```python
'''
        Group A - Assignment 1
        In second year computer engineering class, group A students play cricket,
group B students play badminton and group C students play football.
Write a python program using functions to compute following: -
a)      List of students who play both cricket and badminton
b)      List of students who play either cricket or badminton but not both
c)      Number of students who play neither cricket nor badminton
d)      Number of students who play cricket and football but not badminton.
(Note- While realizing the group, duplicate entries should be avoided, Do not use SET built-in functions)
'''
*************************************************************************************************************
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                        pro
def accept_set(A,Str):
    n = int(input("Enter the total no. of student who play %s : "%Str))
    for i in range(n) :
        x = input("Enter the name of student %d who play %s : "%((i+1),Str))
        A.append(x)
    print("Set accepted successfully");

def display_set(A,Str):
    n = len(A)
    if(n == 0) :
        print("\nGroup of Students who play %s =  { }"%Str)
    else :
        print("\nGroup of Students who play %s =  {"%Str,end=' ')
        for i in range(n-1) :
            print("%s,"%A[i],end=' ')
        print("%s }"%A[n-1]);

def search_set(A,X) :
    n = len(A)
    for i in range(n):
        if(A[i] == X) :
            return (1)
    return (0)


def find_intersection_set(A,B,C):
    for i in range(len(A)):
        flag = search_set(B,A[i]);
        if(flag == 1) :
            C.append(A[i])

def find_difference_set(A,B,C):
    for i in range(len(A)):
        flag = search_set(B,A[i]);
        if(flag == 0) :
            C.append(A[i])


def find_union_set(A,B,C):
    for i in range(len(A)):
        C.append(A[i])
    for i in range(len(B)):
        flag = search_set(A,B[i]);
        if(flag == 0) :
            C.append(B[i])

def Main() :
    Group_A = []
    Group_B = []
    Group_C = []

    while True :
        print ("\t1 : Accept the Information")
        print ("\t2 : List of students who play both cricket and badminton")
        print ("\t3 : List of students who play either cricket or badminton but not both")
        print ("\t4 : Number of students who play neither cricket nor badminton")
        print ("\t5 : Number of students who play cricket and football but not badminton")
        print ("\t6 : Exit")

        ch = int(input("Enter your choice : "))
        Group_R = []

        if (ch == 6):
            print ("End of Program")
            break

        elif (ch==1):
            accept_set(Group_A,"Cricket")
            accept_set(Group_B,"Badminton")
            accept_set(Group_C,"Football")
            display_set(Group_A,"Cricket")
            display_set(Group_B,"Badminton")
            display_set(Group_C,"Football")

        elif (ch==2):
            display_set(Group_A,"Cricket")
            display_set(Group_B,"Badminton")
            find_intersection_set(Group_A,Group_B,Group_R)
            display_set(Group_R," both Cricket and Badminton")

        elif (ch==3):
            display_set(Group_A,"Cricket")
            display_set(Group_B,"Badminton")
            R1 = []
            find_union_set(Group_A,Group_B,R1)
            R2 = []
            find_intersection_set(Group_A,Group_B,R2)
            find_difference_set(R1,R2,Group_R)
            display_set(Group_R," either cricket or badminton but not both")

        elif (ch==4):
            display_set(Group_A,"Cricket")
            display_set(Group_B,"Badminton")
            display_set(Group_C,"Football")
            R1 = []
            find_union_set(Group_A,Group_B,R1)
            find_difference_set(Group_C,R1,Group_R)
            display_set(Group_R," neither cricket nor badminton")
            print("Number of students who play neither cricket nor badminton = %s"%len(Group_R))
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                      output
1 : Accept the Information
              2 : List of students who play both cricket and badminton
              3 : List of students who play either cricket or badminton but not both
              4 : Number of students who play neither cricket nor badminton
              5 : Number of students who play cricket and football but not badminton
              6 : Exit
Enter your choice : 1
Enter the total no. of student who play Cricket : 4
Enter the name of student 1 who play Cricket : jay
Enter the name of student 2 who play Cricket : sam
Enter the name of student 3 who play Cricket : rat
Enter the name of student 4 who play Cricket : puja
Set accepted successfully
Enter the total no. of student who play Badminton : 3
Enter the name of student 1 who play Badminton : sam
Enter the name of student 2 who play Badminton : kunal
Enter the name of student 3 who play Badminton : rutu
Set accepted successfully
Enter the total no. of student who play Football : 2
Enter the name of student 1 who play Football : sayli
Enter the name of student 2 who play Football : pranali
Set accepted successfully

Group of Students who play Cricket = { jay, sam, rat, puja }

Group of Students who play Badminton = { sam, kunal, rutu }

Group of Students who play Football = { sayli, pranali }
              1 : Accept the Information
              2 : List of students who play both cricket and badminton
              3 : List of students who play either cricket or badminton but not both
              4 : Number of students who play neither cricket nor badminton
              5 : Number of students who play cricket and football but not badminton
              6 : Exit
Enter your choice : 2

Group of Students who play Cricket = { jay, sam, rat, puja }

Group of Students who play Badminton = { sam, kunal, rutu }

Group of Students who play  both Cricket and Badminton = { sam }
              1 : Accept the Information
              2 : List of students who play both cricket and badminton
              3 : List of students who play either cricket or badminton but not both
              4 : Number of students who play neither cricket nor badminton
              5 : Number of students who play cricket and football but not badminton
              6 : Exit
Enter your choice : 3

Group of Students who play Cricket = { jay, sam, rat, puja }

Group of Students who play Badminton = { sam, kunal, rutu }

Group of Students who play  either cricket or badminton but not both = { jay, rat, puja, kunal, rutu }
              1 : Accept the Information
              2 : List of students who play both cricket and badminton
              3 : List of students who play either cricket or badminton but not both
              4 : Number of students who play neither cricket nor badminton
              5 : Number of students who play cricket and football but not badminton
              6 : Exit
Enter your choice : 4

Group of Students who play Cricket = { jay, sam, rat, puja }

Group of Students who play Badminton = { sam, kunal, rutu }

Group of Students who play Football = { sayli, pranali }

Group of Students who play  neither cricket nor badminton = { sayli, pranali }
Number of students who play neither cricket nor badminton = 2
              1 : Accept the Information
              2 : List of students who play both cricket and badminton
              3 : List of students who play either cricket or badminton but not both
              4 : Number of students who play neither cricket nor badminton
              5 : Number of students who play cricket and football but not badminton
              6 : Exit
Enter your choice : 5

Group of Students who play Cricket = { jay, sam, rat, puja }

Group of Students who play Football = { sayli, pranali }

Group of Students who play Badminton = { sam, kunal, rutu }

Group of Students who play cricket and football but not badminton = { }
Number of students who play cricket and football but not badminton = 0
              1 : Accept the Information
              2 : List of students who play both cricket and badminton
              3 : List of students who play either cricket or badminton but not both
              4 : Number of students who play neither cricket nor badminton
              5 : Number of students who play cricket and football but not badminton
              6 : Exit
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