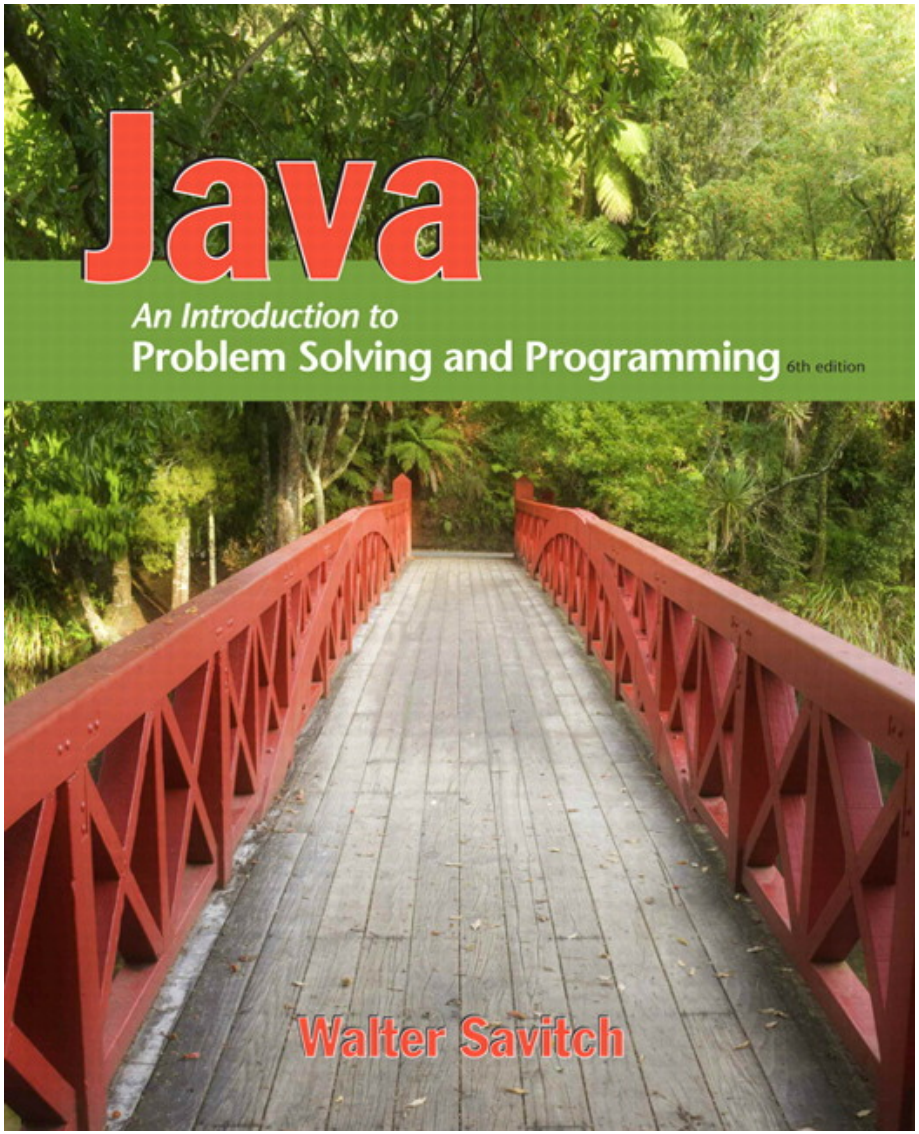


1 Introduction to Computers and Java

