1 **import** javafx.application.Application;

2 **import** javafx.event.ActionEvent;

3 **import** javafx.scene.Scene;

4 **import** javafx.stage.Stage;

5 **import** javafx.scene.control.\*;

6 **import** javafx.scene.layout.Pane;

7 **import** javafx.scene.text.Font;

8 **import** java.text.DecimalFormat;

9

10 **public** **class** AddingMachineV3 **extends** Application

11 {

12 Label description, plus, equals, sum, a, b;

13 TextField aValue, bValue;

14 Button compute, clear;

15

16 @Override

17 **public** **void** start(Stage primaryStage)

18 {

19 // Step 1, declare the component objects

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

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

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

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

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

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

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

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

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

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

30

31 // Step 2, specify the components properties

32 description.setLayoutX(120);

33 description.setLayoutY(0);

34 description.setPrefSize(300, 30);

35 description.setFont(**new** Font("Arial", 24));

36 aValue.setLayoutX(60);

37 aValue.setLayoutY(50);

38 aValue.setPrefSize(120, 30);

39 aValue.setFont(**new** Font("Arial", 18));

40 plus.setLayoutX(195);

41 plus.setLayoutY(50);

42 plus.setPrefSize(20, 30);

43 plus.setFont(**new** Font("Arial", 24));

44 equals.setLayoutX(365);

45 equals.setLayoutY(50);

46 equals.setPrefSize(20, 30);

47 equals.setFont(**new** Font("Arial", 24));

48 bValue.setLayoutX(230);

49 bValue.setLayoutY(50);

50 bValue.setPrefSize(120, 30);

51 bValue.setFont(**new** Font("Arial", 18));

52 sum.setLayoutX(395);

53 sum.setLayoutY(50);

54 sum.setPrefSize(120, 30);

55 sum.setFont(**new** Font("Arial", 18));

56 a.setLayoutX(105);

57 a.setLayoutY(85);

58 a.setPrefSize(20, 30);

59 a.setPrefHeight(30);

60 a.setFont(**new** Font("Arial", 24));

61 b.setLayoutX(275);

62 b.setLayoutY(85);

63 b.setPrefSize(20, 30);

64 b.setPrefHeight(30);

65 b.setFont(**new** Font("Arial", 24));

66 compute.setLayoutX(70);

67 compute.setLayoutY(120);

68 compute.setPrefSize(90, 25);

69 compute.setOnAction(e -> computeClickHandler(e));

70 clear.setLayoutX(242);

71 clear.setLayoutY(120);

72 clear.setPrefSize(90, 25);

73 clear.setOnAction(e -> clearClickHandler(e));

74

75 // Step 4, add the components to the window

76 Pane pane = **new** Pane();

77 pane.getChildren().addAll(description, aValue, plus, bValue, equals,

78 sum, a, compute, clear);

79 Scene scene = **new** Scene(pane, 500, 200);

80

81 primaryStage.setTitle("Calculator");

82 primaryStage.setScene(scene);

83 primaryStage.show();

84 }

85

86 **public** **void** computeClickHandler(ActionEvent e)

87 {

88 String s;

89 **double** a, b, result;

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

91

92 s = aValue.getText();

93 a = Double.parseDouble(s);

94 s = bValue.getText();

95 b = Double.parseDouble(s);

96 result = a + b;

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

98 }

99

100 **public** **void** clearClickHandler(ActionEvent e)

101 {

102 aValue.setText("");

103 bValue.setText("");

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

105 }

106 **public** **static** **void** main(String[] args)

107 {

108 launch(args);

109 }

110 }

**Figure 11.31**

The application AddingMachineV3.