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1 /*****
2 * PROGRAMMER : Ali Eshghi & Ivan Ma
3 * STUDENT ID : 1112261 & 1114811
4 * CLASS      : CS1B
5 * SECTION    : MW 7:30pm
6 * Assign #1  : Functions and arrays
7 * DUE DATE   : 19 September 2019
8 *****/
9 #include<iostream>
10 #include<iomanip>
11 #include<string>
12 using namespace std;
13
14 int main()
15 {
16
17     /*****
18     * CONSTANTS
19     * -----
20     * OUTPUT - USED FOR CLASS HEADING
21     * -----
22     * PROGRAMMER : Programmer's Name
23     * CLASS      : Student's Course
24     * SECTION    : Class Days and Time
25     * LAB_NUM    : Lab Number (specific to this lab)
26     * LAB_NAME   : Title of the Lab
27     * AS_TYPE    : Type of the assignment (Lab or Assignment)
28     *****/
29     const string PROGRAMMER = "Ali Eshghi & Ivan Ma";
30     const string CLASS     = "CS1B";
31     const string SECTION   = "MW: 7:30p - 9:50p";
32     const int    LAB_NUM   = 4;
33     const string LAB_NAME  = "Lab 4 : Introduction to array";
34
35
36     cout << left;
37     cout << "*****" << endl;
38     cout << "* PROGRAMMED BY : " << PROGRAMMER << endl;
39     cout << "* " << setw(14) << "CLASS" << ": " << CLASS << endl;
40     cout << "* " << setw(14) << "SECTION" << ": " << SECTION << endl;
41     cout << "* LAB #" << setw(9) << LAB_NUM << ": " << LAB_NAME << endl;
42     cout << "*****" << endl << endl;
43     cout << right;
44
45
46     /*****
47     * VARIABLES *
48     *****/
49     const int AR_SIZE = 10; // PROCESS - const for the number elements of the array
50
51     int index; // PROCESS - used in the loops to put variables in array
52     int nameCount; // Process - used for the count of instances
53
54     string nameAr[AR_SIZE]; // IN & PROCESS - array of the names, user input
55     string searchName; // IN & PROCESS - name for the search, user input
56
57
58
59     /*****

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60  * INPUT - begin to prompt ask the user for the names that are going to
61  *         be in the array and initialize the array based on the user input
62  *         using a for loop.
63  *****/
64
65  for(index = 0; index < AR_SIZE; index++) //gets the names from the user
66  {
67      cout << "Enter name #" << index+1 << ": ";
68      getline(cin,nameAr[index]);
69  }//end of for loop
70
71  /*****
72  * PROCESS & OUTPUT - the program asks the user what name's instances the
73  *                     user is looking for and outputs the name searched and
74  *                     the number of the instances of the name in the list.
75  *****/
76  *
77  * the program gets the user input and based on the
78  * user's input it search for the name in the array and
79  * if the program finds it it outputs the name and the
80  * number of instances, but if the searched name wasn't
81  * in the list, the program outputs that the program
82  * couldn't find the name.
83  *****/
84  cout << endl << endl;
85  cout << "Who do you want to search for (Enter done to exit)? ";
86  getline(cin,searchName);
87
88
89  while(searchName != "done")//using the while loop because we never know
90  {
91      //when the search ends.
92      nameCount = 0;
93
94      for (index = 0; index < AR_SIZE; index++)//for loop to search the
95      {
96          //the name in the array.
97          if(searchName == nameAr[index])//if the name found it increments
98          {
99              //the instances.
100              nameCount++;
101          }// end of if statement
102      }//end of while loop
103
104      if (nameCount != 0)//if there are any instances,
105      {
106          // it follows the statement below.
107          if (nameCount > 1)//if the instances are more than one,
108          {
109              //the statement below occurs.
110              cout << "There are " << nameCount << " instances of the name "
111                  << searchName << "." << endl << endl;
112          }//end of if statement
113
114          if (nameCount == 1)//if there is only instances, statement below occurs.
115          {
116              cout << "There is one instance of the name " << searchName << "."
117                  << endl << endl;
118          }//end of if statement
119      }
120      else//else statement if the name isn't in the list.
121      {
122          cout << searchName << "'s name does not exist in this list." << endl <<
123          endl;

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118     }//end of else statement.
119
120
121
122     //prompts the user for another input(change the input for the loop).
123     cout << "Who do you want to search for (Enter done to exit)? ";
124     getline(cin,searchName);
125
126
127 }
128
129 //output to shows the user the program ended perfectly.
130 cout << "\nThank you for using my program.";
131
132 return 0;
133
134 }
135
136
```

output.txt

```
1 *****
2 * PROGRAMMED BY : Ali Eshghi & Ivan Ma
3 * CLASS          : CS1B
4 * SECTION        : MW: 7:30p - 9:50p
5 * LAB #4         : Lab 4 : Introduction to array
6 *****
7
8 Enter name #1: Joe
9 Enter name #2: Sally
10 Enter name #3: Joe
11 Enter name #4: Sue
12 Enter name #5: Sally
13 Enter name #6: Adam
14 Enter name #7: Joe
15 Enter name #8: Adam
16 Enter name #9: Adam
17 Enter name #10: Joe
18
19
20 Who do you want to search for (Enter done to exit)? Joe
21 There are 4 instances of the name Joe.
22
23 Who do you want to search for (Enter done to exit)? Sally
24 There are 2 instances of the name Sally.
25
26 Who do you want to search for (Enter done to exit)? Adam
27 There are 3 instances of the name Adam.
28
29 Who do you want to search for (Enter done to exit)? Sue
30 There is one instance of the name Sue.
31
32 Who do you want to search for (Enter done to exit)? John
33 John's name does not exist in this list.
34
35 Who do you want to search for (Enter done to exit)? done
36
37 Thank you for using my program.
```