

**Starting Out with Visual C#, 4<sup>th</sup> Edition**  
**Chapter 2: Introduction to Visual C#**

**Multiple Choice**

1. Which one of the following Button control names is not a legal C# identifier?
  - a. `_calculateTotalButton`
  - b. `printSalesReportButton`
  - c. `clear_customer_names_button`
  - d. `1stPlayerStartButton`

ANS: D

2. Which one of the following Button control names is a legal C# identifier?
  - a. `_DisplayOption5Button`
  - b. `Exit!Button`
  - c. `*Clear*Button*`
  - d. `delete Record Button`

ANS: A

3. The \_\_\_\_\_ naming convention gets its name because the uppercase characters that appear in a name are sometimes reminiscent of a camel's humps.
  - a. `camelCase`
  - b. `Pascal`
  - c. `Hungarian notation`
  - d. `CaMeL style`

ANS: A

4. When learning computer programming, it is traditional to start by learning to write a \_\_\_\_\_ program.
  - a. *Simple*
  - b. *Hello World*
  - c. *Pseudocode*
  - d. *K&R Style*

ANS: B

5. The PictureBox control's \_\_\_\_\_ property determines whether the image stored in the control will cause the control to be shrunk or expanded.
  - a. `DisplayMode`
  - b. `Visible`
  - c. `SizeMode`
  - d. `Render`

ANS: C

6. Programmers commonly use \_\_\_\_\_ in their code to create a sense of visual organization.

- a. different font colors
- b. documentation comments
- c. blank lines and indentation
- d. bold images, such as photos

ANS: C

7. To close an application's form in code, you use the statement \_\_\_\_\_.
- a. `me.Quit();`
  - b. `this.Close();`
  - c. `form.Exit();`
  - d. `app.Stop();`

ANS: B

8. When you enter a statement into the code editor, Visual Studio analyzes it, and if a syntax error is found, it is \_\_\_\_\_.
- a. automatically corrected
  - b. underlined with a jagged line
  - c. crossed out
  - d. highlighted

ANS: B

9. The \_\_\_\_\_ shows a description of the error, the name of the source code file containing the error, the error's line number and column number, and the name of the project.
- a. *Debug* dialog box
  - b. *Crash* pop up
  - c. *Error List* window
  - d. *Just In Time* debugger

ANS: C

10. The \_\_\_\_\_ file contains an application's start-up code, which executes when the application runs.
- a. `Main.cs`
  - b. `Code.cs`
  - c. `Program.cs`
  - d. `Source.cs`

ANS: C

11. The file named \_\_\_\_\_ contains code associated with a form named Form1.
- a. `Form1.cs`
  - b. `MainForm.cs`
  - c. `Control.cs`
  - d. `Window.cs`

ANS: A

12. A \_\_\_\_\_ is a declared block in a program between braces {...} that holds classes.
- a. method
  - b. program
  - c. namespace
  - d. list

ANS: C

13. A(n) \_\_\_\_\_ is a logical container in a program that holds methods (as well as other program elements).
- a. event
  - b. namespace
  - c. queue
  - d. class

ANS: D

14. A(n) \_\_\_\_\_ is a sequence of one or more programming statements (code) that performs some operation.
- a. algorithm
  - b. method
  - c. class
  - d. namespace

ANS: B

15. The \_\_\_\_\_ directives appearing at the top of a C# source code file indicate which namespaces the program will use. Usually, these namespaces belong to the .NET Framework.
- a. include
  - b. namespace
  - c. public
  - d. using

ANS: D

16. Code containers, such as namespaces, classes, and methods, use \_\_\_\_\_ to enclose code.
- a. braces ({ })
  - b. asterisks (\*\*)
  - c. parentheses (( ))
  - d. brackets ([ ])

ANS: A

17. An easy way to switch between the *Designer* and the code editor is to click the \_\_\_\_\_ for the desired window. This only works if both the code file and designer file have already been opened.
- a. icon

- b. tab
- c. button
- d. bounding box

ANS: B

18. A(n) \_\_\_\_\_ is a method that executes when a specific event (such as clicking the mouse) takes place while an application is running.
- a. action sequencer
  - b. feature coordinator
  - c. event handler
  - d. incident manager

