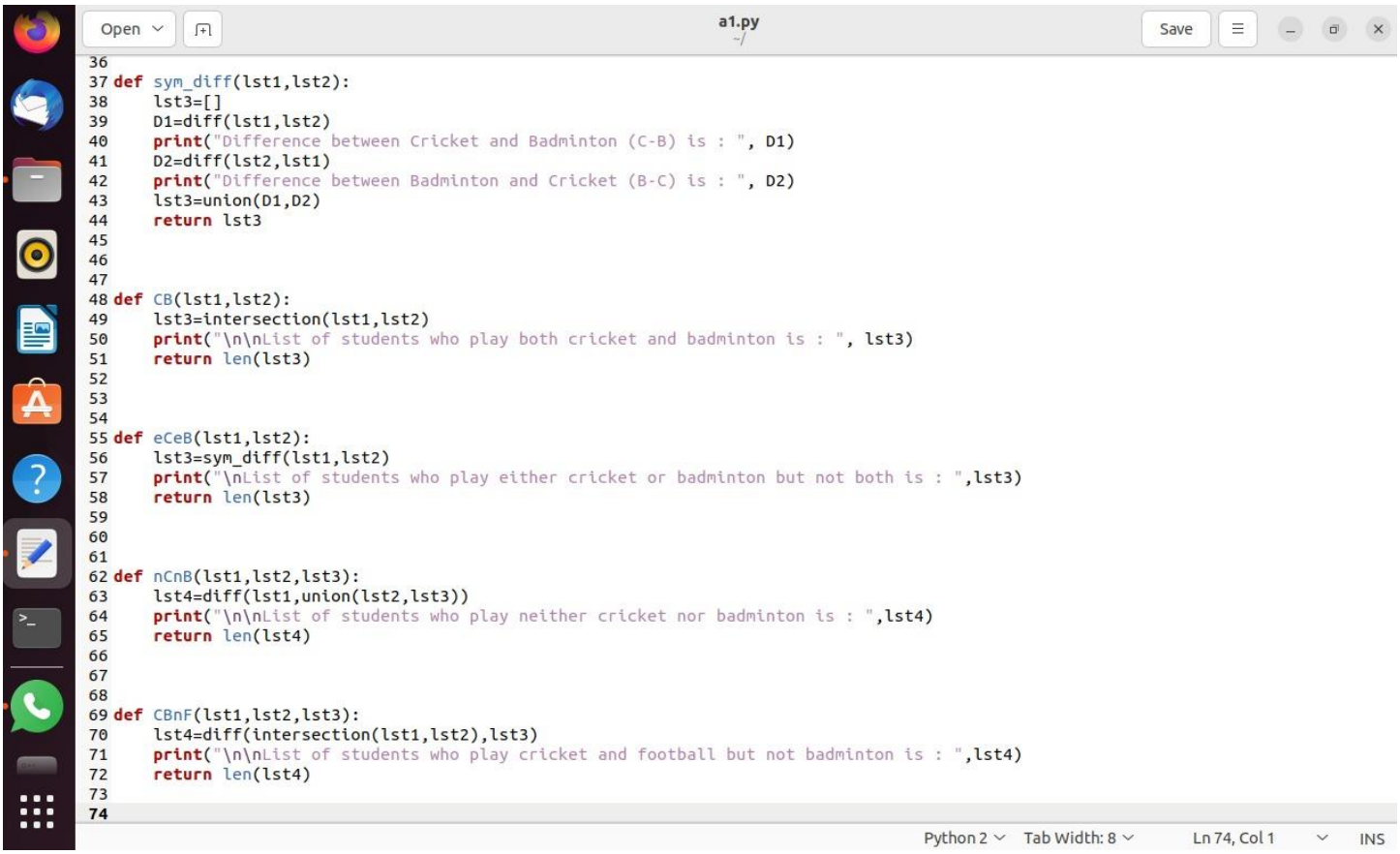

```python
def removeDuplicate(d):
    lst=[]
    for i in d:
        if i not in lst:
            lst.append(i)
    return lst



def intersection(lst1,lst2):
    lst3=[]
    for val in lst1:
        if val in lst2:
            lst3.append(val)
    return lst3


def union(lst1,lst2):
    lst3=lst1.copy()
    for val in lst2:
        if val not in lst3:
            lst3.append(val)
    return lst3


def diff(lst1,lst2):
    lst3=[]
    for val in lst1:
        if val not in lst2:
            lst3.append(val)
    return lst3


def sym_diff(lst1,lst2):
    lst3=[]
    D1=diff(lst1,lst2)
```




```python

def sym_diff(lst1,lst2):
    lst3=[]
    D1=diff(lst1,lst2)
    print("Difference between Cricket and Badminton (C-B) is : ", D1)
    D2=diff(lst2,lst1)
    print("Difference between Badminton and Cricket (B-C) is : ", D2)
    lst3=union(D1,D2)
    return lst3



def CB(lst1,lst2):
    lst3=intersection(lst1,lst2)
    print("\n\nList of students who play both cricket and badminton is : ", lst3)
    return len(lst3)



def eCeB(lst1,lst2):
    lst3=sym_diff(lst1,lst2)
    print("\nList of students who play either cricket or badminton but not both is : ",lst3)
    return len(lst3)



def nCnB(lst1,lst2,lst3):
    lst4=diff(lst1,union(lst2,lst3))
    print("\n\nList of students who play neither cricket nor badminton is : ",lst4)
    return len(lst4)



def CBnF(lst1,lst2,lst3):
    lst4=diff(intersection(lst1,lst2),lst3)
    print("\n\nList of students who play cricket and football but not badminton is : ",lst4)
    return len(lst4)

