

The `Dog` class and the `Cat` class inherit from the `Animal` class. The `Animal` class includes a `breathe()` method and a `speak()` method. If the `speak()` method is called from an object of type `Dog`, the result is a bark. If the `speak()` method is called from an object of type `Cat`, the result is a meow.

Which term is used to describe this object-oriented concept?

Polymorphism

Converting an object to a more general type is called `upcasting`

You need to ensure the data integrity of a database by resolving insertion, update, and deletion anomalies.

Which term is used to describe this process in relational database design?

Normalization

You are updating an existing Windows Forms application. The form hosts a `DateTimePicker` control named `dateTimePicker1`. You need to write code that executes when the value of the `dateTimePicker1` control is changed. You write a method, `ProcessValueChanged`, that contains the code you want to execute. What code should you write to invoke the `ProcessValueChanged` method? Any code that you write must not affect existing functionality of the application. `dateTimePicker1.ValueC`

```
hanged += new System.EventHandler(  
    ProcessValueChanged);
```

You are reviewing the following class that is used to manage the results of a 5K race:

```
public class Player  
{  
    private string _name;  
    public const string Key = "player";  
  
    public bool MatchName(string searchTerm)  
    {  
        return _name.ToLower() == searchTerm;  
    }  
  
    public void SetResult(int rank, string name)  
    {  
        if(_name != null)  
            return;  
  
        Ranking = rank;  
        _name = name;  
    }  
  
    public int Ranking { get; private set; }  
}
```

You can change `Key` from "player" to "racer". – No, If you call the `MatchName` method, the code will throw an exception. – Sometimes YES, sometimes NO, You can only set the player's ranking once. – Ye

You are creating an application for a priority help desk center. The most recent call must be handled first.

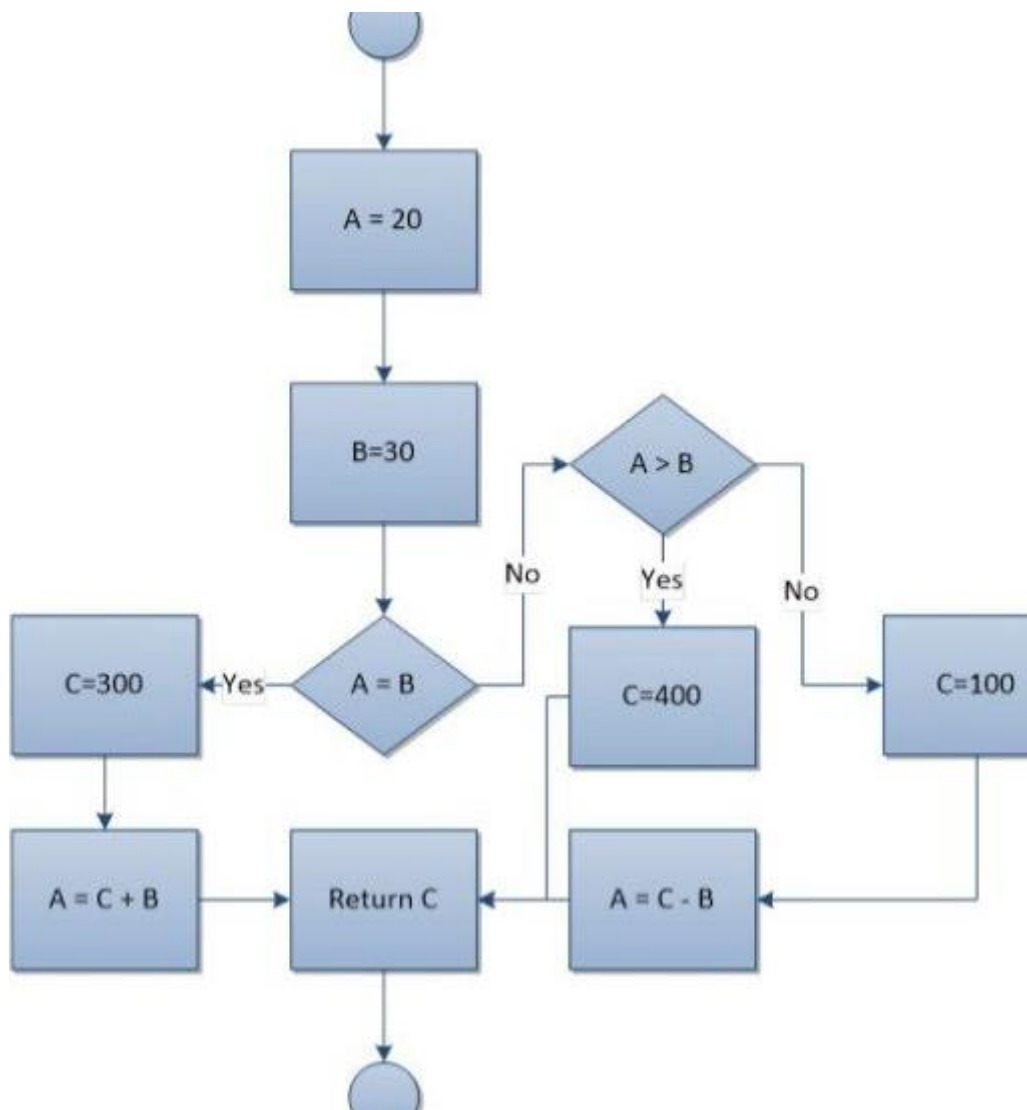
Which data structure should you use?

Stack

You are developing a C# program that makes use of a singly linked list. You need to traverse all nodes of the list. Which of the following items will you need to accomplish this requirement?

link to the head node.

You have the following flowchart:



The value of

A is [answer choice]. – 70, The value that is returned is [answer choice]. – 100

Which three items are benefits of encapsulation? (Choose three.)

maintainability, flexibility, restricted access.

You need to gain a better understanding of the solution before writing the program. You decide to develop an algorithm that lists all necessary steps to perform an operation in the correct order. Any technique that you use should minimize complexity and ambiguity. Which of the following techniques should you use?

Flowchart

The purpose of the Finally section in an exception handler is to:

Execute code regardless of whether an exception is thrown.

You are creating a new class named `Polygon`. You write the following code:

```
class Polygon : IComparable
{
    public double Length { get; set; }
    public double Width { get; set; }

    public double GetArea()
    {
        return Length * Width;
    }

    public int CompareTo(object obj)
    {
        // to be completed
    }
}
```

You need to complete the definition of the `CompareTo` method to enable comparison of the `Polygon` objects. Which of the following code segments should you use?

Prawna odpowiedź to:

```
public int CompareTo(object obj)
{
    Polygon target = (Polygon)obj;
    double diff = this.GetArea() - target.GetArea();

    if (diff == 0)
        return 0;
```

```
else if (diff > 0)
    return 1;
else return -1;
}
```

You are developing a C# program. You write the following code line:

```
int x = 6 + 4 * 4 / 2 - 1;
```

What will be the value of the variable `x` after this statement is executed?

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Internet Information Services (IIS) must be installed on **the client computers** in order to run a deployed ASP.NET application. : computer that hosts the application.

You execute the following code.

```
bool bakerFull = true;
bool flameOn = false;
int iResult = 0;
if(bakerFull)
{
    if(flameOn)
    {
        iResult = 1;
    }
    else
    {
        iResult = 2;
    }
}
else
{
    iResult = 2;
},
```

What will the variable `iResult` be? 2

You are developing a new application that optimizes the processing of a manufacturing plant's operations. You need to implement a data structure that works as a "buffer" for overflow capacity. When the manufacturing capacity is available, the items in the buffer need to be processed in the order in which they were added to the buffer. Which data structure should you use to implement such buffer? queue.

The default entry point for a console application is the **Main** method.

How should you configure an application to consume a Web service?

Add a reference to the Web service in the application..

The elements of an array must be accessed by:

Using an integer index..

You are C# developer who is developing a Windows application. You write the following code:

```
Object o;
```

Later in the code, you need to assign the value in the variable `o` to an object of `Rectangle` type. You expect that at runtime the value in the variable `o` is compatible with the `Rectangle` class. However, you need to make sure that no exceptions are raised when the value is assigned. Which of the following code should you use?

```
Rectangle r = o as Rectangle;
```

Which type of Windows application presents a parent window that contains child windows?

Multiple-document interface (MDI).

You are developing an application that writes messages to the Windows application event log for the local machine. What should you use to view the messages written by the application?

Event Viewer.

What are the three basic states that a Windows service can be in? (Choose three.)

running, stopped, paused.

Converting a value type to a reference type in an object is called **boxing**. No change is needed.

Suppose that you are writing code for a class named `Product`. You need to make sure that the data members of the class are initialized to their correct values as soon as you create an object of the `Product` class. The initialization code should always be executed. What should you do? Create a constructor in the `Product` class to initialize data members.

Where must Internet Information Services (IIS) be installed in order to run a deployed ASP.NET application? on the computer that hosts the application

You are developing a new application that optimizes the processing of a warehouse's operations. When the products arrive, they are stored on warehouse racks. To minimize the time it takes to retrieve an item, the items that arrive last are the first to go out. You need to represent the items that arrive and leave the warehouse in a data structure. Which data structure should you use to represent this situation? Stack

Your application must pull data from a database that resides on a separate server.

Which action must you perform before your application can retrieve the data?

Establish a connection to the database by using the appropriate data provider.

