Jorael Jamison

Ch 8 Homework

06/12/2021

Challenge 1:

```
/* Programmer: Jorael Jamison
   Purpose: CH8 HW Challenges
   Date modified: 06/12/2021
   Compiler: XCode C++ Compiler for Mac
*/
//Challenge 11 Chips and Salsa Version 2

#include <iostream>
#include <iomanip>
#include <string>

using namespace std;

struct Salsa
{
    double salsa1, salsa2, salsa3, salsa4, salsa5;
    int i1, i2, i3, i4;
    string salsaNames[4] = {"Chunky Salsa", "Spicy Salsa", "Mild
Salsa", "Verde Salsa"}; // Array
};

class SalsaBusiness
{
private:
    Salsa cost, sold, total;

public:
    SalsaBusiness() //default values
    {
        cost.salsa1 = 4.0;
        cost.salsa2 = 5.0;
        cost.salsa3 = 6.0;
        cost.salsa4 = 7.0;
    }

    double s1, s2, s3, s4; // hold total cost for each salsa
```

```
    int i1, i2, i3, i4; // hold qty to buy of each

    double sTotal;

    void SalsaCalc()
    {
        total.salsa1 = s1;
        total.salsa2 = s2;
        total.salsa3 = s3;
        total.salsa4 = s4;
    }

 void inputVerify()
    {
        cout << "Entry must be greater than zero, re-enter:\n";
    }

 void getInputs()
    {
        Salsa sal;
        cout << sal.salsaNames[0] << " is $" << cost.salsa1 <<
". Enter QTY to purchase: " << endl;
        cin >> sold.i1;
        while (sold.i1 < 0){inputVerify(); cin >> sold.i1;}
        cout << sal.salsaNames[1] << " is $" << cost.salsa2 <<
". Enter QTY to purchase: " << endl;
        cin >> sold.i2;
        while (sold.i2 < 0){inputVerify(); cin >> sold.i2;}
        cout << sal.salsaNames[2] << " is $" << cost.salsa3 <<
". Enter QTY to purchase: " << endl;
        cin >> sold.i3;
        while (sold.i3 < 0){inputVerify(); cin >> sold.i3;}
        cout << sal.salsaNames[3] << " is $" << cost.salsa4 <<
". Enter QTY to purchase: " << endl;
        cin >> sold.i4;
        while (sold.i4 < 0){inputVerify(); cin >> sold.i4;}
    }

 void calcResult()
    {
        system("cls"); // clear console
        Salsa s;
        cout << fixed << setprecision(2);
        cout << "Thank you for your business!" << endl;
        cout << "**************************\n" << endl;
        s1 = (cost.salsa1 * sold.i1);
```

```
        cout << sold.i1 << " " << s.salsaNames[0] << " = $" <<
s1 << endl;
        s2 = (cost.salsa2 * sold.i2);
        cout << sold.i2 << " " << s.salsaNames[1] << " = $" <<
s2 << endl;
        s3 = (cost.salsa3 * sold.i3);
        cout << sold.i3 << " " << s.salsaNames[2] << " = $" <<
s3 << endl;
        s4 = (cost.salsa4 * sold.i4);
        cout << sold.i4 << " " << s.salsaNames[3] << " = $" <<
s4 << endl;
        sTotal = (s1 + s2 + s3 + s4);
        cout << "Grand Total is = $" << sTotal << endl;
    }

};

int main()
{
    cout << "**********FRESH SALSA**********\n";
    cout << "******************************\n\n";
    SalsaBusiness sales;
    sales.getInputs();
    sales.calcResult();

    return 0;
}


/* Output:
**********FRESH SALSA**********
******************************

Chunky Salsa is $4. Enter QTY to purchase:
1
Spicy Salsa is $5. Enter QTY to purchase:
-5
Entry must be greater than zero, re-enter:
5
Mild Salsa is $6. Enter QTY to purchase:
1
Verde Salsa is $7. Enter QTY to purchase:
5
//clear console
Thank you for your business!
**************************
```

```
1 Chunky Salsa = $4.00
5 Spicy Salsa = $25.00
1 Mild Salsa = $6.00
5 Verde Salsa = $35.00
Grand Total is = $70.00
*/
```

