to the correct targets.

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:

Code Segments

user.Renamed -= delegate(object sender, RenameEventArgs e)
user.Renamed -= (sender, e) =>
user.Renamed += delegate(object sender, RenameEventArgs e)
user.Renamed += (sender, e) =>
users[0] = user;
users.Add(user);
users.Insert(user);

Answer Area

Target 1:
Target 2:

Answer :

Code Segments

user.Renamed -= delegate(object sender, RenameEventArgs e)
user.Renamed -= (sender, e) =>
user.Renamed += delegate(object sender, RenameEventArgs e)
users[0] = user;
users.Insert(user);

Answer Area

Target 1:
user.Renamed += (sender, e) =>
Target 2:
users.Add(user);

Next Question



Question 42 (Volume A)

You are creating a console application by using C#.
You need to access the assembly found in the file named car.dll.
Which code segment should you use?

- A. Assembly.Load();
- B. Assembly.GetExecutingAssembly();
- C. This.GetType();
- D. Assembly.LoadFile("car.dll");

Answer : D

Explanation:

Assembly.LoadFile - Loads the contents of an assembly file on the specified path.

References:

<http://msdn.microsoft.com/en-us/library/b61s44e8.aspx>

[Next Question](#)



Question 43 (Volume A)

You are developing an application by using C#.
The application includes an object that performs a long running process.
You need to ensure that the garbage collector does not release the object's resources until the process completes.
Which garbage collector method should you use?

- A. WaitForFullGCComplete()
- B. WaitForFullGCApproach()
- C. KeepAlive()
- D. WaitForPendingFinalizers()

Answer : C

Explanation:

The GC.KeepAlive method references the specified object, which makes it ineligible for garbage collection from the start of the current routine to the point where this method is called.

The purpose of the KeepAlive method is to ensure the existence of a reference to an object that is at risk of being prematurely reclaimed by the garbage collector.

The KeepAlive method performs no operation and produces no side effects other than extending the lifetime of the object passed in as a parameter.

[Next Question](#)



Question 44 (Volume A)

An application includes a class named Person. The Person class includes a method named GetData.
You need to ensure that the GetData() method can be used only by the Person class and not by any class derived from the Person class.
Which access modifier should you use for the GetData() method?

- A. Public
- B. Protected internal
- C. Internal
- D. Private
- E. Protected

Answer : D

Explanation:

The GetData() method should be private. It would then only be visible within the Person class.

Next Question

Question 45 (Volume A)



DRAG DROP -

You are developing an application by using C#. The application will output the text string "First Line" followed by the text string "Second Line".

You need to ensure that an empty line separates the text strings.

Which four code segments should you use in sequence? (To answer, move the appropriate code segments to the answer area and arrange them in the correct order.)

Select and Place:

```
sb.Append("\1");
var sb = new StringBuilder();
sb.Append("First Line");
sb.Append("\t");
sb.AppendLine();
sb.Append(String.Empty);
sb.Append("Second Line");
```

Answer :

```
sb.Append("\1");
var sb = new StringBuilder();
sb.Append("First Line");
sb.AppendLine();
sb.Append("\t");
sb.Append("Second Line");
sb.Append(String.Empty);
```

Explanation:

Box 1:

`var sb = new StringBuilder();`

First we create the variable.

Box 2:

`sb.Append("First Line");`

We create the first text line.

Box 3:

```
sb.AppendLine();
```

We add a blank line.

The `StringBuilder.AppendLine` method appends the default line terminator to the end of the current `StringBuilder` object.

Box 4:

```
sb.Append("Second Line");
```

Finally, we add the second line.

[Next Question](#)

Question 46 (Volume A)



You are developing an application. The application includes classes named `Mammal` and `Animal` and an interface named `IAnimal`. The `Mammal` class must meet the following requirements:

- > It must either inherit from the `Animal` class or implement the `IAnimal` interface.
- > It must be inheritable by other classes in the application.

You need to ensure that the `Mammal` class meets the requirements.

Which two code segments can you use to achieve this goal? (Each correct answer presents a complete solution. Choose two.)

- A.

```
abstract class Mammal : IAnimal
{
    ...
}
```
- B.

```
sealed class Mammal : IAnimal
{
    ...
}
```
- C.

```
abstract class Mammal : Animal
{
    ...
}
```
- D.

```
sealed class Mammal : Animal
{
    ...
}
```

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

Answer : AC

Explanation:

When applied to a class, the sealed modifier prevents other classes from inheriting from it.

References:

[http://msdn.microsoft.com/en-us/library/88c54tsw\(v=vs.110\).aspx](http://msdn.microsoft.com/en-us/library/88c54tsw(v=vs.110).aspx)

[Next Question](#)

Question 47 (Volume A)



DRAG DROP -

You are developing a class named ExtensionMethods.

You need to ensure that the ExtensionMethods class implements the IsEmail() extension method on string objects.

How should you complete the relevant code? (To answer, drag the appropriate code segments to the correct 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:

```

public static class ExtensionMethods
{
    public class ExtensionMethods
    {
        this String str
        String str
    }
    [protected static class ExtensionMethods]
}

public static class ExtensionMethods
{
    public static bool IsEmail(
        this String str
    )
    {
        var regex = new Regex(@"^([\w\.-]+)@([\w\.-]+)(\.\w{2,3})+$");
        return regex.IsMatch(str);
    }
}

```

Answer :

```

public static class ExtensionMethods
{
    public static bool IsEmail(
        this String str
    )
    {
        var regex = new Regex(@"^([\w\.-]+)@([\w\.-]+)(\.\w{2,3})+$");
        return regex.IsMatch(str);
    }
}

```

[Next Question](#)

Question 48 (Volume A)



An application receives JSON data in the following format:

```
{
    "FirstName": "David",
    "LastName": "Jones",
    "Values": [0, 1, 2]
}
```

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

```

01 public class Name
02 {
03     public int[] Values { get; set; }
04     public string FirstName { get; set; }
05     public string LastName { get; set; }
06 }
07 public static Name ConvertToName(string json)
08 {
09     var ser = new JavaScriptSerializer();
10
11 }

```

You need to ensure that the ConvertToName() method returns the JSON input string as a Name object.
Which code segment should you insert at line 10?

- A. Return ser.Deserialize(json, typeof(Name));
- B. Return ser.ConvertToType<Name>(json);
- C. Return ser.Deserialize<Name>(json);
- D. Return ser.ConvertToType(json, typeof (Name));

Answer : C

[Next Question](#)

Question 49 (Volume A)



You are developing an application that includes the following code segment. (Line numbers are included for reference only.)

```

01 class Customer
02 {
03     public string CompanyName { get; set; }
04     public string Id { get; set; }
05 }
06 const string sqlSelectCustomers = "SELECT CustomerID, CompanyName FROM Customers";
07 private static IEnumerable<Customer> GetCustomers(string sqlConnectionString)
08 {
09     List<Customer> customers = new List<Customer>();
10     SqlConnection sqlConnection = new SqlConnection(sqlConnectionString);
11     using (sqlConnection)
12     {
13         SqlCommand sqlCommand = new SqlCommand(sqlSelectCustomers, sqlConnection);
14
15         using (SqlDataReader sqlDataReader = sqlCommand.ExecuteReader())
16         {
17             while (sqlDataReader.Read())
18             {
19                 Customer customer = new Customer();
20                 customer.Id = (string)sqlDataReader["CustomerID"];
21                 customer.CompanyName = (string)sqlDataReader["CompanyName"];
22                 customers.Add(customer);
23             }
24         }
25     }
26     return customers;
27 }

```

The GetCustomers() method must meet the following requirements:

- > Connect to a Microsoft SQL Server database.
- > Populate Customer objects with data from the database.
- > Return an IEnumerable<Customer> collection that contains the populated Customer objects.

You need to meet the requirements.

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

- A. Insert the following code segment at line 17: while (sqlDataReader.GetValues())
- B. Insert the following code segment at line 14: sqlConnection.Open();
- C. Insert the following code segment at line 14: sqlConnection.BeginTransaction();
- D. Insert the following code segment at line 17: while (sqlDataReader.Read())
- E. Insert the following code segment at line 17: while (sqlDataReader.NextResult())

Answer : BD

Explanation:

SqlConnection.Open - Opens a database connection with the property settings specified by the ConnectionString.

SqlDataReader.Read - Advances the SqlDataReader to the next record.

References:

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

Next Question

Question 50 (Volume A)



DRAG DROP -

You are developing an application that includes a class named Customer.

The application will output the Customer class as a structured XML document by using the following code segment:

```
<?xml version="1.0" encoding="utf-8"?>
<Prospect xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema"
  ProspectId="9c027bb8-65f1-40a9-8afa-ac839f3cdc5d" xmlns="http://prospect">
  <FullName>David Jones</FullName>
  <DateOfBirth>1977-06-11T00:00:00</DateOfBirth>
</Prospect>
```

You need to ensure that the Customer class will serialize to XML.