You run the following code:

```

int a = 10;
int b = 20;
int c = 30;
int result = 0;

if ( a <= b ) || c > a )
    result = 10;
else if (a <= b || c <= a)
    result = 20;
else
    result = 30;

```

What is the value of `result` when the code has completed? 10

Both composition and inheritance allow you to create sub-objects. – Yes, The "is a" relationship between classes refers to composition. – No, The "has a" relationship between classes refers to inheritance. – No

To improve performance, a SQL `SELECT` statement should use indexes. No change is needed.

You write large amount of JavaScript code for your Web site. You need to take advantage of caching techniques to make sure that Web pages load as quickly as possible. You also need to ensure that you can modify the JavaScript code with the least amount of effort. What should you do? Write JavaScript code in a separate file. Use the `SRC` attribute of the `<SCRIPT>` tag to link to the JavaScript file.

Your application connects to a SQL Server database that contains a table called Employees with the following columns:

```

EmployeeID (int, identity)
EmployeeType (char(1))
EmployeeDate (datetime)

```

You need to write a query that selects all rows from the table where the `EmployeeType` value is either `C` or `T`. Which statement should you use?

```

SELECT * FROM Employees
WHERE EmployeeType LIKE '[CT]'

```

You are creating an application that presents the user with a Windows Form. You need to configure the application to display a message box to confirm that the user wants to close the form. `FormClosing`.

In your application, you are using a stack data structure to manipulate information. You need to find which data item will be processed next, but you don't want to actually process that data item yet. Which of the following queue operations will you use? **Peek**

You are assisting your colleague in solving a compiler error that his code is throwing.

Following is the problematic portion of his code:

```
try
{
    bool success = ApplyPicardoRotation(100, 0);
    // additional code lines here
}
catch(DivideByZeroException dbze)
{
    //exception handling code
}
catch(NotFiniteNumberException nfne)
{
    //exception handling code
}
catch(ArithmeticException ae)
{
    //exception handling code
}
catch(OverflowException oe)
{
    //exception handling code
}
```

To remove the compilation error, which of the following ways should you suggest to rearrange the code?

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```
try
{
    bool success = ApplyPicardoRotation(100, 0);
```

```

        // additional code lines here
    }
    catch(DivideByZeroException dbze)
    {
        //exception handling code
    }
    catch(NotFiniteNumberException nfne)
    {
        //exception handling code
    }
    catch(OverflowException oe)
    {
        //exception handling code
    }
    catch(ArithmeticException ae)
    {
        //exception handling code
    }

```

. You are developing an order-entry application that will be used by all employees in your company. You use ASP.NET to develop this application and deploy it on the company's Internet Information Services (IIS) server. What should you install on the users' computers before they can access the order-entry application? **Web browser.**

You have a class named `Truck` that inherits from a base class named `Vehicle`.

The `Vehicle` class includes a protected method named `Brake()`.

How should you call the `Truck` class implementation of the `Brake()` method?

`base.Brake();`

An entity relationship diagram (ERD) contains entities, relationships, and attributes. –

Yes, An entity relationship diagram (ERD) is designed for an object-oriented

database. – No, Cardinality refers to how one table is linked to another table; as one-to-many. – Yes

You are creating a new class named `Sphere` derived from the `Shape` class.

The `Shape` class has the following code:

```
class Shape
```



```
{
    public virtual void Area()
    {
        // additional code...
    }
}
```

The Area method in the Shape class should provide new functionality but also hide the Shape class implementation of the Area method. Which code segment should you use to accomplish this?

Poprawna odpowiedź to:

```
class Sphere : Shape
{
    public new void Area()
    {
        // additional code ...
    }
}
```

Which of the following processes is responsible for providing the ASP.NET functionality? [aspnet_wp.exe](#).

You are planning to develop a new software system for your organization. You need to review the plan for packaging, deployment, delivery, and support for the software. Which of the following should you contact? [release manager](#).

You are developing a sorting algorithm that uses partitioning and comparison to arrange an array of numbers in the correct order. You write a method that partitions the array so that the items less than `pivot` go to the left side, whereas the items greater than `pivot` go to the right side. The partitioning method has the following signature:

```
static int Partition (int[] numbers, int left,
    int right, int pivotIndex)
```

Which of the following algorithms should you use to sort the array using the Partition method?



```
static int[] QuickSort(int[] numbers, int left, int right)
```

```

{
    if (right > left)
    {
        int pivotIndex = left + (right - left) / 2;
        pivotIndex = Partition( numbers, left, right, pivotIndex );
        QuickSort( numbers, left, pivotIndex - 1 );
        QuickSort( numbers, pivotIndex + 1, right );
    }
    return numbers;
}

```

You need a Windows Form similar to the `W_RecForm` form that is being already used by the application. However, you need a couple of extra controls on your form that are not available on `W_RecForm`. You need to make sure that you accomplish this requirement with the least coding effort. In future, if the `W_RecForm` is enhanced, you need to make sure that those enhancements are available in your form as well. What should you do? **Use visual inheritance to inherit the new form from `W_RecForm`. Add the new functionality to the new control..**

You are developing an application that uses a double dimensional array. You use the following code to declare the array:

```

int[,] numbers = new int[,]
{
    { 11, 7, 50, 45, 27 },
    { 18, 35, 47, 24, 12 },
    { 89, 67, 84, 34, 24 },
    { 67, 32, 79, 65, 10 }
};

```

Next, you refer to an array element by using the expression `numbers[2, 3]`. What will be the return value of this expression?³⁴

You are developing a Windows application. The user needs to work with multiple windows of the application at the same time and needs a simplified interface. The application needs to be compatible with different display configurations, such as multiple monitors. Which of the following interfaces should you create? **Create a Single Document Interface (SDI) Application. Open multiple instances of the application..**

You have a Microsoft ASP.NET web application.

You need to store a value that can be shared across users on the server.

Which type of state management should you use? **Application.**

You are writing a C# program that needs to iterate a fixed number of times. You need to make sure that your code is easy to understand and maintain even when the loop body contains complex code. Which of the following C# statements provide the best solution for this requirement? `for`.

You need to update the Region fields for customers whose reference code is `"TKY"`. The updated Region should be set to `"Japan"`. Also, this change should affect only customers who live in Tokyo. Which of the following SQL statement should you use?

```
UPDATE Customers
```

```
SET Region = 'Japan'
```

```
WHERE RefCode = 'TKY'
```

```
AND City = 'TOKYO'
```

You are developing an application that uses the `Stack` data structure. You write the following code:

```
Stack first = new Stack();
```

```
first.Push(50);
```

```
first.Push(45);
```

```
first.Pop();
```

```
first.Push(11);
```

```
first.Pop();
```

```
first.Push(7);
```

What are the contents of the stack, from top to bottom, after these statements are executed? `7, 50`.

You are C# developer who is developing a Windows application. You develop a new class that must be accessible to all the code packaged in the same assembly. Even the classes that are in the same assembly but do not directly or indirectly inherit from this class must be able to access the code. Any code outside the assembly should not be able to access the new class.

Which access modifier should you use to declare the new class? `internal`.

You have developed a Windows service that needs to access data stored in the Windows Registry.

Which of the following accounts should you use for running this Windows service?

`LocalSystem`.

Which three phrases are advantages of connection pooling? (Choose three.)

- *reduces time to create a connection* - Connection pooling also cuts down on the amount of time a user must wait to establish a connection to the database

- *improved scalability* - Connection pooling often improves application performance, concurrency and scalability.
- *improved performance* - In connection pooling, after a connection is created, it is placed in the pool and it is used over again so that a new connection does not have to be established.

You have a website that includes a form for username and password.

You need to ensure that users enter their username and password. The validation must work in all browsers.

Where should you put the validation control?

in both the client-side code and the server-side code.

You are writing a C# program that needs to manipulate very large integer values that may exceed 12 digits. The values can be positive or negative. Which data type should you use to store a variable like this? **Long**

You are C# developer who is developing a Windows application. You need to provide derived classes the ability to share common functionality with base classes but still define their own unique behavior. Which object-oriented programming concept should you use to accomplish this functionality? **polymorphism.**

You are writing a C# program that iterates through a collection such as arrays and lists. You need to make sure that you process each item in the collection once. You also need to ensure that your code is easy to read and debug. Which of the following C# statements provide the best solution for this requirement? **foreach.**

You are developing a C# program. You write the following code:

```
int i = 6;
do
{
    if (i == 3)
        break;

    Console.WriteLine("The value of i = {0}", i);

    i++;
}
while (i <= 5);
```

How many times will the control enter the while loop? **1**

Which language was designed for the primary purpose of querying data, modifying data, and managing databases in a Relational Database Management System? **SQL.**

In your student directory database, the **Students** table contains the following fields:
firstName

```
lastName  
emailAddress  
telephoneNumtoer
```

Which statement will retrieve only the first name, last name, and telephone number for every student listed in the directory?

```
SELECT firstName, lastName, telephoneNumber FROM Students
```

A class named `Manager` is derived from a parent class named `Employee`.

The `Manager` class includes characteristics that are unique to managers. Which term is used to describe this object-oriented concept? `Inheritance`

How many parameters can a default constructor have? `0`

You are writing code for a new method named `Process`:

```
void Process(object o)  
{ }
```

The code receives a parameter of type `object`. You need to cast this object into the type `Polygon`. At times, the value of `o` that is passed to the method might not be a valid `Polygon` value. You need to make sure that the code does not generate any `System.InvalidCastException` errors while doing the conversions. Which of the following lines of code should you use inside the `Draw` method to accomplish this goal? `Polygon p = o as Polygon;`

You execute the following code.

