9
see me

```
// Lab 3 recipe for success

#include <iostream>
#include <string>
#include <sstream>

using namespace std;

int main()
{
   // Food #1 facts
   const string foodName_1 = "eggs";
   const int foodName_1_calories_P100G = 48;
   const double foodName_1_protein_P100G = 11;
   const double foodName_1_sugar_P100G = 1;
   const double foodName_1_totalFat_P100G = 0;

   //Food #2 facts
   const string foodName_2 = "cheddar cheese";
   const int foodName_2_calories_P100G = 403;
   const double foodName_2_protein_P100G = 25;
   const double foodName_2_sugar_P100G = 1;
   const double foodName_2_totalFat_P100G = 33;

   // Food #3 facts
   const string foodName_3 = "broccoli";
   const int foodName_3_calories_P100G = 28;
   const double foodName_3_protein_P100G = 3;
   const double foodName_3_sugar_P100G = 0;
   const double foodName_3_totalFat_P100G = 0;

   // Food #4 facts
   const string foodName_4 = "chicken breast";
   const int foodName_4_calories_P100G = 110;
   const double foodName_4_protein_P100G = 23;
   const double foodName_4_sugar_P100G = 0;
   const double foodName_4_totalFat_P100G = 1;

   string recipeName, userInputStr, gramsOrCups, servingSize;
   int userInputInt;
   double totalCal, totalPro, totalSug, totalTolFat, oneServingSize;

   totalCal = 0;
   totalPro = 0;
   totalSug = 0;
   totalTolFat = 0;

   // Ingredient Menu
   cout << "----- Here is a list of ingredients ----- \n"
      << "   Ingredient # 1: " << foodName_1 << "\n"
      << "   Ingredient # 2: " << foodName_2 << "\n"
      << "   Ingredient # 3: " << foodName_3 << "\n"
      << "   Ingredient # 3: " << foodName_4 << "\n";

   // Name of recipe
   cout << "\nWhat are you calling this recipe? \n";
   getline(cin, recipeName);

   // Number of servings
   cout << "\nWhat is the number of servings?\n ";
   getline(cin, servingSize);
   istringstream(servingSize) >> oneServingSize;
```

consts should be ALL_CAPS -1

should be int -1

-2

```
    // Measurement of servings
    if ((oneServingSize > 0) && (oneServingSize < 10))
    {
       cout << "\nWill you be measuring in grams or by ingredient amount ?\n";
       getline(cin, gramsOrCups);
    }

    else
    {
       cout << "Error!!! Invalid input!\n";
       return 1;
    }
```

overcomplicating -1

```
    // Input for grams
    if ((gramsOrCups == "grams") || (gramsOrCups == "Grams"))
    {
       cout << "\nHow many grams of " << foodName_1 << " ? \n";
       getline(cin, userInputStr);
       istringstream(userInputStr) >> userInputInt;

       if ((userInputInt > 0) && (userInputInt < 1000))
       {
          totalCal += (userInputInt * foodName_1_calories_P100G / 100.) / oneServ
ingSize;
          totalPro += (userInputInt * foodName_1_protein_P100G / 100.) / oneServi
ngSize;
          totalSug += (userInputInt * foodName_1_sugar_P100G / 100.) / oneServing
Size;
          totalTolFat += (userInputInt * foodName_1_totalFat_P100G / 100.) / oneS
ervingSize;
```

divide by serving size once at end -1

unnecessary nesting of if/else statements -2

formatting -2

```
          cout << "\nHow many grams of " << foodName_2 << " ? \n";
          getline(cin, userInputStr);
          istringstream(userInputStr) >> userInputInt;

          totalCal += (userInputInt * foodName_2_calories_P100G / 100.) / oneServ
ingSize;
          totalPro += (userInputInt * foodName_2_protein_P100G / 100.) / oneServi
ngSize;
          totalSug += (userInputInt * foodName_2_sugar_P100G / 100.) / oneServing
Size;
          totalTolFat += (userInputInt * foodName_2_totalFat_P100G / 100.) / oneS
ervingSize;

          cout << "\nHow many grams of " << foodName_3 << " ? \n";
          getline(cin, userInputStr);
          istringstream(userInputStr) >> userInputInt;

          totalCal += (userInputInt * foodName_3_calories_P100G / 100.) / oneServ
ingSize;
          totalPro += (userInputInt * foodName_3_protein_P100G / 100.) / oneServi
ngSize;
          totalSug += (userInputInt * foodName_3_sugar_P100G / 100.) / oneServing
Size;
          totalTolFat += (userInputInt * foodName_3_totalFat_P100G / 100.) / oneS
ervingSize;

          cout << "\nHow many grams of " << foodName_4 << " ? \n";
          getline(cin, userInputStr);
          istringstream(userInputStr) >> userInputInt;
```