FIGURE 1.1 Main Memory

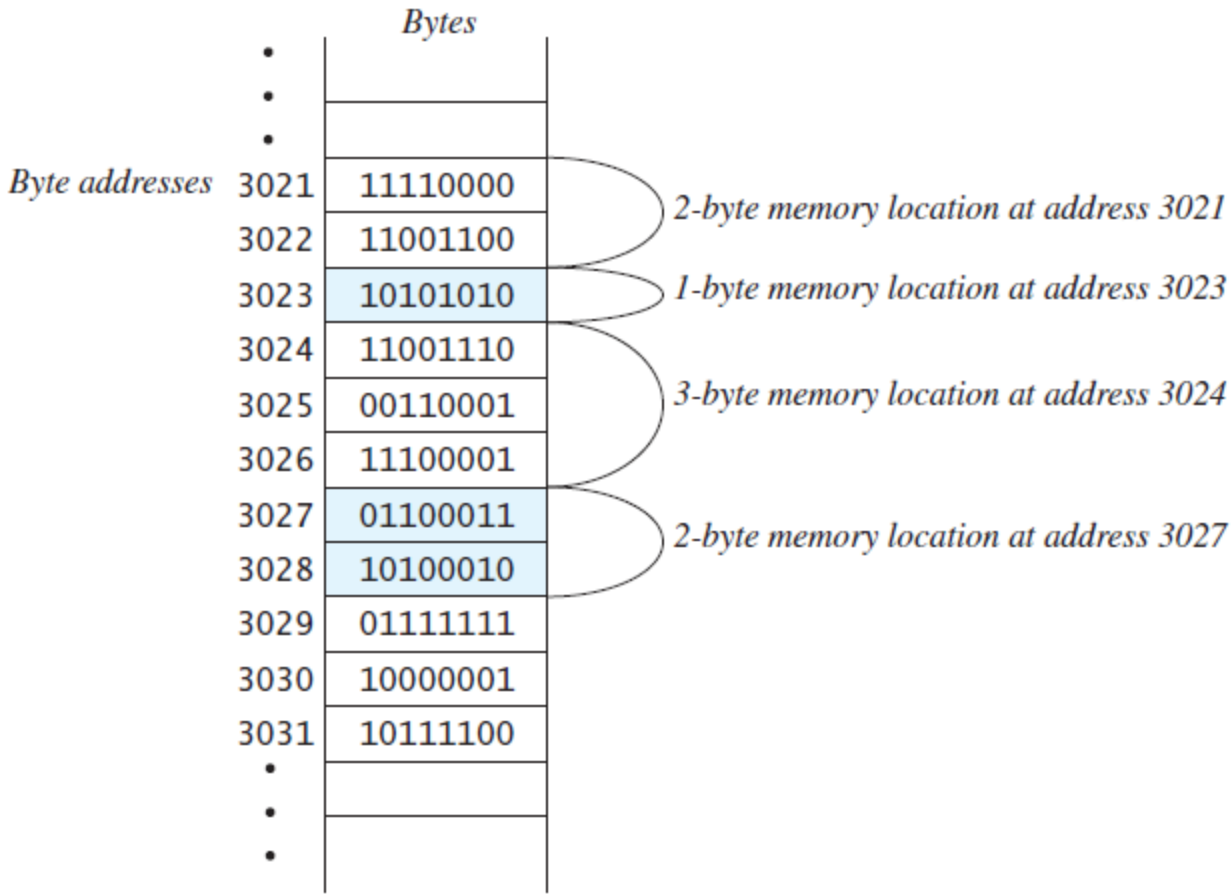


FIGURE 1.2 Running a Program