Challenge 2:

```
/* Programmer: Jorael Jamison
   Purpose: CH8 HW Challenges
   Date modified: 06/12/2021
   Compiler: XCode C++ Compiler for Mac
*/
//Challenge 15 Driver's License Exam

#include <iostream>
#include <iomanip>
#include <string>

using namespace std;

const int numberOfQuestions = 20;
const int requiredToPass = 15;

struct Answers
{
    char keyAnswers[20] = {}; // Array
    char inputAnswers[20] = {}; // Array
    char wrongAnswers[20] = {}; // Array

};

class TestGrader
{
private:
    Answers Key, InputA, WrongA;

public:
    TestGrader() //default values
    {
```

```
        Key.keyAnswers[0] = 'B';
        Key.keyAnswers[1] = 'D';
        Key.keyAnswers[2] = 'A';
        Key.keyAnswers[3] = 'A';
        Key.keyAnswers[4] = 'C';
        Key.keyAnswers[5] = 'A';
        Key.keyAnswers[6] = 'B';
        Key.keyAnswers[7] = 'A';
        Key.keyAnswers[8] = 'C';
        Key.keyAnswers[9] = 'D';
        Key.keyAnswers[10] = 'B';
        Key.keyAnswers[11] = 'C';
        Key.keyAnswers[12] = 'D';
        Key.keyAnswers[13] = 'A';
        Key.keyAnswers[14] = 'D';
        Key.keyAnswers[15] = 'C';
        Key.keyAnswers[16] = 'C';
        Key.keyAnswers[17] = 'B';
        Key.keyAnswers[18] = 'D';
        Key.keyAnswers[19] = 'A';

    }

 bool inputVerify(char answer)
    {
        if (toupper(answer) != 'A' && toupper(answer) != 'B' &&
toupper(answer) != 'C' && toupper(answer) != 'D')
        {
            cout << "Invalid Input only A B C or D:\n";
            return false;
        }

    return true;
    }

    void getInputs()
       {
           cout << "Enter your answer for each question i.e. (A,
B, C or D): \n";
           for (int i = 0; i < numberOfQuestions; i++)
           {
               do
               {
               cout << "Question #" << i+1 << ":";
                   cin >> InputA.inputAnswers[i];
```

```
                    system("clear"); // clear console between
each question
                    for (int upper = 0; upper <
InputA.inputAnswers[i]; upper++) // convert input to uppercase
                    {
                        InputA.inputAnswers[i] =
toupper(InputA.inputAnswers[i]);
                        if (InputA.inputAnswers[i] !=
Key.keyAnswers[i])
                        WrongA.wrongAnswers[i] =
InputA.inputAnswers[i];
                        else
                        WrongA.wrongAnswers[i] = 'x';
                    }
                }while (!inputVerify(InputA.inputAnswers[i]));
            }system("clear"); // clear console for results
        }


  int correctAnswers()
    {
        int correct = 0;
        for (int i = 0; i < numberOfQuestions; i++)
        {
           if (InputA.inputAnswers[i] == Key.keyAnswers[i])
               correct++;
        }
        return correct;
    }

  int wrongAnswers()
      {
          int wrong = 0;
          for (int i = 0; i < numberOfQuestions; i++)
          {
             if (InputA.inputAnswers[i] != Key.keyAnswers[i])
                 wrong++;
          }
          return wrong;
      }

  void showResults(int)
    {
        int correct = correctAnswers();
        int wrong = wrongAnswers();
```

```
        cout << "You answered " << correct << " questions
correctly.\n";
        cout << "You answered " << wrong << " questions
incorrectly.\n";
        if (correct <requiredToPass)
        cout << "Sorry you failed!\n";
        else
        cout << "Congratualations, you passed!\n";
        }

void showWrong()
    {
        for (int i = 0; i < numberOfQuestions; i++)
        if (WrongA.wrongAnswers[i] != 'x')
        {
            cout << "Your answer: " << WrongA.wrongAnswers[i] <<
" for Question # " << i+1 << " is wrong.\n";
            cout << "Correct answer is: " << Key.keyAnswers[i]
<< endl;
        }

    }

};
int main()
{   char yn;
    int correctAnswers = 0, wrongAnswers = 0;

    cout << "************DMV Driver's License
Exam************\n\n";
    cout << "There are " << numberOfQuestions << " questions on
the exam,\n";
    cout << "" << requiredToPass << " correct answers required
to pass!\n";
    cout << "Are you ready to begin? (Y or N): ";
    cin >> yn;
    while (yn == 'y' || yn == 'Y')
    {
    do{
    TestGrader exam;
    exam.getInputs();
    exam.showResults(correctAnswers);
    correctAnswers = exam.correctAnswers();
    wrongAnswers = exam.wrongAnswers();
    exam.showWrong();
```

```
    if (correctAnswers < 15) // Offer to retake only if failed
    cout << "Would you like to retake the exam today? (Y or N):
";
    cin >> yn;
    system("clear"); // clear console for retake
    }while (yn == 'y' || yn == 'Y');
    }
    return 0;
}


/*Output:
**********DMV Driver's License Exam**********

There are 20 questions on the exam,
15 correct answers required to pass!
Are you ready to begin? (Y or N):y

Enter your answer for each question i.e. (A, B, C or D):
Question #1:a
Question #2:f
Invalid Input only A B C or D: //output if not A-D
Question #2:c
Question #3:...
You answered 5 questions correctly.
You answered 15 questions incorrectly.
Sorry you failed! // or Congratulations you passed!
Your answer: A for Question # 1 is wrong.
Correct answer is: B
Your answer: C for Question # 2 is wrong.
Correct answer is: D
Would you like to retake the exam today? (Y or N): y
// retake option only if failed

*/
```