-6

```
            totalCal += (userInputInt * foodName_4_calories_P100G / 100.) / oneServ
ingSize;
            totalPro += (userInputInt * foodName_4_protein_P100G / 100.) / oneServi
ngSize;
            totalSug += (userInputInt * foodName_4_sugar_P100G / 100.) / oneServing
Size;
            totalTolFat += (userInputInt * foodName_4_totalFat_P100G / 100.) / oneS
ervingSize;
         }
```

-3 no error checking for food 2,3,4

```
         else
         {
            cout << "Error!!! Invalid input!\n";
            return 1;
         }

      }

      else
      {
         cout << "\nWhat amount of " << foodName_1 << " are you using? \n";
         getline(cin, userInputStr);
         istringstream(userInputStr) >> userInputInt;

         totalCal += (userInputInt * foodName_1_calories_P100G) / oneServingSize;
         totalPro += (userInputInt * foodName_1_protein_P100G) / oneServingSize;
         totalSug += (userInputInt * foodName_1_sugar_P100G) / oneServingSize;
         totalTolFat += (userInputInt * foodName_1_totalFat_P100G) / oneServingSize
;

         cout << "\nWhat amount of " << foodName_2 << " are you using? \n";
         getline(cin, userInputStr);
         istringstream(userInputStr) >> userInputInt;

         totalCal += (userInputInt * foodName_2_calories_P100G) / oneServingSize;
         totalPro += (userInputInt * foodName_2_protein_P100G) / oneServingSize;
         totalSug += (userInputInt * foodName_2_sugar_P100G) / oneServingSize;
         totalTolFat += (userInputInt * foodName_2_totalFat_P100G) / oneServingSize
;

         cout << "\nWhat amount of " << foodName_3 << " are you using? \n";
         getline(cin, userInputStr);
         istringstream(userInputStr) >> userInputInt;

         totalCal += (userInputInt * foodName_3_calories_P100G) / oneServingSize;
         totalPro += (userInputInt * foodName_3_protein_P100G) / oneServingSize;
         totalSug += (userInputInt * foodName_3_sugar_P100G) / oneServingSize;
         totalTolFat += (userInputInt * foodName_3_totalFat_P100G) / oneServingSize
;

         cout << "\nWhat amount of " << foodName_4 << " are you using? \n";
         getline(cin, userInputStr);
         istringstream(userInputStr) >> userInputInt;

         totalCal += (userInputInt * foodName_4_calories_P100G) / oneServingSize;
         totalPro += (userInputInt * foodName_4_protein_P100G) / oneServingSize;
         totalSug += (userInputInt * foodName_4_sugar_P100G) / oneServingSize;
         totalTolFat += (userInputInt * foodName_4_totalFat_P100G) / oneServingSize
;

      }
```

