CMPS 150 – Fall 2005

Programming Assignment #2

2005.09.12

Date Assigned: **Monday, September 12, 2005**
Due Date: **10:00 PM, Saturday, September 17, 2005**

The coded solution to the following problem is to be done by you and only you. You may ask for help from the class teaching assistants and the instructors, but you may not ask for C++ help from anyone else. You may use your notes, C++ texts, online tutorials, etc., but the code must be your own.

If you have a problem with your class account, compiling or debugging your code, or if you are not certain if you have submitted correctly, come see a TA or instructor as soon as possible.

1) Include the following information as comments in the header of your source code:

```
Author:          Your-Name
CLID:            Your-login-ID
Class:           CMPS 150 Section Your-Section-Number
Assignment:      pa2
Date Assigned:   Monday, September 12, 2005
Due Date:        10:00 PM, Saturday, September 17, 2005
Description:     A brief description of the purpose of the program.
I certify that this assignment is entirely my own work.
```

2) Enter the C++ code for the following description (in your class folder) into a file named pa2.cc

3) Problem Description:

This program will use the features of C++ that we have learned thus far in CMPS150: variables, named constants, arithmetic expressions, cin, cout, and formatting specifications.

You have been asked to write a program to calculate and print a telephone bill. The total telephone bill is the sum of the base fee (plus tax) and the usage fee (based on minutes used). The tax for the base fee on a telephone bills is 6.5%, and the usage fee (per minute) is $0.005. You are to ask the user for three (3) items. The input items and their associated data types are: customer name (data type **`string`**), base fee (data type **`double`**), and number of minutes used (data type **`int`**).

You MUST use named constants for the tax rate and the per minute usage fee.

USEFUL Requirement: Assume the customer name contains NO spaces.

Since the results displayed are monetary values, your output should be displayed with two decimal places of precision. Be sure decimals "line up" when you output the information. See the sample run.

Again, you MUST name your source file 'pa2.cc' and you MUST store it in your class directory (cs150*x*).

4) Sample Output: Your output should look similar to the following:

```
Enter customer name: Nona
Enter your base fee: 45
Enter the minutes used: 2938
-----------------------------------------------------
Customer Name: Nona
-----------------------------------------------------
Minutes Used:              2938

Usage Charge:             14.69
Base Fee:                 45.00
Base Fee Tax:              2.93
                         -------
Total Bill:          $    62.61
```

5) Additional Requirements:

- Use comments as appropriate. Refer to the "Programming Style Sheet" on the CMPS 150 web site.
- Your program must use good names for all variables and named constants. (Good names are names that are descriptive of the values stored or the function performed.)
- Adhere to style requirements. See "Programming Style Sheet" on the CMPS 150 web site.

6) Name your source file 'pa2.cc' and store it in your class directory (cs150*x*).

7) Compile your program and test it (see Some Unix Help for quick assistance).

To compile:

```
g++  -o  pa2run  pa2.cc
```

To run (execute):

```
pa2run
```

8) After it is debugged and running correctly, submit pa2.cc (the source file only) electronically by 10:00 PM, Saturday, September 17, 2005 to receive full credit.

```
submit -d  pa2.cc
```

You will be asked to enter the CLID for the grader/TA of your section. This is one of the following:

Section	TA	CLID of TA
Section 3	Gesan	gxw2096
Section 4	Anca	axd9917
Section 5	Mitun	mxb2169
Section 6	Jason	jmb8240

You will be asked to enter the assignment you are submitting. The assignment name is:

```
assn2
```

REMINDER: You may submit up to 24 hours late for 75% credit, or up to 48 hours late for 50% credit.

IMPORTANT NOTE:

Files submitted that do not compile will receive a grade of zero !!!