```

Open a1.py ~/ Save

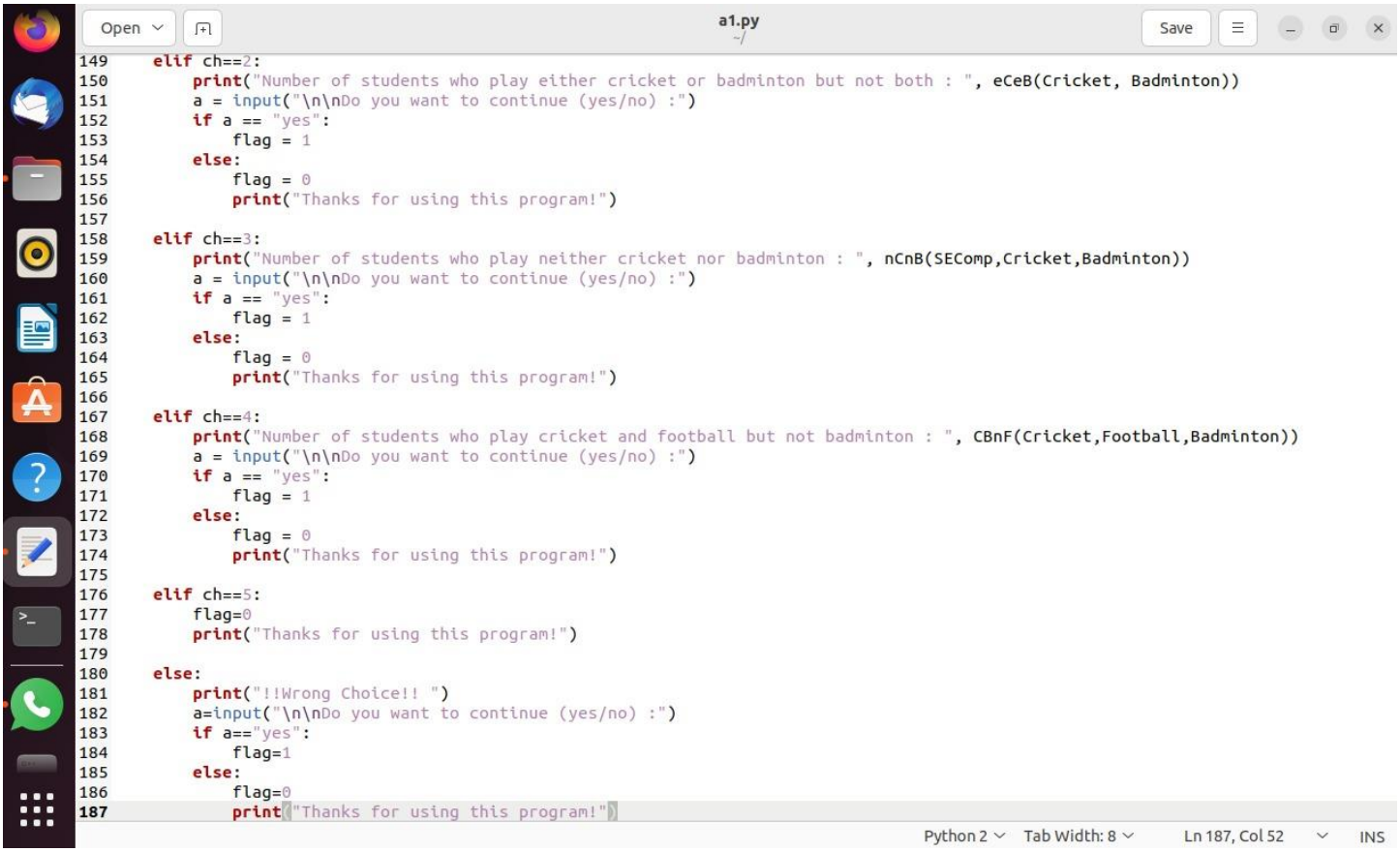
```
# Main function

# Creating an empty list for SE COMP
SEComp = []
n = int(input("\nEnter number of students in SE COMP: "))
print("Enter the names of",n,"students (Please press ENTER after entering each students name) :")
for i in range(0, n):
    ele = str(input())
    SEComp.append(ele)  # adding the element
print("Original list of students in SEComp : " + str(SEComp))



# Creating an empty list for Cricket
Cricket = []
n = int(input("\n\nEnter number of students who play cricket : "))
print("Enter the names of",n,"students who play cricket (Please press ENTER after entering each students name) :")
for i in range(0, n):
    ele = input()
    Cricket.append(ele)  # adding the element
print("Original list of students playing cricket is :" +str(Cricket))
Cricket=removeDuplicate(Cricket)
print("The list of students playing cricket after removing duplicates : " +str(Cricket))


# Creating an empty list for Football
Football = []
n = int(input("\n\nEnter number of students who play football : "))
print("Enter the name of",n,"students who play football (Please press ENTER after entering each students name) :")
for i in range(0, n):
    ele = input()
    Football.append(ele)  # adding the element
print("Original list of students playing football :" +str(Football))
Football=removeDuplicate(Football)
print("The list of students playing football after removing duplicates : " +str(Football))

