TUTORIAL NO. – 8

**STRING APPLICATION**

**PROBLEM STATEMENT /DEFINITION:-**

In any language program mostly syntax error occurs due to unbalancing delimiter such as (),{},[]. Write C++ program using stack to check whether given expression is well parenthesized or not.

**Or**

A palindrome is a string of character that‘s the same forward and backward. Typically, punctuation, capitalization, and spaces are ignored. For example, ‖Poor Dan is in a droop‖ is a palindrome, as can be seen by examining the characters ―poor danisina droop‖ and observing that they are the same forward and backward. One way to check for a palindrome is to reverse the characters in the string and then compare with them the original-in a palindrome, the sequence will be identical. Write C++ program with functions- 1. to check whether given string is palindrome or not that uses a stack to determine whether a string is a palindrome. 2. to remove spaces and punctuation in string, convert all the Characters to lowercase, and then call above Palindrome checking function to check for a palindrome 3. to print string in reverse order using stack.

**OBJECTIVE:-**

* To understand concept of string.
* To study the complex operations on string.
* To understand use of stack

**OUTCOME:-**

* To implement primitive operations on string and use it for complex solution.
* To implement stack for string data.

**S/W PACKAGES AND HARDWARE APPARATUS USED:-**

Operating Systems (64-Bit) 64-BIT Fedora 17 or latest 64-BIT Update of Equivalent Open source OS or latest 64-BIT Version and update of Microsoft Windows 7 Operating System onwards Programming Tools (64-Bit) Latest Open source update of Eclipse Programming frame work, TC++.

**REFERENCES:-**

* + C++ by B. Stroustrup
  + Fundamental of Data Structure in C++

**STEPS:-**

Refer to algorithm

**Theory:-**

The fundamental string searching (matching) problem is defined as follows: given two strings – a text and a pattern, determine whether the pattern appears in the text. C programming code to check if a given string is present in another string, For example the string "programming" is present in "c programming". If the string is present then its location (i.e. at which position it is present) is printed. We create a function match which receives two character pointers and return the position if matching occurs otherwise returns -1. We are implementing naive string search algorithm in our c program

**Algorithm:-**

Algorithm to check parenthesized or not:

Step1: Start

Step2: Create function to check pattern

Step3: Create loop i

Step4: Create loop j

Step5: check condition

if(text[i + j] != pattern[j]) break;

if(j == m) // match found

Step6: End

**Complexity:**

Time complexity = O().