```
for(int i = 0; i <= 100; i++)  
{  
    if( i % 2 != 0)  
    {  
        Console.WriteLine("Hello");  
    }  
}
```

How many times will the word Hello be printed? `50.`

You are developing an application that stores data in SQL Server 2005 database. You need to write a query that retrieves all orders in the orders table that were placed on January 1, 2011. You write the following query:

```
SELECT * FROM Orders  
WHERE OrderDate = 01/01/2011
```

The statement executes without any error but does not return any data. You are certain that the database contains order from this date. How should you correct the SQL statement? `SELECT * FROM Orders WHERE OrderDate = '01/01/2011'`

You are developing a C# program. You write the following code:

```
int x = 10;
int y = ++x;
int z = y++;
```

What will be the value of the variable `z` after all the above statements are executed?

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You are developing an ASP.NET application that calls a Web service to retrieve inventory information. You know the URL of the Web service. You need to invoke the methods of this Web service within your Web application. How can you generate the client-side proxy classes so that you can use the Web methods? `Set a Web reference to point to the Web service.`

Two classes named `Circle` and `Square` inherit from the `Shape` class. `Circle` and `Square` both inherit `Area` from the `Shape` class, but each computes `Area` differently.

Which term is used to describe this object-oriented concept? `polymorphism.`

```
bool bakerFull = true;
bool flameOn = false;
int iResult = 0;

switch(bakerFull)
{
    case true:
        switch(flameOn)
        {
            case true:
                iResult = 1;
                break;
            case false:
                iResult = 2;
                break;
        }
        break;
    case false:
        switch(flameOn)
        {
            case false:
                iResult = 3;
                break;
            case true:
                iResult = 4;
                break;
        }
        break;
}
```

You execute the following code.

2.

What will the variable `iResult` be?

Which one of the following are **essential features** of an object-oriented programming language? **encapsulation, abstraction, polymorphism, inheritance.**

You are developing an application that displays a list of race results. The race results are stored in the following class:

```
public class RaceSpeedRecord
{
    public RaceSpeedRecord Faster;
    public RaceSpeedRecord Slower;

    public string Race;
    public double Time;
}
```

The code that manages the list is as follows:

```
public class Results
{
    public Results()
    {
        CurrentOlympicRecord = new RaceSpeedRecord();
    }

    public RaceSpeedRecord CurrentOlympicRecord;

    public void AddRace(string raceName, double time)
    {
    }
}
```

You need to implement the AddRace method.

Match the code segment to its location.

To answer, drag the appropriate code segment. Each code segment may be used once, more than once, or not at all.

```
public void AddRace(string raceName, double time)
{
    var current = CurrentOlympicRecord;

    while( [current.Time] > time )
        current = [current.Slower];

    var race = new RaceSpeedRecord
    {
        Race = raceName,
        Time = time,
```

```

    Faster = [current.Faster],
    Slower = [current.Slower]
}

current.Faster.Slower = race;
current.Slower.Faster = race;
}

```

The process of transforming compiled C# code into an XML string for a web service is known as **deserialization**. **serialization**.

You are writing code to handle events in your program. You define a delegate named `PolygonHandler` like this:

```
public delegate void PolygonHandler(Polygon p);
```

You also create a variable of the `PolygonHandler` type as follows:

```
PolygonHandler handler;
```

Later in the program, you need to add a method named `CalculateArea` to the method invocation list of the `handler` variable. The signature of the `CalculateArea` method matches the signature of the `PolygonHandler` method. Any code that you write should not affect any existing event-handling code. Given this restriction, which of the following code lines should you write? **`handler += CalculateArea;`**

You are developing a new Windows service application. The application contains three different Windows services. Each service will have a different start type. Which of the following classes will help you perform the installation tasks specific to each service? You must suggest a solution that requires the least coding effort.

`System.ServiceProcess.ServiceInstaller` class.

You need to create a property in a class. Consumers of the class must be able to read the values of the property. Consumers of the class must be prevented from writing values to the property.

Which property procedure should you include? **`get`**

In which order do the typical phases of the Software Development Life Cycle occur?

Requirements gathering, design, development, and testing.

In unit testing each unit is tested separately before integrating the units into modules to test the interfaces between modules. – Yes, The driver that you use in unit testing simulates a calling unit and the stub simulates a called unit. – Yes, The primary goal of unit testing is to

take the smallest piece of testtable software in the application, isolate it from the remainder of the code, and determine whether it behaves exactly as expected. – Yes

Suppose that you defined a class `Scenario` that defines functionality for running customized pivot transform on large data sets. You do not want the functionality of this class to be inherited into derived classes. What keyword should you use to define the `Scenario` class? `sealed`.

You need to debug a Windows Service application by using breakpoints.

What should you do? `Use the Attach to Process menu in Microsoft Visual Studio..`

You are developing an algorithm for a retail Web site. You need to calculate discounts on certain items based on the quantity purchased. You develop the following decision table to calculate the discount:

Quantity < 10	Y	N	N	N
Quantity < 50	Y	Y	N	N
Quantity < 100	Y	Y	Y	N
Discount	5%	10%	15%	20%

If a customer buys 50 units of an item, what discount will be applicable to the purchase? `15 percent.`

In your student directory database, the `Students` table contains the following fields:

`firstName`

`lastName`

`emailAddress`

`telephoneNumber`

You need to retrieve the data from the `firstName`, `lastName`, and `emailAddress` fields for all students listed in the directory. The results must be in alphabetical order according to `lastName` and then `firstName`.

Which statement should you use?

```
SELECT firstName, lastName, emailAddress
```

```
FROM Students
```

```
ORDER BY lastName, firstName, telephoneNumber
```

You need to provide printing functionality to several of your classes. Each class's algorithm for printing will likely be different. Also, not all the classes have an "is-a" relationship with each

other. How should you support this functionality? Create a common interface that all classes implement..

The following functions are defined:

```
private static int Printer(int j)
{
    for(var i=j; i > 0; i = Printer(i-1) )
    {
        Console.Write(i);
    }
    return j;
}
```

What does the console display after call the following line?

Printer(2); 211.

You are writing code for a class named Book. You should be able to get a list of all books sorted by the author's last name. You need to write code to define this behavior of a class.

Which of the following class elements should you use method.

Arrange the various activities of an application lifecycle in the order in which they are likely to occur. Requirements analysis, design, coding, testing, and release.

You open the Internet Information Services 7.5 Manager console as shown in the following exhibit:

You need to examine the current configuration of the server W2008R2.

Use the drop-down menus to select the answer choice that answers each question.

How many applications are configured on server W2008R2? 5

How many sites are configured on server W2008R2 1

You are writing a method named PrintReport that doesn't return a value to the calling code. Which keyword should you use in your method declaration to indicate this fact? void.

You are writing a C# program. You write the following method:

```
public static void TestSwitch(int op1, int op2, char opr)
{
    int result;
    switch (opr)
    {
        case '+':
            result = op1 + op2;
        case '-':
```

```

        result = op1 - op2;

    case '*':

        result = op1 * op2;

    case '/':

        result = op1 / op2;

    default:

        Console.WriteLine("Unknown Operator");

        return;

    }

    Console.WriteLine("Result: {0}", result);

    return;

}

```

However, when you compile this code, you get the following error message:

Control cannot fall through from one case label to another

How should you modify the code to make sure that it compiles successfully? After each case, add the following code line: `break;`.

The `throw` keyword is used to perform which two actions? (Choose two.) `raise exceptions`, `re-throw exceptions as a different type`.

A linked list can be sorted. – Yes, You can add new nodes anywhere in a linked list. – Yes, A linked list has a maximum of 100 nodes. – No

You are developing an ASP.NET application using C#. You create a code-behind class named `Status` that contains the business logic. This class is under the namespace `Northwind` and is stored in a file named `status.aspx.cs`. You need write the user interface code that uses this class. Which of the following code segments should you use? `<% Page Language="c#" Src="status.aspx.cs" Inherits="Northwind.Status" %>`

You need to evaluate the following expression:

`(A>B) && (C<D)`

What is the value of this expression if A=3, B=4, C=4, and D=5? **FALSE**

You created a class named `GeoShape`. You defined a method called `Area` in the `GeoShape` class. This method calculates the area of a geometric shape. You want the derived classes of `GeoShape` to supersede this functionality to support the area calculation of additional geometric shapes. When the method `Area` is invoked on a `GeoShape` object, the area should be calculated based on the runtime type of the `GeoShape` object. Which keyword should you use with the definition of the `Area` method in the `GeoShape` class? `virtual`.

You are writing code for a business application by using C#. You write the following statement to declare an array:

