PROGAM 8 SETS USIN LINKED LIST (VANILA ICECREAM)

**#include**<iostream>

**#include**<string.h>

**using** **namespace** std;

**class** seclass

{

**public**:

**char** name[15];

seclass \*next;

**public**:

seclass\* **insert**(seclass \*s1,seclass \*h);

**void** **display**(seclass \*s1);

**void** **seunion**(seclass \*s1,seclass \*s2);

**void** **seinter**(seclass \*s1,seclass \*s2);

**void** **sediff1**(seclass \*s1,seclass \*s2);

**void** **sediff2**(seclass \*s1,seclass \*s2);

**void** **seneither**(seclass \*s1,seclass \*s2,seclass \*s3);

}\*h1=NULL,\*h2=NULL,\*h3=NULL;

seclass\* **seclass::insert**(seclass \*s1,seclass \*h)

{

seclass \*t;

t=h;

**if**(h==NULL)

{

h=s1;

}

**else**

{

**while**(t->next!=NULL)

t=t->next;

t->next=s1;

}

**return** (h);

}

**void** **seclass:: display**(seclass \*s1)

{

seclass \*temp;

temp=s1;

**while**(temp!=NULL)

{

cout<<temp->name;

temp=temp->next;

}

}

**void** **seclass :: seunion**(seclass \*s1,seclass \*s2)

{

seclass \*t1,\*t2;

t1=s1; t2=s2;

**int** flag=0;

**for**(t1=s1;t1!=NULL;t1=t1->next)

cout<<"\t"<< t1->name;

**for**(t2=s2;t2!=NULL;t2=t2->next)

{

flag=0;

**for**(t1=s1;t1!=NULL;t1=t1->next)

{

**if**(**strcmp**(t1->name,t2->name)==0)

{

flag=1; **break**;

}

}

**if**(flag==0)

cout<<"\t"<<t2->name;

}

}

**void** **seclass::seinter**(seclass \*s1,seclass \*s2)

{

seclass \*t1,\*t2;

t1=s1; t2=s2;

**int** flag=0;

**for**(t1=s1;t1!=NULL;t1=t1->next)

{

flag=0;

**for**(t2=s2;t2!=NULL;t2=t2->next)

{

**if**(**strcmp**(t1->name,t2->name)==0)

{

flag=1; **break**;

}

}

**if**(flag==1)

cout<<"\t"<<t1->name;

}

}

**void** **seclass :: sediff1**(seclass \*s1,seclass \*s2)

{

seclass \*t1,\*t2;

t1=s1; t2=s2;

**int** flag=0;

**for**(t1=s1;t1!=NULL;t1=t1->next)

{

flag=0;

**for**(t2=s2;t2!=NULL;t2=t2->next)

{

**if**(**strcmp**(t1->name,t2->name)==0)

{

flag=1; **break**;

}

}

**if**(flag==0)

cout<<"\t"<<t1->name;

}

}

**void** **seclass::sediff2**(seclass \*s1,seclass \*s2)

{

seclass \*t1,\*t2;

t1=s1; t2=s2;

**int** flag=0;

**for**(t2=s2;t2!=NULL;t2=t2->next)

{

flag=0;

**for**(t1=s1;t1!=NULL;t1=t1->next)

{

**if**(**strcmp**(t1->name,t2->name)==0)

{

flag=1; **break**;

}

}

**if**(flag==0)

cout<<"\t"<<t2->name;

}

}

**void** **seclass ::seneither**(seclass \*s1,seclass \*s2,seclass \*s3)

{

seclass \*t1,\*t2,\*t3;

**int** flag=0;

**for**(t1=s1;t1!=NULL;t1=t1->next)

{

flag=0;

**for**(t2=s2;t2!=NULL;t2=t2->next)

{

**if**(**strcmp**(t1->name,t2->name)==0)

{

flag=1; **break**;

}

}

**if**(flag==0)

{

**for**(t3=s3;t3!=NULL;t3=t3->next)

{

**if**(**strcmp**(t1->name,t3->name)==0)

{

flag=1;**break**;

}

}

}

**if**(flag==0)

cout<<"\t"<<t1->name;

}

}

**int** **main**()

{

seclass s;

seclass \*t;

**int** n,i,ch;

cout<<"\nEnter total students for SE Class";

cin>>n;

**for**(i=0;i<n;i++)

{

t=**new** seclass;

cout<<"enter name to be inserted\n";

cin>>t->name;

t->next=NULL;

h1=s.insert(t,h1);

}

s.display(h1);

cout<<"\nEnter total number of students for vanila";

cin>>n;

**for**(i=0;i<n;i++)

{

t=**new** seclass;

cout<<"enter name to be inserted\n";

cin>>t->name;

t->next=NULL;

h2=s.insert(t,h2);

}

s.display(h2);

cout<<"\nEnter total students for Butterscotch";

cin>>n;

**for**(i=0;i<n;i++)

{

t=**new** seclass;

cout<<"enter name to be inserted\n";

cin>>t->name;

t->next=NULL;

h3=s.insert(t,h3);

}

s.display(h3);

**do**

{

cout<<"\n\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*MENU\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*\*";

cout<<"\n 1. Union";

cout<<"\n 2. Intersection";

cout<<"\n 3. Difference (V-B)";

cout<<"\n 4 Difference (B-v)";

cout<<"\n 5. Neither V nor B";

cin>>ch;

**switch**(ch)

{

**case** 1:s.seunion(h2,h3);

**break**;

**case** 2: s.seinter(h2,h3);

**break**;

**case** 3: s.sediff1(h2,h3);

**break**;

**case** 4: s.sediff2(h2,h3);

**break**;

**case** 5: s.seneither(h1,h2,h3);

**break**;

}

}**while**(ch<6);

}