#include<iostream>

using namespace std;

void unions(int a[],int b[],int c,int k){

int i,j;

cout<<"Union is\n{";

for(i=0;i<k;i++){

cout<<b[i]<<",";

}

for(i=0;i<c;i++){

for(j=0;j<k+1;j++){

if(a[i]==b[j]){

break;

}

}

if(j==k){

cout<<a[i]<<",";

}

}

cout<<"}";

}

void intersection(int a[],int b[],int c,int k){

int i,j;

cout<<"Intersection is\n{";

for(i=0;i<c;i++){

for(j=0;j<k;j++){

if(a[i]==b[j]){

cout<<a[i]<<",";

break;

}

}

}

cout<<"}";

}

void complement(int a[],int b[],int c,int k){

int i,j;

cout<<"Complement of A is\n{";

for(i=0;i<c;i++){

for(j=0;j<k;j++){

if(a[i]==b[j]){

break;

}

}

if(j==k){

cout<<a[i]<<",";

}

}

cout<<"}";

}

void difference(int a[],int b[],int c,int k){

int i,j;

cout<<"A-B= is\n{";

for(i=0;i<c;i++){

for(j=0;j<k;j++)

{

if(a[i]==b[j])

{

break;

}

}

if(j==k){

cout<<a[i]<<",";

}

}

cout<<"}";

}

void symdif(int a[],int b[],int d,int k){

int i,j;

int c[k],m=0;

cout<<"Symmetric difference of A and B is\n{";

for(i=0;i<d;i++){

for(j=0;j<k;j++){

if(a[i]==b[j]){

c[m++]=a[i];

break;

}

}

if(j==k){

cout<<a[i]<<",";

}

}

for(i=0;i<k;i++){

for(j=0;j<m;j++){

if(b[i]==c[j]){

break;

}

}

if(j==m){

cout<<b[i]<<",";

}

}

cout<<"}";

}

int main(){

cout<<" Menu"<<endl;

cout<<"1.Union of two sets"<<endl;

cout<<"2.Intersection of two sets"<<endl;

cout<<"3.Complement of set"<<endl;

cout<<"4.Difference of two set"<<endl;

cout<<"5.Symmetric difference of two sets"<<endl;

int o,i,n,c;

cout<<"Enter option: ";

cin>>o;

if(o!=3){

cout<<"Enter length of set A: ";

}

else{

cout<<"Enter length of universe set: ";

}

cin>>n;

int a[n];

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

cout<<"Enter element:";

cin>>a[i];

}

if(o!=3){

cout<<"Enter length of set B: ";

}

else{

cout<<"Enter length of set A: ";

}

cin>>c;

int b[c];

for(i=0;i<c;i++){

cout<<"Enter element:";

cin>>b[i];

}

if(o==1){

unions(a,b,n,c);

}

else if(o==2){

intersection(a,b,n,c);

}

else if(o==3){

complement(a,b,n,c);

}

else if(o==4){

difference(a,b,n,c);

}

else{

symdif(a,b,n,c);

}

}