1 **import** java.awt.\*;

2 **import** javax.swing.\*;

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

4

5 **public** **class** BoxedSnowmanV4 **extends** JPanel **implements** ActionListener

6 {

7 **private** **int** xS = 8;

8 **private** **int** yS = 30;

9 **private** Color hatColor = Color.BLACK;

10 **private** **int** dx = 0;

11 **private** **int** dy = 0;

12 **private** **int** time = 0;

13 **private** Timer aTimer = **new** Timer(1000, this);

14

15 **public** BoxedSnowmanV4(**int** initalX, **int** initalY, Color hatColor)

16 {

17 xS = initalX;

18 yS = initalY;

19 **this**.hatColor = hatColor;

20 addMouseListener(**new** MouseHandler());

21 addMouseMotionListener(n**e**w MouseHandler());

22 addKeyListener(**new** KeyHandler());

23 aTimer.start();

24 }

25 **public** **void** paintComponent(Graphics g)

26 {

27 **super**.paintComponent(g);

28 g.setColor(hatColor);

29 g.fillRect(xS + 15, yS, 10, 15); **// hat**

30 g.fillRect(xS + 10, yS + 15, 20, 2); **// brim**

31 g.setColor(Color.WHITE);

32 g.fillOval(xS + 10, yS + 17, 20, 20); **// head**

33 g.fillOval(xS, yS + 37, 40, 40); **// body**

34 g.setColor(Color.RED);

35 g.fillOval(xS + 19, yS + 53, 4, 4); **//button**

36 g.setColor(Color.BLACK);

37 g.drawRect(xS, yS, 40, 77); **// inscribing rectangle**

38 g.setFont(**new** Font("Sherif", Font.BOLD, 20));

39 g.drawString("Time: " + time, 300, 50);

40 }

41 **public** **int** getXS()

42 {

43 **return** xS;

44 }

45 **public** **void** setXS(**int** newX)

46 {

47 xS = newX;

48 }

49 **public** **int** getYS()

50 {

51 **return** yS;

52 }

53 **public** **void** setYS(int newY)

54 {

55 yS = newY;

56 }

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

58 {

59 time++;

60 repaint();

61 }

62 **public** **void** addNotify()

63 {

64 **super**.addNotify();

65 requestFocusInWindow();

66 }

67 **public** **class** KeyHandler **extends** KeyAdapter

68 {

69 **public** **void** keyPressed(KeyEvent e)

70 {

71 String key = KeyEvent.getKeyText(e.getKeyCode());

72 **if**(key.equals("Right"))

73 {

74 xS = xS + 3;

75 repaint();

76 }

77 }

78 }

79 **public** **class** MouseHandler **extends** MouseAdapter

80 {

81 **public** **void** mouseDragged(MouseEvent e)

82 {

83 xS = e.getX() - dx;

84 yS = e.getY() - dy;

85 repaint();

86 }

87 **public** **void** mousePressed(MouseEvent e)

88 {

89 dx = e.getX() - xS;

90 dy = e.getY() - yS;

91 }

92 **public** **void** mouseClicked(MouseEvent e)

93 {

94 xS = e.getX();

95 yS = e.getY();

96 repaint();

97 }

98 **public** **void** mouseEntered(MouseEvent e)

99 {

100 System.out.println("Entered");

101 }

102 **public** **void** mouseExited(MouseEvent e)

103 {

104 System.out.println("Exited");

105 }

106 }

107 }

**Figure 11.28 The class BoxedSnowmanV4.**