"""3. In Second year Computer Engineering class of M students, set A of students play cricket and

set B of students play badminton. Write python program to find and display-

A. Set of students who play either cricket or badminton or not both

B. Set of students who play both cricket and badminton

C. Set of students who play only cricket

D. Set of students who play only badminton

E. Number of students who play neither cricket nor badminton"""

C=[]

n=int(input("Enter the no. of students in class : "))

print("Enter name of all the students in the class  : ")

for i in range(n):

    data=input()

    C.append(data)

print("Name of all the students in the class are : ",C)

A=[]

n1=int(input("Enter the no. of students who play Cricket : "))

print("Enter the students name who play Cricket : ",)

for i in range(n1):

    data=input()

    A.append(data)

j=[x for x in A if(x in C)]

print("Students who play cricket from class : ",j)

B=[]

n2=int(input("Enter the no. of students who play badminton : "))

print("Enter the students name who play Badminton : ",)

for i in range(n2):

    data=input()

    B.append(data)

f=[x for x in B if(x in C)]

print("Students who play badminton from class : ",f)

c=[x for x in f if(x not in j)]

d=[x for x in j if(x not in f)]

cd=c+d

print("Students who play either cricket nor badminton but not both : ",cd)

print()

cb=[x for x in f if x in j]

print("Students who play both cricket and badminton : ",cb)

print()

s=[x for x in j if(x not in f)]

print("Students who play only Cricket : ",s)

m=[x for x in f if(x not in j)]

print("Students who play only Badminton:",m)

y=[]

for i in C:

    if i not in j:

        y.append(i)

z=[]

for j in C:

    if j not in f:

        z.append(j)

    a=[x for x in y if x in z]

print ("No. of students who play neither cricket nor badminton:",len(a))

print()

Output:-

Enter the no. of students in class : 10

Enter name of all the students in the class :

amar

arpan

amarnath

gourav

soham

shravani

madhura

aditya

divyanshu

Name of all the students in the class are : ['', 'amar', 'arpan', 'amarnath', 'gourav', 'soham', 'shravani', 'madhura', 'aditya', 'divyanshu']

Enter the no. of students who play Cricket : 5

Enter the students name who play Cricket :

amarnath

aditya

arpan

divyanshu

Students who play cricket from class : ['amarnath', 'aditya', 'arpan', 'divyanshu', '']

Enter the no. of students who play badminton : 3

Enter the students name who play Badminton :

amar

shravani

arpan

Students who play badminton from class : ['amar', 'shravani', 'arpan']

Students who play either cricket nor badminton but not both : ['amar', 'shravani', 'amarnath', 'aditya', 'divyanshu', '']

Students who play both cricket and badminton : ['arpan']

Students who play only Cricket : ['amarnath', 'aditya', 'divyanshu', '']

Students who play only Badminton: ['amar', 'shravani']

No. of students who play neither cricket nor badminton: 3