UNC Charlotte, Department of Electrical and Computer Engineering
ECGR 4101/5101, Spring 2012, Homework #3
(20 points)

Assignment should be submitted to Moodle.

1. Write the complete pseudocode for a function to describe how to toggle the case all of the vowels (not including y) in a string S and convert spaces to the dash character (-). Do not use any function calls. (4 points)

2. Write a C function to implement the pseudocode of the previous question. (6 points)
   Assume the *address* of the global variable
   ```
   char S[80]; /* the string */
   ```
   is passed into the function, i.e. the call would be
   ```
   ChangeChar(&S);
   ```

3. A) What is the number of address bits needed to address any byte in a memory that contains 1048576 bytes? (1 point)
   B) Assume the memory from part A is actually a microcontroller's memory space. 4K is allocated at the top (starting at address 0) for the special function registers, followed by 8K of RAM, followed by 4K of EEPROM; 64K of flash is located all the way at the end of the memory space. (4 point)
4. Book problem 3.5 (1 point)
5. Book problem 3.9 (4 points)