How should you complete the relevant code? (To answer, drag the appropriate code segments to the correct 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:

```
[XmlRoot("Customer", Namespace = "http://customer")]
[XmlRoot("Prospect", Namespace = "http://prospect")]
[XmlAttribute("ProspectId")]
[XmlElement("ProspectId")]
[XmlChoiceIdentifier]
[XmlAttribute]
[XmlArrayItem]
[XmlElement("FullName")]
```

.....

```
public class Customer
{
    public Guid Id { get; set; }
    public string Name { get; set; }
    public DateTime DateOfBirth { get; set; }
    public int Tin { get; set; }
}
```

Answer :

```
[XmlRoot("Customer", Namespace = "http://customer")]
[XmlElement("ProspectId")]
[XmlChoiceIdentifier]
[XmlAttributeItem]

[XmlRoot("Prospect", Namespace = "http://prospect")]
public class Customer
{
    [XmlAttribute("ProspectId")]
    public Guid Id { get; set; }
    [XmlElement("FullName")]
    public string Name { get; set; }
    public DateTime DateOfBirth { get; set; }
    [XmlAttribute]
    public int Tin { get; set; }
}
```

Explanation:

References:

<http://msdn.microsoft.com/en-us/library/3dkta8ya.aspx>

[Next Question](#)

Question 51 (Volume A)



An application will upload data by using HTML form-based encoding. The application uses a method named SendMessage. The SendMessage() method includes the following code. (Line numbers are included for reference only.)

```
01 public Task<byte[]> SendMessage(string url, int intA, int intB)
02 {
03     var client = new WebClient();
04
05 }
```

The receiving URL accepts parameters as form-encoded values.

You need to send the values intA and intB as form-encoded values named a and b, respectively.

Which code segment should you insert at line 04?

- A. var data = string.Format("a={0}&b={1}", intA, intB);
 return client.UploadStringTaskAsync(new Uri(url), data);
- B. var data = string.Format("a={0}&b={1}", intA, intB);
 return client.UploadFileTaskAsync(new Uri(url), data);
- C. var data = string.Format("a={0}&b={1}", intA, intB);
 return client.UploadDataTaskAsync(new Uri(url), Encoding.UTF8.GetBytes(data));
- D. var nvc = new NameValueCollection() { { "a", intA.ToString() }, { "b", intB.ToString() } };
 return client.UploadValuesTaskAsync(new Uri(url), nvc);

- A. Option A
- B. Option B

- C. Option C
- D. Option D

Answer : D

Explanation:

WebClient.UploadValuesTaskAsync - Uploads the specified name/value collection to the resource identified by the specified URI as an asynchronous operation using a task object. These methods do not block the calling thread.

References:

<http://msdn.microsoft.com/en-us/library/system.net.webclient.uploadvaluestaskasync.aspx>

[Next Question](#)

Question 52 (Volume A)



You are developing an application. The application converts a Location object to a string by using a method named WriteObject.

The WriteObject() method accepts two parameters, a Location object and an XmlObjectSerializer object.

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

```

01 public enum Compass
02 {
03     North,
04     South,
05     East,
06     West
07 }
08 [DataContract]
09 public class Location
10 {
11     [DataMember]
12     public string Label { get; set; }
13     [DataMember]
14     public Compass Direction { get; set; }
15 }
16 void DoWork()
17 {
18     var location = new Location { Label = "Test", Direction = Compass.West };
19     Console.WriteLine(WriteObject(location,
20
21     ));
22 }
```

You need to serialize the Location object as XML.

Which code segment should you insert at line 20?

- A. new XmlSerializer(typeof(Location))
- B. new NetDataContractSerializer()
- C. new DataContractJsonSerializer(typeof(Location))
- D. new DataContractSerializer(typeof(Location))

Answer : D

Explanation:

The code is using [DataContract] attribute here so need to used DataContractSerializer class.

[Next Question](#)

Question 53 (Volume A)



You are developing an application that includes a class named Order. The application will store a collection of Order objects.

The collection must meet the following requirements:

- > Internally store a key and a value for each collection item.
- > Provide objects to iterators in ascending order based on the key.

-> Ensure that items are accessible by zero-based index or by key.

You need to use a collection type that meets the requirements.

Which collection type should you use?

- A. LinkedList
- B. Queue
- C. Array
- D. HashTable
- E. SortedList

Answer : E

Explanation:

`SortedList< TKey, TValue >` - Represents a collection of key/value pairs that are sorted by key based on the associated `IComparer< T >` implementation.

References:

<http://msdn.microsoft.com/en-us/library/ms132319.aspx>

Next Question

Question 54 (Volume A)



You are developing an application that includes the following code segment. (Line numbers are included for reference only.)

```

01  using System;
02  class MainClass
03  {
04      public static void Main(string[] args)
05      {
06          bool bValidInteger = false;
07          int value = 0;
08          do
09          {
10              Console.WriteLine("Enter an integer:");
11              bValidInteger = GetValidInteger(ref value);
12          } while (!bValidInteger);
13          Console.WriteLine("You entered a valid integer, " + value);
14      }
15      public static bool GetValidInteger(ref int val)
16      {
17          string sLine = Console.ReadLine();
18          int number;
19
20          {
21              return false;
22          }
23          else
24          {
25              val = number;
26              return true;
27          }
28      }
29  }
```

You need to ensure that the application accepts only integer input and prompts the user each time non-integer input is entered.

Which code segment should you add at line 19?

- A. If (!int.TryParse(sLine, out number))
- B. If ((number = Int32.Parse(sLine)) == Single.NaN)
- C. If ((number = int.Parse(sLine)) > Int32.MaxValue)

D. If (Int32.TryParse(sLine, out number))

Answer : A

Explanation:

Int32.TryParse - Converts the string representation of a number to its 32-bit signed integer equivalent. A return value indicates whether the conversion succeeded.

Incorrect Answers:

B, C: These will throw an exception when user enters non-integer value.

D: This is exactly the opposite what we want to achieve.

References:

<http://msdn.microsoft.com/en-us/library/fo2979c7.aspx>

[Next Question](#)



Question 55 (Volume A)

You are debugging an application that calculates loan interest. The application includes the following code. (Line numbers are included for reference only.)

```
01 private static decimal CalculateInterest(decimal loanAmount, int loanTerm, decimal loanRate)
02 {
03     decimal interestAmount = loanAmount * loanRate * loanTerm;
04
05     return interestAmount;
06 }
07 }
```

You have the following requirements:

- > The debugger must break execution within the CalculateInterest() method when the loanAmount variable is less than or equal to zero.
- > The release version of the code must not be impacted by any changes.

You need to meet the requirements.

What should you do?

- A. Insert the following code segment at line 05: Debug.WriteLine(loanAmount > 0);
- B. Insert the following code segment at line 05: Trace.WriteLine(loanAmount > 0);
- C. Insert the following code segment at line 03: Debug.Assert(loanAmount > 0);
- D. Insert the following code segment at line 03: Trace.Assert(loanAmount > 0);

Answer : C

Explanation:

By default, the Debug.Assert method works only in debug builds. Use the Trace.Assert method if you want to do assertions in release builds. For more information, see Assertions in Managed Code.

References:

<http://msdn.microsoft.com/en-us/library/kssw4w7z.aspx>

[Next Question](#)



Question 56 (Volume A)

You are developing an application that will process orders. The debug and release versions of the application will display different logo images. You need to ensure that the correct image path is set based on the build configuration.

Which code segment should you use?

```
#if (DEBUG)
    imgPath = "TempFolder/Images/";
#elif (RELEASE)
    imgPath = "DevFolder/Images/";
#endif
```

A.

```
if (DEBUG)
    imgPath = "TempFolder/Images/";
else
    imgPath = "DevFolder/Images/";
#endif
```

B.

```
#if (DEBUG)
    imgPath = "TempFolder/Images/";
#else
    imgPath = "DevFolder/Images/";
#endif
```

C.

```
if(Debugger.IsAttached)
{
    imgPath = "TempFolder/Images/";
}
else
{
    imgPath = "DevFolder/Images/";
}
```

D.

Answer : C

Explanation:

There is no such constraint (unless you define one explicitly) RELEASE.

References:

<http://stackoverflow.com/questions/507704/will-if-release-work-like-if-debug-does-in-c>[Next Question](#)[Question 57 \(Volume A \)](#)

You are implementing a method named GetValidEmailAddresses. The GetValidEmailAddresses () method processes a list of string values that represent email addresses.

The GetValidEmailAddresses () method must return only email address that are in a valid format.

