//CODE:

```cpp
#include<iostream>
#include<string.h>
using namespace std;
int op;
struct node
{
public:
int prn;
int rollno;
char name[50];
struct node *next;
};
class SLL
{
node
*s=NULL,*head1=NULL,*temp1=NULL,*head2=NULL,*temp2=NULL,*head=NULL,*temp=NULL;
int b,c,i,j,ct;
char a[20];
public:
node *create();
void insertp();
void insertm();
void delp();
void dels();
void delm();
void display();
void count();
void reverse();
void rev(node *temp);
void concat();
};
node *SLL::create()
{
 node *p=new(struct node);
    cout<<"Enter name of student ";
    cin>>a;
```

```cpp
    strcpy(p->name,a);
    cout<<"\nEnter PRN no. of student ";
    cin>>b;
    p->prn=b;
    cout<<"\nEnter student rollno ";
    cin>>c;
    p->rollno=c;
    p->next=NULL;
    return  p;
 }
void SLL::insertm()
 {
   node *p=create();
   if(head==NULL)
   {   head=p;
   }
   else
   {    temp=head;
       while(temp->next!=NULL)
       {   temp=temp->next;  }
         temp->next=p;
   }
 }
void SLL::insertp()
 {
     node *p=create();
   if(head==NULL)
   {   head=p;
   }
   else
   {
     temp=head;
        head=p;
         head->next=temp->next;
   }
 }
void SLL::display()
  {
```

```cpp
   if(head==NULL)
{
   cout<<"linklist is empty";
 }
   else
{
    temp=head;
    cout<<"PRN   RollnO   NAME  \n";
   while(temp->next!=NULL)
    {
   cout<<"  \n"<<temp->prn<<"   "<<temp->rollno<<"   "<<temp->name;
   temp=temp->next;
   }
    cout<<"   "<<temp->prn<<"   "<<temp->rollno<<"   "<<temp->name;
   }
}
void SLL::delm()
{ int m,f=0;
  cout<<"\n Enter the PRN no. of student whose data you want to delete";
  cin>>m;
  temp=head;
  while(temp->next!=NULL)
  {
     if(temp->prn==m)
     {        s->next=temp->next;
              delete(temp);
              f=1;
     }
     s=temp;
     temp=temp->next;
   }    if(f==0)
       {  cout<<"\n sorry memeber not deleted ";  }
 }
 void SLL::delp()
{   temp=head;
   head=head->next;
    delete(temp);
   }
```

```cpp
    void SLL::dels()
{
   temp=head;
   while(temp->next!=NULL)
   {  s=temp;
   temp=temp->next;
   }    s->next=NULL;
     delete(temp);

}
void SLL::count()
{    temp=head;   ct=0;
     while(temp->next!=NULL)
     {   temp=temp->next; ct++;   }
       ct++;
       cout<<"  Count of members is:"<<ct;

 }

 void SLL::reverse()
 {    rev(head);

 }
 void SLL::rev(node *temp)
 {    if(temp==NULL)
     {
        return;

     }
     else
     {
        rev(temp->next);

     }
     cout<<"   "<<temp->prn<<"   "<<temp->rollno<<"   "<<temp->name;
 }

  void SLL::concat()
```

```cpp
{ int k,j;
  cout<<"Enter no. of members in list1";
  cin>>k;
   head=NULL;
  for(i=0;i<k;i++)
  { insertm();
    head1=head;

  }
  head=NULL;
 cout<<"Enter no. of members in list2";
  cin>>j;
  for(i=0;i<j;i++)
  { insertm();
    head2=head;
  } head=NULL;
   temp1=head1;
 while(temp1->next!=NULL)
 {  temp1=temp1->next;
     temp1->next=head2;
     temp2=head1;
   cout<<"   PRN   rollno  NAME  \n";
    while(temp2->next!=NULL)
    {
    cout<<"\n   "<<temp2->prn<<"   "<<temp2->rollno<<" " <<temp2->name<<"\n";
    temp2=temp2->next;
    }
 cout<<"\n   "<<temp2->prn<<"   "<<temp2->rollno<<"    "<<temp2->name<<"\n";
   }
  }
int main()
{
   SLL s;
   int i;
   char ch;
 do{
     cout<<"\n ---------MENU---------";
     cout<<"\n  1. To insert president   ";
```

```cpp
cout<<"\n  2. To insert member   ";
cout<<"\n  3. To insert secretary ";
cout<<"\n  4. To delete president   ";
cout<<"\n  5. To delete member  ";
cout<<"\n  6. To delete secretary ";
cout<<"\n  7. To display data   ";
cout<<"\n  8. Count of members";
cout<<"\n  9. To display reverse of list ";
cout<<"\n  10.To concatenate two lists ";
cout<<endl;
cin>>i;
switch(i)
{      case 1:  s.insertp();
                break;
       case 2:  s.insertm();
                break;
       case 3:  s.insertm();
