

## orderedlinklist

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```
#include <iostream>
#include<conio.h>
using namespace std;
template <class T>
class orderedlinklist
{
private:
template <class T>
struct node
{
T data;
node <T> *link;
} ;
node <T> *head;
public:
orderedlinklist();
void insert( T num );
T del( T num );
void display();
T count();
~orderedlinklist();
};
template <class T>
orderedlinklist<T>::orderedlinklist()
{
head = NULL;
}
template <class T>
void orderedlinklist<T>::insert(T num)
{
node <T>*q,*t,*n;
n= new node <T>;
n->data=num;
if( head == NULL ) // insert into empty list
{
head=n;
head->link = NULL;
}
else if(num<head->data)
{
n->link=head;
head=n;
}
else
```

```

{
q=head;
t=head->link;
while(t!=NULL && num>t->data)
{
q=t;
t=t->link;
}
q->link=n;
n->link=t;
}
}
template <class T>
T orderedlinklist<T>::del( T num )
{
node <T>*q,*r;
q = head;
if( q->data == num ) // delete from the beginning
{
head = q->link;
delete q;
return 0;
}
r = q;
while( q!=NULL )
{
if( q->data == num )
{
r->link = q->link;
delete q;
return 0;
}
r = q;
q = q->link;
}
cout<<"\nElement "<<num<<" not Found.";
}
template <class T>
void orderedlinklist<T>::display()
{
node <T>*q;
cout<<endl;
for( q = head ; q != NULL ; q = q->link )
cout<<endl<<q->data;
}
template <class T>

```

```

T orderedlinklist<T>::count()
{
    node <T>*q;
    int c=0;
    for( q=head ; q != NULL ; q = q->link )
        c++;

    return c;
}
template <class T>
orderedlinklist<T>::~~orderedlinklist()
{
    node <T>*q;
    if( head == NULL )
        return;
    while( head != NULL )
    {
        q = head->link;
        delete head;
        head = q;
    }
}
int main()
{
    orderedlinklist <int>ll;
    cout<<"No. of elements = "<<ll.count();
    ll.insert(9);
    ll.insert(7);
    ll.insert(8);
    ll.insert(4);
    ll.insert(8);
    ll.insert(1);
    ll.insert(0);
    ll.insert(10);
    ll.insert(4);
    ll.insert(9);
    ll.display();
    //ll.display();
    cout<<"\nNo. of elements = "<<ll.count();
    ll.del(5);
    ll.del(10);
    ll.del(0);
    cout<<"\nNo. of elements = "<<ll.count();
    ll.display();
    getch();
    return 0;}

```

No. of elements = 0

0

0

1

4

4

7

8

8

9

9

10

No. of elements = 10

Element 5 not Found.

No. of elements = 8

1

4

4

7

8

8

9

9