You need to implement the GetValidEmailAddresses() method.

Which two code segments can you use to achieve this goal? (Each correct answer presents a complete solution. Choose two.)

NOTE: Each correct selection is worth one point.

```
private static List<String> GetValidEmailAddresses(string input, string pattern)
{
    var regex = new Regex(pattern);
    var matches = regex.Matches(input);
    var validEmailAddresses = new List<String>();
    foreach(Match match in matches)
    {
        if(match.Success)
        {
            validEmailAddresses.Add(match.Value);
        }
    }
    return validEmailAddresses;
}
```

A.

```
private static List<String> GetValidEmailAddresses(string input, string pattern)
{
    var regex = new Regex(pattern);
    var matches = regex.Matches(input);
    var validEmailAddresses = new List<String>();
    foreach(Match match in matches)
    {
        if(!match.Success)
        {
            validEmailAddresses.Add(match.Value);
        }
    }
    return validEmailAddresses;
}
```

B.

```
private static List<String> GetValidEmailAddresses(string input, string pattern)
{
    var regex = new Regex(pattern);
    var matches = regex.Matches(input);
    return (from Match match in matches where match.Success select match.Value).ToList();
}
```

C.

```
private static List<String> GetValidEmailAddresses(string input, string pattern)
{
    var regex = new Regex(pattern);
    var matches = regex.Matches(input);
    return (from Match match in matches where match.Success select match.Success.ToString()).ToList();
}
```

D.

Answer : BC

[Next Question](#)

Question 58 (Volume A)



You are developing a method named CreateCounters that will create performance counters for an application. The method includes the following code. (Line numbers are included for reference only.)

```

01 void CreateCounters()
02 {
03     if (!PerformanceCounterCategory.Exists("Contoso"))
04     {
05         var counters = new CounterCreationDataCollection();
06         var ccdCounter1 = new CounterCreationData
07         {
08             CounterName = "Counter1",
09             CounterType = PerformanceCounterType.AverageTimer32
10        };
11        counters.Add(ccdCounter1);
12        var ccdCounter2 = new CounterCreationData
13        {
14            CounterName = "Counter2",
15        };
16        counters.Add(ccdCounter2);
17        PerformanceCounterCategory.Create("Contoso", "Help string",
18            PerformanceCounterCategoryType.MultiInstance, counters);
19    }
20 }
21 }
22 }

```

You need to ensure that Counter2 is available for use in Windows Performance Monitor (PerfMon).

Which code segment should you insert at line 16?

- A. CounterType = PerformanceCounterType.RawBase
- B. CounterType = PerformanceCounterType.AverageBase
- C. CounterType = PerformanceCounterType.SampleBase
- D. CounterType = PerformanceCounterType.CounterMultiBase

Answer : B

Explanation:

PerformanceCounterType.AverageTimer32 - An average counter that measures the time it takes, on average, to complete a process or operation. Counters of this type display a ratio of the total elapsed time of the sample interval to the number of processes or operations completed during that time. This counter type measures time in ticks of the system clock. Formula: $((N_1 - N_0)/F)/(B_1 - B_0)$, where N_1 and N_0 are performance counter readings, B_1 and B_0 are their corresponding AverageBase values, and F is the number of ticks per second. The value of F is factored into the equation so that the result can be displayed in seconds.

Thus, the numerator represents the numbers of ticks counted during the last sample interval, F represents the frequency of the ticks, and the denominator represents the number of operations completed during the last sample interval. Counters of this type include PhysicalDisk\ Avg. Disk sec/Transfer.

PerformanceCounterType.AverageBase - A base counter that is used in the calculation of time or count averages, such as AverageTimer32 and AverageCount64.

Stores the denominator for calculating a counter to present "time per operation" or "count per operation".

References:

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

[Next Question](#)

Question 59 (Volume A)



You are developing an application that will transmit large amounts of data between a client computer and a server.

You need to ensure the validity of the data by using a cryptographic hashing algorithm.

Which algorithm should you use?

- A. ECDsa
- B. RNGCryptoServiceProvider
- C. Rfc2898DeriveBytes
- D. HMACSHA512
- E. RSA
- F. ECDsa

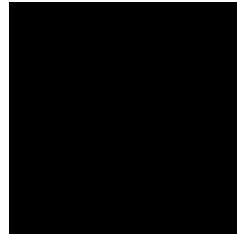
Answer : D

Explanation:

The .NET Framework provides the following classes that implement hashing algorithms:

-> HMACSHA1.

MACTripleDES.



-> MD5CryptoServiceProvider.

-> RIPEMD160.

-> SHA1Managed.

-> SHA256Managed.

-> SHA384Managed.

-> SHA512Managed.

HMAC variants of all of the Secure Hash Algorithm (SHA), Message Digest 5 (MD5), and RIPEMD-160 algorithms.

CryptoServiceProvider implementations (managed code wrappers) of all the SHA algorithms.

Cryptography Next Generation (CNG) implementations of all the MD5 and SHA algorithms.

References:

http://msdn.microsoft.com/en-us/library/92f9ye3s.aspx#hash_values

[Next Question](#)

Question 60 (Volume A)

You are developing an application by using C#.

The application includes an object that performs a long running process.

You need to ensure that the garbage collector does not release the object's resources until the process completes.

Which garbage collector method should you use?

- A. WaitForFullGCComplete()
- B. SuppressFinalize()
- C. collect()
- D. RemoveMemoryPressure()

Answer : B

[Next Question](#)

**Question 61 (Volume A)**

You are implementing a method named `FloorTemperature` that performs conversions between value types and reference types. The following code segment implements the method. (Line numbers are included for reference only.)

```
01 public static void FloorTemperature(float degrees)
02 {
03     object degreesRef = degrees;
04
05     Console.WriteLine(result);
06 }
```

You need to ensure that the application does not throw exceptions on invalid conversions.

Which code segment should you insert at line 04?

- A. int result = (int)degreesRef;
- B. int result = (int)(double)degreesRef;
- C. int result = degreesRef;
- D. int result = (int)(float)degreesRef;

Answer : D

Next Question

**Question 62 (Volume A)**

You are developing an application by using C#.

The application includes an object that performs a long running process.

You need to ensure that the garbage collector does not release the object's resources until the process completes.

Which garbage collector method should you use?

- A. WaitForFullGCComplete()
- B. SuppressFinalize()
- C. WaitForFullGCApproach()
- D. WaitForPendingFinalizers()

Answer : B

Next Question

**Question 63 (Volume A)**

You are developing an application that uses structured exception handling. The application includes a class named `Logger`. The `Logger` class implements a method named `Log` by using the following code segment: `public static void Log(Exception ex) {}`

You have the following requirements:

- > Log all exceptions by using the `Log()` method of the `Logger` class.
 - > Rethrow the original exception, including the entire exception stack.
- You need to meet the requirements. Which code segment should you use?

- A. `catch`

```
{  
    var ex = new Exception();  
    throw ex;  
}
```

B. `catch (Exception ex)`

```
{  
    Logger.Log(ex);  
    throw ex;  
}
```

C. `catch`

```
{  
    Logger.Log(new Exception());  
    throw;  
}
```

D. `catch (Exception ex)`

```
{  
    Logger.Log(ex);  
    throw;  
}
```

A. Option A

B. Option B

C. Option C

D. Option D

Answer : D

Explanation:

Once an exception is thrown, part of the information it carries is the stack trace. The stack trace is a list of the method call hierarchy that starts with the method that throws the exception and ends with the method that catches the exception. If an exception is re-thrown by specifying the exception in the `throw` statement, the stack trace is restarted at the current method and the list of method calls between the original method that threw the exception and the current method is lost. To keep the original stack trace information with the exception, use the `throw` statement without specifying the exception.

References:

[https://docs.microsoft.com/en-us/previous-versions/visualstudio/visual-studio-2012/ms182363\(v=vs.110\)](https://docs.microsoft.com/en-us/previous-versions/visualstudio/visual-studio-2012/ms182363(v=vs.110))

Next Question

Question 64 (Volume A)



DRAG DROP -

You are developing an application that will include a method named `GetData`. The `GetData()` method will retrieve several lines of data from a web service by using a `System.IO.StreamReader` object.

You have the following requirements:

- > The GetData() method must return a string value that contains the entire response from the web service.
- > The application must remain responsive while the GetData() method runs.

You need to implement the GetData() method.

