

src\Problem2.java

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1  /*
2  Name: Hunter Poole
3  Date: 2/20/25
4  HW #: 4
5  Problem #: 2
6  Source Code: Problem2.java
7  Action: Given Gender, body weight in pounds, # of drinks consumed,
8          and # of hours drinking, returns BAC and status message.
9  */
10
11  import java.util.Scanner;
12
13  public class Problem2 {
14      public static void main(String[] args)
15      {
16          final float MALE = 0.68f, FEMALE = 0.55f;
17          float NumDrinks = 0, HoursDrinking = 0, WeightPounds = 0, WeightGrams = 0,
18          GramsAlcohol = 0, MetabolicRate = 0, BAC = 0;
19          String Gender = "";
20
21          Scanner Input = new Scanner(System.in);
22          System.out.print("Male or Female? ");
23          Gender = Input.next();
24
25          System.out.print("What is your body weight in pounds? ");
26          WeightPounds = Input.nextFloat();
27
28          System.out.print("How many drinks have you had? ");
29          NumDrinks = Input.nextFloat();
30
31          System.out.print("How many hours have you been drinking? ");
32          HoursDrinking = Input.nextFloat();
33
34          MetabolicRate = HoursDrinking * 0.015f;
35          GramsAlcohol = NumDrinks * 14f;
36          WeightGrams = WeightPounds * 454f;
37
38          if (Gender.equals("Male") || Gender.equals("M"))
39          {
40              BAC = ((GramsAlcohol) / (WeightGrams * MALE) * 100) - (MetabolicRate);
41          }
42          if (Gender.equals("Female") || Gender.equals("F"))
43          {
44              BAC = ((GramsAlcohol) / (WeightGrams * FEMALE) * 100) - (MetabolicRate);
45          }
46
47          if (BAC == 0)
```

```
47     {
48         System.out.printf("%s %.3f, %s", "BAC =", BAC, "You are just fine");
49     }
50
51     if (BAC > 0 && BAC <= 0.05)
52     {
53         System.out.printf("%s %.3f, %s", "BAC =", BAC, "Feeling good");
54     }
55
56     if (BAC > 0.05 && BAC <= 0.2)
57     {
58         System.out.printf("%s %.3f, %s", "BAC =", BAC, "Slurring speech, loss of
balance");
59     }
60
61     if (BAC > 0.2 && BAC <= 0.249)
62     {
63         System.out.printf("%s %.3f, %s", "BAC =", BAC, "Needs assistance in walking;
total mental confusion");
64     }
65
66     if (BAC > 0.249 && BAC <= 0.399)
67     {
68         System.out.printf("%s %.3f, %s", "BAC =", BAC, "Alcohol poisoning. Loss of
consciousness");
69     }
70
71     if (BAC > 0.399)
72     {
73         System.out.printf("%s %.3f, %s", "BAC =", BAC, "Onset of coma, possible death due
to respiratory arrest.");
74     }
75 }
76 }
77
78 /* P.S., I'm not a big fan of these stacked if statements for each BAC bucket.
79    Is there a better (simpler) way to do this? Didn't work w/switch statement when I tried
80    it.
81    */
82
83 /*
84 Male or Female? M
85 What is your body weight in pounds? 180
86 How many drinks have you had? 4
87 How many hours have you been drinking? 2
88 BAC = 0.071, Slurring speech, loss of balance
89
90 Male or Female? M
91 What is your body weight in pounds? 165
92 How many drinks have you had? 2
```

```
92 | How many hours have you been drinking? 3
93 | BAC = 0.010, Feeling good
94 |
95 | Male or Female? F
96 | What is your body weight in pounds? 120
97 | How many drinks have you had? 8
98 | How many hours have you been drinking? 2
99 | BAC = 0.344, Alcohol poisoning. Loss of consciousness
100 |
101 | Male or Female? M
102 | What is your body weight in pounds? 210
103 | How many drinks have you had? 6
104 | How many hours have you been drinking? 3
105 | BAC = 0.085, Slurring speech, loss of balance
106 |
107 |     // Additional cases //
108 |     // To cover all status messages //
109 |
110 | Male or Female? M
111 | What is your body weight in pounds? 172
112 | How many drinks have you had? 10
113 | How many hours have you been drinking? 2
114 | BAC = 0.234, Needs assistance in walking; total mental confusion
115 |
116 | Male or Female? F
117 | What is your body weight in pounds? 135
118 | How many drinks have you had? 15
119 | How many hours have you been drinking? 1
120 | BAC = 0.608, Onset of coma, possible death due to respiratory arrest.
121 |
122 | Male or Female? F
123 | What is your body weight in pounds? 94
124 | How many drinks have you had? 0
125 | How many hours have you been drinking? 0
126 | BAC = 0.000, You are just fine
127 | */
```