**Assignment- C07**

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**Problem Statement:** The Department of Computer Engineering has a 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 a club. First node is reserved for the president of the club and the last node is reserved for the secretary of the club. Write C++ program to maintain club member‘s information using singly linked lists. 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) Display list in reverse order using recursion

e) Two linked lists exist for two divisions. Concatenate two lists.

**Program :-**

#include<iostream>

using namespace std;

struct node

{

char name[50];

int PRN;

node \*next,\*head=NULL;

void accept();

void display();

void Delete();

void members();

void reverse();

void concatenate(node \*a,node \*b);

}ob,ob1;

void node :: reverse()

{

node \* cn = head;

node \*next=NULL;

node \*prev=NULL;

while(cn != NULL)

{

next=cn->next;

cn->next=prev;

prev=cn;

cn=next;

}

head = prev;

}

void node :: concatenate(node \*a,node \*b)

{

if( a != NULL && b!= NULL )

{

if (a->next == NULL)

a->next = b;

else

concatenate(a->next,b);

}

else

{

cout << "Either a or b is NULL\n";

}

}

void node::accept()

{

node \*ptr,\*temp;

ptr=new node;

if(head==NULL)

{

cout<<"\n Enter Presidents information:";

cin>>ptr->name;

cin>>ptr->PRN;

ptr->next=NULL;

head=ptr;

}

else

{

if(head->next==NULL)

{

cout<<"\n Enter secretary information: ";

cin>>ptr->name;

cin>>ptr->PRN;

ptr->next=NULL;

head->next=ptr;

}

else

{

cout<<"\n Enter members information:";

cin>>ptr->name;

cin>>ptr->PRN;

ptr->next=NULL;

temp=head;

while(temp->next->next!=NULL)

{

temp=temp->next;

}

ptr->next=temp->next;

temp->next=ptr;

}

}

}

void node::display()

{

node \*temp;

cout<<"\n The pinnacle club information is :\n";

temp=head;

while(temp!=NULL)

{

cout<<"\n";

cout<<temp->name<<" ";

cout<<temp->PRN;

temp=temp->next;

}

}

void node:: Delete()

{

node \*temp,\*n;

int prn;

cout<<"\nEnter PRN to delete :";

cin>>prn;

if(head->PRN==prn)

{

temp=head;

head->next=head;

delete temp;

}

else{

temp=head;

while(temp->next->PRN!=prn)

{

temp=temp->next;

}

n=temp->next;

temp->next=temp->next->next;

delete n;

}

}

void node :: members()

{

node \*temp;

int count=0;

temp=head;

while(temp!=NULL)

{

count++;

temp=temp->next;

}

cout<<"Total no of members of club are : "<<count;

}

int main()

{

int ch;

char choice;

do

{

cout<<"\nPress 1. to insert president, secretary and members: ";

cout<<"\npress 2. to display Pinnacle club:";

cout<<"\npress 3. to delete the member:";

cout<<"\npress 4. to compute total no of members : ";

cout<<"\npress 5. to display reverse :";

cout<<"\npress 6, to insert president, secretary and members of list2:";

cout<<"\npress 7. to concatenate the two lists:";

cin>>ch;

switch(ch)

{

case 1:

ob.accept();

break;

case 2:

ob.display();

break;

case 3:

ob.Delete();

break;

case 4:

ob.members();

break;

case 5:

ob.reverse();

break;

case 6:

ob1.accept();

break;

case 7:

ob1.concatenate(ob.head,ob1.head);

}

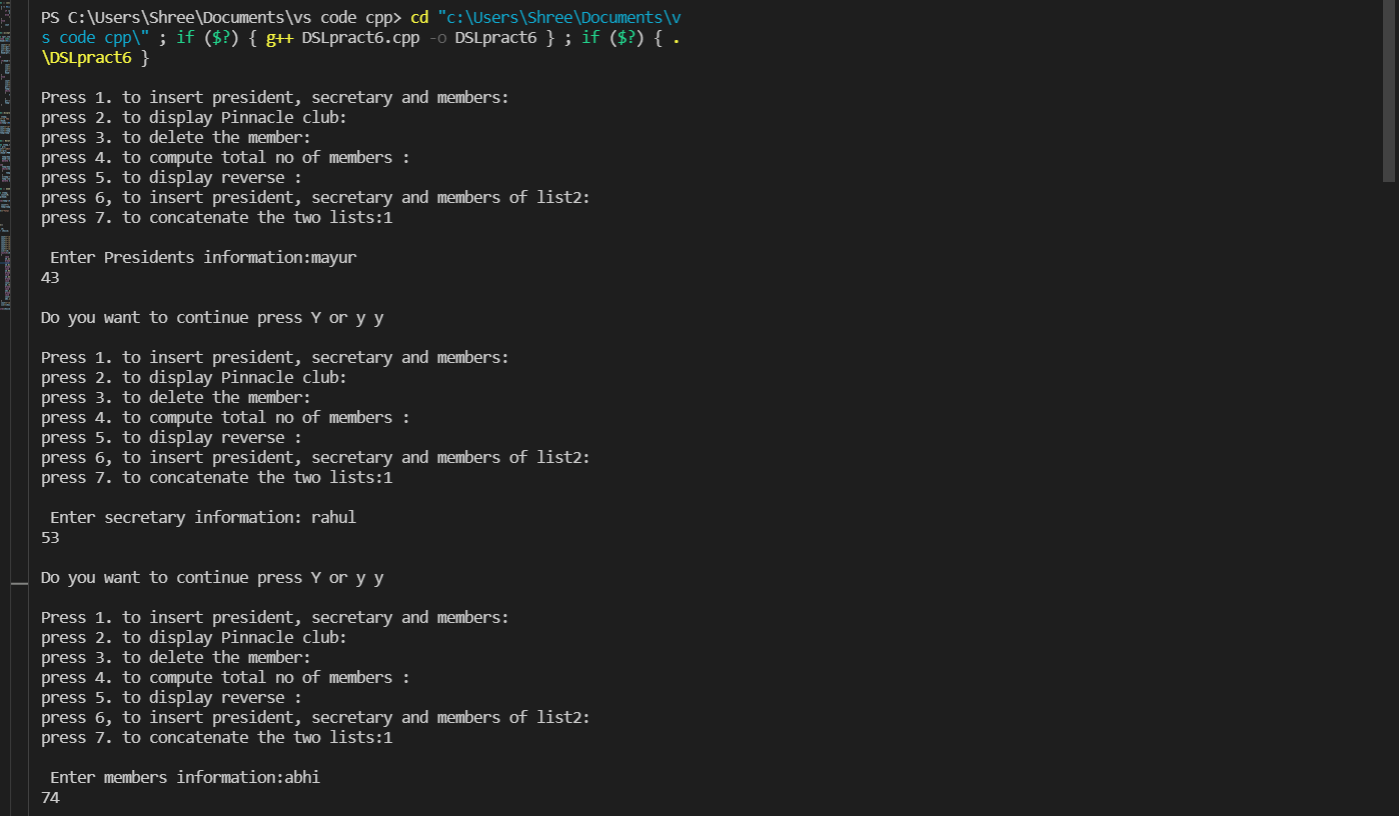
cout<<"\nDo you want to continue press Y or y ";

cin>>choice;

}while(choice=='Y' || choice=='y');

}

**Output :-**

****

