

1. A While statement automatically increments a variable that a programmer specifies.
True False
2. Counter-controlled repetition requires only a control variable, an initial value for the control variable and an increment or decrement.
True False
3. Counting loops should be controlled with whatever data type most closely reflects the operations taking place, whether that is an Integer, Single or Double.
True False
4. The control variable of the For...Next statement must have its type declared before or at the beginning of the loop.
True False
5. A Case Else must be provided for every Switch statement.
True False
6. The placement of a larger value on the left side of keyword To in a Case state-ment is a logic error and causes the case to be ignored during program execution.
True False
7. In a Do...Loop While statement, the loop body is always executed at least once.
True False
8. In a Do...Loop While statement, the loop-continuation condition is tested at the end of the loop.
True False
9. The logical operator Not is also called logical negation.
True False
10. The expression $(x > y \text{ And } a < b)$ is true if either $x > y$ or $a < b$ is true.
True False
11. A program waits for a message dialog to be closed before executing the next line of code—this type of dialog is known as a nodal dialog.
True False
12. MessageBox method Show displays a message dialog, which is typically used to display an important message to the user. The arguments of MessageBox method Show are the message String, the String that's displayed in the dialog's title bar and predefined constants that specify the Button(s) and the icon to show on the dialog, respectively.
True False
13. The return type of a method's return value is specified in the method call.
True False
14. Repeating high-quality, high-performance code in a program helps ensure higher qual-ity programs.
True False
15. Many classes and methods for performing common operations such as mathematical calculations and string manipulations are already provided by .NET's Framework Class Library.
True False
16. Two types of methods exist: subroutines and functions.
True False
17. The header for a function must define the return type of the value to be returned.
True False
18. A function can return multiple values.
True False
19. When Option Explicit is set to Off, the compiler will interpret misspelled variable names as new variables.
True False
20. Type-conversion functions are used to perform explicit conversions between data types.
True False
21. The methods in the Convert class can be used for explicit and narrowing conversions.
True False

22. Keyword Val is used to pass an argument by value.
True False
23. Any variables declared in a For...Next statement header have block scope within that statement.
True False
24. Variables declared in a method exist while the method is active and are destroyed when the method is exited.
True False
25. A button will become unavailable only if an error is detected in the event handler for that button.
True False
26. A GroupBox is used to group related code.
True False
27. Overloaded methods normally perform similar tasks, but on different types of data.
True False
28. Arrays consist of items of different types.
True False
29. An array reference may be assigned only to a different array of the same size as the array it's currently referencing.
True False
30. The position number in square brackets is formally called an index.
True False
31. Only literal integer values can be used as an index into an array.
True False
32. The value used to indicate a specific location within an array is called the index or subscript.
True False
33. The number of elements in the array must be specified in parentheses after the array name in the declaration.
True False
34. Each reference in an array of references is pointed to Nothing by default when the array is allocated.
True False
35. In an array of Boolean variables, if the initializer list is empty, the elements in the array are initialized to the default value True.
True False
36. The declaration and allocation of an array can be combined into one statement.
True False
37. Visual Basic can determine the array bounds from the number of elements in the initializer list.
True False
38. An individual element of an integer array is passed to a method by value.
True False
39. Changes made to an entire array that has been passed to a method will not affect the original values of the array.
True False
40. When we pass an array object to a procedure, we do not need to pass the upper bound of the array as a separate argument.
True False
41. For Each...Next loop is barely used because it's more complicated than the For...Next loop.
True False
42. The ReDim statement enables you to dynamically change the array size, type of the array elements, and the number of dimensions in the array.
True False
43. The ReDim statement is used only to expand an array.
True False
44. Data stored in arrays is permanent data.
True False

45. File-processing capabilities are important for a programming language to support commercial apps.
True False
46. A field is a random group of characters.
True False
47. To distinguish records, there has to be one field that's unique for each instance; this is called the record key.
True False
48. StreamReader property EndOfStream returns True if the end of the file has been reached.
True False
49. The optional Finally block—if present—executes only when an exception occurs in the corresponding Try block.
True False
50. Local variables in a Try block cannot be accessed in the corresponding Finally block.
True False
51. When an argument is sent ByVal, a copy of the argument's value is sent to the procedure so that the procedure cannot alter the original value.
True False
52. A function cannot have multiple arguments.
|True False
53. It is possible to add values to a list box or combo box during design by using the Items property.
True False
54. The SelectedIndex property can be used to select an item in the list or to determine which item is selected.
True False
55. A loop that begins with Do Until will test the condition at the top of the loop.
True False
56. An array is a list or series of values.
True False
57. A subscript may also be called an index.
True False
58. An exception is automatically thrown if a subscript is used that is not a valid element in an array.
True False

Which of the following is not a control statement?