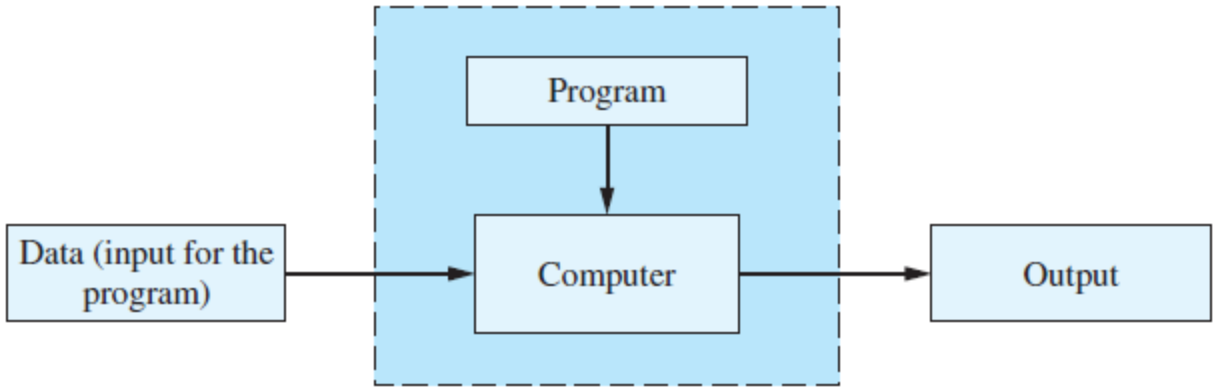
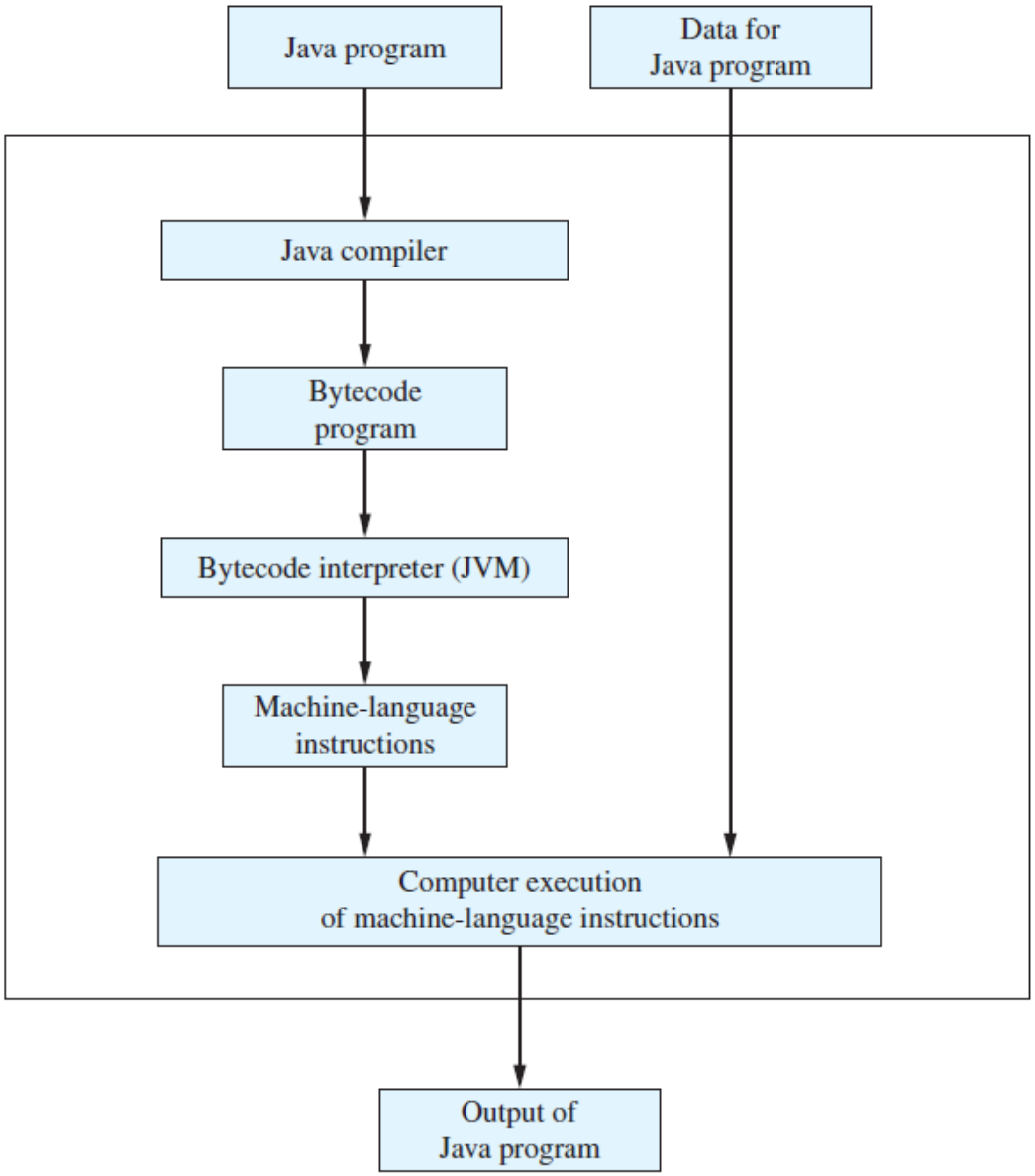