```
int[] numbers = { 1, 2, 3, 4, 5 };
```

Now, you need to access the second item in this array (the number 2). Which of the following expression should you use? `numbers[1]`.

You are creating a routine that will perform calculations by using a repetition structure. You need to ensure that the entire loop executes at least once.

Which looping structure should you use? `Do .. While`.

You are planning to develop a new software system for your organization. You need to review the plans, models, and architecture for how the software will be implemented. Of which of the following activities should you review the output? `design`.

You create an application that uses Simple Object Access Protocol (SOAP).

Which technology provides information about the application's functionality to other applications? `Web Service Description Language (WSDL)`.

You are C# developer who is developing a Windows application. You need to provide a common definition of a base class that can be shared by multiple derived classes.

Which keyword should you use to declare the new class? `abstract`.

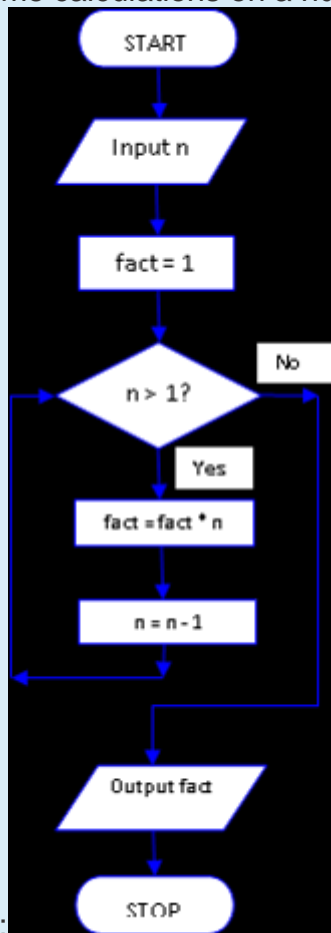
A table whose attributes depend only on the primary key must be at least **second** normal form. No change is needed.

Your application includes a `SqlDataAdapter` object named `sqlDataAdapter` that connects to the `Employees` table. You use the `Fill` method to retrieve the data from the `Employees` table. The `SqlDataAdapter`'s `Connection` property is set to a valid connection to the SQL Server database, but the connection is in the closed state. Which of the following statements is true about the working of the `Fill` method? `The Fill method will open the connection, read the data, and leave the connection closed..`

You are planning to develop a new software system for your organization. Someone needs to be responsible for developing system manuals and help files. Which of the following participants should you identify for this task? `technical writer`.

You are developing a C# program for a bike rental company. The data is stored in a SQL Server 2000 server named `BikeServer` in a database named `BikeDB`. You must use the Windows Integrated authentication to connect to the `BikeDB` database. Which of the following connection strings should you choose in your C# program for connecting to the `BikeDB` database? `"Provider=SQLOLEDB;Data Source=BikeServer;InitialCatalog=BikeDB;Integrated Security=SSPI;"`

You are developing an algorithm before you write the C# program. You need to perform some calculations on a number. You develop the following flowchart for the



calculation:

If the input value of `n` is 5, what is the output value of the variable `fact` according to this flowchart? 120.

Which type of application has the following characteristics when it is installed?

- Runs continuously in the background by default when the startup type is set to automatic
- Presents no user interface Windows Service.

You are developing a program that performs frequent insert and delete operations on the data. Your requirement also dictates the capability to access previous and next records when the user clicks the previous or next button. Which of the following data structures will best suit your requirements? doubly linked list.

You are extending an application that stores and displays the results of various types of foot races. The application contains the following definitions:

```

public interface IDisplayResult
{
    void Display();
}

public class Race
{
    public int Seconds;

    public virtual void Display()
    {
        Console.WriteLine(Seconds);
    }
}

```

The following code is used to display the result for a race:

```

var r1 = new FootRace();
var r2 = r1 as IDisplayResult;
r1.Seconds = 99;

r1.Display();
r2.Display();
r1.DisplayRaw();

```

The contents of the console must be as follows:

- 99 seconds
- 1.65 minutes
- 99

You need to implement the `FootRace` class.

Match the method declaration to the method body. `public class FootRace : Race, IDisplayResult`

```

{
    [public override void Display()]
    {
        Console.WriteLine(Seconds + " seconds");
    }

    [public void DisplayRaw()]
    {
        base.Display();
    }

    [void IDisplayResult.Display()]

```

```
{  
    Console.WriteLine(Seconds / 60d + " minutes");  
}
```

You have a table named ITEMS with the following fields:

- ID (integer, primary key, auto generated)
- Description (text)
- Completed (Boolean)

You need to insert the following data in the table:

"Cheese", False

Which statement should you use? `INSERT INTO ITEMS (Description, Completed) VALUES ('Cheese', 0).`

Which of the following must exist to inherit attributes from a particular class? `Public properties.`

You have a class named `Glass` that inherits from a base class named `Window`. The `Window` class includes a protected method named `brake()`.

How should you call the `Glass` class implementation of the `brake()` method? `this.brake();`

You are developing a C# program. You write a recursive method to calculate the factorial of a number. Which of the following code segment should you use to generate correct results? `public static int Factorial(int n)`

```
{  
    if (n == 0)  
    {  
        return 1;  
    }  
    else  
    {  
        return n * Factorial(n - 1);  
    }  
}
```

You are developing a new Windows application that needs to write messages to the event log. You use the `EventLog` class to write these messages. Each event log message must

specify the name of the application writing to an event log. Which property of the `EventLog` class should you use? `Source`.

You are designing a Windows Store application.

You need to design the application so that users can share content by connecting two or more devices by physically tapping the devices together.

Which user experience (UX) guideline for Windows Store applications should you use? `share and data exchange`.

All objects in .NET inherit from which item? `the System.Object class`.

You are building a web application that enables international exchange students to schedule phone calls with their prospective schools.

The application allows students to indicate a preferred date and time for phone calls. Students may indicate no preferred time by leaving the date and time field empty. The application must support multiple time zones.

Which data type should you use to record the student's preferred date and time?

`DateTimeOffset?`.

You develop a new ASP.NET inventory application on the Northwind Web server. You deploy the files in the folder `c:\WebInventory`. The application should be available via the URL `www.northwind.com/inventory`. The URL `www.northwind.com` is already set up to point to the Northwind Web server. What should you do to make your inventory application available at the expected URL? `Create a virtual directory named Inventory and point it to c:\WebInventory..`

Which type of function can a derived class override? `a protected virtual member function`.

What is displayed when you attempt to access a Web service by using a Web browser? `a listing of methods that are available in the Web service`.

You need to create an application that processes data on a last-in, first-out (LIFO) basis.

Which data structure should you use? `Stack`.

You are developing a new Windows service application that process orders. The system administrator must be able to suspend order processing while maintenance operations are in progress. When maintenance operations are completed, order processing must be resumed without the loss in any information. How should you configure this Windows service? `Set the CanPauseAndContinue property of the service to true..`

You need to perform data validation to ensure that the input fields are not empty and the user's email address and phone numbers have been provided in the required format. You need to minimize the transmission of information across the networks. Which of the following coding approaches should you follow? `Use JavaScript code that executes in the browser..`

The purpose of the `Catch` section in an *exception handler* is to: **Execute code only when an exception is thrown..**

You are developing a user interface component that responds to user actions such as keystrokes. Which of the following programming constructs should you use to accomplish this requirement? **event.**

You are reviewing a C# program that contains the following class:

```
public struct Rectangle
{
    public double Length { get; set; }
    public double Width { get; set; }
}
```

The program executes the following code as part of the `Main` method:

```
Rectangle r1, r2;

r1 = new Rectangle { Length = 10.0, Width = 20.0 };
r2 = r1;
r2.Length = 30;
Console.WriteLine(r1.Length);
```

What will be the output when this code is executed? **10**

You are planning to develop a new software system for your organization. You need to review the system's technical blueprint. Which of the following participants is responsible for providing the technical blueprint? **architect.**

Class C and Class D inherit from Class B. Class B inherits from Class A. The classes have the methods shown in the following table.

Class	Method
A	m1
B	m2
C	m3
D	m4

All methods have a protected scope.

Which methods does Class C have access to? **m1, m2, m3.**

Which two types of information should you include in an effective test case? (Choose two.) **the expected result from testing the case, multiple actions combined as a single step to test the case.**

What are two advantages of normalization in a database? (Choose two) **prevents data inconsistencies, decreases space used on disk**

You are developing a C# program. You write the following code:

```
01: int count = 0;
02: while (count < 5)
03: {
04:     if (count == 3)
05:         break;
06:     count++;
07: }
```

How many times will the control enter the while loop?**4**

You have developed two console applications. The first, `DisplayFile.exe`, accepts the name of a text file as a command-line argument and displays the file's contents. The second, `ToUpper.exe`, accepts text from users and converts the text to uppercase letters. You need to combine both commands so that contents of a given file (`Sample.txt`) can be displayed in uppercase letters. Which of the following commands would you choose? `DisplayFile Sample.txt | ToUpper`.

You are developing a C# application. You need to decide whether to declare a class member as static. Which of the following statements is true about static members of a class? **The `static` keyword is used to declare members that do not belong to individual objects but to a class itself..**

Your C# program needs to return the total number of customers in a SQL Server database. The program will be used several times a day. What is the fastest way to return this information from your program? (Select all answers that apply.) **Write a stored procedure., Use the `SqlCommand.ExecuteScalar` method..**

You are reviewing the following code that saves uploaded images.

```
struct ImageInfo
{
    public byte[] Data;
    public int Length;
    public Guid Id;
}

void Post()
{
    var uploaded = PostedImage();
    var newImage = new ImageInfo();
    newImage.Data = uploaded;
    newImage.Length = uploaded.Length;
    newImage.Id = Guid.NewGuid();
}
```

For each of the following statements, select **Yes** if the statement is true. Otherwise, select **No**. **The `Id` of the image is stored on the stack. – Yes, The bytes that comprise the**

image are stored on the stack. – No, The length of the image data is stored on the heap. – No

You have a class with a property.

You need to ensure that consumers of the class can write to the value of the property.

Which keyword should you use? **set**

You have completed developing a new software application. To ensure the quality of the software, you need to verify that each method or function has proper test cases available.

Which testing approach should you use? **white-box testing.**

You are developing an application to display track and field race results. The application must display the race results twice. The first time it must display only the winner and runner-up. The second time it must display all participants. The code used to display results is shown below.

```
public void Display()
{
    // display top two
    foreach (var ranking in Rankings(true))
    {
        DisplayName(ranking);
    }

    // display all
    foreach (var ranking in Rankings(false))
    {
        DisplayName(ranking);
    }
}
```

You need to implement the **Rankings()** function.

