1 **import** javax.swing.\*;

2 **import** java.awt.\*;

3

4 **public** **class** AddingMachineGUI **extends** JFrame

5 {

6 JLabel description, plus, equals, sum, a, b;

7 JTextField aValue, bValue;

8 JButton compute, clear;

9

10 **public** AddingMachineGUI(String title)

11 {

12 **super**(title); **//Creates the window. All subsequent invocations**

13 setSize(500, 250); **//on an unnamed object operate on *this* window.**

14 setLocation(200, 100);

15 setLayout(**null**);

16

17 //Step 1 declare the components

18 description = **new** JLabel("Computes a + b");

19 aValue = **new** JTextField();

20 plus = **new** JLabel("+");

21 bValue = **new** JTextField();

22 equals = **new** JLabel("=");

23 sum = **new** JLabel("x,xxx.xx");

24 a = **new** JLabel("a");

25 b = **new** JLabel("b");

26 compute = **new** JButton("Compute");

27 clear = **new** JButton("Clear");

28

29 **//Step 2: specify the component's properties**

30 description.setBounds(120, 0, 300, 30);

31 description.setFont(new Font("Sherif", Font.BOLD, 24));

32 aValue.setBounds(60, 50, 100, 30);

33 plus.setBounds(190, 50, 20, 30);

34 plus.setFont(new Font("Sherif", Font.BOLD, 20));

35 bValue.setBounds(230, 50, 100, 30);

36 equals.setBounds(350, 50, 20, 30);

37 equals.setFont(new Font("Sherif", Font.BOLD, 20));

38 sum.setBounds(380, 50, 100, 30);

39 sum.setFont(new Font("Sherif", Font.BOLD, 20));

40 a.setBounds(105, 75, 20, 30);

41 a.setFont(new Font("Sherif", Font.BOLD, 20));

42 b.setBounds(275, 75, 20, 30);

43 b.setFont(new Font("Sherif", Font.BOLD, 20));

44 compute.setBounds(65, 110, 90, 25);

45 clear.setBounds(235, 110, 90, 25);

46 clear.setToolTipText("Clears a, b and the sum");

47

48 **//Step 4: add the component to the container**

49 add(description);

50 add(aValue);

51 add(plus);

52 add(bValue);

53 add(equals);

54 add(sum);

55 add(a);

56 add(b);

57 add(compute);

58 add(clear);

59 }

60 }

**Figure 11.15 The class AddingMachineGUI.**