```
 1  // Program 2
 2  // CIS-199-02
 3  // Due: 03-11-2021
 4  // By: S5309
 5
 6  // This assignment explores the use of decision-making logic
 7  // and the creation of GUI applications.
 8
 9  // The code collects customer order inputs for a catering company,
10  // calculates and shows the delivery costs for 3 different companies
11  // and provides a suggestion on the cheapest one.
12
13  using System;
14  using System.Collections.Generic;
15  using System.ComponentModel;
16  using System.Data;
17  using System.Drawing;
18  using System.Linq;
19  using System.Text;
20  using System.Threading.Tasks;
21  using System.Windows.Forms;
22
23  namespace Program2
24  {
25      public partial class MainForm : Form
26      {
27          public MainForm()
28          {
29              InitializeComponent();
30          }
31          // this event handler collects order inputs, provides the
32          // estimated costs for three companies and a suggestion
33          // of the lowest cost company.
34          private void calcButton_Click(object sender, EventArgs e)
35          {
36              const int COMPANY_A_PEOPLE_FEE = 1; // Company A, fee per person.
37              const decimal COMPANY_A_DISTANCE_FEE = 0.02M; // Company A, fee per
                  mile.
38              const int COMPANY_A_1DAY_FEE = 20; // Company A, fee for 1-day
                  delivery.
39              const int COMPANY_A_2DAY_FEE = 17; // Company A, fee for 2-day
                  delivery.
40              const int COMPANY_A_3DAY_FEE = 15; // Company A, fee for 3-day
                  delivery.
41              const int COMPANY_A_4TO7DAY_FEE = 10; // Company A, fee for 4-7 day
                  delivery.
42              const int COMPANY_A_7PLUSDAY_FEE = 7;// Company A, fee for 7+ day
                  delivery.
43
44              const decimal COMPANY_B_DISTANCE_FEE = 0.10M; // Company B, fee per
                  mile.
45              const int COMPANY_B_10PEOPLE_FEE = 20; // Company B, fee per person
```

```
                for under 10 people.
46              const int COMPANY_B_50PEOPLE_FEE = 10; // Company B, fee per person
                for 10-50 people.
47              const int COMPANY_B_100PEOPLE_FEE = 5; // Company B, fee per person
                for 50-100 people.
48              const int COMPANY_B_200PEOPLE_FEE = 3; // Company B, fee per person
                for 100-200 people.
49              const decimal COMPANY_B_200PLUSPEOPLE_FEE = 0.15M; // Company B, fee
                per person for 200+ people.
50              const int COMPANY_B_1TO4DAY_FEE = 10; // Company B, fee for 1-4 day
                delivery.
51              const int COMPANY_B_4PLUSDAY_FEE = 7; // Company B, fee for 4+ days
                delivery.
52
53              const decimal COMPANY_C_PEOPLE_FEE = 0.25M; // Company C, fee per
                people.
54              const int COMPANY_C_DAYS_FEE = 20; // Company C, preparation fee.
55              const int COMPANY_C_200MILES_FEE = 10; // Company C, fee for 0-200
                miles delivery.
56              const int COMPANY_C_500MILES_FEE = 15; // Company C, fee for 200-500
                miles delivery.
57              const int COMPANY_C_750MILES_FEE = 25; // Company C, fee for 500-750
                miles delivery.
58              const int COMPANY_C_1KMILES_FEE = 35; // Company C, fee for 750-1000
                miles delivery.
59              const int COMPANY_C_1KPLUSMILES_FEE = 40; // Company C, fee for 1000+
                 miles delivery.
60
61              uint numPeople; // number of people being catered
62              uint prepDays; // number of order preparation days
63              decimal distance; // delivery distance
64              decimal costA, costB, costC; // service cost for each company
65
66              // get inputs from the form and check for invalid data.
67              if(uint.TryParse(numPeopleTxtBox.Text, out numPeople) && numPeople !=
                0)
68              {
69                  if(decimal.TryParse(distanceTxtBox.Text, out distance) &&
                    distance > 0)
70                  {
71                      if(uint.TryParse(deliveryTxtBox.Text, out prepDays) &&
                        prepDays != 0)
72                      {
73                          // Company A cost calculations
74                          costA = (numPeople * COMPANY_A_PEOPLE_FEE) + (distance *
                        COMPANY_A_DISTANCE_FEE);
75                          switch (prepDays)
76                          {
77                              case 1:
78                                  costA += COMPANY_A_1DAY_FEE;
79                                  break;
80                              case 2:
```

```
81                                  costA += COMPANY_A_2DAY_FEE;
82                                  break;
83                              case 3:
84                                  costA += COMPANY_A_3DAY_FEE;
85                                  break;
86                              case 4:
87                              case 5:
88                              case 6:
89                              case 7:
90                                  costA += COMPANY_A_4TO7DAY_FEE;
91                                  break;
92                              default:
93                                  costA += COMPANY_A_7PLUSDAY_FEE;
94                                  break;
95                          }
96
97                          // Company B cost calculations
98                          costB = (distance * COMPANY_B_DISTANCE_FEE);
99
100                         if (numPeople < 10)
101                             costB += numPeople * COMPANY_B_10PEOPLE_FEE;
102                         else if(numPeople < 50)
103                             costB += numPeople * COMPANY_B_50PEOPLE_FEE;
104                         else if(numPeople < 100)
105                             costB += numPeople * COMPANY_B_100PEOPLE_FEE;
106                         else if(numPeople < 200)
107                             costB += numPeople * COMPANY_B_200PEOPLE_FEE;
108                         else
109                             costB += numPeople * COMPANY_B_200PLUSPEOPLE_FEE;
110
111                         if (prepDays < 4)
112                             costB += COMPANY_B_1TO4DAY_FEE;
113                         else
114                             costB += COMPANY_B_4PLUSDAY_FEE;
115
116                         // Company C cost calculations
117                         costC = (numPeople * COMPANY_C_PEOPLE_FEE) +
                        COMPANY_C_DAYS_FEE;
118                         if (distance < 200)
119                             costC += COMPANY_C_200MILES_FEE;
120                         else if (distance < 500)
121                             costC += COMPANY_C_500MILES_FEE;
122                         else if (distance < 750)
123                             costC += COMPANY_C_750MILES_FEE;
124                         else if (distance < 1000)
125                             costC += COMPANY_C_1KMILES_FEE;
126                         else
127                             costC += COMPANY_C_1KPLUSMILES_FEE;
128
129                         // Show the results for each company
130                         outputALbl.Text = $"{costA:C}";
131                         outputBLbl.Text = $"{costB:C}";
```

```
132                         outputCLbl.Text = $"{costC:C}";
133
134                         // Determine the lowest cost
135                         if (costA == costB || costA == costC || costB == costC)
136                             lowestOutLbl.Text = "The lowest cost company is:
                        Tie!";
137                         else if (costA < costB && costA < costC)
138                             lowestOutLbl.Text = "The lowest cost company is: A";
139                         else if (costB < costC)
140                             lowestOutLbl.Text = "The lowest cost company is: B";
141                         else
142                             lowestOutLbl.Text = "The lowest cost company is: C";
143                     }
144                     else // Show error message for invalid delivery days input.
145                     {
146                         MessageBox.Show("Invalid delivery days");
147                     }
148                 }
149                 else // Show error message for invalid delivery distance input.
150                 {
151                     MessageBox.Show("Invalid distance");
152                 }
153             }
154             else // Show error message for invalid number of people input.
155             {
156                 MessageBox.Show("Invalid number of people");
157             }
158         }
159     }
160 }
161
```