How should you complete the relevant code? (To answer, drag the appropriate objects to the correct locations in the answer area. Each object 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:

The screenshot shows a Windows application window with two main sections. On the left is a vertical list of method names in yellow boxes: `ReadLineAsync()`, `ReadToEndAsync()`, `await`, `async`, `ReadLine()`, `ReadToEnd()`, and `ToString()`. On the right is a code editor pane containing the following C# code:

```

public [ ] void GetData(WebResponse response)
{
    string urlText;
    var sr = new StreamReader(response.GetResponseStream());
    urlText = [ ] await sr.[ ];
}

```

Answer :

The screenshot shows the same Windows application window. The code in the editor has been modified to include `async` and `await` keywords. The completed code is:

```

public [async] void GetData(WebResponse response)
{
    string urlText;
    var sr = new StreamReader(response.GetResponseStream());
    urlText = [await] await sr.[ReadToEndAsync()];
}

```

[Next Question](#)

Question 65 (Volume A)



You are developing an application that includes a class named BookTracker for tracking library books. The application includes the following code segment. (Line numbers are included for reference only.)

```

01 public delegate void AddBookCallback(int i);
02 public class BookTracker
03 {
04     List<Book> books = new List<Book>();
05     public void AddBook(string name, AddBookCallback callback)
06     {
07         books.Add(new Book(name));
08         callback(books.Count);
09     }
10 }
11
12 public class Book
13 {
14
15     BookTracker tracker = new BookTracker();
16     public void Add(string name)
17     {
18
19     }
20 }

```

You need to add a book to the BookTracker instance.

What should you do?

Insert the following code segment at line 18:

```
tracker.AddBook(name, delegate(int i)
{
    ...
});
```

A.

Insert the following code segment at line 11:

```
delegate void AddBookDelegate(string name, AddBookCallback callback);
```

Insert the following code segment at line 18:

```
AddBookDelegate adder = (i, callback) =>
{
    ...
};
```

B.

Insert the following code segment at line 11:

```
delegate void AddBookDelegate(BookTracker bookTracker);
```

Insert the following code segment at line 18:

```
AddBookDelegate addDelegate = (bookTracker) =>
{
    ...
};
addDelegate(bookTracker);
```

C.

Insert the following code segment at line 14:

```
private static void PrintBookCount(int i)
{
    ...
}
```

Insert the following code segment at line 18:

```
AddBookCallback callback = PrintBookCount;
```

D.

Answer : A

Next Question

Question 66 (Volume A)



You use the Task.Run() method to launch a long-running data processing operation. The data processing operation often fails in times of heavy network congestion.

If the data processing operation fails, a second operation must clean up any results of the first operation.

You need to ensure that the second operation is invoked only if the data processing operation throws an unhandled exception.

You need to ensure that the second operation is not run only if the first operation fails or an unhandled exception occurs.

What should you do?

- A. Create a task within the operation, and set the Task.StartOnException property to true.
- B. Create a TaskFactory object and call the ContinueWhenAll() method of the object.
- C. Create a task by calling the Task.ContinueWith() method.
- D. Use the TaskScheduler class to create a task and call the TryExecuteTask() method on the class.
- E. Create a TaskCompletionSource<T> object and call the TrySetException() method of the object.
- F. Examine the Task.Status property immediately after the call to the Task.Run() method.
- G. Create a task inside the existing Task.Run() method by using the AttachedToParent option.

Answer : C

Explanation:

Task.ContinueWith - Creates a continuation that executes asynchronously when the target Task completes. The returned Task will not be scheduled for execution until the current task has completed, whether it completes due to running to completion successfully, faulting due to an unhandled exception, or exiting out early due to being canceled.

References:

<http://msdn.microsoft.com/en-us/library/dd270696.aspx>

[Next Question](#)

Question 67 (Volume B)



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

```

01  double x, y;
02  x = 0.0;
03  y = 0.0;
04  Console.WriteLine(x/y);

```

What is the output of line 04?

- A. Error
- B. 0
- C. null
- D. NaN

Answer : B

References:

<https://www.dotnetperls.com/divide>

[Next Question](#)

Question 68 (Volume A)



DRAG DROP -

You have the following code:

```
public static void DeserializeJsonData(MemoryStream stream1)
{
    DataContractJsonSerializer serializer =
        new DataContractJsonSerializer(Target_1(Target_2));
    CompanyInfo cn = (CompanyInfo)Target_3.ReadObject(stream1);
```

parameter into the CompanyInfo class.

How should you complete the code? To answer, drag the appropriate code elements to the correct targets.

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.

NOTE: Each correct selection is worth one point.

Select and Place:

Code Segments	Answer Area
CompanyInfo	Target 1: <input type="text"/>
Encoding.UTF8.GetBytes	Target 2: <input type="text"/>
JSONObject	Target 3: <input type="text"/>
ReadObject	
serializer	
typeof	

Answer :

Code Segments	Answer Area
<input type="text"/>	Target 1: <input type="text"/> typeof
Encoding.UTF8.GetBytes	Target 2: <input type="text"/> CompanyInfo
JSONObject	Target 3: <input type="text"/> serializer
ReadObject	
<input type="text"/>	
<input type="text"/>	

References:

<https://docs.microsoft.com/en-us/dotnet/framework/wcf/feature-details/how-to-serialize-and-deserialize-json-data>

Next Question

Question 69 (Volume A)

HOTSPOT -



You are developing a method named Method1 for a class named Class1, and returns to a decimal value.

You need to ensure that calls to Method1 support being executed on separate threads.

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

NOTE: Each correct selection is worth one point.

Hot Area:

Answer Area

	Method1 (int parameter1)
async	
await	
delegate	
	decimal
	Task
	Task <decimal>

Answer :

Answer Area

	Method1 (int parameter1)
async	
await	
delegate	
	decimal
	Task
	Task <decimal>

Reference:

<https://docs.microsoft.com/en-us/dotnet/csharp/async>

Next Question

Question 70 (Volume A)



You are creating an application that manages information about your company's products. The application includes a class named Product and a method named

Save -

The Save() method must be strongly typed. It must allow only types inherited from the Product class that use a constructor that accepts no parameters.

You need to implement the Save() method.

Which code segment should you use?

```
public static void Save(Product target)
{
    ...
}
```

A.

```
public static void Save<T>(T target) where T : Product
{
    ...
}
```

B.

```
public static void Save<T>(T target) where T : new()
{
    ...
}
```

C.

```
public static void Save<T>(T target) where T : Product, new()
{
    ...
}
```

D.

Answer : D

[Next Question](#)

Question 71 (Volume A)



You are creating a class named Employee. The class exposes a string property named EmployeeType. The following code segment defines the Employee class. (Line numbers are included for reference only.)

```
01 public class Employee
02 {
03     internal string EmployeeType
04     {
05         get;
06         set;
07     }
08 }
```

The EmployeeType property value must meet the following requirements:

The value must be accessed only by code within the Employee class or within a class derived from the Employee class.

The value must be modified only by code within the Employee class.

You need to ensure that the implementation of the EmployeeType property meets the requirements.

Which two actions should you perform? (Each correct answer represents part of the complete solution. Choose two.)

NOTE: Each correct selection is worth one point.

- A. Replace line 03 with the following code segment: public string EmployeeType
- B. Replace line 06 with the following code segment: protected set;
- C. Replace line 05 with the following code segment: private get;
- D. Replace line 05 with the following code segment: protected get;
- E. Replace line 03 with the following code segment: protected string EmployeeType
- F. Replace line 06 with the following code segment: private set;

Answer : EF

[Next Question](#)

Question 72 (Volume A)



You are developing an application by using C#.

The application includes an object that performs a long running process.

You need to ensure that the garbage collector does not release the object's resources until the process completes.

Which garbage collector method should you use?

- A. RemoveMemoryPressure()
- B. ReRegisterForFinalize()
- C. WaitForFullGCComplete()
- D. KeepAlive()
- E. Collect()

Answer : D

[Next Question](#)

Question 73 (Volume A)



You have the following C# code.

```
StringBuilder sb = new StringBuilder(reallyLongString);
```

The reallyLongString variable is a string in which a very long string is stored.

You need to identify whether a string stored in an object named StringToFind is within the StringBuilder sb object.

Which code should you use?

- A. sb.Equals(stringToFind);
- B. sb.ToString().IndexOf(stringToFind);
- C. sb.ToString().CompareTo(stringToFind);
- D. sb.ToString().Substring(stringToFind.Length);

Answer : A

References:

https://docs.microsoft.com/en-us/dotnet/api/system.text.stringbuilder.equals?view=netframework-4.7.2#System_Text_StringBuilder_Equals_System_Text_StringBuilder_

[Next Question](#)

Question 74 (Volume A)



DRAG DROP -

You are developing an application by using C#. The application will process several objects per second.

You need to create a performance counter to analyze the object processing.

