Implement methods**add, size**in template class **DLinkedList (which implements List ADT)**representing the doubly linked list with type T with the initialized frame. The description of each method is given in the code.

template <class T>  
class DLinkedList {  
public:  
    class Node; // Forward declaration  
protected:  
    Node\* head;  
    Node\* tail;  
    int count;  
public:  
    DLinkedList();  
    ~DLinkedList();  
 void add(const T &e);  
 void add(int index, const T &e);  
 int size();  
public:

class Node

{

private:

T data;

Node \*next;

Node \*previous;

friend class DLinkedList<T>;

public:

Node()

{

this->previous = NULL;

this->next = NULL;

}

Node(const T &data)

{

this->data = data;

this->previous = NULL;

this->next = NULL;

}

};

};

In this exercise, we have include <iostream>, <string>, <sstream> and using namespace std.

**For example:**

| **Test** | **Result** |
| --- | --- |
| DLinkedList<int> list;  int size = 10;  for(int idx=0; idx < size; idx++){  list.add(idx);  }  cout << list.toString(); | [0,1,2,3,4,5,6,7,8,9] |
| DLinkedList<int> list;  int size = 10;  for(int idx=0; idx < size; idx++){  list.add(0, idx);  }  cout << list.toString(); | [9,8,7,6,5,4,3,2,1,0] |