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

2

3 **public** **class** ProcessingExceptions

4 {

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

6 {

7 String s;

8 **int** a, b;

9 **int** quotient = 0;

10 **int** remainder = 0;

11

12 s = JOptionPane.showInputDialog("This program calculates a / b " +

13 "\nEnter the value of a" );

14 a = Integer.parseInt(s);

15 s = JOptionPane.showInputDialog("Enter the value of b" );

16 b = Integer.parseInt(s);

17

18 **for**(**int** i=1; i<=3; i++) **//three attempts to divide a and b**

19 {

20 **try**

21 {

22 quotient = a / b; **//could throw an ArithmeticException**

23 remainder = a % b;

24 break; **//ends the for loop and Line 43 executes next**

25 }

26 **catch**(ArithmeticException e)

27 {

28 **if**(i != 3) **//three attempts to divide have not been made**

29 {

30 s = JOptionPane.showInputDialog("A divisor cannot be zero." +

31 "\nPlease re-enter it");

32 b = Integer.parseInt(s);

33 }

34 **else**

34 {

36 JOptionPane.showMessageDialog(**null**, "Division by zero " +

37 "is undefined \n" +

38 "The program is ending");

39 System.exit(0); **//terminate the program**

40 }

41 } **//end of the try-catch construct**

42 }

43 JOptionPane.showMessageDialog(**null**, a + " / " + b + " = " +

44 quotient + ", with a " +

45 "remainder of " + remainder);

46 }

47 }

**Figure 10.4 The application ProcessingExceptions.**