**S.Y. B. Tech. Academic Year 2018-19 Trimester: IV**

**Data Structure-I**

**LABORATORY WRITE UP**

###### Experiment Number: 01

### **TITLE: String Operations**

**PROBLEM STATEMENT**:

Write a C program for string operations- length, copy, concatenate(with pointers), palindrome, check substring, equal, reverse ( without pointers)

**OBJECTIVE:**

1. To Study memory representations and operations associated with string
2. To understand the implementation of different string operations with and without pointers

**THEORY: *//To be Written by Students***

***// Write theory by elaborating below points***

* String definition, Declaration of String
* Ways of accepting and printing string with and without spaces
* Ways of initializing string
* Memory Representation of string
* Difference between string and char array

**IMPLEMENTATION:**

* **PLATFORM:** 
  + 64-bit Open source Linux or its derivatives.
  + Open Source C Programming tool like gcc/Eclipse Editor.
* I**INPUT & OUTPUT:**

|  |  |  |
| --- | --- | --- |
| **TEST CASE NO** | **INPUT** | **OUTPUT** |
| TC001 | Str1=”abc”  Str2=”abcd” | Copy(str1,str2)=abc  Copy(str2,str1)=abcd  Concat(str1,str2)=abcabcd  Palindrom(str1)=false |
| TC002 | Str1=”abbb34”  Str2=” ” | Copy(str1,str2)=abbb34  Copy(str2,str1)=  Concat(str1,str2)=abb34  Palindrom(str1)=false |
| TC003 | Str1=”madam”  Str2=” ” | Copy(str1,str2)=madam  Copy(str2,str1)=  Concat(str1,str2)=madam  Palindrom(str1)=true |

* **TEST CONDITIONS:-**

1. Input two strings with same length.
2. Input two strings without same length.

3. Input such string whose reverse will be equal as original.

* **PSEUDO CODE: *//To be Written by Students***

Write pseudo code for copy, concat and palindrome operation.

* **TIME COMPLEXITY: *//To be Written by Students***

Find out time complexity of above operations

* **CONCLUSION:**

Thus, implemented string Operations assignment using Array concepts. This System is able to perform different operations on string.

* **FAQs *//To be Written by Students***

1. What are the different library functions available to perform these string operations?

2. Write a C syntax to create array of strings.

3. What’s difference between char s[] and char \*s in C?

4. What is the difference between single quoted and double quoted declaration of char array?

* **PRACTICE ASSIGNMENTS**

###### Write a program to names of students of a class and print names whose length is less than 4.

1. Write a program to find frequency of character in a string.
2. Write a program to accept string and find count of characters, numbers, special symbols etc.
3. Write a program to replace a substring by another string.