

LAB 08:**Strings****1. Scope of Knowledge:**

- Learn the concept of strings, the relationship between strings and character arrays
- String input/output operations
- String manipulation functions: strcat(), strcmp(), strchr()...

2. Marterials/Softwares/Tools:

- Visual Studio Code
- Draw IO (online) or Microsoft Word

3. Coding Convention:

- All identifiers must be in English and lower case
- Follow the valid identifers naming rules in C
- Tab is 4 characters
- Curly braces must be aligned
- Statements in curly brackets must be indented by 1 tab

4. Exercise:**Exercise 1:**

Enter a string and a character from the keyboard. Print to the screen the number of occurrences of that character in the string.

Exercise 2:

Write a program to input a string from the key to normalize the string according to the following requirements:

- Convert the first character to uppercase (if it is already in lowercase)
- Each word in the input string must be separated by only 1 space (leave only 1 space between two words)

- There are no spaces at the beginning and end of the string

Exercise 3:

Write a program to input a string of up to 80 characters. Statistics the sentence according to the following information:

- Number of characters in a sentence
- The number of vowel characters and the percentage of vowel characters in the sentence (calculated by %)
- Number of words in a sentence (each word is separated by 01 or more whitespace characters)
- Conduct string normalization (like exercise 2)

Exercise 4:

Write a program to input a string and check if the string is a Palindrome string or not. (Palindrome is a symmetric string meaning writing from left to right or from right to left does not change. eg: "Step on no pets", "ABBA", "Was it a rat I saw?")

Exercise 5:

Write a program in C to compare two strings without using string library functions (strcmp() function).

Exercise 6:

Write a program in C to count total number of alphabets, digits and special characters in a string.

Exercise 7*:

Write a program in C to check an email string is valid or not. The email must be entered from the console screen.

Hint: A valid email address must have the character "@" and "." (dot), the place of "@" before dot and no spaces.