                break;
       case 4:  s.delp();
                break;
       case 5:  s.delm();
                break;
       case 6:  s.dels();
                break;
       case 7:  s.display();
                break;
       case 8:  s.count();
                break;
       case 9:  s.reverse();
                break;
       case 10:  s.concat();
                break;
       default:
       cout<<"\n Please enter valid choice";
}
  cout<<"\n do you want to continue enter y/Y \n";
  cin>>ch;
```

```
    }while(ch=='y'||ch=='Y');
    return 0;
}
```

OUTPUT:

```
---------MENU---------
  1. To insert president
  2. To insert member
  3. To insert secretary
  4. To display data
  5. To count the members
  6. To reverse the list
  7. To ddelete president
  8. To delete member
  9. To delete secretary
  10.To concatenate two lists
1
Enter name of student ABC

Enter PRN no. of student 111

Enter student rollno 222

 do you want to continue enter y/Y
Y
```

```
        ---------MENU---------
    1.  To insert president
    2.  To insert member
    3.  To insert secretary
    4.  To display data
    5.  To count the members
    6.  To reverse the list
    7.  To ddelete president
    8.  To delete member
    9.  To delete secretary
    10.To concatenate two lists
    2
Enter name of student PQR

Enter PRN no. of student 333

Enter student rollno 444

 do you want to continue enter y/Y
    Y
```

```
        ---------MENU---------
    1.  To insert president
    2.  To insert member
    3.  To insert secretary
    4.  To display data
    5.  To count the members
    6.  To reverse the list
    7.  To ddelete president
    8.  To delete member
    9.  To delete secretary
    10.To concatenate two lists
    3
Enter name of student XYZ

Enter PRN no. of student 666

Enter student rollno 777

 do you want to continue enter y/Y
    Y
```

```
---------MENU----------
1.  To insert president
2.  To insert member
3.  To insert secretary
4.  To display data
5.  To count the members
6.  To reverse the list
7.  To ddelete president
8.  To delete member
9.  To delete secretary
10.To concatenate two lists
4
PRN     RollnO    NAME

111     222      ABC
333     444      PQR      666      777     XYZ
 do you want to continue enter y/Y
Y
```

```
---------MENU----------
1.  To insert president
4.  To display data
5.  To count the members
6.  To reverse the list
7.  To ddelete president
8.  To delete member
9.  To delete secretary
10.To concatenate two lists
5
   Count of members is:3
 do you want to continue enter y/Y
Y
```

```
---------MENU---------
1. To insert president
2. To insert member
3. To insert secretary
4. To display data
5. To count the members
6. To reverse the list
7. To ddelete president
8. To delete member
9. To delete secretary
10.To concatenate two lists
6
  666   777   XYZ   333   444   PQR   111   222   ABC
 do you want to continue enter y/Y
```

```
---------MENU---------
1.  To insert president
2.  To insert member
3.  To insert secretary
4.  To display data
5.  To count the members
6.  To reverse the list
7.  To ddelete president
8.  To delete member
9.  To delete secretary
10.To concatenate two lists
7

 do you want to continue enter y/Y
Y
```

```
---------MENU---------
1. To insert president
2. To insert member
3. To insert secretary
4. To display data
5. To count the members
6. To reverse the list
7. To ddelete president
8. To delete member
9. To delete secretary
10.To concatenate two lists
8

Enter the PRN no. of student whose data you want to delete 333
```

```
---------MENU---------
1.  To insert president
2.  To insert member
3.  To insert secretary
4.  To display data
5.  To count the members
6.  To reverse the list
7.  To ddelete president
8.  To delete member
9.  To delete secretary
10.To concatenate two lists
9
```