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/*
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AssignmentNo:13
Assignment Title:Write C++ program to maintain club list.
Store student PRN and Name.Write functions to:
a)Add and delete the members as well aspres ident or even secretary.
b)Compute total number of members of club
c)Display members
*/
#include<iostream>
#include<stdlib.h> //mustwritethisfileinlinkedlist
using namespace std;
class node
{
public:
int rollno;
char name[20];
node*next;
};
class SLL
{
node*head;
public:
SLL()
{
head=NULL;
}
void create_head();
void display();
void insert_front();
void insert_middle();
void insert_end();
void del_front();
void del_middle();
void del_end();
void total_count();
void reverse();
};
void SLL::create_head() //functiontocreatenode
{
node*new1;
new1=newnode;
cout<<"\nEnter rollno="<<"";
cin>>new1->rollno;
cout<<"\nEnter name="<<"";
cin>>new1->name;
new1->next=NULL;

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head=new1;
}
void SLL::display() //function to display linked list
{
node*temp;
if(head==NULL)
{
cout<<"\nYour list is Empty.";
}
else
{
temp=head;
cout<<" List is as follows:="<<endl;
while(temp!=NULL)
{
cout<<temp->rollno<<" "<<temp->name<<endl;
temp=temp->next;
}
}
}
void SLL::insert_front() //function to insert from front
{
node*new1;
new1=newnode;
cout<<"\nEnter prn=";
cin>>new1->rollno;
cout<<"\nEnter name=";
cin>>new1->name;
new1->next=head;
head=new1;
}
void SLL::insert_middle() //function to insert at middle
{
node*new1;
new1=newnode;
node*temp;
intn;
cout<<"\nEnter prn after which member you want to insert=";
cin>>n;
cout<<"\nEnter prn=";
cin>>new1->rollno;
cout<<"\nEnter name=";
cin>>new1->name;
temp=head;
while(temp->rollno!=n)
{
temp=temp->next;
}
}

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new1->next=temp->next;
temp->next=new1;
}
void SLL::insert_end() //function to insert from end
{
node*new1;
new1=newnode;
node*temp;
cout<<"\nEnter prn=";
cin>>new1->rollno;
cout<<"\nEnter name=";
cin>>new1->name;
new1->next=NULL;
temp=head;
while(temp->next!=NULL)
{
temp=temp->next;
}
temp->next=new1;
}
void SLL::del_front()
{
node*temp;
temp=head;
head=head->next;
free(temp);
}
void SLL::del_middle()
{
node*temp,*prev;
intx;
cout<<"\nEnter prn to delete member=";
cin>>x;
temp=head;
while(temp->rollno!=x)
{
prev=temp;
temp=temp->next;
}
prev->next=temp->next;
free(temp);
}
void SLL::del_end()
{
node*temp,*prev;
temp=head;
while(temp->next!=NULL)
{

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prev=temp;
temp=temp->next;
}
prev->next=temp->next;
free(temp);
}
void SLL::total_count()
{
intcount=0;
node*temp;
temp=head;
while(temp!=NULL)
{
count++;
temp=temp->next;
}
cout<<"\nTotal count="<<"<<count;
}
void SLL::reverse()
{
ints[20],top=-1;
node*temp;
temp=head;
while(temp!=NULL)
{
top++;
s[top]=temp->rollno;
temp=temp->next;
}
cout<<"\nList in reverse order:"<<endl;
while(top>=0)
{
cout<<s[top]<<"<<"<<endl;
top--;
}
}
int main()
{
SLL ob;
int ch;
while(1)
{
cout<<"\nMenu:"<<endl;
cout<<"1.To enter prn and name of president"<<endl;
cout<<"2.To enter prn and name of member at front"<<endl;
cout<<"3.To enter prn and name of member at middle"<<endl;
cout<<"4.To enter prn and name of member at end"<<endl;
cout<<"5.To delete prn and name of member from front"<<endl;

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cout<<"6.To delete prn and name of member from middle"<<endl;
cout<<"7.To delete prn and name of member from end"<<endl;
cout<<"8.To find total count of member"<<endl;
cout<<"9.To Reverse the list of members"<<endl;
cout<<"10.To Display the list"<<endl;
cout<<"Enter your choice=";
cin>>ch;
switch(ch)
{
case1:ob.create_head();
break;
case2:ob.insert_front();
break;
case3:ob.insert_middle();
break;
case4:ob.insert_end();
break;
case5:ob.del_front();
break;
case6:ob.del_middle();
break;
case7:ob.del_end();
break;
case8:ob.total_count();
break;
case9:ob.reverse();
break;
case10:ob.display();
break;
}
}
}
/*