ANS: C

19. A(n) \_\_\_\_\_ event occurs on a control when the user clicks the mouse on a control while the program is running.
- a. Action
  - b. Click
  - c. Live
  - d. Mouse

ANS: B

20. A \_\_\_\_\_ is a small pop-up window, also known as a *dialog box*, that displays a message.
- a. standard window
  - b. pop up
  - c. banner
  - d. message box

ANS: D

21. If you want your code to execute a method, write a statement known as a(n) \_\_\_\_\_.
- a. event handler
  - b. executor statement
  - c. initialization routine
  - d. method call

ANS: D

22. Which one of the following statements correctly display the text "Hello" in a message box?
- a. `MessageBox( "Hello" )`
  - b. `MessageBox.Show( "Hello" );`
  - c. `msgbox(Hello);`
  - d. `msgbox.show(Hello)`

ANS: B

23. When a(n) \_\_\_\_\_ appears around an object in the Visual Studio *Designer*, it indicates that the object is selected and is ready for editing.
- a. sizing handle
  - b. editing icon
  - c. bounding box
  - d. frame

ANS: C

24. \_\_\_\_\_ allow you to resize a selected object in the Visual Studio *Designer* by clicking and dragging the mouse when the mouse cursor becomes a two-headed arrow.
- a. Bounding boxes
  - b. Sizing handles
  - c. ToolTips
  - d. Properties

ANS: B

25. When you select an object in the Visual Studio *Designer*, the object's size, color, text, and other characteristics are displayed in the \_\_\_\_\_ window.
- a. *Designer*
  - b. *Editing*
  - c. *Object*
  - d. *Properties*

ANS: D

26. The \_\_\_\_\_ property of a form determines the text that is displayed in a form's title bar.
- a. Title
  - b. Caption
  - c. Name
  - d. Text

ANS: D

27. The \_\_\_\_\_ property can be used to change a form's width and height, measured in pixels.
- a. Area
  - b. Resolution
  - c. Size
  - d. Rectangle

ANS: C

28. When selected in the Properties window toolbar, the \_\_\_\_\_ button causes the items in the *Properties* window to be displayed in alphabetical order.
- a. Arrange
  - b. Ascending

- c. Descending
- d. Alphabetical

ANS: D

29. Selecting the \_\_\_\_\_ button in the *Properties* window causes the items in the window to be displayed in logical groups.
- a. Grouped
  - b. Categorized
  - c. Ordered
  - d. Type

ANS: B

30. The Visual Studio \_\_\_\_\_ window shows a scrollable list of controls that you can add to a form.
- a. *Collection*
  - b. *Bank*
  - c. *Toolbox*
  - d. *Shelf*

ANS: C

31. In the design window, you can click and drag a control to a new location when the mouse cursor is positioned inside the control and the mouse cursor becomes a \_\_\_\_\_.
- a. two-headed arrow
  - b. four-headed arrow
  - c. hand icon
  - d. scissor icon

ANS: B

32. To delete a control, you can select it on a form and then press the \_\_\_\_\_ key on the keyboard.
- a. Delete
  - b. Z
  - c. Tab
  - d. X

ANS: A

33. A Button control has a \_\_\_\_\_ property that holds a string to be displayed on the face of the button.
- a. Text
  - b. Name
  - c. Description
  - d. Face

ANS: A

34. A control's \_\_\_\_\_ property identifies the control in the application's code and in the Visual Studio environment.
- a. Text
  - b. Source
  - c. Tag
  - d. Name

ANS: D

35. Control names are also known as \_\_\_\_\_, the same term used for variables in programs.
- a. tags
  - b. identifiers
  - c. values
  - d. labels

ANS: B

36. To run an application in Visual Studio, press the \_\_\_\_\_ button on the keyboard or click the *Start Debugging* button on the toolbar.
- a. Enter
  - b. F5
  - c. Tab
  - d. Shift

ANS: B

37. A file that contains program code is called a \_\_\_\_\_.
- a. source code file
  - b. program file
  - c. C# file
  - d. cs file

ANS: A

38. In programming we use the term \_\_\_\_\_ to mean a sequence of characters that could be enclosed in quotation marks "...".
- a. statement
  - b. thread
  - c. word
  - d. string