- a) Do...Loop While
- b) While...Do Loop
- c) Select...Case
- d) For...Next

Which of the following is not required for counter-controlled repetition?

- a) the special value -1 to mark the end of data input
- b) initial value of the control variable
- c) increment or decrement by which the control variable is modified each time through the loop
- d) condition that tests for the final value of the control variable.

The optional _____ keyword specifies the increment of the For...Next loop.

- a) Increase
- b) Increment
- c) Step
- d) Raise

Which of the following headers will cause the body not to execute at least once?

- a) For i As Integer = 1 To 10
- b) For i As Integer = 1 To 10 Step 2
- c) For i As Integer = 10 To 20 Step -1
- d) None of the Above

For monetary calculations use the data type:

- a) Single
- b) Double
- c) Decimal
- d) Integer

A case can be labeled as to execute in the event that none of the provided cases are equivalent to the controlling expression.

- a) General
- b) Default
- c) Case *
- d) Case Else

The loop body of a Do...Loop While statement always executes _____.

- a) zero times
- b) at least once
- c) more than once
- d) undeterminable

The Do...Loop While statement is an example of a:

- a) Selection statement
- b) Repetition statement
- c) Loop statement
- d) Sequence statement

Including an incorrect relational operator or an incorrect final value for a loop counter in the condition of any repetition statement often cause _____ errors.

- a) off-by-one
- b) compilation
- c) syntax
- d) None of the above

The statement, when executed in a loop, terminates the loop.

- a) Continue
- b) Break
- c) Skip
- d) Exit

Which of the following statements cannot be terminated early?

- a) For...Next
- b) Do...Loop Until
- c) If...Then
- d) Select...Case

Assuming a is a Boolean with a value of false, which of the following evaluates to true?

- a) Not(Not a)
- b) a
- c) Not a
- d) None of the above.

If we wish to ensure that either or both of two conditions are true we should use the logical operator:

- a) And
- b) AndAlso
- c) OrElse
- d) Xor

The performance feature for the evaluation of AndAlso and OrElse expressions is called:

- a) short-circuit evaluation
- b) quick evaluation
- c) shortcut evaluation
- d) fast evaluation

Which of the following is not a motivation for dividing code into methods?

- a) makes program development more manageable
- b) software reusability
- c) have more separate files
- d) avoid repeating code

Subroutines are _____.

- a) methods that can be called only once
- b) methods that cannot be called with arguments
- c) methods that do not return a value
- d) methods that return an optional value

What do functions have that subroutines do not?

- a) Exit Sub keywords
- b) a return value
- c) ByVal keyword
- d) None of the above

A _____ conversion occurs when an argument is converted to a parameter of another type that can hold more data.

- a) widening
- b) implicit
- c) narrowing
- d) explicit

_____ causes the compiler to check all conversions and requires you to perform all narrowing conversions explicitly.

- a) Option Explicit
- b) Option Strict
- c) Option Convert
- d) None of the above

Which statement is false?

- a) To ensure that the operands are of the same type, Visual Basic performs implicit conversion on selected operands.
- b) Cast operators are unary operators.
- c) Cast operations are performed implicitly when Option Strict is off.
- d) Cast operators are formed by placing parentheses around the name of a type.

Passing an argument to a method by value provides the method with:

- a) the address of the value in memory
- b) a separate copy of the value
- c) the type of the value
- d) None of the above.

Identifiers declared within a class have _____.

- a) block scope
- b) class scope
- c) local scope
- d) module scope

If a local variable in a method has the same name as a variable in the main program, what will occur?

- a) an error is generated
- b) the variable in the main program is "hidden" until the method is finished executing
- c) the variable in the main program will override the variable from the method
- d) None of the above.

Which of these statements best defines scope?

- a) Scope refers to the classes that have access to a variable.
- b) Scope determines whether a variable's value can be altered.
- c) Scoping allows you to use a class without using its fully qualified name.
- d) Scope is the portion of a program that can refer to an entity by its simple name.

