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1  /*
2      Lab 1
3      CS2
4      Updated by: FIXME
5      Date: FIXME
6
7      Breakfast billing system for a restaurant.
8
9      This program allows restaurant customers to select breakfast items and prints the bill.
10 */
11 #include <iostream>
12 #include <fstream>
13 #include <iomanip>
14 #include <string>
15
16 using namespace std;
17
18 // max no. of menu items that can be stored by the program
19 const int NO_OF_ITEMS = 8;
20
21 // data structure to hold each menu item info
22 struct menuItemType
23 {
24     string itemName;
25     double itemPrice;
26 };
27
28 // initialize menu list with some default values
29 void initMenuList(menuItemType menuList[], int menuListSize);
30 // function that reads menu data into menuList array
31 void readMenuData(ifstream& fin, menuItemType menuList[], int menuListSize);
32 // function that displays the menu
33 void showMenu(menuItemType menuList[], int menuListSize);
34 // function to print check after menu items are selected
35 void printCheck(menuItemType menuList[], int menuListSize,
36     int selectedList[], int selectedListLength);
37 // function to select items from the menu list
38 void makeSelection(menuItemType menuList[], int menuListSize,
39     int selectedList[], int& selectedListLength);
40 // function that returns true if the itemNo is in the selectedList otherwise false.
41 // this function avoids user repeating the menu item
42 bool isSelected(int selectedList[], int selectedListLength, int itemNo);
43
44 int main()
45 {
46     menuItemType menuList[NO_OF_ITEMS];
47     int choiceList[NO_OF_ITEMS]; // array to keep track of choices based on item number
48     int choiceListLength; // variable to keep track of no. of choices
49     ifstream fin;
50     cout << fixed << showpoint << setprecision(2);
51     // open menu.txt file to read menu data from
52     fin.open("menu.txt");
53     if (!fin)
54     {
55         cout << "Input file does not exist. Program Terminates!"
56             << endl;
57         cin.get();
58         return 1;
59     }
60     initMenuList(menuList, NO_OF_ITEMS);
61     // FIXME
62     // Call readMenuData function passing proper arguments
63
64     fin.close(); //close input file

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55     showMenu(menuList, NO_OF_ITEMS);
56     makeSelection(menuList, NO_OF_ITEMS,
57         choiceList, choiceListLength);
58     printCheck(menuList, NO_OF_ITEMS,
59         choiceList, choiceListLength);
60     // pause the program until enter his hit
61     cin.get();
62     cin.get();
63     return 0;
64 }
65
66 void initMenuList(menuItemType menuList[], int menuListSize)
67 {
68     for (int i = 0; i < menuListSize; ++i)
69     {
70         // FIXME
71         // Initialize each menu item's name to A Tasty Item
72         // Initialize each menu item's price to 0;
73     }
74 }
75
76 void readMenuData(ifstream& fin, menuItemType menuList[], int menuListSize)
77 {
78     char ch;
79     for (int i = 0; i < menuListSize; i++)
80     {
81         // FIXME
82         // 1. Read each item name into itemName field of menuList array
83         // 2. Read each item price into itemPrice field of menuList array
84         fin.get(ch); // read and ignore \n char
85     }
86 }
87
88 void showMenu(menuItemType menuList[], int menuListSize)
89 {
90     cout << "Welcome to Papi Joey's Kitchen" << endl;
91     cout << "----Today's Menu----" << endl;
92
93     for (int i = 0; i < menuListSize; i++)
94     {
95         cout << i + 1 << ": " << left << setw(15) << menuList[i].itemName
96             << right << " $" << menuList[i].itemPrice << endl;
97     }
98     cout << endl;
99 }
100
101 void printCheck(menuItemType menuList[], int menuListSize,
102     int selectedList[], int selectedListLength)
103 {
104     int i;
105     double salesTax;
106     double amountDue = 0;
107
108     cout << "    Papi Joey's Kitchen" << endl;
109     cout << "        Guest Check    " << endl;
110     cout << setw(25) << setfill('=') << endl;
111     cout << setfill(' ') << endl;
112     for (i = 0; i < selectedListLength; i++)
113     {
114         cout << left << setw(15) << menuList[selectedList[i]].itemName
115             << right << " $" << setw(4) << menuList[selectedList[i]].itemPrice << endl;
116         amountDue += menuList[selectedList[i]].itemPrice;
117     }
118     cout << endl;

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29     salesTax = amountDue * .07;
30     cout << left << setw(15) << "Tax " << right << " $"
31         << salesTax << endl;
32     amountDue = amountDue + salesTax;
33     cout << left << setw(15) << "Amount Due " << right
34         << " $" << amountDue << endl << endl;
35     cout << setw(25) << setfill('=') << ' ' << endl;
36     cout << setfill(' ') << endl;
37     cout << "        Thank you! " << endl;
38     // FIXME
39     // 1. Prompt user to enter output filename to write receipt data.
40     // 2. Create the file and write the check info (as you see on the common output) into the file.
41     // 3. Provide feedback to the user, once done.
42     // 4.. Close the file.
43 }
44
45 void makeSelection(menuItemType menuList[], int menuListSize, int selectedList[],
46     int& selectedListLength)
47 {
48     int selectionNo = 0;
49     int itemNo;
50     char response;
51     selectedListLength = 0;
52
53     cout << "You can make up to " << menuListSize
54         << " single order selections" << endl;
55
56     cout << "Do you want to make selection Y/y (Yes), N/n (No): ";
57     cin >> response;
58     cout << endl;
59
60     while ((response == 'Y' || response == 'y') &&
61         selectedListLength < 8)
62     {
63         cout << "Enter item number: ";
64         cin >> itemNo;
65         cout << endl;
66
67         if (!isItemSelected(selectedList, selectedListLength, itemNo))
68             selectedList[selectedListLength++] = itemNo - 1;
69         else
70             cout << "Item already selected" << endl;
71
72         cout << "Select another item Y/y (Yes), N/n (No): ";
73         cin >> response;
74         cout << endl;
75     }
76 }
77
78 bool isItemSelected(int selectedList[], int selectedListLength, int itemNo)
79 {
80     /*
81     FIXME
82     Algorithm steps:
83     1. Go through each item in selectedList and check if itemNo is in there.
84     2. If it is, return true, otherwise false
85     */
86 }

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