ANS: D

39. In C# code, \_\_\_\_\_ are required to indicate the beginning and the end of a string.
- a. single quotation marks, such as (')
  - b. double quotation marks, such as (")
  - c. parentheses
  - d. semicolons

ANS: B

40. Just as a period marks the end of a sentence, a \_\_\_\_\_ marks the end of a programming statement in C#.
- a. space
  - b. underscore
  - c. semicolon
  - d. period

ANS: C

41. When a piece of data such as 23 or "Hello" is written into a program's code, it is called a \_\_\_\_\_.
- a. constant
  - b. sentinel
  - c. value
  - d. literal

ANS: D

42. When a string is written into a program's code, it is called a(n) \_\_\_\_\_.
- a. string literal
  - b. typed string
  - c. encoded string
  - d. string constant

ANS: A

43. When you have a project open in Visual Studio, the time during which you build the GUI and write the application's code is referred to as \_\_\_\_\_.
- a. prototyping
  - b. design time
  - c. visual planning
  - d. application progression

ANS: B

44. The time during which an application is executing is referred to as \_\_\_\_\_.
- a. up time
  - b. execution
  - c. run time
  - d. instancing

ANS: C

45. When you want to display text on a form but not allow the user to change the text, you use a \_\_\_\_\_.
- a. String control
  - b. Label control



- c. Text control
- d. Font control

ANS: B

46. The Label control can be found in the \_\_\_\_\_ group of the *Toolbox*.
- a. *Common Controls*
  - b. *Containers*
  - c. *Data*
  - d. *Components*

ANS: A

47. The \_\_\_\_\_ property allows you to set the font, font style, and size of a control's text.
- a. Appearance
  - b. Text
  - c. Font
  - d. Graphics

ANS: C

48. The \_\_\_\_\_ can be accessed from the *Properties* window by clicking the ellipses (...) appearing next to the Font property's value.
- a. *Text* designer
  - b. *Font* dialog box
  - c. *Text* editor
  - d. *Font* selector

ANS: B

49. Each Label control has a \_\_\_\_\_ property that allows you to display a rectangle around the control's text.
- a. Border
  - b. FrameStyle
  - c. Frame
  - d. BorderStyle

ANS: D

50. Which one of the following is not a valid setting for a Label control's BorderStyle property?
- a. FixedSingle
  - b. None
  - c. Fixed3D
  - d. FixedDouble

ANS: D

51. Label controls have a(n) \_\_\_\_\_ property that affects the way they can be resized.

- a. Resize
- b. AutoSize
- c. SizeMode
- d. Redraw

ANS: B

52. A \_\_\_\_\_ property can be set to one of two possible values: *True* or *False*.

- a. Boolean
- b. Binary
- c. Singular
- d. Toggle

ANS: A

53. A Label control's \_\_\_\_\_ property can be used to change the alignment of text within the Label.

- a. TextPosition
- b. DisplayFont
- c. TextAlign
- d. HorizontalAlign

ANS: C

54. In code, you use a(n) \_\_\_\_\_ to store a value in a control's property.

- a. string literal
- b. assignment statement
- c. dialog box
- d. constant

ANS: B

55. In C#, the equal sign (=) is known as the \_\_\_\_\_.

- a. equality operator
- b. parity operator
- c. assignment operator
- d. transfer operator

ANS: C

56. The standard notation for referring to a control's property in code is:

- a. `ControlName.PropertyName`
- b. `ControlName->PropertyName`
- c. `ControlName::PropertyName`
- d. `ControlName<PropertyName/>`

ANS: A

57. Which of the following statements would display the number 25 in a Label control named `outputLabel`?

- a. `outputLabel.Text = 25;`
- b. `outputLabel.Text = "25";`
- c. `outputLabel(25);`
- d. `outputLabel = "25";`

ANS: B

58. Which of the following statements would clear the text displayed in a Label control named `cityLabel`?

- a. `cityLabel.Text = "empty";`
- b. `cityLabel.Text = "none";`
- c. `cityLabel.Text = "clear";`
- d. `cityLabel.Text = "";`

ANS: D

59. \_\_\_\_\_ is a feature of Visual Studio that provides automatic code completion as you write programming statements.