```
private IEnumerable<string> Rankings(bool top20only)
{
    [yield return] "John";
    [yield return] "Nancy";
    if( top20only )
        [yield break];
    [yield return] "Chris";
}
```

You are creating the necessary variables for an application. The data you will store in these variables has the following characteristics:

- Consists of numbers
- Includes numbers that have decimal points
- Requires more than seven digits of precision

You need to use a data type that will minimize the amount of memory that is used.

Which data type should you use? `double`.

Within an XHTML document, the XML namespace attribute in the html tag is mandatory. –

Yes, Within an XHTML document, the html head, title, and body tags are mandatory. – Yes,

Within an XHTML document, the XHTML DOCTYPE declaration is mandatory. – Yes

You are developing a C# program for a bike rental company. Every night, your application needs to read data from a SQL Server 2000 database and write it to a flat file. This flat file will be transferred to your supplier. Which of the following classes shall you use to retrieve the data? Any solution that you suggest must have very little impact of the server while maximizing performance. `SqlDataReader`.

You are studying various sorting algorithms to understand, analyze, and compare the various sorting techniques. Which of the following techniques should you utilize when using the `BubbleSort` algorithm? `comparison and swap`.

You are writing a C# program and need to select an appropriate repetition structure for your requirement. You need to make sure that the test for the termination condition is performed at the bottom of the loop rather than at the top. Which repetition structure should you use? `The do-while statement`.

You need to allow a consumer of a class to modify a private data member. What should you do? `Provide a public function that assigns a value to the data member..`

You have written a C# method that opens a database connection by using the `SqlConnection` object. The method retrieves some information from the database and then closes the connection. You need to make sure that your code fails gracefully when there is a database error. To handle this situation, you wrap the database code in a `try-catch-finally` block. You use two catch blocks — one to catch the exceptions of type `SqlException` and the second to catch the exception of type `Exception`. Which of the following places should be the best choice for closing the `SqlConnection` object? `Inside the finally block`.

You need an application that updates the inventory every morning when you log in to the workstation. If an error occurs during update, the application needs to log messages to a text file. The application doesn't need any user interaction. You want to automate the process that launches the application. You want to minimize the efforts for developing, installing, and updating the application. Which type of application should you create? `console application`.

*Arguments are passed to console applications as a **Hashtable** object.* `String Array`.

You need to display specific messages to the users when their browser is not running JavaScript. Which of the following code segment should you use? `<noscript> ... </noscript>` You are creating a variable for an application.

You need to store data that has the following characteristics in this variable:

- Consists of numbers and characters

- Includes numbers that have decimal points `String`.

Which service can host an ASP.NET application? `Internet Information Services`.

Simulating the final design of an application in order to ensure that the development is progressing as expected is referred to as: `Software testing`.

What are two methods that can be used to evaluate the condition of a loop at the start of each iteration? (Each correct answer presents a complete solution. Choose two.) `For`, `While`.

`User acceptance` is the final set of tests that must be completed before a feature or product can be considered finished.

In your student directory database, the `Students` table contains the following fields:

`firstName`

`lastName`

`emailAddress`

`telephoneNumber`

You need to retrieve the data from the `firstName`, `lastName`, and `emailAddress` fields for all students listed in the directory. The results must be in alphabetical order according to `lastName` and then `firstName`.

```
SELECT firstName, lastName, emailAddress  
  
FROM Students  
  
ORDER BY lastName, firstName
```

How does a console-based application differ from a Windows Forms application? `Console-based applications do not display a graphical interface`

You are developing an ASP.NET application that calls a Web service to retrieve earthquake predictions for a given geographical area. The Web service performs complex, time-consuming calculations to generate the predictions. It is hosted on a government Web server, where you have permission only to invoke the Web service. The users of your Web application complain that the user interface freezes when they attempt to retrieve the predictions. You have full access to the Web server that hosts your ASP.NET application. Which of the following approach should you use to resolve this issue? `Use asynchronous calls to invoke the Web service from within your ASP.Net application` .

You are developing a C# program that needs to perform 5 iterations. You write the following code:

```
01: int count = 0;  
02: while (count <= 5)  
03: {  
04:     Console.WriteLine("The value of count = {0}", count);  
05:     count++;  
06: }
```

When you run the program, you notice that the loop does not iterate five times. What should you do to make sure that the loop is executed exactly five times? `int count =`

`1;`

You need to develop a C# program that exports the contents of the Customers table to an XML file. The exported data must be in the following format:

```
<Customer CustomerID="ALFKI" ContactName="Maria Anders" Phone="030-007-4321" />
<Customer CustomerID="ANATR" ContactName="Ana Trujillo" Phone="(5) 555-4729" />
```

Which of the following code segments should you use to export the Customers table to the specified XML format?

```
foreach(DataColumn c in dataset1.tables["Customers"].Columns)
{
    c.ColumnMapping = MappingType.Attribute;
}
dataSet1.WriteXml("Customers.xml");
```

The purpose of a constructor in a class is to: `Initialize an object of that class.`

You are developing a C# application. You create a class of the name `Widget`. You use some third-party libraries, one of which also contains a class of the name `Widget`. You need to make sure that using the `Widget` class in your code causes no ambiguity. Which C# keyword should you use to address this requirement? `namespace.`

You are developing code for a method that calculates the discount for the items sold. You name the method `CalculateDiscount`. The method defines a variable, `percentValue` of the type `double`. You need to make sure that `percentValue` is accessible only within the `CalculateDiscount` method. What access modifier should you use when defining the `percentValue` variable? `private.`

You are assisting your colleague in solving a compiler error that his code is throwing. Following is the problematic portion of his code:

```
try
{
    bool success = ApplyPicardoRotation(100, 0);
    // additional code lines here
}
catch(DivideByZeroException dbze)
{
    //exception handling code
```

```

}
catch(NotFiniteNumberException nfne)
{
    //exception handling code
}
catch(ArithmeticException ae)
{
    //exception handling code
}
catch(OverflowException oe)
{
    //exception handling code
}

```

To remove the compilation error, which of the following ways should you suggest to rearrange the code?

Wybierz jedną odpowiedź:



try

```

{
    bool success = ApplyPicardoRotation(100, 0);
    // additional code lines here
}
catch(DivideByZeroException dbze)
{
    //exception handling code
}
catch(NotFiniteNumberException nfne)
{
    //exception handling code
}
catch(OverflowException oe)
{

```

```

    //exception handling code
}
catch(ArithmeticException ae)
{
    //exception handling code
}

```

You are creating an application for computers that run Windows XP or later. This application must run after the computer starts. The user must not be aware that the application is running.

The application performs tasks that require permissions that the logged-in user does not have.

Which type of application allows this behavior? **Windows Service application.**

You are reviewing a design for a database. A portion of this design is shown in the exhibits (Exhibit A - Crow's Foot Notation, Exhibit B - Chen Notation version of the design).

Exhibit A - Crow's Foot Notation



Exhibit B - Chen Notation



Which term is used to describe the Customer component? **Entity.**

You create an object of type **ANumber**. The class is defined as follows.

```

public class ANumber
{
    private int _number = 7;

    public ANumber()
    {
    }
}

```



```

public ANumber( int number )
{
    _number = number;
}
}

```

The code is executed as follows:

```
ANumber mynumber = new ANumber(3);
```

What is the value of `_number` after the code is executed? **3.**

Which of the following languages is not considered a high-level programming language?

Wybierz jedną odpowiedź:



Common Intermediate Language

The application you are developing needs to write data to a flat file that include items such as a five-digit integer key, followed by a 20-character customer name, followed by two date and time fields. Your solution should be as fast as possible and should create smallest size data file.

Which of the following classes should you use? `BinaryWriter`.

Which term is used to describe a class that inherits functionality from an existing

class? **Derived class**

The **bubble** sort algorithm steps through the list to be sorted, comparing adjacent items and swapping them if they are in the wrong order.

Which function does Simple Object Access Protocol (SOAP) provide when using Web services? **communications protocol.**

You have completed developing several major features of a new software application. You plan to provide an early look at the product to important customers to gather some early feedback. Your application still misses features and you haven't yet optimized the application for performance and security. Which kind of testing should you perform with a limited number of important customers? **alpha testing.**

You are developing code that defines an `InitFields` method. The method takes two parameters of data type `double` and does not return any value to the calling code. Which of the following code segments would you use to define the `InitFields` method? `public void InitFields(double l, double w)`

```
{
```

```

length = l;

width = w;
}

```

You have a base class named `Tree` with a *friend* (in VB.NET, in C# `internal`) property named `color` and a *protected* property named `NumberOfLeaves`. In the same project, you also have a class named `Person`. Methods in the `Person` class can access the `color` property. – Yes, Methods in the `Tree` class can access all private properties in `Person`. – No, Methods in the `Person` class can access the `NumberOfLeaves` property. – No

You have developed a Windows Forms application that stockbrokers will use. The stockbrokers need to view data for multiple stocks at the same time. You need to change the display and behavior of a Windows Form so that it can contain multiple child windows. What should you do? set the `IsMdiContainer` property of the form to `true`..

You are developing an application that tracks tennis matches. A match is represented by the following class:

```

public class Match
{
    public Match()
    {
        Location = "unknown";
    }

    public string Location { get; set; }
    public DateTime? MatchDate { get; set; }
}

```

A match is created by using the following code:

```

var match = new Match
{
    Location = "north region",
    MatchDate = new DateTime(2013, 4, 14)
};

```

How many times is the `Location` property on the newly created instance of `Match` class assigned? 2

In the application life cycle, the revision of an application after it has been deployed is referred to as: **Maintenance**.

A piece of text that is 4096 bytes or smaller and is stored on and retrieved from the client computer to maintain state is known as a **ViewState**. **Cookie**.

A table named `Student` has columns named `ID`, `Name`, and `Age`. An index has been created on the `ID` column. What advantage does this index provide? It speeds up query execution..

What does the `Console.Error` property do within a console-based application?

gets the standard error output stream.

The default entry point for a console application is the `Main` method.

You need to provide complex multi-way branching in your C# program. You need to make sure that your code is easy to read and understand. Which of the following C# statements should you use? ☒ `switch`

You are developing code for a method that calculates the discount for the items sold. You name the method `CalculateDiscount`. The method defines a variable, `percentValue` of the type `double`. You need to make sure that `percentValue` is accessible only within the `CalculateDiscount` method. What access modifier should you use when defining the `percentValue` variable? `private`.

What are two possible options for representing a Web application within Internet Information Services (IIS)? (Each correct answer presents a complete solution. Choose two.) `Web site`, `Virtual directory`.

You are developing a webpage that enables students to manage races.

The webpage will display two lists: past races and upcoming races. The page also contains a sidebar with contact information and a panel with social media settings that can be edited. Race results can be shared on social media.

How many components will be on the webpage? `4`

When a web service is referenced from a client application in Microsoft Visual Studio, which two items are created? (Choose two.) `a .wsdl file`, `a .disco file`.

You are developing a C# program. You write the following code:

```
01: int count = 0;
02: while (count < 5)
03: {
04:     if (count == 3)
05:         break;
06:     count++;
07: }
```

How many times will the control enter the while loop?`4`

ou are reviewing a C# program that contains the following class:

```
public class Rectangle
{
```

```
    public double Length {get; set;}

    public double Width { get; set; }

}
```

The program executes the following code as part of the `Main` method:

```
Rectangle r1, r2;

r1 = new Rectangle { Length = 10.0, Width = 20.0 };

r2 = r1;

r2.Length = 30;

Console.WriteLine(r1.Length);
```

What will be the output when this code is executed? 30

You are creating an application that presents users with a graphical interface in which they can enter data. The application must run on computers that do not have network connectivity.

Which type of application should you choose? Windows Forms

The duplication of code so that modifications can happen in parallel is known as `[branching]`

You execute the following code.

```
for(int i = 0; i <= 10; i += 2)

{

    Console.WriteLine("Hello");

}
```

How many times will the word Hello be printed? 6

*When a base class declares a method as virtual, the method **is hidden from implementation by a derived class**. can be overridden with its own implementation by a derived class.*

You need to gain a better understanding of the solution before writing the program. You decide to develop an algorithm that lists all necessary steps to perform an operation in the correct order. Any technique that you use should minimize complexity and ambiguity. Which of the following techniques should you use? Flowchart

You are developing a C# application. You need to decide whether to declare a class member as static. Which of the following statements is true about static members of a class?

The `static` keyword is used to declare members that do not belong to individual objects but to a class itself..

You have a stack that contains integer values. The values are pushed onto the stack in the following order: 2, 4, 6, 8.

The following sequence of operations is executed:

1. Pop
2. Push 3
3. Pop
4. Push 4
5. Push 6
6. Push 7
7. Pop
8. Pop
9. Pop

What is the value of the top element after these operations are executed? **3**

Your application includes a `SqlDataAdapter` object named `sqlDataAdapter` and an `OleDbDataAdapter` object named `oledbdataAdapter`. You need to connect to the Employees table of a SQL Server database. Your application also includes a `DataSet` object named `dsEmployees`. You need to load the data from the database into the `DataSet` object. You must select a solution that gives you the best performance. Which of the following lines of code should you choose? `sqlDataAdapter.Fill(dsEmployees, "Employees");`.

You are creating a Windows Store application that uses the following gesture:



Use the drop-down menus to select the answer choice that completes each statement. The surface displayed after the gesture has been completed is— app bar, The gesture shown in the graphic is called. — swiping

You are developing a C# program. You write a recursive method to calculate the factorial of a number. Which of the following code segment should you use to generate correct results? `public static int Factorial(int n)`

```
{  
    if (n == 0)  
    {  
        return 1;  
    }  
    else  
    {
```

```
        return n * Factorial(n - 1);  
    }  
}
```

You are designing a database for your company and are reviewing the normalization for the database tables. You review the following Customer table:

<u>Id</u>	FirstName	LastName
1	Jane	Doe
2	John	Doe
3	Howard	Steel

Which of the following statements is true? The highest normal form of the Customer table is the third normal form..

Suppose that you are a new C# developer and are reviewing object-oriented programming fundamentals. Which of the following statements is not true? A class is a concrete instance of an object..

You are planning to develop a new software system for your organization. You need to verify that the implementation of the system matches with the requirements of the system. Which of the following activities would accomplish this requirement? : testing.

You are developing an ASP.NET application that uses a Web service created by one of your large customers. This Web service provides you with the Order object, which has several properties. The developer of the Web service has informed you that a new property named Priority has been added to the Order object. What should you do to be able to use the Priority property in your code with minimum effort? Update the Web reference in the existing ASP.NET application..

Which of the following is not true about linked lists? The items in a linked list must be stored in contiguous memory locations..

The benefit of using a transaction when updating multiple tables is that the update [succeeds or fails as a unit].

You are designing a database for your company and are reviewing the normalization for the database tables. You review the following Customer table:

<u>Id</u>	FirstName	LastName	PhoneNumber
-----------	-----------	----------	-------------

1	Jane	Doe	(503) 555-6874
2	John	Doe	(509) 555-7969, (509) 555-7970
3.	Howard	Steel	(604) 555-3392, (604) 555-3393

Which of the following statements is true? **It is not normalized..**

You are creating an application for a help desk center. Calls must be handled in the same order in which they were received.

Which data structure should you use? **Queue.**

You are developing a new Web page. You need to create hyperlinks that point to other pages on the World Wide Web. Which of the following methods should you use to create these hyperlinks on your Web page? **the HREF attribute of the <A> tag.**

A queue is a first in, first out (FIFO) data structure. – Yes, A queue's items are stored in the order they were added. – Yes, A queue has a limited number of items. – No

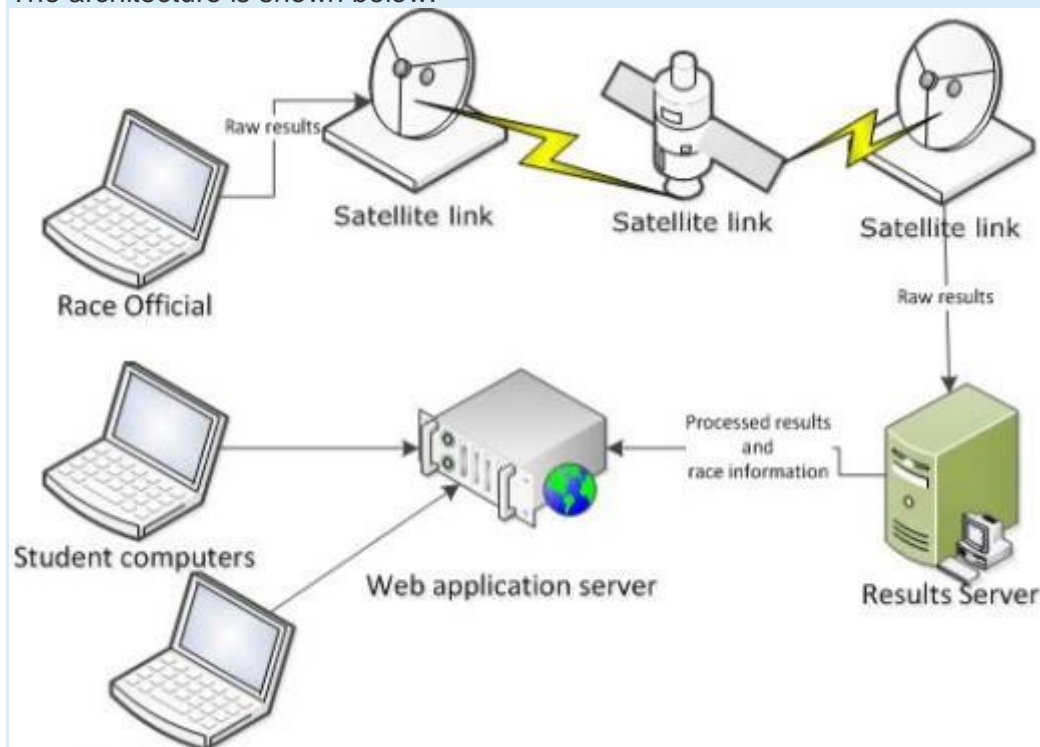
In the life cycle of an ASP. NET Web page, which phase follows the `SaveStateComplete` phase? **Render.**

An *Abstract Data Type* (ADT) is: **A data type type for which only the operations defined on it can be used, but none else.**

In your application, you are using a queue data structure to manipulate information. You need to find whether a data item exists in the queue, but you don't want to actually process that data item yet. Which of the following queue operations will you use? **Contains**

You are reviewing the architecture for a system that allows race officials to enter the results of 5K race results. The results are then made available to students using a web application.

The architecture is shown below:



Use the drop-down menus to select the answer choice that answers each question.

To increase the number of students that can access race results, what element should be added to the system? – web application server, To minimize the time between when a race official records the results and when the results are available on the web, which part of the system is critical? – satellite link

You are in the process of developing a new software application. As defects are reported, you take the necessary steps to fix them. You need to make sure that each new fix doesn't break anything that was previously working. Which type of testing should you use?

regression testing.

You are developing a C# program. You write the following code:

```
int i = 6;
do
{
    if (i == 3)
        break;
    Console.WriteLine("The value of i = {0}", i);
    i++;
}
```



```
while (i <= 5);
```

How many times will the control enter the while loop 1

he "is a" relationship between classes refers to composition. – No, The "has a" relationship between classes refers to inheritance. – No, Both composition and inheritance allow you to create sub-objects. – Yes

You are developing an ASP.NET Web page that displays status of a shipment. You need to write some code that will change the Web page's appearance and assign values to some controls. Where should you put this code? In a method that handles the Load event

You are designing a class for an application. You need to restrict the availability of the member variable `accessCount` to the base class and to any classes that are derived from the base class.

Which access modifier should you use? Protected.

You have written a C# method that opens a database connection by using the `SqlConnection` object. The method retrieves some information from the database and then closes the connection. You need to make sure that your code fails gracefully when there is a database error. To handle this situation, you wrap the database code in a try-catch-finally block. You use two catch blocks — one to catch the exceptions of type `SQLException` and the second to catch the exception of type `Exception`. Which of the following places should be the best choice for closing the `SqlConnection` object? Inside the finally block.

You created a class named `GeoShape`. You defined a method called `Area` in the `GeoShape` class. This method calculates the area of a geometric shape. You want the derived classes of `GeoShape` to supersede this functionality to support the area calculation of additional geometric shapes. When the method `Area` is invoked on a `GeoShape` object, the area should be calculated based on the runtime type of the `GeoShape` object. Which keyword should you use with the definition of the `Area` method in the `GeoShape` class? virtual.

You are developing a Windows forms application used by a government agency. You need to develop a distinct user interface element that accepts user input. This user interface will be reused across several other applications in the organization. None of the controls in the Visual Studio toolbox meets your requirements; you need to develop all your code in house. Which of the following actions should you take? Develop a custom control for the user interface..

You are developing a new Windows service application. The application contains three different Windows services. Before these services can be used, they must be installed in the Windows service database. What action should you take to ensure that your services can be installed by a Windows installer tool? Add a service installer to the Windows service project..

You are creating an application that accepts input and displays a response to the user. You cannot create a graphical interface for this application.

Which type of application should you create? **Console-based.**

You have a server that limits the number of data connections.

What should you use to optimize connectivity when the number of users exceeds the number of available connections? **Connection pooling.**

You are developing an application that needs to copy data from a SQL Server table to a DataSet. Which of the following methods should you use to copy the data? **Fill.**

You are designing a database for your company. You are reviewing the normalization for the database tables. You review the following Orders table:

<u>OrderId</u>	<u>CustomerId</u>	OrderDate	FirstName	LastName
101	1	10/1/2010	Jane	Doe
102	2	10/5/2010	John	Doe
103	1	10/4/2010	Jane	Doe

Which of the following statement is true for the Orders table? **It meets the requirements for the first normal form..**

You are creating an application that presents users with a graphical interface. Users will run this application from remote computers. Some of the remote computers do not have the . NET Framework installed. Users do not have permissions to install software.

Which type of application should you choose? **ASP. NET.**

You are developing a Windows Form with a multiple document interface (MDI). You need to write code that arranges the child windows vertically within the client region of the MDI parent form. Which of the following **MdiLayout** values should you pass to the **LayoutMdi** method? **MdiLayout.TileVertical.**

You are writing a Web application that processes room reservation requests. You need to verify that the room that a guest has selected is not already reserved by another guest.

Which type of programming should you use to determine whether the room is still available when the request is made? **server-side.**

You need to create a stored procedure that passes in a person's name and age.

Which statement should you use to create the stored procedure? **CREATE PROCEDURE** storeData (@UserName, @Age)

```
@UserName nvarchar(255),  
@Age int
```

Which programming language is characterized as client-side, dynamic and weakly typed? **JavaScript**

The **Response.Redirect method** is used to transfer processing of the current page to a new page, and then return processing back to the calling page once processing of the new page has completed. `Server.Execute method.`

Which language uses Data Definition Language (DDL) and Data Manipulation Language (DML)? **SQL**

You need to create an application that processes data on a last-in, first-out (LIFO) basis. Which data structure should you use? **Stack**

The purpose of the `Catch` section in an *exception handler* is to: **Execute code only when an exception is thrown..**

As you design a database for your company, you review the normalization rules for the database tables. You need to ensure that your table design meets the requirements for the third normal form. Which of the following statements must be true for your tables? (Choose all that apply.) **None of the columns in the table should have multiple values in the same row of data. , All non-key columns are functionally dependent on the entire primary key., Non-key attributes don't share any functional dependency..**

You create an ASP.NET Web Service that tracks the shipment of orders. The Web service includes a class named `StatusService`, which contains the following method:

```
public string GetStatus()  
{  
    /* additional code here */  
}
```

You note that you can instantiate the `StatusService` class from a Web service client project, but the `GetStatus` method is not available. What could be the problem?

You must mark the method with the `WebMethod` attribute..

*To minimize the amount of storage used on the hard drive by an application that generates many small files, you should make the **partition** as small as possible. **block size.***

Converting an object to a more general type is called [upcasting].

You are developing a data-entry application that receives user input in multiple data fields. The application allows users to enter the data either by using a keyboard or by using a bar-

code scanner. When a code is entered, a picture of the product appears onscreen. The application also needs to log its operation to a console window. Occasionally, the operator will look at the console window to monitor communication with the scanner. What project should you choose to create such an application? **a Windows Forms application project with the Output type set to Console Application.**

You need to update the Products table and remove all discontinued products. When the products are discontinued, the value of the field Discontinued is set to true. Which of the following SQL statements should you use to make changes to the Products table? **DELETE**

The duplication of code so that modifications can happen in parallel is known as [branching].

Suppose that you defined a class `Scenario` that defines functionality for running customized pivot transform on large data sets. You do not want the functionality of this class to be inherited into derived classes. What keyword should you use to define the `Scenario` class? **Sealed**

You are creating an application that presents the user with a Windows Form.

Which event is triggered each time the Windows Form receives focus? **Enter**

How many parameters can a default constructor have? **0**

You are creating the necessary variables for an application. The data you will store in these variables has the following characteristics:

- Consists of numbers
- Includes numbers that have decimal points
- Requires more than seven digits of precision

You need to use a data type that will minimize the amount of memory that is used.

Which data type should you use? The `double` keyword signifies a simple type that stores 64-bit floating-point values. Precision: 15-16 digits
Poprawna odpowiedź to: `double`.

You are developing an application that manages customers and their orders. Any solution that you develop must take the least amount of effort but offer the best performance.. Which of the following situations is not a good candidate for implementation with stored procedures in your application? **Ad hoc querying by the database administrator.**

You need to start a Windows service named `ProcService` from the command line. Which command should you use? **`net start ProcService.`**

What are two methods that can be used to evaluate the condition of a loop at the start of each iteration? **For, While.**

You are planning to develop a new software system for your organization. You need to review the system's technical blueprint. Which of the following participants is responsible for providing the technical blueprint? **architect.**

You are developing an application that will be run from the command line. Which of the following methods would you use for getting input from to the command line?

`Console.Read`.

You are writing code for a new method named `Process`:

```
void Process(object o)
{
}

```

The code receives a parameter of type `object`. You need to cast this object into the type `Polygon`. At times, the value of `o` that is passed to the method might not be a valid `Polygon` value. You need to make sure that the code does not generate any `System.InvalidCastException` errors while doing the conversions. Which of the following lines of code should you use inside the `Draw` method to accomplish this goal? `Polygon p = o as Polygon;`

XHTML attribute minimization is forbidden. – Yes, XHTML attribute values must be in quotation marks. – Yes, XHTML attribute names must be in uppercase. – No

You plan to create an application for your company. The application will run automated routines and write the results to a text-based log file. Little or no user interaction is required.

Security requirements on the host computers prevent you from running applications on startup, and users must be able to see the status easily on the screen. The host computers also have limited memory and monitors that display only two colors. These computers will have no network connectivity.

Which type of application should you use for this environment? `console-based`.

An application presents the user with a graphical interface. The interface includes buttons that the user clicks to perform tasks. Each time the user clicks a button, a method is called that corresponds to that button. Which term is used to describe this programming model?

`Event driven`.

You are developing a web application.

You need to create the following graphic by using Cascading Style Sheets (CSS):



For the CSS Style `background-image`, you should use the value– `linear-gradient(to bottom, green, black);`, For the CSS Style `border-radius`, you should use the value `. – 10px;`

You write the following code in your Web page:

```
protected void Page_Load  
  
    (object sender, EventArgs e)  
  