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:

- Add the **PerformanceCounterPermissionEntry** objects to the collection by calling the **Add()** method of the collection.
- Add the **CounterCreationData** objects to the collection by calling the **Add()** method of the collection.
- Create a **CounterCreationDataCollection** collection. Then create the counters as **CounterCreationData** objects and set the necessary properties.
- Create a **PerformanceCounterPermissionEntryCollection** collection.
- Call the **Create()** method of the **PerformanceCounterCategory** class and pass the collection to the method.
- Get the **CategoryName** property of the **PerformanceCounterPermissionEntry** class.

Answer :

- Add the **PerformanceCounterPermissionEntry** objects to the collection by calling the **Add()** method of the collection.
-
-
- Create a **PerformanceCounterPermissionEntryCollection** collection.
-
- Get the **CategoryName** property of the **PerformanceCounterPermissionEntry** class.

- Create a **CounterCreationDataCollection** collection. Then create the counters as **CounterCreationData** objects and set the necessary properties.
- Add the **CounterCreationData** objects to the collection by calling the **Add()** method of the collection.
- Call the **Create()** method of the **PerformanceCounterCategory** class and pass the collection to the method.

Explanation:

Note:

Example:

```
CounterCreationDataCollection counterDataCollection = new CounterCreationDataCollection(); // Box1
// Add the counter. Box 1
CounterCreationData averageCount64 = new CounterCreationData(); averageCount64.CounterType = PerformanceCounterType.AverageCount64;
averageCount64.CounterName = "AverageCounter64Sample"; counterDataCollection.Add(averageCount64);
// Add the base counter.
CounterCreationData averageCount64Base = new CounterCreationData(); averageCount64Base.CounterType =
PerformanceCounterType.AverageBase; averageCount64Base.CounterName = "AverageCounter64SampleBase";
counterDataCollection.Add(averageCount64Base); // Box 2
// Create the category. Box 3
PerformanceCounterCategory.Create("AverageCounter64SampleCategory",
"Demonstrates usage of the AverageCounter64 performance counter type.",
PerformanceCounterCategoryType.SingleInstance, counterDataCollection);
```

[Next Question](#)

Question 75 (Volume A)



You are developing an application. The application calls a method that returns an array of integers named `customerIds`. You define an integer variable named `customerIdToRemove` and assign a value to it. You declare an array named `filteredCustomerIds`. You have the following requirements.

- > Remove duplicate integers from the `customerIds` array.
- > Sort the array in order from the highest value to the lowest value.

-> Remove the integer value stored in the customerIdToRemove variable from the customerIds array.

You need to create a LINQ query to meet the requirements.

Which code segment should you use?

- A. `int[] filteredCustomerIds = customerIds.Distinct().OrderByDescending(x => x).ToArray();`
- B. `int[] filteredCustomerIds = customerIds.Where(value => value != customerIdToRemove).OrderByDescending(x => x).ToArray();`
- C. `int[] filteredCustomerIds = customerIds.Distinct().Where(value => value != customerIdToRemove).OrderByDescending(x => x).ToArray();`
- D. `int[] filteredCustomerIds = customerIds.Where(value => value != customerIdToRemove).OrderBy(x => x).ToArray();`

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

Answer : C

[Next Question](#)

Question 76 (Volume A)



DRAG DROP -

You are developing an application that implements a set of custom exception types. You declare the custom exception types by using the following code segments:

```
public class AdventureWorksException : System.Exception { }
public class AdventureWorksDbException : AdventureWorksException { }
public class AdventureWorksValidationException : AdventureWorksException { }
```

The application includes a function named DoWork that throws .NET Framework exceptions and custom exceptions. The application contains only the following logging methods:

```
static void Log(Exception ex) { }
static void log(AdventureWorksException ex) { }
static void Log(AdventureWorksValidationException ex) { }
```

The application must meet the following requirements:

-> When AdventureWorksValidationException exceptions are caught, log the information by using the static void Log method.

(AdventureWorksValidationException ex)

-> When AdventureWorksDbException or other AdventureWorksException exceptions are caught, log the information by using the static void Log method.

(AdventureWorksException ex)

You need to meet the requirements.

You have the following code:

```
try
{
    DоРаВk() ;
}
catch Target1
{
    Log(ex) ;
}
catch Target2
{
    Log(ex) ;
}
catch Target3
{
    Log(ex) ;
}
```

Which code segments should you include in Target 1, Target 2 and Target 3 to complete the code? To answer, drag the appropriate code segments to the correct targets. 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:

Code Segments
(AdventureWorksValidationException ex)
(AdventureWorksException ex)
(Exception ex)
(AdventureWorksDbException ex)

Answer Area
Target 1: <input type="text"/>
Target 2: <input type="text"/>
Target 3: <input type="text"/>

Answer :

Code Segments	Answer Area
<code>{ (Exception ex)</code>	Target 1: <code>(AdventureWorksValidationException ex)</code>
	Target 2: <code>(AdventureWorksDbException ex)</code>
	Target 3: <code>(AdventureWorksException ex)</code>

[Next Question](#)

Question 77 (Volume A)



You are developing a C# application that includes a class named Product. The following code segment defines the Product class:

```
public class Product
{
    public int Id { get; set; }
    public int CategoryId { get; set; }
    public string Name { get; set; }
    public bool IsValid { get; set; }
}
```

You implement System.ComponentModel.DataAnnotations.IValidatableObject interface to provide a way to validate the Product object.

The Product object has the following requirements:

- > The Id property must have a value greater than zero.
- > The Name property must have a value other than empty or null.

You need to validate the Product object. Which code segment should you use?

```
public bool Validate ()
{
    IsValid = Id > 0 || !string.IsNullOrEmpty(Name);
    return IsValid;
}
```

A.

```
public IEnumerable<ValidationResult> Validate(ValidationContext validationContext)
{
    if (Id <= 0)
        yield return new ValidationResult("Product Id is required.", new[] { "Id" });
    if (string.IsNullOrEmpty(Name))
        yield return new ValidationResult("Product Name is required.", new[] { "Name" });
}
```

B.

```
public bool Equals (Product productToValidate)
{
    productToValidate.IsValid = productToValidate.Id > 0 || !
    string.IsNullOrEmpty(productToValidate.Name);
    return productToValidate.IsValid;
}
```

C.

```

public Validation Validate()
{
    ValidationResult validationResult = null;
    if (Id <= 0)
    {
        validationResult = new ValidationResult("Product Id is required.");
    }
    if (string.IsNullOrEmpty(Name))
    {
        validationResult = new ValidationResult("Product Name is required.");
    }
    return validationResult;
}

```

D.

Answer : B

[Next Question](#)

Question 78 (Volume A)



DRAG DROP -

You have the following class:

```

public class Class1 : IEquatable<Class1>
{
    public Int32 ID { get; set; }
    public String Name { get; set; }
    public bool Equals(Class1 other)
    {
    }
}

```

You need to implement `IEquatable`. The `Equals` method must return true if both `ID` and `Name` are set to the identical values. Otherwise, the method must return false. `Equals` must not throw an exception.

What should you do? (Develop the solution by selecting and ordering the required code snippets. You may not need all of the code snippets.)

Select and Place:

```

if (!Object.Equals
(this.Name, other.Name)) return false;

if (this.ID == other.ID) return false;

return false;

return true;

if (other == null) return false;

break;

if (this.ID != other.ID) return false;

if (!this.Name.Equals
(other.Name)) return false;

```

Answer :

```

if (other == null) return false;
if (this.ID != other.ID) return false;
if (!Object.Equals
(this.Name, other.Name)) return false;

return true;

break;

if (!this.Name.Equals
(other.Name)) return false;

```

[Next Question](#)

Question 79 (Volume A)



HOTSPOT -

You are reviewing the following code:

```

[System.FlagsAttribute()]
public enum Group
{
    Users = 1,
    Supervisors = 2,
    Managers = 4,
    Administrators = 8
}
public class User
{
    public Group UserGroup { get; set; }
}

```

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

Hot Area:

Yes No

A user can be a member of more than one of the groups.

If the user belongs to only the Administrators group, the following code will return a value of true:

user.UserGroup == Group.Administrators

If the user belongs to only the Supervisors group, the following code will return a value of true:

user.UserGroup != Group.Administrators

Answer :

Yes **No**

A user can be a member of more than one of the groups.

If the user belongs to only the Administrators group, the following code will return a value of true:


```
user.UserGroup == Group.Administrators
```

If the user belongs to only the Supervisors group, the following code will return a value of true:


```
user.UserGroup != Group.Administrators
```

[Next Question](#)

Question 80 (Volume A)



HOTSPOT -

You have the following code:

```
private static Dictionary<string, int> CreateTestData()
{
    Dictionary<string, int> dict = new Dictionary<string, int>()
    {
        {"Accounting", 1},
        {"Marketing", 2},
        {"Operations", 3}
    };
    return dict;
}

private static bool? FindInList(string searchTerm)
{
    Dictionary<string, int> data = CreateTestData();

    if (data.ContainsKey(searchTerm))
    {
        return true;
    }
    else
    {
        return false;
    }
}
```

To answer, complete each statement according to the information presented in the code.

