#include<iostream>

using namespace std;

class Student

{

int roll;

Student \*next;

public:

Student()

{

roll=0;

next=NULL;

}

Student(int r)

{

roll=r;

next=NULL;

}

friend class Set;

};

class Set

{

int total,roll;

Student \*head;

public:

Set()

{

head=NULL;

}

void create(int roll);

void insert();

void display();

Set both(Set b);

Set either();

Set vanillaOnly();

Set butterscotchOnly();

Set neither();

};

void Set::create(int roll)

{

Student \*p=new Student(roll);

if(head==NULL)

{

head=p;

}

else

{

Student \*temp=head;

while(temp->next!=NULL)

{

temp=temp->next;

}

temp->next=p;

}

}

void Set::insert()

{

cin>>total;

cout<<"Enter all the roll no.s\n";

for(int i=0;i<total;i++)

{

cin>>roll;

create(roll);

}

}

void Set::display()

{

cout<<"Set is:\n";

Student \*p=head;

while(p!=NULL)

{

cout<<p->roll<<" ";

p=p->next;

}

cout<<endl;

}

Set Set::both(Set b)

{

cout<<"Roll No. of students who like both Vanilla and ButterS\n";

Student \*temp=head;

Student \*tempb=b.head;

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

{

if(temp->roll==tempb->roll)

{

cout<<tempb->roll<<"\t";

}

tempb=tempb->next;

temp=temp->next;

}

}

int main()

{

Set b,v,s;

cout<<"Enter the total number of students\n";

s.insert();

s.display();

cout<<"Enter the total number of students who like Vanilla.\n";

v.insert();

v.display();

cout<<"Enter the total number of students who like Butterscotch.\n";

b.insert();

b.display();

b.both(v);

return 0;

}