CSCI-201– Winter 2010 – PROGRAMMING ASSIGNMENT 1

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This assignment is due on **Monday, February 01, 2010**. The assignment is worth 10 points.

Problem. Write a C++ program that prompts the user for a 5-digit integer, reads this number, and prints it out in **expanded form.** Here are some examples:

```
    Input:                    Output:

    91234        --->         9x10000 + 1x1000 + 2x100 + 3x10 + 4x1
    50308        --->         5x10000 + 0x1000 + 3x100 + 0x10 + 8x1
    10000        --->         1x10000 + 0x1000 + 0x100 + 0x10 + 0x1
```

Before you write any C++ code, think through the problem first. Solve several yourself by paper-and-pencil. How do you compute the numbers to print out? printed? Design your **algorithm first.** Then code. You should find that the modulo operator % and integer division / are useful.

Your program may assume that the input is always a 5-digit number. Your program does not have to validate the input in any way. When you run your program, restrict yourself to entering 5-digit numbers only.

Once your program compiles, run it with 5-10 different inputs (e.g., see the ones above plus some extras). The more test cases your program can pass the more likely is it that it is really working as intended.

Submit via Blackboard. When you are convinced that your program is correct, prepare it for electronic submission via Blackboard. Make a copy of your program and call it the following name:

```
    <firstinitial>_<lastname>_hw1.cpp     (all lower-case letters)


    Example: k_voigt_hw1.cpp
```

Log on to `http://blackboard.csusb.edu`, move to your CSCI-201 course site, and access and use the `Digital Dropbox` tool. If you experience problems with `Dropbox`, email your program as an attachment to `kvoigt@csusb.edu`. **Dropbox**, however, is the much preferred mode of homework submission!

Help, my program is not working. It is important that you submit your homework assignments by the due date. If you have not managed to produce a working program, that is, your program either does not compile, or it compiles but does not run correctly, **submit the program anyway in its current form.** Your will receive partial credit.