7. PROGRAMMING ASSIGNMENT 7:
Read: Chapter 9, pg 264–272 (Skip pg218-226)
Programming: Name your program p7.c
DUE: THURSDAY, November 30, 2017 @ 6:00am

START EARLY!!!
This program will use character strings, functions, and pointer notation to manipulate input strings to print in reverse and translate the original strings from "SMS" (SMS - Short Message Service or txt) to English. Do NOT use global variables in CSE 5a. Include <string.h> and <stdlib.h> for strlen().
Remember, function headers are required. Please refer to the last page of the Lab Guide for guidance: http://ieng6.ucsd.edu/~cs5fzz/lab/guide.pdf

A definition for “txt”, used in text messaging is:
From Wikipedia, the free encyclopedia https://en.wikipedia.org/wiki/SMS_language

SMS language (Short Message Service) or textese (also known as txt-speak, txtese, chatspeak, txt, txtspk, txtk, txtto, texting language, txt lingo, SMSish, txt slang, txt talk, or l33tsp34k) is a term for the abbreviations and slang commonly used with mobile phone text messaging, but sometimes used with other Internet-based communication such as email and instant messaging.

NOTE: NO error checking of input data is required with corresponding error messages because data is type "String". In production programming, ALL software is error checked.

```c
#include <stdio.h> // strlen() returns size_t: unsigned int
define MAX_SENTENCE_61

int main(void)
{
    char choice;
    char inputS[MAX_SENTENCE]; // Input sentence includes newline
    char s[MAX_SENTENCE]; // Input sentence trimmed

do
{
    printf ("Enter Text sentence(s): ");
    fgets(inputS, MAX_SENTENCE, stdin); // Reads in newline char
    strcpy(s, inputS);
    s[strlen(s)-1] = '\0'; // Trim trailing newline

    printf("Reversed uppercase: ");
    prtRev(s);

    printf("Converted to English: ");
    txtToEng(s); // Displays in English sentence

    printf ("Want more Texting? ");
    choice = getchar(); // Assign to character
    getchar(); // Read <ENTER> key
}while(/* Exit on n or N */);
return 0;
```

a) ALL methods are public with a short header comment for describing purpose.

b) In main(), read in the input and assign to a local string, inputS, as given below. Copy into string “s” and trim trailing newline character. Call txtToEng(s) and prtRev(s); Repeat program until a word starting with ‘n’ or ‘N’ is entered.
c) In `txtToEng()` initialize 7 local strings.

```c
void txtToEng(char *p)
{
    char sms1[]= {"B4N"};     // Bye For Now
    char sms2[]= {"BAK"};     // Back at keyboard
    char sms3[]= {"BTW"};     // By The Way
    char sms4[]= {"PLZ"};     // Please
    char sms5[]= {"THX"};     // Thanks
    char sms6[]= {"WYA"};     // Where Are You At
    char sms7[]= {"WTD"};     // What Are You Doing

    // Traverse array with loop
    if( isspace( *(p+3) ) || ispunct(*(p+3)) ) // is punctuation
    {
        if( ! strncmp(p, sms1, 3) )
        {
            // Print the 3 letter sequence “B4N” to “Bye For Now”.
           ...
        }
    }
}
```

Helpful functions `<string.h>`: `strncpy(s1, s2, n)`

`<ctype.h>`: `isspace(char ch), ispunct(char ch), tolower(char ch)`

**Note:** Punctuation to terminate a txt only includes the exclamation mark (bang) and space.

**HINT:** Solve this problem in small steps. Compile and test gradually. Here’s a suggestion.

1) In `main()`, write the code for steps a and b) above. Test.
2) Write code for step c).
   - Loop through input string
     - Test if 3rd character is a punctuation mark
     - If so, test if 1st 3 characters match the given txt
     - Then print the translated words, increment pointer to next word
   - Else print the current character

**PA#7 SAMPLE OUTPUT:**

```
Enter Txt sentence(s): HI JON, BAK.
Reversed lowercase: .kab ,noj ih
Converted to English: HI JON, Back At Keyboard.
Want more Txting? a

Enter Txt sentence(s): Vincent WYA?
Reversed lowercase: ?ayw tnecniv
Converted to English: Vincent Where Are You At??
Want more Txting? B

Enter Txt sentence(s): Sanyri PLZ help THX caitlyn
Reversed lowercase: nyltiac xht pleh zlp irynas
Converted to English: Sanyri Please help Thanks caitlyn
Want more Txting? c

Enter Txt sentence(s): BFF Yibei B4N*
Reversed lowercase: *n4b iebiy ffb
Converted to English: BFF Yibei Bye For Now*
Want more Txting? d

Enter Txt sentence(s): WYD Jiewen BYE!
Reversed lowercase: !eyb neweij dyw
Converted to English: What Are You Doing? Jiewen BYE!
Want more Txting? n
```

**PA#7 SAMPLE INPUT** (typed in **bold** above)

Verify you SAVED your work in the **Documents - cs5f HOME directory**