- a. IntelliSense
- b. AutoComplete
- c. Snippet
- d. CodeHelper

ANS: A

60. You can use a(n) \_\_\_\_\_ control to display a graphic image on a form.

- a. Image
- b. Graphics
- c. Texture2D
- d. PictureBox

ANS: D

61. Once you have created a PictureBox control, you use its \_\_\_\_\_ property to specify the image it will display.

- a. Picture
- b. Image
- c. Source
- d. Display

ANS: B

62. \_\_\_\_\_ is the default value of the PictureBox control's `SizeMode` property.

- a. AutoSize
- b. Normal
- c. Zoom
- d. StretchImage

ANS: B

63. \_\_\_\_\_ is a term that refers to an image's width to height ratio.
- a. Area
  - b. Bounding box
  - c. Aspect ratio
  - d. UV map

ANS: C

64. When a PictureBox control's SizeMode property is set to \_\_\_\_\_, the image is uniformly resized to fit the PictureBox without losing its original aspect ratio.
- a. Normal
  - b. Zoom
  - c. CenterImage
  - d. StretchImage

ANS: B

65. Most controls have a(n) \_\_\_\_\_ property that determines whether the control can be seen by the user at run time.
- a. Enabled
  - b. Invisible
  - c. Show
  - d. Visible

ANS: D

66. Assuming an application has a PictureBox control named `profilePictureBox`, which one of the following assignment statements will hide the PictureBox from the user at run time?
- a. `profilePictureBox.Visible = False;`
  - b. `profilePictureBox.Visible = false;`
  - c. `profilePictureBox.Invisible = True;`
  - d. `profilePictureBox.Invisible = true;`

ANS: B

67. \_\_\_\_\_ are short notes placed in a program's source code, explaining how the program works.
- a. Sketches
  - b. Tags
  - c. Comments
  - d. Labels

ANS: C

68. A(n) \_\_\_\_\_ appears on one line in a program and begins with two forward slashes (`//`).
- a. line comment

- b. short comment
- c. block comment
- d. documentation comment

ANS: A

69. A(n) \_\_\_\_\_ can occupy multiple consecutive lines in a program. It starts with / \* (a forward slash followed by an asterisk), and ends with \* / (an asterisk followed by a forward slash).
- a. line comment
  - b. block comment
  - c. short comment
  - d. documentation comment

ANS: B

70. \_\_\_\_\_ are used by professional programmers to embed extensive documentation in a program's source code.
- a. Line comments
  - b. Block comments
  - c. Documentation comments
  - d. Embedded comments

ANS: C

### True or False

1. When you use the *Properties* window to change a control's Visible property at design time, the control will become invisible in the *Designer*.

ANS: F

2. A control's Visible property cannot be modified in code.

ANS: F

3. When you write the values `true` or `false` in code, they must be written in all lowercase letters.

ANS: T

4. When a method executes, the statements in the method always execute in the order that they appear, from the beginning of the method to the end of the method.

ANS: T

5. Comments are short notes intended for the compiler to read and interpret.

ANS: F

6. In C#, there are three types of comments: line comments, block comments, and compilation comments.

ANS: F

7. A line comment does not have to occupy an entire line, so a line comment can appear after an executable statement.

ANS: T

8. Block comments make it easier to write long explanations because you do not have to mark every line with a comment symbol.

ANS: T

9. Writing comments should be avoided, especially for large and complex programs.

ANS: F

10. The indentation of statements inside methods, classes, and namespaces is a convention that virtually all programmers follow.

ANS: T

11. The standard Windows close button is the only way to close a running application in Visual Studio.

ANS: F

12. If you double-click an error message in the Error List window, the code editor will highlight and display the line of code that caused the error.

ANS: T

13. Each form and control in an application's GUI is assigned a default name.

ANS: T

14. The appearance and other characteristics of a GUI object are determined by the object's properties.

ANS: T

15. The *Properties* window contains a scrollable list of properties, which has two columns: the left column shows each property's name, and the right column shows each property's value.

ANS: T

16. Changing a form's Text property will change the form's name.

ANS: F

17. When the properties in the *Properties* window are displayed alphabetically, the (name) property appears at the bottom of the list.

