

//sets

```
def removeDuplicate(SL):
```

```
    SL1=[]
```

```
    for i in SL:
```

```
        if i not in SL1:
```

```
            SL1.append(i)
```

```
    return SL1
```

```
def TakeInput(sport):
```

```
    n=int(input("Enter Number of Students Playing "+sport+":"));
```

```
    SL=[];
```

```
    SL1=[]
```

```
    print("Enter Names of N student");
```

```
    for i in range(n):
```

```
        name=input();
```

```
        SL.append(name);
```

```
    SL1=removeDuplicate(SL);
```

```
    return SL1;
```

```
def DisplayList(sport,SL):
```

```
    print("Students Playing "+sport+":");
```

```
    for i in range(len(SL)):
```

```
        print(SL[i], end=" ");
```

```
    print();
```

```
def DisplayAns(SL):
```

```
    for i in range(len(SL)):
```

```
        print(SL[i], end=" ");
```

```
    print();
```

```
def InterSection(SL1,SL2):
```

```
    SL3=[];
```

```
for i in SL1:
    if i in SL2 :
        SL3.append(i);
return SL3;
```

```
def diff(SL1,SL2):
    SL3=[];
    for i in SL1:
        if i not in SL2:
            SL3.append(i);
    return SL3;
```

```
def Unioin(SL1,SL2):
    SL3=SL1;
    for i in SL2:
        if i not in SL1:
            SL3.append(i);
    return SL3;
```

```
def sym_diff(SL1,SL2):
    SL3=diff(SL1,SL2);
    SL4=diff(SL2,SL1);
    SL5=Unioin(SL3,SL4);
    return SL5;
```

```
def A_Ans(SL1,SL2):
    SL4=InterSection(SL1,SL2);
    return SL4;
```

```
def B_Ans(SL1,SL2):
    SL4=sym_diff(SL1,SL2);
```

```
return SL4;
```

```
def C_Ans(SL1,SL2,SL3):
```

```
SL4=diff(SL1,Unioin(SL2,SL3));
```

```
return SL4;
```

```
def D_Ans(SL1,SL2,SL3):
```

```
SL4=diff(InterSection(SL1,SL3),SL2);
```

```
return SL4;
```

```
SL=[]
```

```
SEComp=[];
```

```
n=int(input("Enter Number of Students in SEComp:"));
```

```
print("Enter Names of N student");
```

```
for i in range(n):
```

```
    name=input();
```

```
    SL.append(name);
```

```
SEComp=removeDuplicate(SL);
```

```
Cricket=TakeInput("Cricket");
```

```
Badminton=TakeInput("Badminton");
```

```
Football=TakeInput("Football");
```

```
flag=1;
```

```
while flag==1:
```

```
    print("-----MENU-----");
```

```
    print("1.List of students who play both cricket and badminton ");
```

```
    print("2.List of students who play either cricket or badminton but not both");
```

```
    print("3.Number of students who play neither cricket nor badminton");
```

```
    print("4.Number of students who play cricket and football but not badminton.");
```

```
    print("5.Exit");
```

```
    ch=int(input("Enter Your Choice:"));
```

```
if ch==1:

    print("List of students who play both cricket and badminton: ",A_Ans(Cricket,Badminton))

    a=input("\nDo you want to continue:(Yes/No):");

    if a=="yes":

        flag=1;

    else:

        flag=0;
```

```
elif ch==2:

    print("List of students who play either cricket or badminton but not both: ",B_Ans(Cricket,Badminton))

    a=input("\nDo you want to continue:(Yes/No):");

    if a=="yes":

        flag=1;

    else:

        flag=0;
```

```
elif ch==3:

    print("Number of students who play neither cricket nor badminton: ",C_Ans(SEComp,Cricket,Badminton))

    a=input("\nDo you want to continue:(Yes/No):");

    if a=="yes":

        flag=1;

    else:

        flag=0;
```

```
elif ch==4:

    print("Number of students who play cricket and football but not badminton: ",D_Ans(Cricket,Badminton,Football))

    a=input("\nDo you want to continue:(Yes/No):");

    if a=="yes":

        flag=1;
```

else:

flag=0;

elif ch==5:

flag=0;

print("Thanks For Using our system");

else:

print("Wrong Choice!!!!");

a=input("\nDo you want to continue(Yes/No):");

if a=="yes":

flag=1;

else:

flag=0;