size = int(input("Enter size of set 1: "))

size1 = int(input("Enter size of set 2: "))

print("\nFor set 1:")

list1 = []

for \_ in range(size):

element = int(input("Enter element: "))

list1.append(element)

print("set 1 =", list1)

print("\nFor set 2:")

list2 = []

for \_ in range(size1):

element = int(input("Enter element: "))

list2.append(element)

print("set 2 =", list2)

choice = 0

while choice != 10:

print("\n---------------------")

print("\*\*\* Menu \*\*\*")

print(" 1.Add")

print(" 2.Remove")

print(" 3.Contains")

print(" 4.Size")

print(" 5.Intersection")

print(" 6.Union")

print(" 7.Difference")

print(" 8.Subset")

print(" 9.Proper Subset")

print(" 10.Exit")

print("---------------------\n")

choice = int(input("Enter Choice: "))

print()

if choice == 1:

e = int(input("Enter Number to Add: "))

list1.append(e)

print("set 1 =", list1)

elif choice == 2:

e = int(input("Enter Number to Remove: "))

if e in list1:

list1.remove(e)

print("set 1 =", list1)

else:

print(e, "is not in set 1")

elif choice == 3:

e = int(input("Enter Number to Search in set 1: "))

if e in list1:

print("Number Present in Set 1!!")

else:

print("Number is not Present in Set 1!!")

print("set 1 =", list1)

elif choice == 4:

print("Set 1 Contains {} elements!!".format(len(list1)))

elif choice == 5:

list3 = [element for element in list1 if element in list2]

print("Set 1 =", list1)

print("Set 2 =", list2)

print("Intersection =", list3)

elif choice == 6:

list3 = list1.copy()

for element in list2:

if element not in list1:

list3.append(element)

print("Set 1 =", list1)

print("Set 2 =", list2)

print("Union =", list3)

elif choice == 7:

list3 = [element for element in list1 if element not in list2]

print("Set 1 =", list1)

print("Set 2 =", list2)

print("set1-set2 =", list3)

elif choice == 8:

print("Set 1 =", list1)

print("Set 2 =", list2)

def sub():

flag = 0

for e in list2:

if e not in list1:

flag = 1

if flag == 1:

print("Set 2 is not a Subset of Set 1!!")

else:

print("Set 2 is the Subset of Set 1!!")

sub()

elif choice == 9:

print("Set 1 =", list1)

print("Set 2 =", list2)

if sorted(list1) == sorted(list2):

print("Set 2 is the Proper Subset of Set 1!!")

else:

print("Set 2 is not a Proper Subset of Set 1!!")

elif choice == 10:

print("Thanks for using this Program !!")

break

elif choice < 1 or choice > 10:

print("Please Enter a Valid Choice !!")