FIGURE 1.3 Compiling and Running a Java Program



LISTING 1.1 A Sample Java Program

```
import java.util.Scanner;

public class FirstProgram
{
    public static void main(String[] args)
    {
        System.out.println("Hello out there.");
        System.out.println("I will add two numbers for you.");
        System.out.println("Enter two whole numbers on a line:");

        int n1, n2;

        Scanner keyboard = new Scanner(System.in);
        n1 = keyboard.nextInt();
        n2 = keyboard.nextInt();

        System.out.println("The sum of those two numbers is");
        System.out.println(n1 + n2);
    }
}
```

Gets the `Scanner` *class from the package (library)* `java.util`

Name of the class—your choice

Sends output to screen

Says that `n1` *and* `n2` *are variables that hold Integers (whole numbers)*

Readies the program for keyboard input

Reads one whole number from the keyboard

Sample Screen Output

```
Hello out there.
I will add two numbers for you.
Enter two whole numbers on a line:
12 30
The sum of those two numbers is
42
```

FIGURE 1.4 An Inheritance Hierarchy

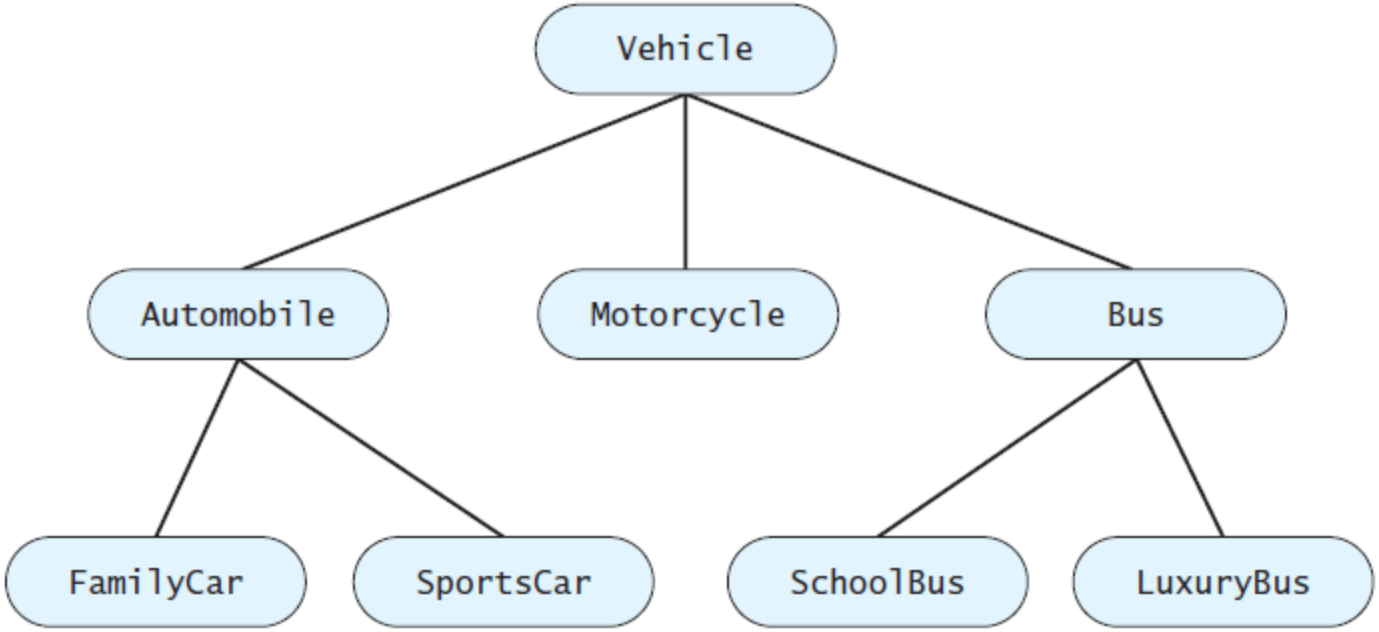
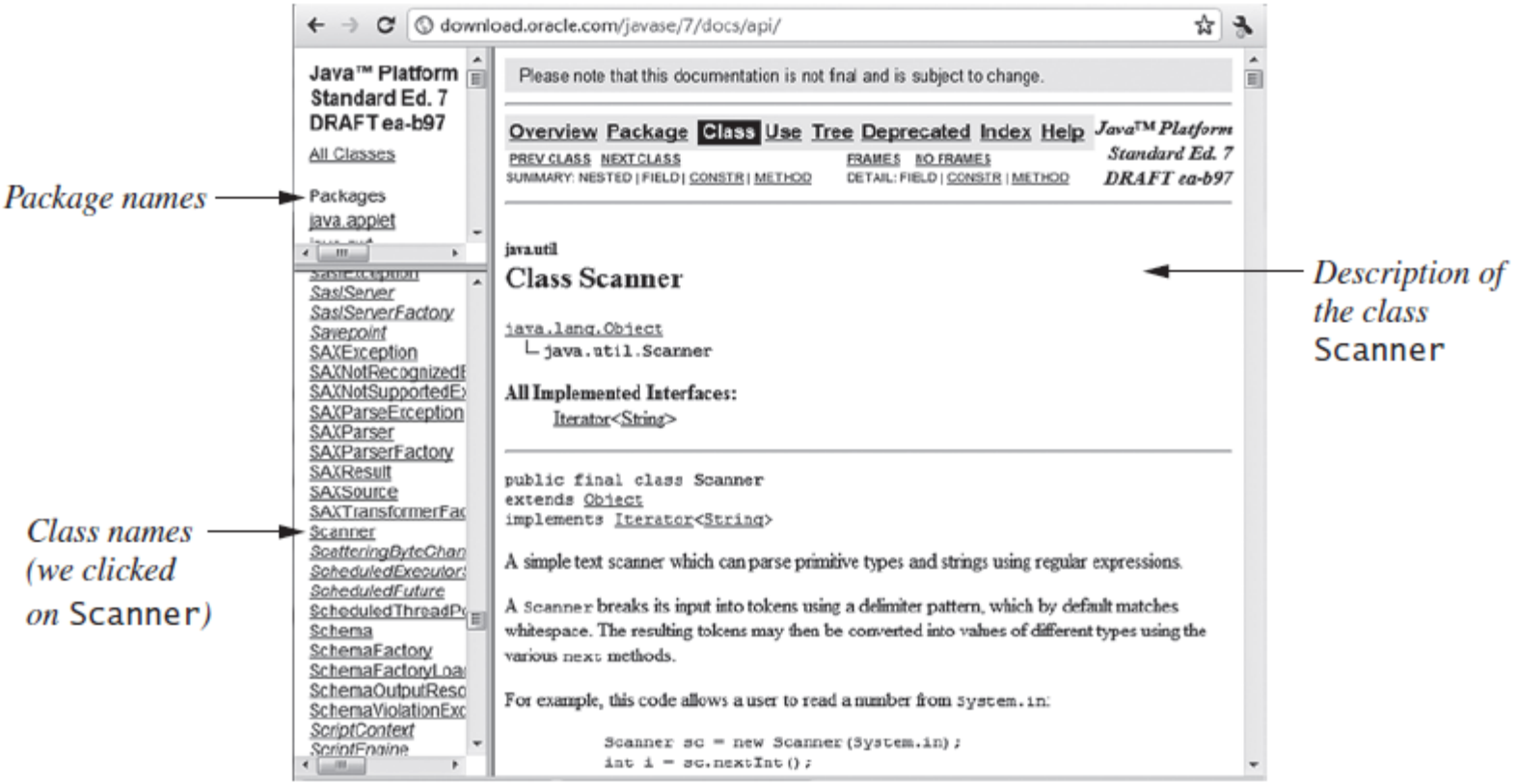