Hot Area:

If the search term is set to "Finance", the result will be ...

false
true
null

If the search term is set to "1", the result will be ...

false
true
null

If the search term is set to "Operations", the result will be ...

false
true
null

Answer :

If the search term is set to "Finance", the result will be ...

false
true
null

If the search term is set to "1", the result will be ...

false
true
null

If the search term is set to "Operations", the result will be ...

false
true
null

[Next Question](#)

Question 81 (Volume A)



HOTSPOT -

You have the following code:

```
[DataContract(Name="Individual")]
public class Individual
{
    private string m_FirstName;
    private string m_LastName;

    [DataMember]
    public string FirstName
    {
        get { return m_FirstName; }
        set { m_FirstName = value; }
    }

    [DataMember(EmitDefaultValue=false)]
    public string LastName
    {
        get { return m_LastName; }
        set { m_LastName = value; }
    }

    public Individual()
    {}

    public Individual(string firstName, string lastName)
    {
        m_FirstName = firstName;
        m_LastName = lastName;
    }
}
```

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

NOTE: Each correct selection is worth one point

Hot Area:

	Yes	No
Last Name will be serialized after first Name.	<input type="radio"/>	<input checked="" type="radio"/>
The namespace used in the serialized XML will be Individual.	<input checked="" type="radio"/>	<input type="radio"/>
The lastName node will always appear in the serialized XML.	<input type="radio"/>	<input checked="" type="radio"/>

Answer :

	Yes	No
Last Name will be serialized after first Name.	<input checked="" type="radio"/>	<input type="radio"/>
The namespace used in the serialized XML will be Individual.	<input type="radio"/>	<input checked="" type="radio"/>
The lastName node will always appear in the serialized XML.	<input type="radio"/>	<input checked="" type="radio"/>

Explanation:

Note:

* The System.Runtime.Serialization namespace contains classes that can be used for serializing and deserializing objects. Serialization is the process of converting an object or a graph of objects into a linear sequence of bytes for either storage or transmission to another location. Deserialization is the process of taking in stored information and recreating objects from it.

* EmitDefaultValue

DataMemberAttribute.EmitDefaultValue Property

Gets or sets a value that specifies whether to serialize the default value for a field or property being serialized. true if the default value for a member should be generated in the serialization stream; otherwise, false.

Next Question

Question 82 (Volume A)



DRAG DROP -

You have a method named GetCustomerIDs that returns a list of integers. Each entry in the list represents a customer ID that is retrieved from a list named

Customers. The Customers list contains 1,000 rows.

Another developer creates a method named ValidateCustomer that accepts an integer parameter and returns a Boolean value. ValidateCustomer returns true if the integer provided references a valid customer. ValidateCustomer can take up to one second to run.

You need to create a method that returns a list of valid customer IDs. The code must run in the shortest amount of time.

Which four code blocks should you use to develop the solution? To answer, move the appropriate code blocks from the list of code blocks to the answer area and arrange them in the correct order.

Select and Place:

```

public List<Int32> GetValidCustomers()
{
    Task<List<Int32>> validCustomers =
        (from c in customers
         where ValidateCustomer(c)
         select c).ToList();

    return validCustomers;
}

(from c in customers
where ValidateCustomer(c)
select c).AsParallel().ToList();

public async Task<List<Int32>> GetValidCusto-
mers()
{
    (from c in customers.AsParallel()
     where ValidateCustomer(c)
     select c).ToList();
}

List<Int32> validCustomers =

```

Answer :

```

public List<Int32> GetValidCustomers()
{
    Task<List<Int32>> validCustomers =
        (from c in customers
         where ValidateCustomer(c)
         select c).ToList();

    return validCustomers;
}

(from c in customers
where ValidateCustomer(c)
select c).AsParallel().ToList();

public async Task<List<Int32>> GetValidCusto-
mers()
{
    (from c in customers.AsParallel()
     where ValidateCustomer(c)
     select c).ToList();
}

List<Int32> validCustomers =

```

Explanation:

Note:

ParallelEnumerable.AsParallel Method

Enables parallelization of a query.

We parallelize the execution of the ValidateCustomer instances.

[Next Question](#)

Question 83 (Volume A)



You are creating a class named Game.

The Game class must meet the following requirements:

-> Include a member that represents the score for a Game instance.

Allow external code to assign a value to the score member.



-> Restrict the range of values that can be assigned to the score member.

You need to implement the score member to meet the requirements.

In which form should you implement the score member?

- A. protected field
- B. public static field
- C. public static property
- D. public property

Answer : D

Next Question

Question 84 (Volume A)



You have a List object that is generated by executing the following code:

```
List<string> departments = new List<string>()
{
    "Accounting", "Marketing", "Sales", "Manufacturing", "Information Systems", "Training"
};
```

You have a method that contains the following code (line numbers are included for reference only):

```
01 private bool GetMatches(List<string> departments, string searchTerm)
02 {
03     var findDepartment = departments.Exists((delegate(string deptName)
04     {
05         return deptName.Equals(searchTerm);
06     })
07     ));
08     return findDepartment;
09 }
```

You need to alter the method to use a lambda statement.

How should you rewrite lines 03 through 06 of the method?

- A. `var findDepartment = departments.First(x => x == searchTerm);`
- B. `var findDepartment = departments.Where(x => x == searchTerm);`
- C. `var findDepartment = departments.Exists(x => x.Equals(searchTerm));`
- D. `var findDepartment = departments.Where(x => x.Equals(searchTerm));`

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

Answer : C

[Next Question](#)

Question 85 (Volume A)



You are developing code for a class named Account. The Account class includes the following method:

```
public void Deposit(int dollars, int cents)
{
    int totalCents = cents + this.cents;
    int extraDollars = totalCents / 100;
    this.cents = totalCents - 100 * extraCents;
    this.dollars += dollars + extraDollars;
}
```

You need to ensure that overflow exceptions are thrown when there is an error.

Which type of block should you use?

- A. checked
- B. try
- C. using
- D. unchecked

Answer : A

Explanation:

The checked keyword is used to explicitly enable overflow checking for integral-type arithmetic operations and conversions.

References:

<https://docs.microsoft.com/en-us/dotnet/csharp/language-reference/keywords/checked> <https://docs.microsoft.com/en-us/dotnet/api/system.overflowexception?view=netframework-4.7.2>

[Next Question](#)

Question 86 (Volume A)



You are developing an application that uses a .config file.
The relevant portion of the .config file is shown as follows:

```
<system.diagnostics>
  <trace autoflush="false" indentsize="0">
    <listeners>
      <add name="appListener"
        type="System.Diagnostics.EventLogTraceListener"
        initializeData="TraceListenerLog" />
    </listeners>
  </trace>
</system.diagnostics>
```

You need to ensure that diagnostic data for the application writes to the event log by using the configuration specified in the .config file.

What should you include in the application code?

- A. EventLog log = new EventLog();
 log.WriteEntry("Trace data...");
- B. Debug.WriteLine("Trace data...");
- C. Console.SetOut(new StreamWriter("System.Diagnostics.EventLogTraceListener"));
 Console.WriteLine("Trace data...");
- D. Trace.WriteLine("Trace data...");

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

Answer : D

Explanation:

```
Public static void Main(string[] args) {
  Create a trace listener for the event log.
  EventLogTraceListener myTraceListener = new EventLogTraceListener("myEventLogSource");
  Add the event log trace listener to the collection.
  Trace.Listeners.Add(myTraceListener);
  // Write output to the event log.
  Trace.WriteLine("Test output");
}
```

References:

<http://msdn.microsoft.com/en-us/library/vstudio/system.diagnostics.eventlogtracelistener>

[Next Question](#)

Question 87 (Volume A)



You have the following code (line numbers are included for reference only):

```

01 class Bar
02 {
03     public string barColor { get; set; }
04     public string barName { get; set; }
05     private static IEnumerable<Bar> GetBars(string sqlConnectionString)
06     {
07         var bars = new List<Bar>();
08         SqlConnection fooSqlConn = new SqlConnection();
09         using (fooSqlConn)
10         {
11             SqlCommand fooSqlCmd = new SqlCommand
12                 ("Select sqlName,sqlColor from Animals", fooSqlConn);
13             fooSqlConn.Open();
14             using (SqlDataReader fooSqlReader = fooSqlCmd.ExecuteReader())
15             {
16                 while (fooSqlReader.Read())
17                 {
18                     var bar = new Bar();
19                     bar.barName = (String)fooSqlReader["sqlName"];
20                     bar.barColor = (String)fooSqlReader["sqlColor"];
21                     bars.Add(bar);
22                 }
23             }
24         }
25     }
26 }

```

You need to identify the missing line of code at line 15. Which line of code should you identify?

