

Assignment-3

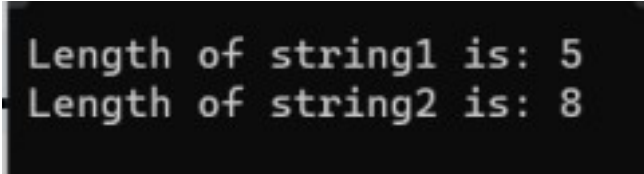
UCS540 (Data Structures and Algorithms)

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Group- 3EE3

Q1) Write a program to implement strlen() function.

Code:

```
#include<stdio.h>
#include <string.h>
int main()
{
    int len1, len2;
    char string1[] = "Hello";
    char string2[] = {'c','o','m','p','u','t','e','r','\0'};
    len1 = strlen(string1);
    len2 = strlen(string2);
    printf("Length of string1 is: %d \n", len1);
    printf("Length of string2 is: %d \n", len2);
    return 0;
}
```



```
Length of string1 is: 5
Length of string2 is: 8
```

Q2) Write a program to implement strcpy() function.

Code:

```
#include <stdio.h>

#include <string.h>

int main() {char str1[20] = "PrepBytes!!";

    char str2[20];

    strcpy(str2, str1);

    printf("str1: %s\n", str1);

    printf("str2: %s\n", str2);

    return 0;}
```

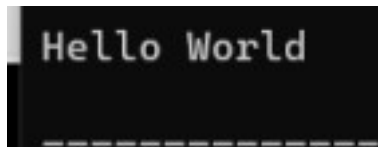
Output:

```
str1: PrepBytes!!  
str2: PrepBytes!!
```

Q3) Write a program to implement strcat() function.

Code:

```
#include <stdio.h>  
#include <string.h>  
int main()  
{  
    char string1[100];  
    strcpy(string1, "Hello");  
    strcat(string1, " World");  
    printf("%s\n", string1);  
  
    return 0;  
}
```

A screenshot of a terminal window with a black background. The text 'Hello World' is displayed in a light gray, monospaced font. Below the text, there are several horizontal dashed lines, likely representing a command prompt or a separator.

Q4) Write a program to implement strcmp() function.

Code:

```
#include <stdio.h>  
#include <string.h>  
  
int main()  
{  
    char str1[] = "Hello";  
    char str2[] = "World";  
    int result = strcmp(str1, str2);  
    printf("%d\n", result);  
    return 0;  
}
```

A screenshot of a terminal window with a black background. The text '-1' is displayed in a light gray, monospaced font.

Q5) WAP to demonstrate limitations of Two-Dimensional Array of Characters. #include <stdio.h>

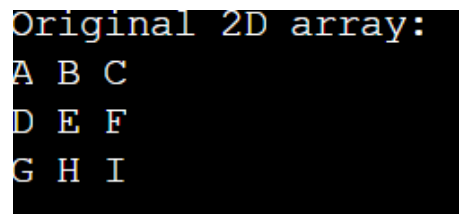
```
#define ROWS 3
```

```
#define COLS 3
```

```
void print_2d_array(char arr[ROWS][COLS]){for (int i = 0; i < ROWS; i++){  
    for (int j = 0; j < COLS; j++) {printf("%c ", arr[i][j]);}
```

```
printf("\n");}}  
  
int main() {char char_array[ROWS][COLS] = {{'A', 'B', 'C'},  
{'D', 'E', 'F'},  
{'G', 'H', 'I'}};  
  
printf("Original 2D array:\n");  
print_2d_array(char_array);  
  
printf("\n");  
  
return 0;}
```

Output:



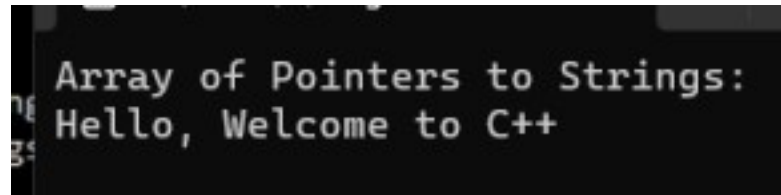
```
Original 2D array:  
A B C  
D E F  
G H I
```

Q6) WAP to demonstrate an array of Pointers to Strings.

Code:

```
#include <stdio.h>  
  
int main() {  
    const int numStrings = 3;  
    const char* strings[numStrings] = {  
        "Hello",  
        "Welcome",  
        "to C++"  
    };  
    printf("Array of Pointers to Strings:\n");  
    for (int i = 0; i < numStrings; ++i) {
```

```
        printf("%s ", strings[i]);  
    }  
    printf("\n");  
    return 0;  
}
```

A screenshot of a terminal window with a dark background. The text 'Array of Pointers to Strings:' is on the first line, and 'Hello, Welcome to C++' is on the second line. The text is in a light-colored, monospaced font.

```
Array of Pointers to Strings:  
Hello, Welcome to C++
```