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OUTPUT:

Menu:

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1.To enter prn and name of president
2.To enter prn and name of member at front
3.To enter prn and name of member at middle
4.To enter prn and name of member at end
5.To delete prn and name of member from front
6.To delete prn and name of member from middle
7.To delete prn and name of member from end
8.To find total count of member
9.To Reverse the list of members
10.To Display the list
Enter your choice=1
Enter roll no=20
Enter name=b

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Menu:

- 1.Toenterprnandnameofpresident
- 2.Toenterprnandnameofmemberatfront
- 3.Toenterprnandnameofmemberatmiddle
- 4.Toenterprnandnameofmemberatend
- 5.Todeleteprnandnameofmemberfromfront
- 6.Todeleteprnandnameofmemberfrommiddle
- 7.Todeleteprnandnameofmemberfromend
- 8.Tofindtotalcountofmember
- 9.ToReversethelistofmembers
- 10.ToDisplaythelist

Enteryourchoice=2

Enterprn=10

Entername=a

Menu:

- 1.Toenterprnandnameofpresident
- 2.Toenterprnandnameofmemberatfront
- 3.Toenterprnandnameofmemberatmiddle
- 4.Toenterprnandnameofmemberatend
- 5.Todeleteprnandnameofmemberfromfront
- 6.Todeleteprnandnameofmemberfrommiddle
- 7.Todeleteprnandnameofmemberfromend
- 8.Tofindtotalcountofmember
- 9.ToReversethelistofmembers
- 10.ToDisplaythelist

Enteryourchoice=4

Enterprn=40

Entername=d

Menu:

- 1.Toenterprnandnameofpresident
- 2.Toenterprnandnameofmemberatfront
- 3.Toenterprnandnameofmemberatmiddle
- 4.Toenterprnandnameofmemberatend
- 5.Todeleteprnandnameofmemberfromfront
- 6.Todeleteprnandnameofmemberfrommiddle
- 7.Todeleteprnandnameofmemberfromend
- 8.Tofindtotalcountofmember
- 9.ToReversethelistofmembers
- 10.ToDisplaythelist

Enteryourchoice=3

Enterprnafterwhichmemberyouwanttoinsert=20

Enterprn=30

Entername=c

Menu:

- 1.Toenterprnandnameofpresident
- 2.Toenterprnandnameofmemberatfront
- 3.Toenterprnandnameofmemberatmiddle
- 4.Toenterprnandnameofmemberatend

5. Todeleteprnandnameofmemberfromfront
6. Todeleteprnandnameofmemberfrommiddle
7. Todeleteprnandnameofmemberfromend
8. Tofindtotalcountofmember
9. ToReversethelistofmembers
10. ToDisplaythelist

Enteryourchoice=10

Listisasfollows:=

10a

20b

30c

40d

Menu:

1. Toenterprnandnameofpresident
2. Toenterprnandnameofmemberatfront
3. Toenterprnandnameofmemberatmiddle
4. Toenterprnandnameofmemberatend
5. Todeleteprnandnameofmemberfromfront
6. Todeleteprnandnameofmemberfrommiddle
7. Todeleteprnandnameofmemberfromend
8. Tofindtotalcountofmember
9. ToReversethelistofmembers
10. ToDisplaythelist

Enteryourchoice=5

Menu:

1. Toenterprnandnameofpresident
2. Toenterprnandnameofmemberatfront
3. Toenterprnandnameofmemberatmiddle
4. Toenterprnandnameofmemberatend
5. Todeleteprnandnameofmemberfromfront
6. Todeleteprnandnameofmemberfrommiddle
7. Todeleteprnandnameofmemberfromend
8. Tofindtotalcountofmember
9. ToReversethelistofmembers
10. ToDisplaythelist

Enteryourchoice=10

Listisasfollows:=

20b

30c

40d

Menu:

1. Toenterprnandnameofpresident
2. Toenterprnandnameofmemberatfront
3. Toenterprnandnameofmemberatmiddle
4. Toenterprnandnameofmemberatend
5. Todeleteprnandnameofmemberfromfront
6. Todeleteprnandnameofmemberfrommiddle
7. Todeleteprnandnameofmemberfromend

8.To find total count of member

9.To Reverse the list of members

10.To Display the list

Enter your choice=6

Enter prn to delete member=30

Menu:

1.To enter prn and name of president

2.To enter prn and name of member at front

3.To enter prn and name of member at middle

4.To enter prn and name of member at end

5.To delete prn and name of member from front

6.To delete prn and name of member from middle

7.To delete prn and name of member from end

8.To find total count of member

9.To Reverse the list of members

10.To Display the list

Enter your choice=10

List is as follows:=

20b

40d

Menu:

1.To enter prn and name of president

2.To enter prn and name of member at front

3.To enter prn and name of member at middle

4.To enter prn and name of member at end

5.To delete prn and name of member from front

6.To delete prn and name of member from middle

7.To delete prn and name of member from end

8.To find total count of member

9.To Reverse the list of members

10.To Display the list

Enter your choice=4

Enter prn=50

Enter name=e

Menu:

1.To enter prn and name of president

2.To enter prn and name of member at front

3.To enter prn and name of member at middle

4.To enter prn and name of member at end

5.To delete prn and name of member from front

6.To delete prn and name of member from middle

7.To delete prn and name of member from end

8.To find total count of member

9.To Reverse the list of members

10.To Display the list

Enter your choice=2

Enter prn=10

Enter name=a

Menu:

- 1.Toenterprnandnameofpresident
- 2.Toenterprnandnameofmemberatfront
- 3.Toenterprnandnameofmemberatmiddle
- 4.Toenterprnandnameofmemberatend
- 5.Todeleteprnandnameofmemberfromfront
- 6.Todeleteprnandnameofmemberfrommiddle
- 7.Todeleteprnandnameofmemberfromend
- 8.Tofindtotalcountofmember
- 9.ToReversethelistofmembers
- 10.ToDisplaythelist

Enteryourchoice=10

Listisasfollows:=

10a

20b

40d

50e

Menu:

- 1.Toenterprnandnameofpresident
- 2.Toenterprnandnameofmemberatfront
- 3.Toenterprnandnameofmemberatmiddle
- 4.Toenterprnandnameofmemberatend
- 5.Todeleteprnandnameofmemberfromfront
- 6.Todeleteprnandnameofmemberfrommiddle
- 7.Todeleteprnandnameofmemberfromend
- 8.Tofindtotalcountofmember
- 9.ToReversethelistofmembers
- 10.ToDisplaythelist

Enteryourchoice=7

Menu:

- 1.Toenterprnandnameofpresident
- 2.Toenterprnandnameofmemberatfront
- 3.Toenterprnandnameofmemberatmiddle
- 4.Toenterprnandnameofmemberatend
- 5.Todeleteprnandnameofmemberfromfront
- 6.Todeleteprnandnameofmemberfrommiddle
- 7.Todeleteprnandnameofmemberfromend
- 8.Tofindtotalcountofmember
- 9.ToReversethelistofmembers
- 10.ToDisplaythelist

Enteryourchoice=10

Listisasfollows:=

10a

20b

40d

Menu:

- 1.Toenterprnandnameofpresident
- 2.Toenterprnandnameofmemberatfront

3.Toenterprnandnameofmemberatmiddle
4.Toenterprnandnameofmemberatend
5.Todeleteprnandnameofmemberfromfront
6.Todeleteprnandnameofmemberfrommiddle
7.Todeleteprnandnameofmemberfromend
8.Tofindtotalcountofmember
9.ToReversethelistofmembers
10.ToDisplaythelist
Enteryourchoice=8
Totalcount=3

Menu:

1.Toenterprnandnameofpresident
2.Toenterprnandnameofmemberatfront
3.Toenterprnandnameofmemberatmiddle
4.Toenterprnandnameofmemberatend
5.Todeleteprnandnameofmemberfromfront
6.Todeleteprnandnameofmemberfrommiddle
7.Todeleteprnandnameofmemberfromend
8.Tofindtotalcountofmember
9.ToReversethelistofmembers
10.ToDisplaythelist
Enteryourchoice=9

Listinreverseorder:

402010

Menu:

1.Toenterprnandnameofpresident
2.Toenterprnandnameofmemberatfront
3.Toenterprnandnameofmemberatmiddle
4.Toenterprnandnameofmemberatend
5.Todeleteprnandnameofmemberfromfront
6.Todeleteprnandnameofmemberfrommiddle
7.Todeleteprnandnameofmemberfromend
8.Tofindtotalcountofmember
9.ToReversethelistofmembers
10.ToDisplaythelist
Enteryourchoice=*/