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

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

3 **import** java.text.DecimalFormat;

4 **import** java.awt.event.\*;

5

6 **public** **class** AddingMachineGUIV2 **extends** JFrame

7 {

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

9 JTextField aValue, bValue;

10 JButton compute, clear;

11

12 **public** AddingMachineGUIV2(String title)

13 {

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

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

16 setLocation(200, 100);

17 setLayout(**null**);

18

19 **//Step 1 declare the components**

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

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

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

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

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

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

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

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

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

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

30

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

49

50 **// Register the event handler methods**

51 compute.addActionListener(**new** ComputeClickHandler());

52 clear.addActionListener(**new** ClearClickHandler());

53

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

55 add(description);

56 add(aValue);

57 add(plus);

58 add(bValue);

59 add(equals);

60 add(sum);

61 add(a);

62 add(b);

63 add(compute);

64 add(clear);

65 }

66 **//Event handler inner classes and methods**

67 **public** **class** ComputeClickHandler **implements** ActionListener

68 {

69 **public** **void** actionPerformed(ActionEvent e)

70 {

71 String s;

72 **double** a, b, result;

73 DecimalFormat f = **new** DecimalFormat("#,##0.00");

74

75 s = aValue.getText();

76 a = Double.parseDouble(s);

77 s = bValue.getText();

78 b = Double.parseDouble(s);

79 result = a + b;

80 sum.setText(f.format(result));

81 }

82 }

83 **public** **class** ClearClickHandler **implements** ActionListener

84 {

85 **public** **void** actionPerformed(ActionEvent e)

86 {

87 aValue.setText("");

88 bValue.setText("");

89 sum.setText("x,xxx.xx");

90 }

91 }

92 }

**Figure 11.19 The class AddingMachineGUIV2.**