CMPSC125 in-class Lab Assignbment 1

Due date: Jan. 23, 2:50pm

Total Points: 15 points

**Problem 1** [5 points] - Output format – file name: **“lab1\_yourfirstname\_grossAmount.cpp”**

Write a program that calculates and prints monthly paycheck for an employee. The net pay is calculated after taking the following deductions:

Federal Income Tax: 20%  
State Tax:   4%  
Social Security Tax:  3.5%  
Medicare/Medicaid Tax:  2.75%  
Pension Plan:  6%  
Health Insurance:  $80.0

Your program should prompt the user to input the gross amount. Format your output to have two decimal places. A sample output follows:

**Gross amount:** *3587.00*

|  |  |  |
| --- | --- | --- |
| **Gross amount:** | **$** | **3587.00** |
| **Federal Tax:** | **$** | **717.40** |
| **State Tax:** | **$** | **143.48** |
| **Social Security Tax:** | **$** | **125.55** |
| **Medicare/Medicaid Tax:** | **$** | **98.64** |
| **Pension Plan:** | **$** | **215.22** |
| **Health Insurance:** | **$** | **80.00** |
| **Net Pay:** | **$** | **2206.71** |

Note:

Net pay = gross amount - (federal tax + state tax + social security tax + Medicare/Medicaid Tax + Pension Plan + Health Insurance)

Hints: You should be able to complete the program with the hints below.

#include <iostream>  
#include <iomanip>  
using namespace std;  
//Declare all constant variables

//Your code

int main()  
{

//Declare variables  
 //your code

// Calculate gross amount, federate tax, sale tax, social security, medicare/medicaid tax, pension plan,

// health insurance and net pay your coding

//Display output

cout<< left <<  setw(26) << "Gross Amount: " << right << " $"  << setw(7) << grossAmount << endl;

// Your code

 return 0;  
}

**Problem 2** [5 points]: file name is **“lab1\_yourfirstname\_convertCentimeter.cpp”**

Write a program that takes length as input in feet and inches. The program should then convert the lengths in centimeters and display it on screen. Use the following named constants.

const double CENTIMETERS\_PER\_INCH = 2.54; *//Named constants*

const int INCHES\_PER\_FOOT = 12; *//Named constants*

**Problem 3** [5 points]: file name is **“lab1\_yourfirstname\_travelTime.cpp”**

Write a program that takes speed and distance as input and then computes and output travel time for given values. For example, if the user enters data of 50 mph and 475 miles and requests output in hours and minutes, the following table shows the computed values.



Here is the actual program output for this case:

Enter your speed in mph: 50

Enter your distance in miles: 475

Tt will take 9 hours and 30 minutes to travel 475 miles.

**What to submit?**

* The assignment will be graded using [this grading rubric](http://digital.cs.usu.edu/~cdyreson/teaching/cpp/091/a2grading.htm) below.
* Submit C++ code to the Blackboard

**Grading Rublic for each problem**

* Turnin - 1 point

Yes/No - Did you turnin three files called by specified names?

* Style – 1 point
* Yes/No - Are good variable names used?
* Yes/No - Is the code easy to read and properly indented?
* Yes/No - Is there top comment describing the program?
* Yes/No – Did you follow the naming convention rules?
* Correctness - 2 points

Yes/Partial/No - are the formula correctly computed?

* Output - 1 points

Yes/No – is the outputs correct?