FIGURE 1.5 The Documentation for the Class Scanner



LISTING 1.2 Drawing a Happy Face

```
import javax.swing.JApplet;
import java.awt.Graphics;
public class HappyFace extends JApplet
{
   public void paint(Graphics canvas)
   {
      canvas.drawOval(100, 50, 200, 200);
      canvas.fillOval(155, 100, 10, 20);
      canvas.fillOval(230, 100, 10, 20);
      canvas.drawArc(150, 160, 100, 50, 180, 180);
   }
}
```

Applet Output

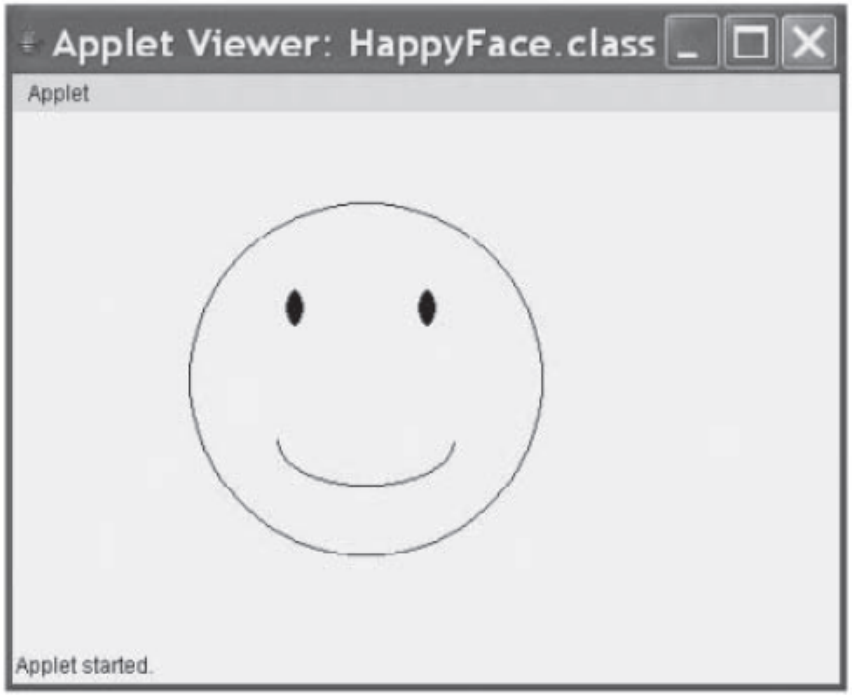


FIGURE 1.6 Screen Coordinate System

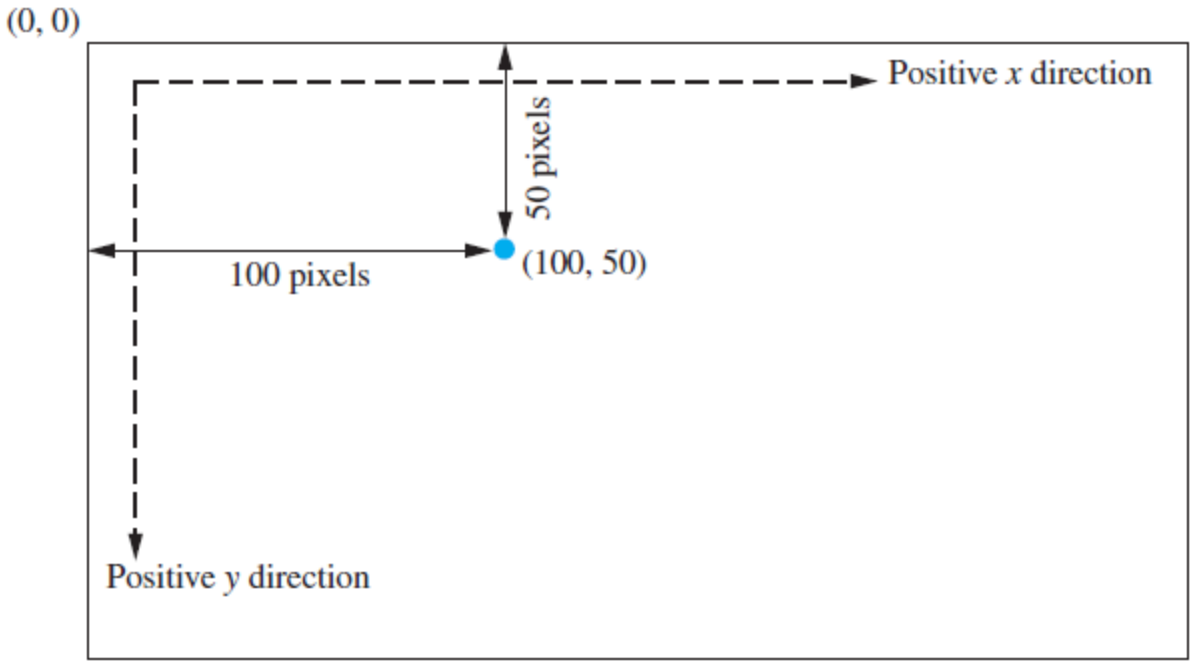


FIGURE 1.7 **The Oval Drawn by canvas.drawOval(100, 50, 90, 50)**

