

```
1  #include <iostream>
2  #include <iomanip>
3  using namespace std;
4  int main() {
5
6      //cost and change given variables
7
8      const double tax = 1.075;
9      double cost = 0;
10     double change = 0;
11     double total = 0;
12     double pay = 0;
13
14     //Prices for items (double variable)
15     double fancy = 0.85;
16     double fritter = 1.50;
17     double regular_dozen = 7.99;
18     double regular = 0.75;
19     double fancy_dozen = 8.49;
20
21     //Variables for purchased number of items
22     int numFancy = 0;
23     int numFritter = 0;
24     int numRegularDozen = 0;
25     int numRegular = 0;
26     int numFancyDozen = 0;
27
28
29
30     //collects the number of each donut ordered, input
31     cout << "Numbers of regular donuts ordered: ";
32     cin >> numRegular;
33     cout << "Number of fancy donuts ordered: ";
34     cin >> numFancy;
35     cout << "Number of apple fritter ordered: ";
36     cin >> numFritter;
37
38     //calculates the dozen and remaining items
39     numFancyDozen = numFancy / 12;
40     numRegularDozen = numRegular / 12;
41     numFancy = numFancy % 12;
42     numRegular = numRegular % 12;
43
44
45     //total cost added with tax
46     cost = (numRegularDozen * regular_dozen) + (numFancy * fancy) + (numFancyDozen *
        fancy_dozen) + (numFritter * fritter) + (numRegular * regular);
47     total = cost * tax;
48
49     //conversion to fixed decimal place
50     total = (int)(total * 100 + .5);
51     total /= 100;
52     cout << fixed << setprecision(2);
53
54 }
```

```

55 //Output the total amount owed and inputs the amount paid
56 cout << "Customer Owes $" << total << endl;
57 cout << "Customer Pays $";
58 cin >> pay;
59
60 //calculate the change owed
61 change = (int)((pay * 100) - (total * 100));
62 if (change != 0) {
63     cout << "change owed is $" << change / 100 << " - ";
64 }
65 else {
66     cout << "Exact payment reiceved - no change owed.";
67 }
68
69
70
71
72 //dollers given back
73 int dollar = (int)change / 100;
74 change = change - (dollar * 100);
75
76 //calculation of quarters
77 int quarter = (int)change / 25;
78 change = change - (quarter * 25);
79
80
81 //calculation of dimes
82 int dime = (int)change / 10;
83 change = change - (dime * 10);
84
85
86 //calculation of nickels
87 int nickel = (int)change / 5;
88 change = change - (nickel * 5);
89
90 //calculation of pennies
91 int pennie = (int)change / 1;
92
93
94
95 //counter
96
97 int count = 0;
98
99 if (dollar > 0)
100     count++;
101
102 if (quarter > 0)
103     count++;
104
105 if (dime > 0)
106     count++;
107
108 if (nickel > 0)
109     count++;

```

```
110
111     if (pennie > 0)
112         count++;
113
114     if (dollar == 1)
115     {
116         cout << dollar << " dollar";
117         count--;
118         if (count == 0)
119
120             cout << ". ";
121
122         else
123             cout << ", ";
124     }
125     else if (dollar >= 2) //dollar value using period and comma
126     {
127         cout << dollar << " dollars";
128         count--;
129         if (count == 0)
130
131             cout << ". ";
132
133         else
134             cout << ", ";
135     }
136
137     if (quarter == 1)
138     {
139         cout << quarter << " quarter";
140         count--;
141         if (count == 0)
142
143             cout << ". ";
144
145         else
146             cout << ", ";
147     }
148     else if (quarter >= 2) //quarter value using period and comma
149     {
150         cout << quarter << " quarters";
151         count--;
152         if (count == 0)
153
154             cout << ". ";
155
156         else
157             cout << ", ";
158     }
159
160
161     if (dime == 1)
162     {
163         cout << dime << " dime";
164         count--;
```

```
165     if (count == 0)
166
167         cout << ". ";
168
169     else
170         cout << ", ";
171 }
172
173 else if (dime >= 2) //dimes value using period and comma
174 {
175     cout << dime << " dimes";
176     count--;
177     if (count == 0)
178
179         cout << ". ";
180
181     else
182         cout << ", ";
183 }
184
185 if (nickel == 1)
186 {
187     cout << nickel << " nickel";
188     count--;
189     if (count == 0)
190
191         cout << ". ";
192
193     else
194         cout << ", ";
195 }
196
197 else if (nickel >= 2) //nickel value using period and comma
198 {
199     cout << nickel << " nickels";
200     count--;
201     if (count == 0)
202
203         cout << ". ";
204
205     else
206         cout << ", ";
207 }
208
209
210 if (pennie == 1)
211 {
212     cout << pennie << " penny";
213     count--;
214     if (count == 0)
215
216         cout << ". ";
217
218     else
219         cout << ", ";
```

```
220         cout << ", ";
221     }
222
223     else if (pennie >= 2) //pennies value using period and comma
224     {
225         cout << pennie << " pennies";
226         count--;
227         if (count == 0)
228
229             cout << ". ";
230
231         else
232             cout << ", ";
233     }
234
235
236     //return line
237     return 0;
238
239
240
241
242
243
244
245
246 }
```