Which of the following method headers are appropriate for the method call SR(True, 0, 2.6)?

- a) Sub SR(ByVal a As Boolean, ByRef b As Double, ByRef c As Integer)
- b) Sub SR(ByVal a As Boolean, ByVal b As Double, ByVal c As Double)
- c) Sub SR(ByRef a As Boolean, ByRef b As Integer, By Ref c As Double)
- d) b and c

Overloaded methods always have the same _____.

- a) method name
- b) return type
- c) number of the parameters
- d) order of the parameters

An overloaded method is one that

- a) has a different name than another method, but the same parameters.
- b) has the same name as another method, but different parameters.
- c) has the same name and parameters as a method defined in another class.
- d) has the same name and parameters as another method, but a different return type.

Which of the following statements is false?

- a) To have an optional parameter, place the Optional keyword at the beginning of an argument in the method header.
- b) The optional parameter must provide a default value.
- c) The optional argument(s) can be placed anywhere in the parameter list of the method header.
- d) When calling a method, the optional argument can be omitted.

Arrays normally are data structures.

- a) constant
- b) dynamic
- c) static
- d) None of the above.

The number in parentheses after an array name is the of the item in the array.

- a) value
- b) position
- c) size
- d) None of the above.

Consider the array:

s(0) = 7
s(1) = 0
s(2) = -12
s(3) = 9
s(4) = 10
s(5) = 3
s(6) = 6

The value of s(s(6) – s(5)) is:

- a) 0
- b) 3
- c) 9
- d) 0

All arrays have access to the methods and properties of this class:

- a) VisualBasic.Array
- b) Microsoft.Array
- c) System.Array
- d) None of the Above

To declare an array one must provide the:

- a) array name and array size
- b) array name and data type
- c) array size and data type
- d) array name, array size and data type

You must do the following before using an array:

- a) declare then reference the array
- b) initialize then declare the array
- c) initialize then reference the array
- d) declare then initialize the array

Consider the code segment below. Which of the following statements is false?

```
Dim array(5) As Integer
```

- a) The first statement declares an array reference.
- b) The second statement creates the array.
- c) array is a reference to an array of integers.
- d) The value of array(3) is -1.

Consider the code below:

```
Dim a(9) As Integer
```

```
For i As Integer = 0 To a.Length - 1  
    a(i) = i + 2  
Next
```

```
Dim result As Integer = 0  
For i As Integer = 0 To a.Length - 1  
    result += a(i)  
Next
```

The value of variable result will be:

- a) 62
- b) 64
- c) 65
- d) 67

The value of variable result will be:

- a) 280
- b) 154
- c) 286
- d) 332

Invalid possibilities for array indices include .

- a) positive integers
- b) negative integers
- c) zero

Referencing an element outside the array bounds is a:

- a) syntax error
- b) compile error
- c) runtime error
- d) None of the above

Array element values of primitive data types, such as Integer, can be passed to a method by:

- a) value
- b) reference
- c) both a and b
- d) None of the above

An array itself can be passed to a method by:

- a) value
- b) reference
- c) both a and b
- d) None of the above

The For Each...Next repetition statement requires you to provide an array, its type and a variable for the purpose of:

- a) preventing the statement from going past the end of the array
- b) storing the value of each typed element that's traversed
- c) acting as a counter to traverse the array
- d) None of the above.

Rectangular arrays are often used to represent tables of values consisting of information arranged in:

- a) rows
- b) columns
- c) both a and b
- d) None of the above

An array with m rows and n columns is not:

- I. An m-by-n array.
- II. An n-by-m array.
- III. A two-dimensional array.
- IV. A dual-transcripted array.

- a) I and III
- b) I and IV
- c) II and IV
- d) II and III

For the array in the previous question, what is the value returned by `items(1, 0)`?

- a) 4
- b) 8
- c) 12
- d) 6

How many RadioButtons in a group can be selected at a time?

- a) 0
- b) 1
- c) 2
- d) all of them

The optional _____ keyword in the ReDim statement will keep the existing array elements after the array is resized.

- a) Keep
- b) Copy
- c) Preserve
- d) Save

_____ are used for long-term retention of large amounts of data.

- a) Memory cards
- b) Buffers
- c) Files
- d) Data structures.