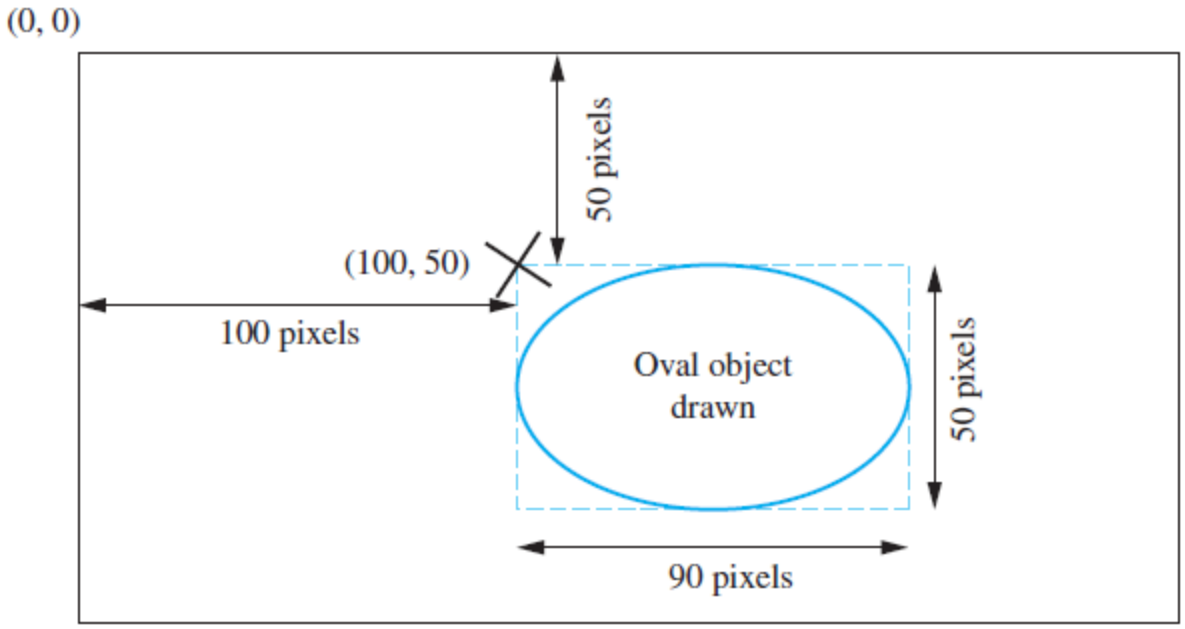
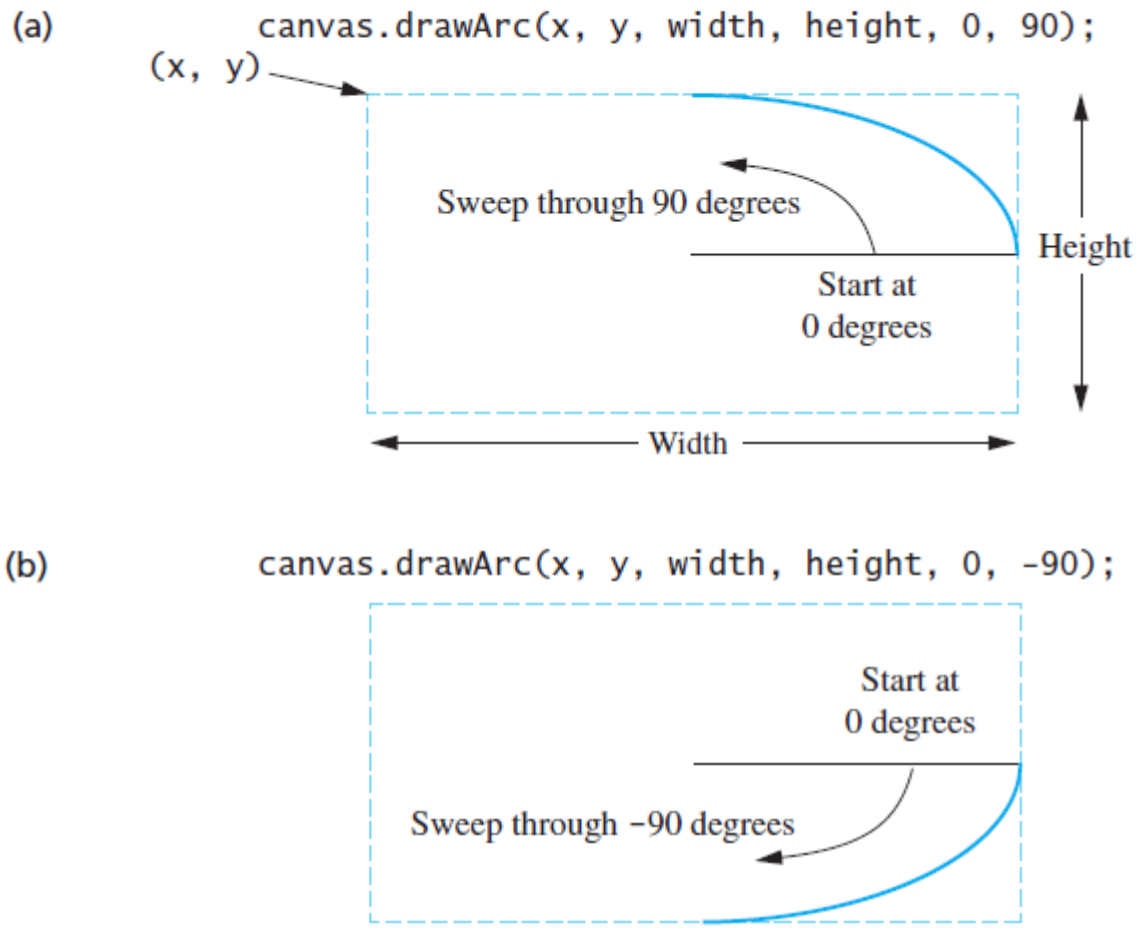
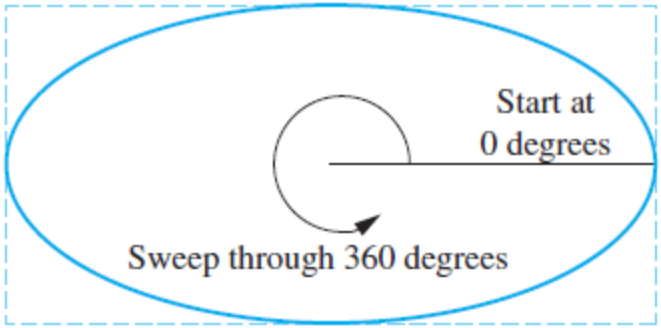


FIGURE 1.8 Specifying an Arc



(c)

```
canvas.drawArc(x, y, width, height, 0, 360);
```



(d)

```
canvas.drawArc(x, y, width, height, 180, 180);
```