ANS: F

18. To add a control to a form, you find it in the *Toolbox* and then double-click it.

ANS: T

19. You cannot click and drag controls from the *Toolbox* onto a form.

ANS: F

20. Once a control has been added to a form, it cannot be deleted.

ANS: F

21. To remove a control from a form, you select it and then press the F4 key on the keyboard.

ANS: F

22. When you create Button controls, they are automatically given default names such as `button1`, `button2`, and so forth.

ANS: T

23. When Button control is created, its Text property is initially set to the same value as the Button control's name.

ANS: T

24. Text displayed on a button should hint at what the button will do when it is clicked.

ANS: T

25. A control's name should reflect the purpose of the control.

ANS: T

26. C# identifiers can contain spaces after the first character.

ANS: F

27. The first character of a C# identifier must be one of the letters a through z or A through Z or an underscore character (`_`).

ANS: T

28. A *Hello World* program is a simple program that merely displays the words “*Hello World*” on the screen.

ANS: T

29. The only way to run a program in Visual Studio is by clicking the *Start Debugging* button on the toolbar.

ANS: F

30. C# source code files always end with the .cs extension.

ANS: T

31. The Program.cs file contains auto-generated code that serves as an outline to which you should add your own code as you develop the application.

ANS: F

32. It is important that you do not modify the contents of the Form1.cs file because doing so will prevent the application from executing.

ANS: F

33. C# code is primarily organized in three ways: namespaces, classes, and methods.

ANS: T

34. C# code is organized using namespaces, which are contained inside classes, which are contained inside methods.

ANS: F

35. Each opening brace ( { ) of a code container must have a matching closing brace ( } ) later in the program.

ANS: T

36. You can detach the code editor window and use the mouse to drag it to another part of the screen.

ANS: T

37. When an event handler is generated for a control by Visual Studio, it doesn't do anything until you add your own code.

ANS: T



38. The .NET Framework provides a method named `MessageBox`. Show that you can use in Visual C# to display a pop-up message box.

ANS: T

39. Programmers refer to the act of executing a method as *calling* the method.

ANS: T

40. Single quotation marks can be used in program code to mark the beginning and ending of a string.

ANS: F

41. Ending a programming statement with a semicolon is not required in C#.

ANS: F

42. If you wish to create a Click event handler for a control in Visual Studio, it is not necessary to double-click the control in the *Designer* first.

ANS: F

43. In C#, string literals must be enclosed in double quotation marks.

ANS: T

44. Programmers sometimes say that literals are values that are *soft coded* into a program because the value of a literal can be changed while the program is running.

ANS: F

45. In a C# application, all buttons on a form must share the same Click event handler in form's source code file.

ANS: F

46. At run time, you should not use the *Designer*, *Toolbox*, *Properties* window, or code editor to modify the program.

ANS: F

47. The terms *run time*, *runtime*, and *run-time* all typically mean the same thing.

ANS: T

48. Once you have placed a Label control on a form, set its Text property to the string you want to display.

ANS: T

49. A Label control's Text property is initially set to the same value as the Label control's name.

ANS: T

50. A control's name should never be changed to something other than the default name that Visual Studio gives it.

ANS: F

51. A Label control's BorderStyle property is set to FixedSingle by default.

ANS: F

52. To change the BorderStyle property of a Label control in the *Designer*, select it in the *Properties* window and then click the down-arrow button that appears next to the value.

ANS: T

53. By default, a Label control's text is aligned with the top and left edges of the label's bounding box.

ANS: T

54. The assignment operator assigns the value that appears on its left side to the item that appears on its right side.

ANS: F

55. Because the Label control's Text property can accept only strings, you cannot display a number in a label.

ANS: F

56. In code, if you want to clear the text that is displayed in a Label control, you can assign an empty string ( " ") to the control's Text property.

ANS: T

57. When typing a statement in code, press the Tab key on the keyboard to accept suggestions made by the IntelliSense feature of Visual Studio.

ANS: T

58. In the *Designer*, the PictureBox tool is located in the *Common Controls* group in the *Toolbox* window.

ANS: T

59. When the PictureBox control's *SizeMode* property is set to *AutoSize*, the PictureBox control is automatically resized to fit the size of the image being displayed.

ANS: T

60. PictureBox controls have a *BorderStyle* property, but it does not work like a Label control's *BorderStyle* property.

ANS: F

61. Buttons are the only controls that respond to Click events.

ANS: F