-3

```
   cout << "--------------Nutrition facts for 1 serving of " << recipeName << "
in grams-------------- \n"
      << "   Calories: " << totalCal << "\n"
      << "   Protein: " << totalPro << "\n"
      << "   Sugar: " << totalSug << "\n"
      << "   Total Fat: " << totalTolFat << "\n";

   return 1;
}



/*---------------------------- Posted Run # 1--------------------------------
----

----- Here is a list of ingredients -----
Ingredient # 1: eggs
Ingredient # 2: cheddar cheese
Ingredient # 3: broccoli
Ingredient # 3: chicken breast

What are you calling this recipe?
Broccoli Cheddar Soup

What is the number of servings?
4

Will you be measuring in grams or by ingredient amount ?
ingredients

What amount of eggs are you using?
0

What amount of cheddar cheese are you using?
4

What amout of broccoli are you using?
4

What amount of chicken breast are you using?
0
--------------Nutrition facts for 1 serving of Broccoli Cheddar Soup in grams---
-----------
Calories: 431
Protein: 28
Sugar: 1
Total Fat: 33
Press any key to continue . . .

------------------------------------------------------------------------------
-*/


/*---------------------------- Posted Run # 2 --------------------------------
-----

----- Here is a list of ingredients -----
Ingredient # 1: eggs
Ingredient # 2: cheddar cheese
Ingredient # 3: broccoli
Ingredient # 3: chicken breast
```

```
What are you calling this recipe?
Cheese Stuffed Chicken

What is the number of servings?
5

Will you be measuring in grams or by ingredient amount ?
grams

How many grams of eggs ?
0

How many grams of cheddar cheese ?
500

How many grams of broccoli ?
0

How many grams of chicken breast ?
500
--------------Nutrition facts for 1 serving of Cheese Stuffed Chicken in grams--
------------
Calories: 513
Protein: 48
Sugar: 1
Total Fat: 34
Press any key to continue . . .

------------------------------------------------------------------------------
-*/


/*----------------------------- Posted Run # 3---------------------------------
----

----- Here is a list of ingredients -----
Ingredient # 1: eggs
Ingredient # 2: cheddar cheese
Ingredient # 3: broccoli
Ingredient # 3: chicken breast

What are you calling this recipe?
Cheese Omelette

What is the number of servings?
8

Will you be measuring in grams or by ingredient amount ?
ingredients

What amount of eggs are you using?
8

What amount of cheddar cheese are you using?
8

What amout of broccoli are you using?
0

What amount of chicken breast are you using?
0
```

```
--------------Nutrition facts for 1 serving of Cheese Omelette in grams---------
-----
Calories: 451
Protein: 36
Sugar: 2
Total Fat: 33
Press any key to continue . . .

------------------------------------------------------------------------------
-*/

/*----------------------------- Posted Run # 3--------------------------------
----

----- Here is a list of ingredients -----
Ingredient # 1: eggs
Ingredient # 2: cheddar cheese
Ingredient # 3: broccoli
Ingredient # 3: chicken breast

What are you calling this recipe?
Chicken with Broccoli

What is the number of servings?
2

Will you be measuring in grams or by ingredient amount ?
Grams

How many grams of eggs ?
0

How many grams of cheddar cheese ?
0

How many grams of broccoli ?
200

How many grams of chicken breast ?
200
--------------Nutrition facts for 1 serving of Chicken with Broccoli in grams---
-----------
Calories: 138
Protein: 26
Sugar: 0
Total Fat: 1
Press any key to continue . . .

------------------------------------------------------------------------------
-*/


/*----------------------------- Posted Run Error Test-------------------------
-----------

----- Here is a list of ingredients -----
Ingredient # 1: eggs
Ingredient # 2: cheddar cheese
Ingredient # 3: broccoli
Ingredient # 3: chicken breast

What are you calling this recipe?
```

```
Cheese Covered Chicked

What is the number of servings?
-1
Error!!! Invalid input!
Press any key to continue . . .


--------------------------------------------------------------------------------
-*/
```

```
// CS 2A Lab 3
// Instructor Solution:
//  Original - Prof. Loceff, Updates, Edits, Annotations: &

// Notes:
//  - Use of sensible names for vars
//  - Use of symbolic consts rather than literals
//  - Use of correct data types (ints and doubles)
//  - Use of getline(cin) rather than cin >>
//  - Correct arithmetic
//  - Faithfulness to spec (reporting per serving, etc.)
//
#include <iostream>
#include <string>
#include <sstream>
using namespace std;

// main client -------------------------------------------------------
int main()
{
    // food #1 constants
    const string FOOD_1_NAME = "avocado";
