**Assignment 2.(Set Operations).**

#include <iostream>

using namespace std;

class setops{

public:

int no;

int rollno[20];

void accept(){

cout<<endl<<"Enter count:";

cin>>no;

cout<<endl<<"Enter rollnos:";

for(int i=0;i<no;i++){

cin>>rollno[i];

}

}

void display(){

cout<<"{";

for(int i=0;i<no;i++){

if(i<no-1){

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

}else{

cout<<rollno[i];

}

}

cout<<"}";

}

void uns(setops c1,setops c2){

int cnt=0,flag=0;

for(int i=0;i<c1.no;i++){

rollno[cnt]=c1.rollno[i];

cnt++;

}

for(int j=0;j<c2.no;j++){

flag=0;

for(int i=0;i<c1.no;i++){

if(c2.rollno[j]==c1.rollno[i]){

flag=1;

break;

}

}

if(flag==0){

rollno[cnt]=c2.rollno[j];

cnt++;

}

}

no=cnt;

}

void diff(setops c1,setops c2){

int cnt=0,flag=0;

for(int i=0;i<c1.no;i++){

flag=0;

for(int j=0;j<c2.no;j++){

if(c1.rollno[i]==c2.rollno[j]){

flag=1;

break;

}

}

if(flag==0){

rollno[cnt]=c1.rollno[i];

cnt++;

}

}

no=cnt;

}

void intersect(setops c1,setops c2){

int flag=0,cnt=0;

for(int j=0;j<c2.no;j++){

flag=0;

for(int i=0;i<c1.no;i++){

if(c2.rollno[j]==c1.rollno[i]){

flag=1;

break;

}

}

if(flag==1){

rollno[cnt]=c2.rollno[j];

cnt++;

}

}

no=cnt;

}

};

int main()

{

setops total,cricket,bad,unions,inter,onc,onb,nei;

int ch;

cout<<endl<<"Enter rollno of students in the class:";

total.accept();

total.display();

cout<<endl<<"Enter rollno of students who plays cricket:";

cricket.accept();

cricket.display();

cout<<endl<<"Enter rollno of students who plays badminton";

bad.accept();

bad.display();

do{

cout<<endl<<endl<<"1.Union...\n2.Intersection....\n3.playing only cricket...\n4.Playing only badminton...\n5.Neither nor";

cout<<endl<<"Enter your choice;";

cin>>ch;

switch(ch){

case 1:

unions.uns(cricket,bad);

unions.display();

break;

case 2:

inter.intersect(cricket,bad);

inter.display();

break;

case 3:

onc.diff(cricket,bad);

onc.display();

break;

case 4:

onb.diff(bad,cricket);

onb.display();

break;

case 5:

nei.diff(total,unions);

nei.display();

break;

}

}while(ch!=8);

return 0;

}