**ASSIGNMENT** 7

**PROBLEM STATEMENT:**

Using standard template library (STL) list container implement following member functions of list class: empty, insert, reverse, sort, Unique, using iterator.

**AIM OF ASSIGNMENT:**

C++ Program to implement and understand the concepts of list container. Include the list and iterator class, to use member function of list.

**DESCRIPTION:**

In this program, firstly we included the list and iterator class. We created two objects of list class (g & l1) and defined a function to display the list using iterator. We used member functions like begin(), end(), empty(), push\_back(), pop\_front(), front(), back(), reverse(), sort(), unique().

**OOP CONCEPT USED:**

* list class
* iterator class
* member functions of list class
* user defined functions.

**Sourcecode:**

#include<iostream>

using namespace std;

#include <list>

#include <iterator>

using namespace std;

//function for printing the elements in a list

int showlist(list <int> g)

{

list <int> :: iterator it;

for(it = g.begin(); it != g.end(); ++it)

cout << '\t' << \*it;

cout << '\n';

}

int main()

{

list <int> l1;

cout<<"List status:"<<l1.empty();

for (int i = 0; i < 10; ++i)

{

l1.push\_back(i \* 2);

}

cout << "\nList 1 (l1) is : ";

showlist(l1);

cout << "\nlist1.front() : " << l1.front();

cout << "\nlist1.back() : " << l1.back();

cout << "\nlist1.pop\_front() : ";

l1.pop\_front();

showlist(l1);

cout << "\nlist1.reverse() : ";

l1.reverse();

showlist(l1);

cout<<"\nSorting():";

l1.sort();

showlist(l1);

cout<<"List status:"<<l1.empty();

return 0;

}

**Output:**

List status:1

List 1 (l1) is : 0 2 4 6 8 10 12 14 16 18

list1.front() : 0

list1.back() : 18

list1.pop\_front() : 2 4 6 8 10 12 14 16 18

list1.reverse() : 18 16 14 12 10 8 6 4 2

Sorting(): 2 4 6 8 10 12 14 16 18

List status:0

**CONCLUSION:**

Hence, we learnt the concept of list for storing the data. It flows random access to data which was not in the case of array.