#include<iostream>

#include<cstdlib>

#define n 10

**using** **namespace** std;

**struct** Node{

Node\* prev;

**int** num;

Node\* next;

};

**class** list{

**private**:

Node \*head, \*tail;

**public**:

**void** createnode(**int** value);

**void** insert(**int** val);

**void** display();

**void** sort();

**int** length();

list(){

head = **NULL**;

tail = **NULL**;

};

};

**void** list::createnode(**int** value){

Node\* N = **new** Node;

N->num = value;

N->next = **NULL**;

**if**(head == **NULL**)

{

head = N;

tail = N;

}

**else**

{

tail->next = N;

tail = N;

}

}

**void** list::display(){

Node\* temp = **new** Node;

temp=head;

**while**(temp != **NULL**)

{

cout<<temp->num<<'\t';

temp = temp->next;

}

}

**void** list::sort(){

Node\* t1;

**if**(head == **NULL** || head->next == **NULL**)

**return**;

**else**

t1 = head;

**while**(t1 != **NULL**)

{

Node\* t2;

t2 = head;

**while**(t2->next != t1->next)

{

**if**(t2->num > t1->num)

{

**int** temp = t2->num;

t2->num = t1->num;

t1->num = temp;

}

t2 = t2->next;

}

t1 = t1->next;

*//delete t2;*

}

}

**void** list::insert(**int** val){

Node\* t = **new** Node;

t->num = val;

tail->next = t;

tail = t;

}

**int** list::length(){

**int** len = 0;

**if**(head == **NULL**)

**return** 0;

Node\* l = **new** Node;

l = head;

**while**(l != **NULL**)

{

len++;

l = l->next;

}

**return** len;

}

**int** main()

{

list mine;

**int** a[] = {1,2,4,7,1,4,10,13,5};

**for**(**int** j=0;j<9;j++)

mine.createnode(a[j]);

mine.insert(20);

mine.display();

*//mine.sort();*

cout<<'\n';

*//mine.display();*

*//cout<<"the length of the list is "<<mine.length();*

**return** 0;

}