4. What is shown by each column in the *Properties* window?
5. What steps must you perform to change a form's Text property?
6. What steps must you perform to change a form's Size property in the *Properties* window?
7. How do you move a control to a new location on the form using the mouse?
8. What steps do you perform to change a Button control's Text property?
9. Briefly describe the contents of the Form1.cs file.
10. In code, what characters do you enclose a string literal in?
11. When creating an event handler for a button, is it possible to skip a step by opening the code editor and writing all the event handler code yourself? Why or why not?
12. Briefly describe the difference between design time and run time.
13. Describe the appearance of a Label control that's BorderStyle property is set to Fixed3D.
14. What does it mean when a Label control's AutoSize property is set to True?
15. What are the values that the TextAlign property may be set to?
16. How do you clear the text that is displayed in a Label control in code?
17. What are the different image formats that a PictureBox control can display?
18. List the values that the SizeMode property of a PictureBox control can be set to.
19. What are the three types of comments you can use in Visual C#?
20. How does Visual Studio help you to quickly correct syntax errors?

Algorithm Workbench

1. What statement would you write to display *Good Afternoon* in a message box?
2. What statement would you write to display your name in a message box?
3. Suppose an application's GUI has a Label control named `dogLabel`. Write a statement that causes *Fido* to be displayed in the `dogLabel` control.
4. Suppose an application's GUI has a Label control named `outputLabel`. Write a statement that clears any text that happens to be displayed by the control.
5. Suppose an application's GUI has a PictureBox control named `myPicture`. Write a statement that makes the control invisible.

Programming Problems

1. **Latin Translator**

   Look at the following list of Latin words and their meanings.

Latin	English
sinister	left
dexter	right
medium	center

Create an application that translates the Latin words to English. The form should have three buttons, one for each Latin word. When the user clicks a button, the application should display the English translation in a Label control.

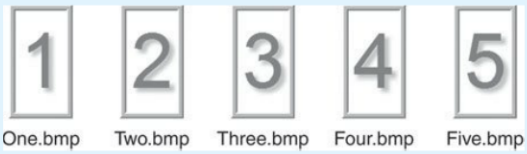
VideoNote
Solving the Clickable Number Images Problem

2. **Clickable Number Images**

In the *Chap02* folder, in the Student Sample Program files, you will find the image files shown in Figure 2-79. Create an application that displays these images in PictureBox controls. The application should perform the following actions:

- When the user clicks the 1 image, the application should display the word *One* in a message box.
- When the user clicks the 2 image, the application should display the word *Two* in a message box.
- When the user clicks the 3 image, the application should display the word *Three* in a message box.
- When the user clicks the 4 image, the application should display the word *Four* in a message box.
- When the user clicks the 5 image, the application should display the word *Five* in a message box.

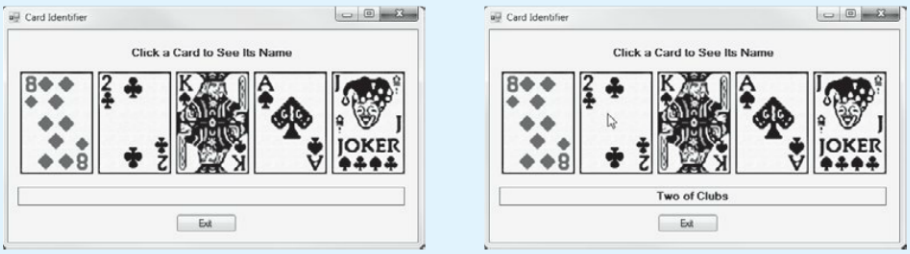
Figure 2-79 Image files



3. **Card Identifier**

In the Student Sample Programs that accompany this book, you will find a folder named *Images\Cards\Poker Large*. In that folder you will find JPEG image files for a complete deck of poker cards. Create an application with five PictureBox controls. Each PictureBox should display a different card from the set of images. When the user clicks any of the PictureBox controls, the name of the card should be displayed in a Label control. Figure 2-80 shows an example of the application running. The image on the left shows the application's form when it starts running. The image on the right shows the form after the user has clicked the two of clubs card.

Figure 2-80 *Card Identifier* application



4. **Joke and Punch line**

   A joke typically has two parts: a setup and a punch line. For example, this might be the setup for a joke:

   How many programmers does it take to change a lightbulb?

   And this is the punch line:

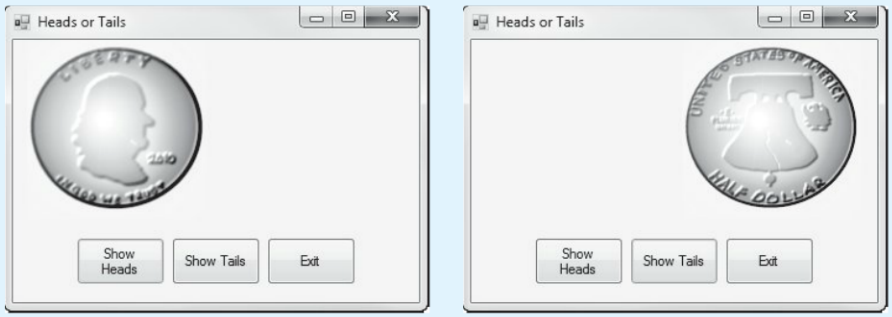
   None. That's a hardware problem.

   Think of your favorite joke and identify its setup and punch line. Then, create an application that has a Label and two buttons on a form. One of the buttons should read "Setup" and the other button should read "Punch line." When the *Setup* button is clicked, display the joke's setup in the Label control. When the *Punch line* button is clicked, display the joke's punch line in the Label control.

5. **Heads or Tails**

   In the Student Sample Programs that accompany this book you will find a folder named *Images\Coins* that contains images showing the heads and tails sides of a coin. Create an application with a *Show Heads* button and a *Show Tails* button. When the user clicks the *Show Heads* button, an image of the heads side of a coin should appear. When the user clicks the *Show Tails* button, an image of the tails side of a coin should appear. Figure 2-81 shows examples of how the application's form might appear.

Figure 2-81 The *Heads or Tails* application



6. **Orion Constellation**

   Orion is one of the most famous constellations in the night sky. In the *Chap02* folder of the Student Sample Programs that accompany this book, you will find an image file named Orion.bmp, which contains a diagram of the Orion constellation. Create an application that displays the Orion image in a PictureBox control, as shown on the left in Figure 2-82. The application should have a button that, when clicked, displays the names of each of the stars, as shown on the right in Figure 2-82. The application should have another button that, when clicked, hides the star names. The names of the stars are *Betelgeuse*, *Meissa*, *Alnitak*, *Alnilam*, *Mintaka*, *Saiph*, and *Rigel*.

   Hint: Place the PictureBox control with the Orion image on the form. Then, place Label controls containing the star names on top of the PictureBox. Use the *Properties* window to set each of the Label control's Visible property to False. That will cause the labels to be invisible when the application runs. The *Show Star Names* button will set each of the Label control's Visible property to `true`, and the *Hide Star Names* button will set each of the Label control's Visible property to `false`.

Figure 2-82 The *Orion Constellation* application