Department of Computer Engineering has student's club named 'Pinnacle Club'. Students of second, third and final year of department can be granted membership on request. Similarly one may cancel the membership of club. First node is reserved for president of club and last node is reserved for secretary of club. Write C++ program to maintain club member„s information using singly linked list. Store student PRN and Name. Write functions to:

a) Add and delete the members as well as president or even secretary.

b) Compute total number of members of club

c) Display members

d) Two linked lists exists for two divisions. Concatenate two lists

Code -

```
#include<iostream>
using namespace std;
class node
{
public:
int prn;
string name;
node *link;
};
class linkedlist
{
public:
node *start;
linkedlist()
{
start=NULL;
}
void insert_President()
{
node *n;
n=new node;
cout<<"\nEnter President PRN to be inserted\n";
cin>>n->prn;
cout<<"\nEnter President Name to be inserted\n";
cin>>n->name;
n->link=NULL;
if(start==NULL)
{
start=n;
}
else
{node *tmp;
tmp=start;
while(tmp->link!=NULL)
{
tmp=tmp->link;
}
tmp->link=n;
}
display();
}
void insert_Secretary()
{
node *n;
n=new node;
```

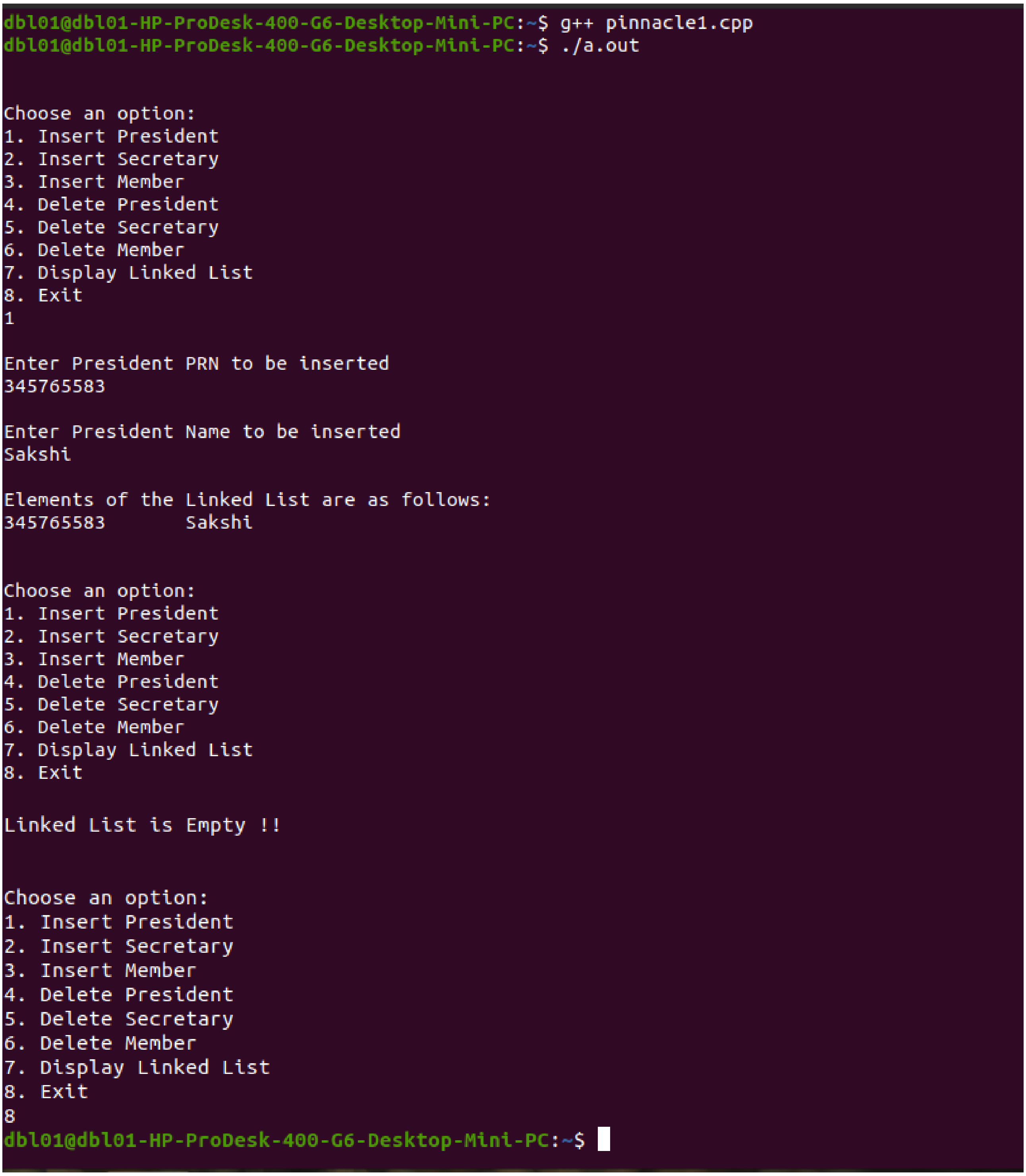
```
cout<<"\nEnter Secretary PRN to be inserted\n";
cin>>n->prn;
cout<<"\nEnter Secretary Name to be inserted\n";
cin>>n->name;
n->link=NULL;
if(start==NULL)
{
start=n;
}
else
{
node *tmp;
tmp=start;
while(tmp->link!=NULL)
{
tmp=tmp->link;
}
tmp->link=n;
}
display();
}
void insert_Member()
{
node *n;
n=new node;
cout<<"\nEnter Member PRN to be inserted\n";
cin>>n->prn;
cout<<"\nEnter Member Name to be inserted\n";
cin>>n->name;
n->link=NULL;
if(start==NULL)
{
start=n;
}
else
{
node *tmp;
tmp=start;
while(tmp->link!=NULL)
{
tmp=tmp->link;
}
tmp->link=n;
}
display();
}
void del_President()
{
if(start==NULL)
{
cout<<"\nLinked List is Empty !!\n";
return;
}
else
{
node *tmp;
tmp=start;
```

```
start=start->link;
delete tmp;
}
display();
}
void del_Secretary()
{
if(start==NULL)
{
cout<<"\nLinked List is Empty !!\n";
return;
}
else
{
node *tmp;
tmp=start;
