

LAB7 : Characters and Strings

Task1: Write a C Program to Copy One String into Other Without Using Library Function. (use pointer)

```
#include "stdafx.h"
void main()
{
    char s1[50], s2[50];
    int i = 0;
    printf("enter e string:");
    gets(s1);
    while (*(s1 + i) != '\0') // or s[i] != '\0'
    {
        *(s2 + i) = *(s1 + i);
        i++;
    }
    *(s2 + i) = '\0';
    printf("copied string is %s \n", s2);
}
```

Task2: Write a C Program Copy One String Into Other Using Library Function (strcpy())

```
#include "stdafx.h"
void main()
{
    char s1[50], s2[50];
    int i = 0;
    printf("enter e string:");
    gets(s1);
    strcpy(s2, s1);
    puts(s2); //OR printf("copied string is %s \n", s2);
}
```

Task3:Write a C Program to Reverse Letter in Each Word of the Entered String

(In this program we are going to accept a string . This program will check for word inside string and if word founds then program will reverse that word. Similarly it will reverse out all all the words. **Store Character into** Another String Variable. **As soon as** Space character encounters then reverse the string (strrev())and print **the String.**)

String is: **Welcome to Programming World**

Reverse: **emocleW ot gnimmargorP dlroW**

```
#include "stdafx.h"
void main()
{
    char msg[] = "Welcome to programming world";
    char str[15];
    int i = 0, j = 0;
    while (msg[i] != '\0')
    {
        if (msg[i] != ' ')
        {
            str[j] = msg[i];
            j++;
        }
        else
        {
            str[j] = '\0';
            printf("%s", strrev(str));
            printf(" ");
            j = 0;
        }
        i++;
    }
    str[j] = '\0';
    printf("%s", strrev(str));
    printf("\n\n");
}
```

Task4: Write a C Program to Concat Two Strings without Using Library Function (In this C Program we have to accept two strings from user using gets and we have to concatenate these two strings without using library functions.)

<pre>#include "stdafx.h" void main() { char s1[50], s2[50]; int i, j = 0; printf("enter s1: "); gets(s1); printf("enter s2: "); gets(s2); i = strlen(s2); while (*(s1 + j) != '\0') { *(s2 + i) = *(s1 + j); i++; j++; } *(s2 + i) = '\0'; printf("S2 is: %s\n", s2); }</pre>	<pre>#include "stdafx.h" void concat(char *p1, char *p2, int i) { int j = 0; while (*(p2 + j) != '\0') { *(p1 + i) = *(p2 + j); i++; j++; } *(p1 + i) = '\0'; } void main() { char s1[50], s2[30]; int i; printf("\nEnter String 1 :"); gets(s1); printf("\nEnter String 2 :"); gets(s2); i = strlen(s1); concat(s1, s2, i); printf("s1: %s", s1); }</pre>
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Task5: Write a C Program to Concat Two Strings with Using Library Function (strcat())

<pre>#include "stdafx.h" void main() { char s1[50], s2[50]; int i, j = 0; printf("enter s1: "); gets(s1); printf("enter s2: "); gets(s2); strcat(s2, s1); printf("S2 is: %s\n", s2); }</pre>	<pre>#include "stdafx.h" void main() { char str1[100]; char str2[100]; char str3[100]; int len; printf("\nEnter the String 1 : "); gets(str1); printf("\nEnter the String 2 : "); gets(str2); strcpy(str3, str1); strcat(str3, str2); printf("\nConcat String : %s", str3); }</pre>
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Task6: Write a program that inputs a line of text into char array s[100]. Output the line in uppercase letters and in lowercase letters.

```
#include "stdafx.h"
void main()
{
    char s[100];
    int i;

    printf("Enter a line of text:\n");
    gets(s);
    printf("\nThe line in uppercase is:");

    for (i = 0; s[i] != '\0'; i++) {
        printf("%c", toupper(s[i]));
    }

    printf("\n\nThe line in lowercase is:");

    for (i = 0; s[i] != '\0'; i++) {
        printf("%c", tolower(s[i]));
    }
    printf("\n\n");
}
```

Extra Questions

Question1 (Random Sentences) Write a program that uses random number generation to create sentences.

- The program should use four arrays of pointers to char called article, noun, verb and preposition.
- The program should create a sentence by selecting a word at random from each array in the following order: article, noun, verb, preposition, article and noun.
- As each word is picked, it should be concatenated to the previous words in an array large enough to hold the entire sentence.
- The words should be separated by spaces.
- When the final sentence is output, it should start with a capital letter and end with a period. The program should generate 5 such sentences.
- The arrays should be filled as follows:
 - The article array should contain the articles "the", "a", "one", "some" and "any";
 - the noun array should contain the nouns "boy", "girl", "dog", "town" and "car";
 - the verb array should contain the verbs "drove", "jumped", "ran", "walked" and "skipped";
 - the preposition array should contain the prepositions "to", "from", "over", "under" and "on".

```
#include "stdafx.h"

void main()
{
    char *article[] = { "the", "a", "one", "some", "any" };
    char *noun[] = { "boy", "girl", "dog", "town", "car" };
    char *verb[] = { "drove", "jumped", "ran", "walked", "skipped" };
    char *preposition[] = { "to", "from", "over", "under", "on" };
}
```

```

char sentence[ 100 ] = "";
int i;

srand(time(NULL));
/* create 5 sentences */
for ( i = 1; i <= 5; i++ ) {

    /* randomly choose pieces of sentence */
    strcat( sentence, article[ rand() % 5 ] );
    strcat( sentence, " " );

    strcat( sentence, noun[ rand() % 5 ] );
    strcat( sentence, " " );

    strcat( sentence, verb[ rand() % 5 ] );
    strcat( sentence, " " );

    strcat( sentence, preposition[ rand() % 5 ] );
    strcat( sentence, " " );

    strcat( sentence, article[ rand() % 5 ] );
    strcat( sentence, " " );

    strcat( sentence, noun[ rand() % 5 ] );

    /* capitalize first letter and print sentence */
    putchar( toupper( sentence[ 0 ] ) );
    printf( "%s.\n", &sentence[ 1 ] );
    sentence[ 0 ] = '\0';
}
}

```

Question2 (Strings Starting with "b") Write a program that reads a series of strings and prints only those beginning with the letter "b".

```

#include "stdafx.h"
void main()
{

    int i; /* loop counter */
    char array[5][20]; /* 5 strings from user */
    /* read 5 strings from user */
    for (i = 0; i <= 4; i++) {
        printf("Enter a string: ");
        gets( array[i]);
    }

    printf("\nThe strings starting with 'b' are:\n");

    /* loop through strings */
    for (i = 0; i <= 4; i++) {
        /* print if first character is 'b' */
        if (array[i][0] == 'b') {
            printf("%s\n", &array[i]);
        }
    }
}

```

Question3 (Strings Ending with "ed") Write a program that reads a series of strings and prints only those that end with the letters "ed".

```
#include "stdafx.h"
void main()
{
    int i;                /* loop counter */
    int length;           /* length of current string */
    char array[5][20]; /* 5 strings from user */

                                /* read in 5 strings from user */
    for (i = 0; i <= 4; i++) {
        printf("Enter a string: ");
        gets(array[i]);
    }

    printf("\nThe strings ending with \"ED\" are:\n");

    /* loop through 5 strings */
    for (i = 0; i <= 4; i++) {

        /* find length of current string */
        length = strlen(array[i]);

        /* print string if it ends with "ed" */
        if (strcmp(&array[i][length - 2], "ed") == 0) {
            printf("%s\n", &array[i][0]);
        }

    }
}
```