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

2 **import** javafx.event.\*;

3 **import** javafx.geometry.\*;

4 **import** javafx.scene.Scene;

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

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

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

8 **import** javafx.stage.Stage;

9

10 **public** **class** AddingMachine **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 //Step1: Declare the component objects, Step2: Set their properties

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

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

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

23 aValue.setPrefSize(120, 30);

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

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

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

27 bValue.setPrefSize(120, 30);

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

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

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

31 sum.setFont(new Font("Arial", 24));

32 sum.setMinWidth(68);

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

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

35 b = n**e**w Label("b");

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

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

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

39 Tooltip.install(clear, new Tooltip("Clears operands and result"));

40

41 //Step 3: Declare the component container, and set its properties

42 GridPane grid = **new** GridPane();

43 grid.setHgap(10);

44 grid.setVgap(10);

45 grid.setPadding(**new** Insets(10, 0, 10, 10));

46 grid.setHalignment(description, HPos.CENTER);

47 grid.setHalignment(a, HPos.CENTER);

48 grid.setHalignment(b, HPos.CENTER);

49 grid.setHalignment(compute, HPos.CENTER);

50 grid.setHalignment(clear, HPos.CENTER);

51

52 //Step 4: Add the components to the component container

53 grid.add(description, 0, 0, 5, 1); //col, row, nCols, nRows

54 grid.add(aValue, 0, 1, 1, 1);

55 grid.add(plus, 1, 1, 1, 1);

56 grid.add(bValue, 2, 1, 1, 1);

57 grid.add(equals, 3, 1, 1, 1);

58 grid.add(sum, 4, 1, 1, 1);

59 grid.add(a, 0, 2, 1, 1);

60 grid.add(b, 2, 2, 1, 1);

61 grid.add(compute, 0, 3, 1, 1);

62 grid.add(clear, 2, 3, 1, 1);

63

64 Scene scene = new Scene(grid); // add the container to the scene

65

66 primaryStage.setTitle("Adding Machine");

67 primaryStage.setScene(scene);

68 primaryStage.show();

69 }

70

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

72 {

73 launch(args);

74 }

75 }

**Figure 11.17** The application AddingMachine.