```
 1 /* Using methods, this program asks the user to input gross pay, savings
 2    rate, and IRA investment rate. The program will store the values and
 3    calculate the amount of money saved, invested, and sum of both combined.
 4
 5    This program purpose is to mirror assignment two while using methods.
 6    Methods used:
 7       explain() - explain the program to the user
 8       userInput() - prompts user to input data needed
 9       calcMoney() - calculates saving and IRA amounts from percentages
10       outPutData() - formats and outputs data to user
11
12    Zachary Stall
13    Program #5, CS 1050, Section 2
14    jGRASP, Custom PC, Windows 10
15
16    Pedantic - Characterized by a narrow, often ostentatious concern for
17    book learning and formal rules.
18
19    "To be yourself in a world that is constantly trying to make you
20    something else is the greatest accomplishment."
21    -Waldo Emerson (1803 - 1882)
22 */
23
24 import java.util.Scanner;  // For console input
25
26 public class ZacharyStall_2_05 {
27
28    static Scanner console = new Scanner(System.in);
29    static Toolkit tools   = new Toolkit();
30
31    public static void main (String [] args) {
32       double grossPay = 0.0;     // gross pay
33       double savingRate = 0.0;   // percentage rate to be saved
34       double iraRate = 0.0;      // percentage rate of be invested in IRA
35       double savingAmount = 0.0; // dollar amount in savings
36       double iraAmount = 0.0;    // dollar amount in IRA
37
38       // Explain the program to the user
39
40       explain();
41
42       // Input the gross pay, saving rate, and IRA rate
43       // userInput string prompts user to input parameter
44
45       grossPay = userInput("gross pay (without commas)");
46       savingRate = userInput("saving % as a number (i.e. 5.5% = 5.5)");
47       iraRate = userInput("IRA % as a number (i.e. 12% = 12)");
48
49       // Determine the amount in savings and IRA accounts
50
51       savingAmount = calcMoney(grossPay, savingRate);
52       iraAmount = calcMoney(grossPay, iraRate);
53
54       // Output the results
55
56       outputData(grossPay, savingRate, iraRate, savingAmount, iraAmount);
57
58       System.exit(0);
59    } // End main
60
61    // ************************************************************
62
63    // Methods section
64
65    // Explain the program to the user
66
67    public static void explain() {
68       System.out.println(
```

```
69             "The user will input gross pay, saving percentage rate, " +
70             "and IRA percentage investment rate. \n\n" +
71             "The program will use gross pay and the percentages" +
72             " to calculate saving amount, \n" +
73             "IRA investment amount, and a total of both accounts. \n\n" +
74             "Finaly the program will output gross pay, percentages and " +
75             "the calculated values in dollar amounts. \n\n" +
76             "Note: This program uses methods. \n\n" +
77             "Zachary Stall \n");
78    } // End explain
79
80    // ************************************************************
81
82    /*
83       userInput will prompt and collect the gross pay, savings rate, and
84       IRA investment rate from the user. userInput will also check that
85       the user is inputing positive numbers, and if not post an error message
86       to the user and have them re-enter the number.
87
88    */
89
90    public static double userInput(String str) {
91       double number;
92       System.out.print("Enter the " + str + ": ");
93       number = console.nextDouble();
94
95       // while statement to check input is postive, ask for new value if negative

96       while(number < 0) {
97          System.out.print("Error, must be a positive number. \n" +
98          "Enter the " + str + ": ");
99          number = console.nextDouble();
100      }
101      return number;
102   } // End userInput method
103
104   // ************************************************************
105
106   // Returns rate percentage of g amount (savings and IRA in this program)
107
108   public static double calcMoney(double g, double rate) {
109      return rate / 100.0 * g; // calculates amount of money based off of percentage rate
110   }  // End calcMoney
111
112   // ************************************************************
113
114   // Output gross pay, savings rate, IRA rate, savings amount, and IRA amount fromatted
115
116   public static void outputData(double gp,
117                                 double saver,
118                                 double irar,
119                                 double savea,
120                                 double iraa) {
121
122      System.out.print(
123         "\n" + "The gross pay entered: " + tools.leftPad(gp, 15, "$###,##0.00") +
124         "\n" + "The savings rate entered: " + tools.leftPad(saver, 11, "#0.0") + "%" +
125         "\n" + "The savings amount is: " + tools.leftPad(savea, 15, "$##,##0.00") +
126         "\n" + "The IRA investment rate: " + tools.leftPad(irar, 12, "#0.0") + "%" +
127         "\n" + "The IRA amount invested is: " + tools.leftPad(iraa, 10, "$##,##0.00") +
128         "\n" + "Savings and IRA is: " + tools.leftPad(iraa + savea, 18, "$##,##0.00") +
129         "\n" + "Zachary Stall" + "\n\n" );
130   } // End outputData
131
132 } // End class
```