- A. using (fooSqlConn.BeginTransaction())
- B. while (fooSqlReader.Read())
- C. while (fooSqlReader.NextResult())
- D. while (fooSqlReader.GetBoolean(0))

Answer : B

[Next Question](#)

Question 88 (Volume A)



HOTSPOT -

You are developing an application in C#.

The application will display the temperature and the time at which the temperature was recorded. You have the following method (line numbers are included for reference only):

```

01 public void DisplayTemperature(DateTime date, double temp)
02 {
03     string output;
04
05     string lblMessage = output;
06 }

```

You need to ensure that the message displayed in the `lblMessage` object shows the time formatted according to the following requirements:

- > The time must be formatted as hour:minute AM/PM, for example 2:00 PM.
- > The date must be formatted as month/day/year, for example 04/21/2013.
- > The temperature must be formatted to have two decimal places, for example 23.45.

Which code should you insert at line 04? (To answer, select the appropriate options in the answer area.)

Hot Area:

output = string.Format("Temperature at on : ", date, temp);

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
{0:d}	{1:d}	{0}
{1:t}	{1:d}	{1}
{0:hh:mm}	{1:dd/mm/yyyy}	{0:N2}
{1:hh:mm}	{0:mm/dd/yyyy}	{1:N2}

Answer :

```
output = string.Format("Temperature at {0:t} on {0:d}-{1:d}:{2:00} : {0} ", date, temp);
```

{0:t}	{0:d}	{0}
{1:t}	{1:d}	{1}
{0:hh:mm}	{0:dd/mm/yyyy}	{0:N2}
{1:hh:mm}	{0:mm/dd/yyyy}	{1:N2}

Next Question

Question 89 (Volume A)



HOTSPOT -

You are developing an application that includes a Windows Communication Foundation (WCF) service.

The service includes a custom TraceSource object named ts and a method named DoWork. The application must meet the following requirements:

-> Collect trace information when the DoWork() method executes.

-> Group all traces for a single execution of the DoWork() method as an activity that can be viewed in the WCF Service Trace Viewer Tool.

You need to ensure that the application meets the requirements.

How should you complete the relevant code? (To answer, select the correct code segment from each drop-down list in the answer area.)

Hot Area:

```
static TraceSource ts = new TraceSource("Contoso",
{
    SourceLevels.ActivityTracing
    SourceLevels.Information
    SourceLevels.Verbose
    SourceLevels.Critical
};

public void DoWork()
{
    var originalId = Trace.CorrelationManager.ActivityId;
    try
    {
        var guid = Guid.NewGuid();

        ts.TraceTransfer(1, "Changing Activity", guid);
        ts.TraceEvent(TraceEventType.Start, 0, "Start");
        ts.TraceTransfer(1, "Changing Activity", originalId);
        ts.TraceInformation("Start");

        Trace.CorrelationManager.ActivityId = guid;

        ts.TraceTransfer(1, "Changing Activity", guid);
        ts.TraceEvent(TraceEventType.Start, 0, "Start");
        ts.TraceTransfer(1, "Changing Activity", originalId);
        ts.TraceInformation("Start");

    }
    finally
    {

        ts.TraceTransfer(1, "Changing Activity", guid);
        ts.TraceTransfer(1, "Changing Activity", originalId);
        ts.TraceInformation("Stop");

        ts.TraceTransfer(1, "Changing Activity", guid);
        ts.TraceEvent(TraceEventType.Stop, 0, "Stop");
        ts.TraceInformation("Stop");

        Trace.CorrelationManager.ActivityId = originalId;
    }
}
```

Answer :

```

static TraceSource ts = new TraceSource("Contoso",
{
    SourceLevels.ActivityTracing
    SourceLevels.Information
    SourceLevels.Verbose
    SourceLevels.Critical
};

public void DoWork()
{
    var originalId = Trace.CorrelationManager.ActivityId;
    try
    {
        var guid = Guid.NewGuid();

        ts.TraceTransfer(1, "Changing Activity", guid);
        ts.TraceEvent(TraceEventType.Start, 0, "Start");
        ts.TraceTransfer(1, "Changing Activity", originalId);
        ts.TraceInformation("Start");

        Trace.CorrelationManager.ActivityId = guid;

        ts.TraceTransfer(1, "Changing Activity", guid);
        ts.TraceEvent(TraceEventType.Start, 0, "Start");
        ts.TraceTransfer(1, "Changing Activity", originalId);
        ts.TraceInformation("Start");

    }
    finally
    {
        ts.TraceTransfer(1, "Changing Activity", guid);
        ts.TraceTransfer(1, "Changing Activity", originalId);
        ts.TraceInformation("Stop");

        ts.TraceTransfer(1, "Changing Activity", guid);
        ts.TraceEvent(TraceEventType.Stop, 0, "Stop");
        ts.TraceInformation("Stop");

        Trace.CorrelationManager.ActivityId = originalId;
    }
}

```

[Next Question](#)

Question 90 (Volume A)



HOTSPOT -

You are creating a C# application named Application1 that will process IoT data from 100,000 devices. Each IoT device can submit hundreds of data transactions per second.

Application1 runs on Windows Server.

You need to create a performance counter in Windows Server that will display the number of data transactions processed per second.

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:

Answer Area

```

var countersDC = new
    
    
    
var IOTDateRate = new
    
    
    
IOTDateRate.CounterName = "Data Trans/Sec";
IOTDateRate.CounterHelp = "Data transactions per second";
IOTDateRate.CounterType = PerformanceCounterType.
    
    
    
countersDC.Add(IOTDateRate);
PerformanceCounterCategory.Create("Application1", "Application1 category for
IOT data", PerformanceCounterCategoryType.SingleInstance, countersDC);

```

Answer :

Answer Area

```

var countersDC = new
    
    
    
var IOTDateRate = new
    
    
    
IOTDateRate.CounterName = "Data Trans/Sec";
IOTDateRate.CounterHelp = "Data transactions per second";
IOTDateRate.CounterType = PerformanceCounterType.
    
    
    
countersDC.Add(IOTDateRate);
PerformanceCounterCategory.Create("Application1", "Application1 category for
IOT data", PerformanceCounterCategoryType.SingleInstance, countersDC);

```

References:

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

[Next Question](#)

Question 91 (Volume A)

**DRAG DROP -**

You are developing an application that will populate an extensive XML tree from a Microsoft SQL Server 2008 R2 database table named Contacts. You are creating the XML tree. The solution must meet the following requirements:

- > Minimize memory requirements.
- Maximize data processing speed.



You open the database connection. You need to create the XML tree.

How should you complete the relevant code? (To answer, drag the appropriate code segments to the correct 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:

```

 XElement root = new XElement
 ("(ContactList)contacts", "content");
 XNamespace ew = "ContactList";
 XElement root = new XElement(ew + "Root");
 XAttribute contacts =
 new XAttribute("contacts",
 XElement contacts =
 new XElement("contacts",

```

```

Console.WriteLine(root);
from c in db.Contacts
orderby c.ContactId
select new XElement("contact",
    new XAttribute("contactId", c.ContactId)
    new XElement("firstName", c.FirstName),
    new XElement("lastName", c.LastName))
);
```

Answer :

```

 XElement root = new XElement
 ("(ContactList)contacts", "content");
 XNamespace ew = "ContactList";
 XElement root = new XElement(ew + "Root");
 Console.WriteLine(root);
 XAttribute contacts =
 new XAttribute("contacts",
 XElement contacts =
 new XElement("contacts",

```

```

from c in db.Contacts
orderby c.ContactId
select new XElement("contact",
    new XAttribute("contactId", c.ContactId)
    new XElement("firstName", c.FirstName),
    new XElement("lastName", c.LastName))
);
```

[Next Question](#)

Question 92 (Volume A)



You have an assembly named Assembly1 that is written in C#. Assembly1 has a method named Method1.

You add a new method named Method2 to Assembly1. Method2 is a newer version of Method1 and must be used by applications in the future. You need to ensure that if a developer builds a project that uses Method1, the developer is notified that Method1 is deprecated.

What should you do?

- A. Set an #if DEPRECATED preprocessor directive above Method1. Set a #endif preprocessor directive after Method1.
- B. Set a #pragma warning disable preprocessor inside of Method1.
- C. Mark Method1 with an ObsoleteAttribute attribute.
- D. Mark Method1 with a Conditional attribute that is set to WARNING.
- E. Set a #warning preprocessor directive inside of Method1.

