ASSIGNMENT 5

STRING OPERATIONS

**Problem Statement** :-

Write a C++ program to perform String operations :

i. = Equality

ii. == String Copy

iii. + Concatenation

iv. << To display a string

v. >> To reverse a string

vi. Function to determine whether a string is a palindrome

vii. To find occurrence of a sub-string.

Use Operator Overloading.

**Learning Objectives** :-

i. String manipulating functions

ii. Friend functions

iii. Input / Output operator overloading

**Theory** :-

The String class in C++ :-

String Function and Purpose :-

**Friend function :-**

**Input / Output Operators Overloading :-**

C++ is able to input and output the built-in data types using the stream extraction operator >> and the stream insertion operator <<. The stream insertion and stream extraction operators also can be overloaded to perform input and output for user defined types like an object. Here it is important to make operator overloading function a friend of the class because it would be called without creating an object.

For example,

friend ostream &operator<<( ostream &output, const Distance &D )

{

output << "F : " << D.feet << " I : " << D.inches;

return output;

}

friend istream &operator>>( istream &input, Distance &D )

{

input >> D.feet >> D.inches;

return input;

}

**Related Mathematics** :-

//Input :- Si = { C1, C2, C3, ……….., Cn }

The sequence Si represents a string and C1, C2, ………, Cn represents characters in the string.

|Si| denotes the number of elements in the given sequence Thus, |Si| denotes the string length

Sri = { Cn, Cn-1, ……….., C2, C1 }

Sri is the reverse sequence of Si i.e., reverse string. If Si Sri ≠ 0 , then string is a palindrome.

If the sequence of Si and Sri are the same, then the string is palindrome or we can say that

Si | Sri.

**Conclusion** :-

Using string manipulating functions, we can perform string operations.