while(tmp->link->link!=NULL)
{
tmp=tmp->link;
}
node *p;
p=tmp->link;
tmp->link=p->link;
delete p;
}
display();
}
void del_Member()
{
if(start==NULL)
{
cout<<"\nLinked List is Empty !!\n";
return;
}
else
{
node *tmp;
tmp=start;
while(tmp->link->link->link!=NULL)
{
tmp=tmp->link;
}
node *p;
p=tmp->link;
tmp->link=p->link;
delete p;
}
display();
}
void display()
{
node *tmp;
tmp=start;
if(start==NULL)
{
cout<<"\nLinked List is Empty !!\n";
return;
```

```
}
else
{
cout<<"\nElements of the Linked List are as follows: \n";
while(tmp!=NULL)
{
cout<<tmp->prn<<"\t"<<tmp->name<<"\n";
tmp=tmp->link;
}
}
}
};
int main()
{
linkedlist list;
int ch;
do
{
cout<<"\n\nChoose an option: \n1. Insert President\n2. Insert Secretary\n3. Insert Member\n4. Delete
President\n5. Delete Secretary\n6. Delete Member\n7. Display Linked List\n8. Exit\n";
cin>>ch;
switch(ch)
{
case 1:
list.insert_President();
break;
case 2:
list.insert_Secretary();
break;
case 3:
list.insert_Member();
break;
case 4:
list.del_President();
break;
case 5:
list.del_Secretary();
break;
case 6:
list.del_Member();
break;
case 7:
list.display();
break;
case 8:
break;
default:
cout<<"\n\nInvalid Input! Please Enter Again...\n";
}
}while(ch!=8);
return 0;
}
```

Output -

.



```
dbl01@dbl01-HP-ProDesk-400-G6-Desktop-Mini-PC:~$ g++ pinnacle1.cpp
dbl01@dbl01-HP-ProDesk-400-G6-Desktop-Mini-PC:~$ ./a.out


Choose an option:
1. Insert President
2. Insert Secretary
3. Insert Member
4. Delete President
5. Delete Secretary
6. Delete Member
7. Display Linked List
8. Exit
1

Enter President PRN to be inserted
345765583

Enter President Name to be inserted
Sakshi

Elements of the Linked List are as follows:
345765583       Sakshi


Choose an option:
1. Insert President
2. Insert Secretary
3. Insert Member
4. Delete President
5. Delete Secretary
6. Delete Member
7. Display Linked List
8. Exit

Linked List is Empty !!


Choose an option:
1. Insert President
2. Insert Secretary
3. Insert Member
4. Delete President
5. Delete Secretary
6. Delete Member
7. Display Linked List
8. Exit
8
dbl01@dbl01-HP-ProDesk-400-G6-Desktop-Mini-PC:~$
```