CIS 41A - Lab 4: Functions

This lab is a variation of Textbook P5.11 and P5.13.

Download the file lab4.py, which is the program intName.py from the book. The intName.py program reads in a positive integer and prints out the English name for the number. For example, if the input integer is 355, then the program prints "three hundred fifty five".

Follow these steps to complete the lab assignment:

1. Read and run lab4.py so you understand what it does. A good programmer can read code as well as write code.   
   The program has 4 functions and a main function.
2. Note that the output text string has a space in front, for example, " twenty". Modify the code so that there's no space when the text string is printed. Your code change for this step should *not* be in the main function.
3. To use proper English, any value between 20 and 100 that has a non-zero last digit should have a hyphen between the 2 words, for example, "thirty-one" or "sixty-seven". Modify the code (*not* in main) so that the hyphen is printed for these cases.
4. Find the right location to add code so that the input integer can be as large as 999,999. Don't forget requirement 3 as you expand to the thousands digits.
5. Add code to the main function so that it keeps prompting the user for a positive integer between 0 and 1,000,000 and printing the output text string. If the user enters an invalid value, print an error message and re-prompt. The program ends when the user enters 0.

Test your program with all of the following output or their equivalent values.

Sample program output (user input in blue):

Please enter a positive integer < 1,000,000 (or 0 to end): -3

input must be between 0 and 1,000,000

Please enter a positive integer < 1,000,000 (or 0 to end): 1000

one thousand

Please enter a positive integer < 1,000,000 (or 0 to end): 987654

nine hundred eighty-seven thousand six hundred fifty-four

Please enter a positive integer < 1,000,000 (or 0 to end): 300003

three hundred thousand three

Please enter a positive integer < 1,000,000 (or 0 to end): 300300

three hundred thousand three hundred

Please enter a positive integer < 1,000,000 (or 0 to end): 300333

three hundred thousand three hundred thirty-three

Please enter a positive integer < 1,000,000 (or 0 to end): 333444

three hundred thirty-three thousand four hundred forty-four

Please enter a positive integer < 1,000,000 (or 0 to end): 333404

three hundred thirty-three thousand four hundred four

Please enter a positive integer < 1,000,000 (or 0 to end): 12

twelve

Please enter a positive integer < 1,000,000 (or 0 to end): 10001

ten thousand one

Please enter a positive integer < 1,000,000 (or 0 to end): 2000000

input must be between 0 and 1,000,000

Please enter a positive integer < 1,000,000 (or 0 to end): 0

Just for fun, here's a website that does the same task as your program, but it doesn't work with numbers as large as your program: <http://researchmaniacs.com/Numbers/Spell/How-to-spell-the-number-1.html>  
And, if you've ever received a check that's computer generated, the code to print the amount of money is the code that you're writing.