

Lab Assignment-3

String Processing Operations

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

```
1  #include <stdio.h>
2  #include <string.h>
3
4  int main()
5  {
6      char str[] = "BhavleenKaur";
7      int length = strlen(str);
8      printf("Length of string is : %d", length);
9      return 0;
10 }
```

/tmp/X8mDiCUONF.o
Length of string is : 12

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

```
1  #include <stdio.h>
2  #include <string.h>
3
4  int main() {
5      char str1[20] = "BhavleenKaur";
6      char str2[20];
7      strcpy(str2, str1);
8      printf("str1: %s\n", str1);
9      printf("str2: %s\n", str2);
10     return 0;
11 }
```

/tmp/X8mDiCUONF.o
str1: BhavleenKaur
str2: BhavleenKaur

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

```
1  #include <stdio.h>
2  #include <string.h>
3  int main() {
4      char str1[50] = "Hello, ";
5      const char str2[] = "Friends!";
6      strcat(str1, str2);
7      printf("%s", str1);
8      return 0;
9  }
```

/tmp/X8mDiCUONF.o
Hello, Friends!

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

```
1 #include<stdio.h>
2 #include <string.h>
3- int main(){
4     char str1[20],str2[20];
5     printf("Enter 1st string: ");
6     gets(str1);//reads string from console
7     printf("Enter 2nd string: ");
8     gets(str2);
9     if(strcmp(str1,str2)==0)
10         printf("Strings are equal");
11     else
12         printf("Strings are not equal");
13     return 0;
14 }
```

```
/tmp/X8mDiCUONF.o
Enter 1st string: Bhavleen
Enter 2nd string: bhavLeen
Strings are not equal
```

Q5. WAP to demonstrate limitations of Two-Dimensional Array of Characters.

One common limitation of a two-dimensional array of characters (string array) is the fixed size. In many programming languages, once you declare a 2D array, its size cannot be changed dynamically during runtime.

```
1 #include <stdio.h>
2 #include <string.h>
3 #define ROWS 3
4 #define COLS 10
5
6- int main() {
7     char strings[ROWS][COLS];
8     strcpy(strings[0], "Hello");
9     strcpy(strings[1], "Bhavleen");
10    strcpy(strings[2], "!");
11    printf("Strings in the array:\n");
12-    for (int i = 0; i < ROWS; i++) {
13        printf("%s\n", strings[i]);
14    }
15
16    // Attempt to add a new string
17    strcpy(strings[3], "This will cause an error");
18
19    return 0;
20 }
```

```
/tmp/a6Q38AAsJm.o
Strings in the array:
Hello
Bhavleen
!
```

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

```
1  #include<stdio.h>
2  #include<string.h>
3- void main(){
4      int i;
5      char *a[5]={"One","Two","Three","Four","Five"};
6
7      printf("The values in every string location are : ");
8-     for(i=0;i<5;i++){
9         printf("%s",a[i]);
10        printf(",");
11    }
12
13     printf("\n");
14     printf("The address locations of every string values are : ");
15-     for(i=0;i<5;i++){
16         printf("%d",a[i]);
17         printf(",");
18     }
19 }
```

/tmp/a6Q38AAsJm.o
The values in every string location are : One,Two,Three,Four,Five,
The address locations of every string values are : 4202504,4202508,4202512,4202518
,4202523,|