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Assignment - XIII

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Assignment VIII: String

Let see about string. String is an array of character. Do you know where it is used in our real time? Which is name(char, flowers,..),id(voter id, aadhar card id etc), communication, website, everywhere in this world.

Let see how to use string and how it will be stored? Consider we are creating a array of character type which is having 30 bytes of memory.

Char name[30];

In memory name variable will allocate 30 bytes. In each byte each character has to stored till the 29th byte. In memory data won't be write as in the form of data type. Instead of that storing in the declared format it is stored in hexadecimal format. You may thought every machine reads only the binary value, but i am telling it should be in hexadecimal value. Because the hexadecimal is nothing but a higher byte of binary(binary= hexadecimal). Refer below diagram.

Now consider,

Char name[30]='rabbit';

(refer fig 1). For that each data respected hexadecimal value should be(refer fig 2).

Memory:

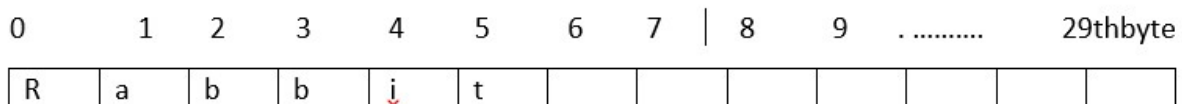


Fig 1(From this string, each data should be write in the memory)

Memory:

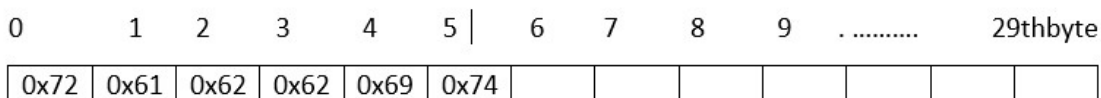


Fig 2 (For that each data respected hexadecimal value should be)

Now we takes same example,

Char name[30]='rabbit';



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In order to variable name is allocated the 30 bytes in the memory, within this allocated memory datas(rabbit) should be write hexadecimal values for respected data's. Finally generate a NULL char due to the single cotation(').

Let you find the difference between the below examples,

- a. `char name[30]="rabbit";`
- b. `char n[0]='x';`
`n[1]='a';`

The 1st example is a string type character, so the null character should terminated in that array. The 2nd example is a character array. Okay, have you though why NULL character is required? If you are going to write the string (`printf("%s",name[30]);`),it reads all the datas till reachNULL.

Make a program using multiple file and run.

<code>strcpy</code>	Copies a string into another
<code>strncpy</code>	Copies first n characters of one string into another
<code>strcmp</code>	Compares two strings
<code>strncmp</code>	Compares first n characters of two strings
<code>strcmpi</code>	Compares two strings without regard to case ("i" denotes that this function ignores case)
<code>stricmp</code>	Compares two strings without regard to case (identical to <code>strcmpi</code>)
<code>strnicmp</code>	Compares first n characters of two strings without regard to case
<code>strdup</code>	Duplicates a string
<code>strchr</code>	Finds first occurrence of a given character in a string
<code>strrchr</code>	Finds last occurrence of a given character in a string
<code>strstr</code>	Finds first occurrence of a given string in another string
<code>strset</code>	Sets all characters of string to a given character
<code>strnset</code>	Sets first n characters of a string to a given character
<code>strrev</code>	Reverses string

1. Copy two string using pointers (don't use string copy function).
2. Program to convert string from upper case to lower case.
3. Program to convert string from lower case to upper case.
4. Find the length of string without using `strlen()`.
5. Program to check endianness of the computer.(program to find if machine is little endian or big endian?
6. Write a c-program to input 2 binary strings and print their binary sum.



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7. Write c program to swap two strings.
8. Enter your name, address, mobile number and about your feeling through keyboard and print them.
9. Write a c program to implement library function of

isalnum() – check for an alphanumeric character.

Isalpha() – checks for an alphabet is character.

Isascii() – checks whether c is a 7-bit unsigned char value that fits into the ASCII character set.

Isblank() – checks for a blank character, that is a space or a tab.