    const int FOOD_1_CALORIES_P100G = 160;        // in calories
    const double FOOD_1_SOL_FIBER_P100G = 1.75;   // in grams

    // food #2 constants
    const string FOOD_2_NAME = "tomato";
    const int FOOD_2_CALORIES_P100G = 18;        // in calories
    const double FOOD_2_SOL_FIBER_P100G = .12;   // in grams

    // food #3 constants
    const string FOOD_3_NAME = "mozzerella";
    const int FOOD_3_CALORIES_P100G = 282;       // in calories
    const double FOOD_3_SOL_FIBER_P100G = 0.;    // in grams

    // food #4 constants
    const string FOOD_4_NAME = "fresh basil";
    const int FOOD_4_CALORIES_P100G = 23;        // in calories
    const double FOOD_4_SOL_FIBER_P100G = 0.7;   // in grams

    // more ingredients supplied by student

    // limits of acceptable quantities
    const int MIN_GRAMS = 0;
    const int MAX_GRAMS = 1000;
    const int MIN_SERVINGS = 1;
    const int MAX_SERVINGS = 10;

    string recipeName, userInputStr;
    int userInputInt, numServings;
    double totalSolFiber, totalCals;

    // initialize accumulator variables
```

```
totalSolFiber  = 0.;
totalCals = 0;

// print menu
cout << "---------- List of Possible Ingredients ---------" << endl;
cout << "  Food #1: " << FOOD_1_NAME << endl;
cout << "  Food #2: " << FOOD_2_NAME << endl;
cout << "  Food #3: " << FOOD_3_NAME << endl << endl;

// name of recipe
cout << "What are you calling this recipe? ";
getline(cin, recipeName);

// number of servings
cout << "How many people does this recipe serve? ";
getline(cin, userInputStr);
istringstream(userInputStr) >> numServings;
if (numServings < MIN_SERVINGS || numServings > MAX_SERVINGS) {
    cout << "Error:  invalid input" << endl;
    return 1;
}

// food #1 ------------------------------------------------------------
cout << "How many grams of " << FOOD_1_NAME << "? ";
getline(cin, userInputStr);
istringstream(userInputStr) >> userInputInt;
if (userInputInt < MIN_GRAMS || userInputInt > MAX_GRAMS) {
    cout << "Error:  invalid input" << endl;
    return 1;
}

// update accumulators
totalCals += userInputInt * (FOOD_1_CALORIES_P100G/100.);
totalSolFiber  += userInputInt * (FOOD_1_SOL_FIBER_P100G/100.);

// food #2 ------------------------------------------------------------
cout << "How many grams of " << FOOD_2_NAME << "? ";
getline(cin, userInputStr);
istringstream(userInputStr) >> userInputInt;
if (userInputInt < MIN_GRAMS || userInputInt > MAX_GRAMS) {
    cout << "Error:  invalid input" << endl;
    return 1;
}

// update accumulators
totalCals += userInputInt * (FOOD_2_CALORIES_P100G/100.);
totalSolFiber  += userInputInt * (FOOD_2_SOL_FIBER_P100G/100.);

// food #3 ------------------------------------------------------------
cout << "How many grams of " << FOOD_3_NAME << "? ";
getline(cin, userInputStr);
istringstream(userInputStr) >> userInputInt;
if (userInputInt < MIN_GRAMS || userInputInt > MAX_GRAMS) {
```

```
        cout << "Error:  invalid input" << endl;
        return 1;
    }

    // update accumulators
    totalCals += userInputInt * (FOOD_3_CALORIES_P100G/100.);
    totalSolFiber  += userInputInt * (FOOD_3_SOL_FIBER_P100G/100.);

    // food #4 ------------------------------------------------------
    cout << "How many grams of " << FOOD_4_NAME << "? ";
    getline(cin, userInputStr);
    istringstream(userInputStr) >> userInputInt;
    if (userInputInt < MIN_GRAMS || userInputInt > MAX_GRAMS) {
        cout << "Error:  invalid input" << endl;
        return 1;
    }

    // update accumulators
    totalCals += userInputInt * (FOOD_4_CALORIES_P100G/100.);
    totalSolFiber  += userInputInt * (FOOD_4_SOL_FIBER_P100G/100.);

    // report results -----------------------------------------------
    // The following form of chaining output and ending with a semi-colon on
    // its own line is fine with me.
    cout << "\n"
         << "Nutrition per serving for " << recipeName << ":" <<endl
         << "  Calories: " << totalCals/numServings << endl
         << "  Soluble Fiber: " << totalSolFiber/numServings << " grams"
         << endl;

    return 0;
}

/* -------------------------- run ----------------------
 ---------- List of Possible Ingredients ---------
 Food #1: avocado
 Food #2: tomato
 Food #3: mozzerella

 What are you calling this recipe? &'s Awesome Tomozzado
 How many people does this recipe serve? 5
 How many grams of avocado? 300
 How many grams of tomato? 300
 How many grams of mozzerella? 250
 How many grams of fresh basil? 25

 Nutrition per serving for &'s Awesome Tomozzado:
 Calories: 248.95
 Soluble Fiber: 1.157 grams
 Program ended with exit code: 0

 ...  more runs supplied by student
 ------------------------------------------------------------- */
```