Assignment-3

UCS540 (Data Structures and Algorithms)

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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;
}
```

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;
}
```

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;
}
```