CIS 130 - Intro to Programming - Spring 2007
Homework Assignment #2 - **INDIVIDUAL** assignment

Homework #2 DUE**: BEGINNING** of class, Wednesday, February 7, 2007

Purpose: get some practice with the design recipe for designing arithmetic functions

How to turn in: use the tool **~st10/130submit** on cs-server to turn in the files **hw2.py** and **hw2.txt** that you create below.

1. Create a file **hw2.py**. Within it, type in **design recipes** and **function definitions** for each of the following (as specified in problems #2 through #5, 7 functions in all).

Use **named constants** as appropriate; place their definitions between the contract/purpose-statement/examples comment and the function definition for the FIRST function in which they are used. (That is, if a named constant is used in more than one function, only define that named constant ONCE! 8-) It can then be used in as many other functions after that as want to.)

Once you have debugged and tested your functions and are satisfied with them, "officially" demonstrate each function by either typing in tests based on your examples within your **hw2.py** file (like in the Week 3 Lecture example) **OR** by hand-typing your example calls within the **python** interpreter. Paste the displayed test-run results from the **python** interpreter into a file **hw2.txt** for submission as proof of testing. Be sure to ask me if you are not sure what I mean by this.

2. Remember what you did for the **Week 3 Lab Exercise**?

Now complete **2a**, **2b, 2c**, and **2d** from that Week 3 Lab Exercise. Include the complete design recipe and function definition for each within **hw2.py**.

Be sure to test these four functions -- when you run the examples, do you get what your examples sections predict?

3. (Adapted from a problem by Stephen Bloch, Adelph University) Develop the function **total_inches**. This function expects as parameters a length represented by two numbers: the first is a number of feet, and the second a number of inches. The function returns the total length in inches.

4. (Adapted from a problem by Karen O'Loughlin, Ankeny High School) Develop the function **semester_grade**. A semester grade is computed from a cumulative homework score, a cumulative quizzes score, and a final exam score, weighted as follows: 50% homework, 30% quizzes, and 20% final exam. This function should compute and return the semester grade.

5. (Adapted from www.htdp.org) Develop a function that, when given the length and width of a rectangular floor and the edge length of a square tile, will compute the whole number of tiles needed to cover the floor completely.

When you are happy with your files **hw2.py** and **hw2.txt**, type the following command at the cs-server prompt:

~st10/130submit

Then follow its directions to submit your files .