Answer : C

Reference:

<https://docs.microsoft.com/en-us/dotnet/api/system.obsoleteattribute?view=netframework-4.7.2>

Next Question

Question 93 (Volume A)



You are creating a console application named App1.

App1 retrieves data from the Internet by using JavaScript Object Notation (JSON).

You are developing the following code segment (line numbers are included for reference only):

```
01 public bool ValidateJson(string json, Dictionary<string, object> result)
02 {
03
04     try
05     {
06         result = serializer.Deserialize<Dictionary<string, object>>(json);
07         return true;
08     }
09     catch
10     {
11         return false;
12     }
13 }
```

You need to ensure that the code validates the JSON string.

Which code should you insert at line 03?

- A. DataContractSerializer serializer = new DataContractSerializer();
- B. var serializer = new DataContractSerializer();
- C. XmlSerlalizer serializer = new XmlSerlalizer();
- D. var serializer = new JavaScriptSerializer();

Answer : D

Explanation:

The JavaScriptSerializer Class Provides serialization and deserialization functionality for AJAX-enabled applications.

The JavaScriptSerializer class is used internally by the asynchronous communication layer to serialize and deserialize the data that is passed between the browser and the Web server. You cannot access that instance of the serializer. However, this class exposes a public API. Therefore, you can use the class when you want to work with JavaScript Object Notation (JSON) in managed code.

Next Question

Question 94 (Volume A)



You are developing an application that uses several objects. The application includes the following code segment. (Line numbers are included for reference only.)

```
01 private bool IsNull(object obj)
02 {
03
04     return false;
05 }
```

You need to evaluate whether an object is null.

Which code segment should you insert at line 03?

A. `if (obj = null)`
{
 `return true;`
}

B. `if (null)`
{
 `return true;`
}

C. `if (obj == 0)`
{
 `return true;`
}

D. `if (obj == null)`
{
 `return true;`
}

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

Answer : D

Explanation:

Use the == operator to compare values and in this case also use the null literal.

[Next Question](#)

Question 95 (Volume B)



You are developing an application.

The application contains the following code segment (line numbers are included for reference only):

```
01 ArrayList array1 = new ArrayList();
02 int var1 = 10;
03 int var2;
04 array1.Add(var1);
05 var2 = array1[0];
```

When you run the code, you receive the following error message: "Cannot implicitly convert type 'object' to 'int'. An explicit conversion exists (are you missing a cast?)."

You need to ensure that the code can be compiled.

Which code should you use to replace line 05?

- A. var2 = ((List<int>)array1)[0];
- B. var2 = (int)array1[0];
- C. var2 = int.Parse(array1[0]);
- D. var2 = array1[0] as int;

Answer : B

[Next Question](#)

Question 96 (Volume B)



You need to write a method that retrieves data from a Microsoft Access 2013 database.

The method must meet the following requirements:

- > It must be read-only.
 - > You must be able to use the data before the entire data set is retrieved.
 - > You must minimize the amount of system overhead and the amount of memory usage.
- Which type of object should you use in the method?

- A. SqlDataAdapter
- B. DataContext
- C. DbDataAdapter
- D. OleDbDataReader

Answer : D

Explanation:

OleDbDataReader Class -

Provides a way of reading a forward-only stream of data rows from a data source.

Example:

```
OleDbConnection cn = new OleDbConnection();
OleDbCommand cmd = new OleDbCommand();
DataTable schemaTable;
OleDbDataReader myReader;
//Open a connection to the SQL Server Northwind database.
cn.ConnectionString = "Provider=SQLOLEDB;Data Source=server;User ID=login;
Password=password;Initial Catalog=Northwind";
```

[Next Question](#)

Question 97 (Volume B)



You have the following code:

```
List<Int32> items = new List<int>() {
    100,
    95,
    80,
    75,
    95
};
```

You need to retrieve all of the numbers from the items variable that are greater than 80.

Which code should you use?

- A. `var result = from i in items
where i > 80
select i;`
- B. `var result = items.Take(80);`
- C. `var result = items.First(i => i > 80);`
- D. `var result = items.Any(i => i > 80);`

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

Answer : A

[Next Question](#)



Question 98 (Volume B)

DRAG DROP -

You are creating a method that will split a single input file into two smaller output files.

The method must perform the following actions:

- > Create a file named header.dat that contains the first 20 bytes of the input file.
- > Create a file named body.dat that contains the remainder of the input file.

You need to create the method.

How should you complete the relevant code? (To answer, drag the appropriate code segments to the correct 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:

```
fsSource.Seek(20, SeekOrigin.Current);
byte[] body = new byte[fsSource.Length];
byte[] body = new byte[fsSource.Length - 20];
fsHeader.Write(header, 0, header.Length);
fsHeader.Write(header, 20, header.Length);
fsBody.Write(body, 0, body.Length);
fsBody.Write(body, 20, body.Length);
```

```
using (FileStream fsSource = File.OpenRead(SourceFilePath))
using (FileStream fsHeader = File.OpenWrite(HeaderFilePath));
using (FileStream fsBody = File.OpenWrite(BodyFilePath))
{
    byte[] header = new byte[20];
    [REDACTED]
    fsSource.Read(header, 0, header.Length);
    [REDACTED]
    fsSource.Read(body, 0, body.Length);
    [REDACTED]
}
```

Answer :

```
fsSource.Seek(20, SeekOrigin.Current);
byte[] body = new byte[fsSource.Length];
[REDACTED]
[REDACTED]
fsHeader.Write(header, 20, header.Length);
[REDACTED]
fsBody.Write(body, 20, body.Length);
```

```
using (FileStream fsSource = File.OpenRead(SourceFilePath))
using (FileStream fsHeader = File.OpenWrite(HeaderFilePath));
using (FileStream fsBody = File.OpenWrite(BodyFilePath))
{
    byte[] header = new byte[20];
    byte[] body = new byte[fsSource.Length - 20];
    fsSource.Read(header, 0, header.Length);
    fsHeader.Write(header, 0, header.Length);
    fsSource.Read(body, 0, body.Length);
    fsBody.Write(body, 0, body.Length);
}
```

[Next Question](#)



Question 99 (Volume B)

DRAG DROP -

You are adding a function to a membership tracking application. The function uses an integer named memberCode as an input parameter and returns the membership type as a string.

The function must meet the following requirements:

- > Return "Non-Member" if the memberCode is 0.
- > Return "Member" if the memberCode is 1.
- > Return "Invalid" if the memberCode is any value other than 0 or 1.

You need to implement the function to meet the requirements.

How should you complete the relevant code? (To answer, drag the appropriate statements to the correct locations in the answer area. Each statement 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:

```

default
switch
break
case
private string GetMemberType(int memberCode)
{
    string memberType;
    switch (memberCode)
    {
        case 0:
            memberType = "Non-Member";
        case 1:
            memberType = "Member";
        default:
            memberType = "Invalid";
    }
    return memberType;
}
  
```

Answer :

```

default
switch
break
case
private string GetMemberType(int memberCode)
{
    string memberType;
    switch (memberCode)
    {
        case 0:
            memberType = "Non-Member";
            break;
        case 1:
            memberType = "Member";
            break;
        default:
            memberType = "Invalid";
            break;
    }
    return memberType;
}
  
```

[Next Question](#)



Question 100 (Volume B)

HOTSPOT -

You are developing the following classes named:

- > Class1

-> Class2
-> Class3

All of the classes will be part of a single assembly named Assembly.dll. Assembly.dll will be used by multiple applications.

All of the classes will implement the following interface, which is also part of Assembly.dll: public interface Interface1

```
{  
void Method1(decimal amount);  
void Method2(decimal amount);  
}
```

You need to ensure that the Method2 method for the Class3 class can be executed only when instances of the class are accessed through the Interface1 interface. The solution must ensure that calls to the Method1 method can be made either through the interface or through an instance of the class.

Which signature should you use for each method? (To answer, select the appropriate signature for each method in the answer area.)

Hot Area:

Method1:

```
internal void Method1(decimal amount)  
private void Method1(decimal amount)  
public void Method1(decimal amount)  
void Interface1.Method1(decimal amount)
```

Method2:

```
internal void Method2(decimal amount)  
private void Method2(decimal amount)  
public void Method2(decimal amount)  
void Interface1.Method2(decimal amount)
```

Answer :

Method1:

```
internal void Method1(decimal amount)  
private void Method1(decimal amount)  
public void Method1(decimal amount)  
void Interface1.Method1(decimal amount)
```

Method2:

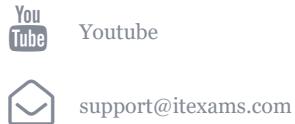
```
internal void Method2(decimal amount)  
private void Method2(decimal amount)  
public void Method2(decimal amount)  
void Interface1.Method2(decimal amount)
```

Next Question

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