Assignment 1

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comp=[]
n=int(input("enter the no. of students in SE comp :"))
print("enter the name of SE comp students :")
for i in range(0,n):
    q=input()
    comp.append(q)
print("name of the students into SE computer :",comp)
cricket=[]
c=int(input("enter no of student plays cricket :"))
print("enter the name of student plays cricket :")
for i in range(0,c):
    q=input()
    cricket.append(q)
print("name of students play cricket :",cricket)
badminton=[]
b=int(input("enter no. of student plays badminton :"))
print("enter the names of the student plays badminton :")
for i in range(0,b):
    q=input()
    badminton.append(q)
print("name of student play badminton :",badminton)
football=[]
f=int(input("enter no of student plays football :"))
print("enter the names of student plays football :")
for i in range(0,f):
    q=input()
    football.append(q)
print("name of students play football :",football)
print("given are the options")
print("1.list of students who play both cricket and badmintion")
print("2.list of students who play either cricket or badminton but not
both")
print("3.no. of students who play neither cricket nor badminton")
print("4.no. of students who play cricket and football but not badminton")
ch=int(input("enter your choice :"))
if(ch==1):
  CB(cricket,badminton)
elif(ch==2):
   CNB(cricket,badminton)
elif(ch==3):
   NCNB(SEcomp,cricket,badminton)
elif(ch==4):
   CNF(cricket,football,badminton)
def union(list1,list2):
   list3=list1.copy()
   for val in list2:
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        if val not in list2:
            list3.append(val)
    print(list3)
def intersection(list1,list2):
    list3=[ ]
    for val in list1:
       if val in list2:
          list3.append(val)
    return(list3)
def difference(list1,list2):
    list3=[ ]
    for val in list1:
       if val not in list2:
           list3.append(val)
    return(list3)
def symmetricdiff(list1,list2):
     list3=[ ]
     D1=difference(list1,list2)
     D2=difference(list2,list1)
     list3=union(D1,D2)
     return(list3)

def CB(list1,list2):
     list3=[ ]
     list3=intersection(list1,list2)
     print("list of students who play both cricket and badmintion :",list3)
     a=len(list3)
     print("no. of students who play both cricket and badmintion :",a)
CB(cricket,badminton)
def CNB(list1,list2):
    list3=[ ]
    list3=symmetricdiff(list1,list2)
    print("list of students who play either cricket or badminton but not
both :",list3)
    b=len(list3)
    print("no. of students who play either cricket or badminton but not
both :",b)
CNB(cricket,badminton)
def NCNB(list1,list2,list3):
    list4=[ ]
    list4=difference(list1,union(list2,list3))
    print("list of students who play neither cricket nor badminton
:",list4)
    c=len(list4)
    print("no. of students who play neither cricket nor badminton :",c)
NCNB(SEcomp,cricket,badminton)
def CNF(list1,list2,list3):
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    list4=[ ]
    list4=difference(intersection(list1,list2),list3)
    print("list of students who play cricket and football but not
badminton :",list4)
    d=len(list4)
    print("no. of students who play cricket and football but not badminton
:",d)
CNF(cricket,football,badminton)
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