{  
  
    /* additional code here */  
  
}
```

You expect this code to be executed in response to the Load event of the ASP.NET page. However, when you request the page, you notice that the method is not executed. What should you do to make sure that the `Page_Load` method is executed when the `Load` event of the Web page is fired? **Set the `AutoEventWireup` attribute of the `@Page` directive to `true`.**

You are developing a restaurant locator Web site in ASP.NET and C#. As users browse through the Web site, each of the Web pages must display a list of the recently viewed restaurant in the lower left corner. You want this information to be available across Web pages and browser restarts but do not want to use server-side resources to accomplish this. Which of the following state management techniques will help you accomplish this requirement with minimum effort? **Cookies**

You are developing an application that receives orders over the Internet via Electronic Data Interface (EDI). The application needs to run constantly the background and wait for orders. There is no user interface. The application writes messages to the Windows application event log. The application must continue to run even after a user logs off from the computer. Which type of application should you develop for this requirement? **Windows Service application.**

You have a class with a property.

You need to ensure that consumers of the class can write to the value of the property.

Which keyword should you use? **`set`.**

You are designing database for a new Web application. You need to identify appropriate relational database structure to satisfy business requirements. Which of the following activities should you **not** perform as part of the design process? **Write stored procedures..**

You need to provide complex multi-way branching in your C# program. You need to make sure that your code is easy to read and understand. Which of the following C# statements should you use? **`switch`.**

Which three are valid SQL keywords? (Choose three.) **`FROM`, `SELECT`, `WHERE`.**

Suppose that you are a new C# developer and are reviewing object-oriented programming fundamentals. Which of the following statements is not true? **A class is a concrete instance of an object..**

You are developing an application that needs to retrieve a list of customers and their orders from a SQL Server database. After the list is retrieved, you should be able to display this data, even when a connection to the SQL Server is not available.

Which of the following classes should you use to hold the data? **DataSet.**

You have developed a Windows service and need to install it to implement its functionality.

Which of the following options should you use to accomplish this task? **InstallUtil.exe.**

You are building a web application that enables international exchange students to schedule phone calls with their prospective schools.

The application allows students to indicate a preferred date and time for phone calls. Students may indicate no preferred time by leaving the date and time field empty. The application must support multiple time zones.

Which data type should you use to record the student's preferred date and time?

DateTimeOffset?.

You are developing an ASP.NET application using C#. On your Web page, you want to display the results returned by a C# method named `GetShipmentStatus` when the page is rendered to the client.

Which of the following code segments should you use to call the `GetShipmentStatus` method? **`<%= GetShipmentStatus() %>`**

You have created a new Web service that provides mapping data. You are working in a Visual Studio environment and use C# as your programming language. You need to test the Web service to ensure that it is returning correct results. What is the easiest way to test your new Web service? **Run the Web services project from within Visual Studio and use the test page that is displayed in the Web browser..**

The purpose of the Finally section in an exception handler is to: **Execute code regardless of whether an exception is thrown..**

The purpose of a constructor in a class is to: **Initialize an object of that class..**

You need to allow a consumer of a class to modify a private data member. What should you do? **Provide a public function that assigns a value to the data member**

You are developing a database that other programmers will query to display race results.

You need to provide the ability to query race results without allowing access to other information in the database.

What should you do? **Place the query into a stored procedure..**

A data warehouse database is designed to: **Enable business decisions by collecting, consolidating, and organizing data..**

Suppose that you are writing code for a class named `Product`. You need to make sure that the data members of the class are initialized to their correct values as soon as you create an

object of the `Product` class. The initialization code should always be executed. What should you do? **Create a constructor in the `Product` class to initialize data members..**

You are developing a C# program that needs to perform 5 iterations. You write the following code:

```
01: int count = 0;
02: while (count <= 5)
03: {
04:     Console.WriteLine("The value of count = {0}", count);
05:     count++;
06: }
```

When you run the program, you notice that the loop does not iterate five times. What should you do to make sure that the loop is executed exactly five times? **Change the code in line 01 to `int count = 1;`.**

In your application, you are using a stack data structure to manipulate information. You need to find which data item will be processed next, but you don't want to actually process that data item yet. Which of the following queue operations will you use? **peek.**

You are migrating several HTML pages to your website. Many of these pages contain HTML `<center>` and `` tags. Which XHTML document type declaration should you use?
`<!DOCTYPE HTML PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN" "http://www.w3.org/TR/html4/loose.dtd">`.

In the life cycle of an ASP. NET Web page, which phase follows the `SaveStateComplete` phase? **Render.**

You are writing a C# program and need to select an appropriate repetition structure for your requirement. You need to make sure that the test for the termination condition is performed at the bottom of the loop rather than at the top. Which repetition structure should you use? **: The `do-while` statement.**

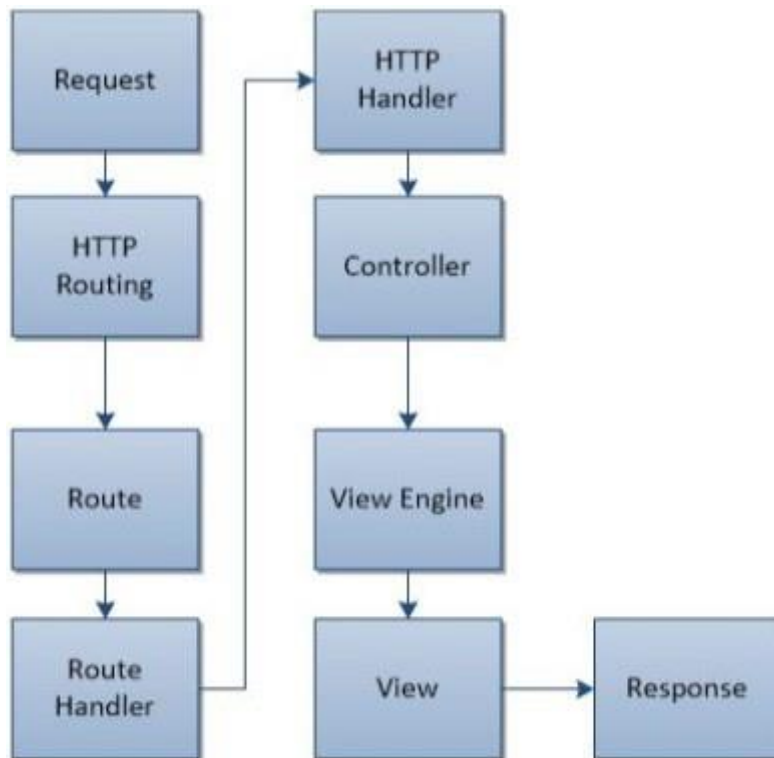
You have developed a Windows service that needs to access data stored in the Windows Registry.

Which of the following accounts should you use for running this Windows service? **`LocalSystem`.**

You are developing a Web page for a medium-sized business. You want to separate the formatting and layout of the page from its content. Which of the following technologies should you use to define the formatting and layout of the page content? **: Cascading Style Sheets (CSS).**

Your database administrators will not allow you to write SQL code in your application. How should you retrieve data in your application? **Call a stored procedure..**

The ASP.NET MVC page lifecycle is shown in the following graphic:



The URL pattern is matched during the **[answer choice]** event. – Route, The **[answer choice]** event determines which action method is needed and then calls that method. – Controller

When a base class declares a method as virtual, the method can be overridden with its own implementation by a derived class.

You are reviewing a design for a database. A portion of this design is shown in the exhibit. (Crow's Foot Notation -- Exhibit A, Chen Notation -- Exhibit B).

Exhibit A



Exhibit B



Which term is used to describe the relationship between Customer and Order?

one-to-many.

A data dictionary that describes the structure of a database is called **metadata**. No change is needed.

You are invoking a Web service method that returns an ArrayList object. The client application is written in C#, whereas the Web service is written in Visual Basic. The Web service is outside your corporate firewall. You receive an "object not found" error when you call the method that returns the ArrayList object but can call other methods successfully

from the same Web service. What could be the problem? The client project does not contain a reference to the System.Collection namespace..

You are creating an ASP. NET Web application.

Which line of code should you use to require a control to process on the computer that hosts the application? `runat="server"`.

Which two types of information should you include in an effective test case? (Choose two.) the expected result from testing the case, multiple actions combined as a single step to test the case.

Which of the following languages is not considered a high-level programming language? Common Intermediate Language.

You have a SQL Server database named MyDB that uses SQL Server Authentication.

Which connection string should you use to connect to MyDB? `Data Source=MyDB; UserID=username; Password=P@sswOrd; Initial Catalog=Sales`

Which term is used to describe small units of text that are stored on a client computer and retrieved to maintain state? cookie

Your application needs to store the customer list in a text file. You want to minimize the size of this disk file and be able to open it in common text editors. Which of the following classes should you use to write the file? `StreamWriter`.

You want to display an image on your Web page. The image is stored on a separate Web server but can be accessed with a public URL. Which of the following HTML tags should you use to ensure that the image is displayed when the user navigates to your Web page? ``.

You plan to create an application for your company. The application will run automated routines and write the results to a text-based log file. Little or no user interaction is required.

Security requirements on the host computers prevent you from running applications on startup, and users must be able to see the status easily on the screen. The host computers also have limited memory and monitors that display only two colors. These computers will have no network connectivity. console-based.

Which language allows you to dynamically create content on the client side? JavaScript (JS).

You are creating an application that presents the user with a Windows Form. You need to configure the application to display a message box to confirm that the user wants to close the form.

Which event should you handle? `FormClosing`

You need to group all the style settings into a separate file that can be applied to all the pages in a Web application **Use a Cascading Style Sheet (CSS)**

In this XHTML code sample, what will cause an error?

```
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Strict//EN"
    "http://www.w3.org/TR/xhtml1/DTD/xhtml1-strict.dtd">
<html lang="en" xmlns="http://www.w3.org/1999/xhtml">
  <head>
    <title>The Title</title>
  </head>
  <body>
    <h1>This is a Heading.</h1>
    <p>This is a paragraph</p><br>
  </body>
</html>
```

The line break

tag is incorrectly formatted..

You are creating a Web application. The application will be consumed by client computers that run a variety of Web browsers.

Which term is used to describe the process of making the application available for client computers to access? **Hosting**