ASSIGNMENT 6: STRINGS

1. Write a program to demonstrate use of string library functions.
    a. strlen()
    b. strcpy()
    c. strcat()
    d. strcmp()
    e. strchr()
    f. strstr()
    g. strncpy()
    h. strncat()
    i. strncmp()
    j. strtok()
    k. sprintf()
2. Write a program to simulate the following library function.
    a. size_t strlen(const char* str);
    b. char* strcpy(char *dest, const char *src);
    c. char* strncpy(char *dest, const char *src);
    d. char* strcat(char *dest, const char *src);
    e. char* strncat(char *dest, const char *src);
    f. int strcmp(const char *str1, const char *str2);
    g. char* strchr(const char *str, int ch);
    h. char* strstr(const char *str, const char *substr);
3. Write a function to check whether given string is palindrome or not.
4. Write a function to check whether given string is palindrome or not (ignore whitespaces).
5. Write a function to return all occurrences of find string in source string.

    Input:
    Source: How much wood would a woodchuck chuck
    Find: wo
    Output:
    "wo" occurs in "How much wood would a woodchuck chuck" 3 times.
6. Modify above code to ignore case.
7. Modify above code to find occurrences of words.
8. Write a function to converts a string of digits into its numeric equivalent i.e. simulate atoi() library function.
    int atoi(const char* string);
9. Write a function, which accepts a number, base and character pointer and converts number to a string.
    char* itoa(int value, char *string, int base);
10. Write a function to remove all occurrences of given character from the string.
11. Write a function to remove all occurrences of any character in string1 from the string2.
12. Write a function to convert a number to its roman equivalent. Write another function to convert a roman number to decimal equivalent.
13. Write a function to print a given number in words.
14. Write a function to display no of words and lines in given string.

15. Write a function to find and replace a string using library functions [strstr(), strncpy(), strlen(), strcat(), strcpy(), etc.].

```
Input :
        Source : This is test time
        Find   : is
        Replace: was
Output:
        Thwas was test time
```

16. Write a function to find and replace a string without using library functions.
17. Write a function to display histogram of all character values in given string (ignore case and whitespaces).

```
Input:
        How much wood would a woodchuck chuck
Output:
        Character Occurrences
                a       1       *
                c       5       *****
                d       3       ***
                h       4       ****
                k       2       **
                l       1       *
                m       1       *
                o       6       ******
                u       4       ****
                w       4       ****
```

    Try inputs as given in tong twisters given at the end of this document.
18. Write a function to display histogram of words.
19. Input desired delay and crystal frequency and display 8051 assembly code to generate the delay.
20. Write versions of all codes to accept input as command line arguments.
21. Read TEXT functions from EXCEL help document. Try to implement the functions in C language. At least implement TRIM function.

ASSIGNMENT 6 STRINGS ☺

- Write a function to display Occurrences of all words along with line numbers (ignore case).

Tong Twisters

How much wood would a woodchuck chuck
if a woodchuck could chuck wood?
He would chuck, he would, as much as he could,
and chuck as much wood as a woodchuck would
if a woodchuck could chuck wood.

Betty Botter bought some butter,
But, she said, the butter's bitter;
If I put it in my batter
It will make my batter bitter.
But, a bit of better butter
Will make my batter better.
So, she bought a bit of butter
Better than her bitter butter;
And she put it in her batter
And the batter was not bitter.
So, twas better Betty Botter
Bought a bit of better butter

Swan swam over the sea,
Swim, swan, swim!
Swan swam back again
Well swum, swan!