Binary code is actually:

- a) a complex programming language.
- b) a series of 0's and 1's.
- c) machine language instructions.
- d) a series of characters representing the numbers 0 to 9

The smallest data item in a computer is the _____.

- a) bit
- b) byte
- c) kilobyte
- d) None of the above.

One byte is composed of:

- a) 2 bits
- b) 4 bits
- c) 8 bits
- d) 10 bits

In a _____ file, records are typically stored in order by a record-key field.

- a) chronological
- b) non-sequential
- c) sequential
- d) record-key

The _____ control enables you to place a menu bar in your window.

- a) MenuTool
- b) MenuBar
- c) MenuStrip
- d) None of the above

The _____ namespace contains stream classes such as StreamWriter and StreamReader.

- a) System.IO
- b) System.ReadWrite
- c) System.InputOutput
- d) System.

Most file processing operations have the potential to throw `IOException`, so such operations are typically placed in Try statements.

- a) FileExceptions
- b) ReadWriteExceptions
- c) InputOutputExceptions
- d) IOExceptions

StreamWriter method `WriteLine` writes a sequence of characters to a file and positions the output cursor to the beginning of the next line in the file.

- a) WriteLine
- b) NewLine
- c) NextLine
- d) WriteMoveCursor

To specify the shortcut key for a menu or menu item, type a `&` before the character to be underlined in the menu or menu item's name.

- a) %
- b) *
- c) &
- d) #

Like Buttons, menu items have `Click` events that notify the program when an item is selected.

- a) Select
- b) Hover
- c) Choose
- d) Click

The `Finally` block is an ideal location in which to place resource release code for resources such as files that are acquired and manipulated in the corresponding Try block.

- a) Catch
- b) Release
- c) Finally
- d) Return

Which of the following is NOT true about passing arguments to procedures or functions?

- a) Arguments may be passed ByVal or ByRef.
- b) An argument that is passed ByRef cannot alter the original value.
- c) Specifying ByVal or ByRef is not required when passing arguments.
- d) If ByVal or ByRef is not specified, the argument will be sent by value.

If you need the user to respond to a form before continuing, you should display the form as `modal`.

- a) modular
- b) modal
- c) modeless
- d) modeled

The SelectedIndex property of the first item in a list is `0`.

- a) -1
- b) 0
- c) 1
- d) True

What is the value of the SelectedIndex property if the user has selected the last item in a list with four items?

- a) 3
- b) 4
- c) 5
- d) 0

Terminate a For/Next loop with the _____ statement.

- a) Exit
- b) Exit For
- c) Exit Loop
- d) Continue

How many elements are contained in the array created with the following code?

Dim EmployeeString(25) As String

- a) 0 (The code is incorrect to create an array.)
- b) 24
- c) 25
- d) 26

When you are working with an array, the easiest way to traverse the elements is to use the _____.

- a) If / Then statement
 - b) Next statement
 - c) For Each / Next statement
 - d) Case structure
- ```
For index As Integer = 1 To 5
 Debug.Write(index.ToString & " ")
Next
Debug.WriteLine("")
' Output: 1 2 3 4 5
```

1. If an argument is passed ByRef, the memory address of the argument is passed to the CalledProcedure and any modification to that parameter by the CalledProcedure is made to the value in the CallingProcedure. If an argument is passed ByVal, the actual value, not a reference to the variable, is passed to the CalledProcedure.

Explain the difference between passing an argument ByVal, ByRef

Explain the difference between a window opened modally versus modelessly.

Write For Next loop to iterate items in ListBox or an Array

dialog inside your program, as long as the modal dialog is open. Most dialogs are modal, for example the File-Save As dialogs are modal.

Difference between For/Next and For/Each, give example

On the other hand a modeless dialog behaves just like a normal window, you can do anything you want while it is open. The spell checker dialog in Microsoft Word is an example of such a dialog.

Dimension array variables, single and multi dimensional

Difference between function and sub routine

Define the general format/flow of a Menu (File, Edit, View, etc.)

```
Dim lst As New List(Of String) _
 From {"abc", "def", "ghi"}
```

What is the Items collection and how does it relate to a list box and/or a combo box?

```
' Iterate through the list.
For Each item As String In lst
 Debug.Write(item & " ")
Next
Debug.WriteLine("")
'Output: abc def ghi
```

Dimension a variable that can be used for a seating chart that will hold student names in a classroom that has 5 tables, each with 7 chairs.