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,texto,texting_language,textingo,SMSish,txtslang,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.

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.

```
#include <stdlib.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 ("\nEnter Txt sentence(s): ");
    fgets(inputS, MAX_SENTENCE, stdin); // Reads in newline char
    strcpy(s, inputS);
    s[strlen(s)-1] = ' \0'; // Trim trailing newline

    printf("\nReversed lowercase: ");
    prtRev(s);

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

    printf ("\nWant moreTxting? ");
    choice = getchar(); // Assign to character
    getchar(); // Read <ENTER> key
} while(/* Exit on n or N */);
return 0;
```
c) In `txtToEng()` initialize 7 local strings.

```c
void txtToEng(char *p)
{
    char smsl[] = {"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>: `strn cmp(s1, s2, n)`

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

**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:**

<table>
<thead>
<tr>
<th>Enter Txt sentence(s):</th>
<th>HI JON, BAK.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reversed lowercase:</td>
<td>.kab ,noj ih</td>
</tr>
<tr>
<td>Converted to English:</td>
<td>HI JON, Back At Keyboard.</td>
</tr>
<tr>
<td>Want more Txting?</td>
<td>a</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Enter Txt sentence(s):</th>
<th>Vincent WYA?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reversed lowercase:</td>
<td>?ayw tnecniv</td>
</tr>
<tr>
<td>Converted to English:</td>
<td>Vincent Where Are You At?</td>
</tr>
<tr>
<td>Want more Txting?</td>
<td>B</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Enter Txt sentence(s):</th>
<th>Sanyri PLZ help THX caitlyn</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reversed lowercase:</td>
<td>nyltiac xht pleh zlp ilynay</td>
</tr>
<tr>
<td>Converted to English:</td>
<td>Sanyri Please help Thanks caitlyn</td>
</tr>
<tr>
<td>Want more Txting?</td>
<td>c</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Enter Tx sentence(s):</th>
<th>BFF Yibei B4N*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reversed lowercase:</td>
<td>*n4b iebiy ffb</td>
</tr>
<tr>
<td>Converted to English:</td>
<td>BFF Yibei Bye For Now*</td>
</tr>
<tr>
<td>Want more Ttxting?</td>
<td>d</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Enter Tx sentence(s):</th>
<th>WYD Jiewen BYE!</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reversed lowercase:</td>
<td>!eyb newei dyw</td>
</tr>
<tr>
<td>Converted to English:</td>
<td>What Are You Doing Jiewen BYE!</td>
</tr>
<tr>
<td>Want more Ttxting?</td>
<td>n</td>
</tr>
</tbody>
</table>

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

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