```

Python 2 Tab Width: 8 Ln 76, Col 2 INS

Open a1.py ~/ Save

```
# Creating an empty list for Badminton
Badminton = []
n = int(input("\n\nEnter number of students who play badminton : "))
print("Enter the name of",n,"students who play badminton (Please press ENTER after entering each students name) :")
for i in range(0, n):
    ele = input()
    Badminton.append(ele)  # adding the element
print("Original list of students playing badminton :" +str(Badminton))
Badminton=removeDuplicate(Badminton)
print("The list of students playing badminton after removing duplicates : " +str(Badminton))



flag=1
while flag==1:
    print("\n\n--------------------MENU--------------------\n")
    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. List of students who play neither cricket nor badminton")
    print("4. Number of students who play cricket and football but not badminton")
    print("5. Exit\n")
    ch=int(input("Enter your Choice (from 1 to 5) :"))

    if ch==1:
        print("Number of students who play both cricket and badminton : ", CB(Cricket,Badminton))
        a = input("\n\nDo you want to continue (yes/no) :")
        if a == "yes":
            flag = 1
        else:
            flag = 0
            print("Thanks for using this program!")

    elif ch==2:
        print("Number of students who play either cricket or badminton but not both : ", eCeB(Cricket, Badminton))
        a = input("\n\nDo you want to continue (yes/no) :")
        if a == "yes":
            flag = 1
        else:
            flag = 0
```

Python 2 Tab Width: 8 Ln 155, Col 2 INS


Open
a1.py
~/
Save
elif ch==2:
print("Number of students who play either cricket or badminton but not both : ", eCeB(Cricket, Badminton))
a = input("\n\nDo you want to continue (yes/no) :")
if a == "yes":
flag = 1
else:
flag = 0
print("Thanks for using this program!")
elif ch==3:
print("Number of students who play neither cricket nor badminton : ", nCnB(SEComp,Cricket,Badminton))
a = input("\n\nDo you want to continue (yes/no) :")
if a == "yes":
flag = 1
else:
flag = 0
print("Thanks for using this program!")
elif ch==4:
print("Number of students who play cricket and football but not badminton : ", CBnF(Cricket,Football,Badminton))
a = input("\n\nDo you want to continue (yes/no) :")
if a == "yes":
flag = 1
else:
flag = 0
print("Thanks for using this program!")
elif ch==5:
flag=0
print("Thanks for using this program!")
else:
print("!!Wrong Choice!! ")
a=input("\n\nDo you want to continue (yes/no) :")
if a=="yes":
flag=1
else:
flag=0
print("Thanks for using this program!")
Python 2
Tab Width: 8
Ln 187, Col 52
INS

```
onkar@ubuntu:~$ python3 a1.py

Enter number of students in SE COMP: 5
Enter the names of 5 students (Please press ENTER after entering each students name) :
rahul
raj
jay
yash
rakesh
Original list of students in SEComp : ['rahul', 'raj', 'jay', 'yash', 'rakesh']


Enter number of students who play cricket : 2
Enter the names of 2 students who play cricket (Please press ENTER after entering each students name) :
raj
jay
Original list of students playing cricket is :['raj', 'jay']
The list of students playing cricket after removing duplicates : ['raj', 'jay']


Enter number of students who play football : 3
Enter the name of 3 students who play football (Please press ENTER after entering each students name) :
rakesh
yash
raj
Original list of students playing football :['rakesh', 'yash', 'raj']
The list of students playing football after removing duplicates : ['rakesh', 'yash', 'raj']


Enter number of students who play badminton : 3
Enter the name of 3 students who play badminton (Please press ENTER after entering each students name) :
jay
raj
rahul
Original list of students playing badminton :['jay', 'raj', 'rahul']
The list of students playing badminton after removing duplicates : ['jay', 'raj', 'rahul']


--------------------MENU--------------------
```

```
--------------------MENU--------------------

1. List of students who play both cricket and badminton
2. List of students who play either cricket or badminton but not both
3. List of students who play neither cricket nor badminton
4. Number of students who play cricket and football but not badminton
5. Exit

Enter your Choice (from 1 to 5) :1


List of students who play both cricket and badminton is :  ['raj', 'jay']
Number of students who play both cricket and badminton :  2


Do you want to continue (yes/no) :yes


--------------------MENU--------------------

1. List of students who play both cricket and badminton
2. List of students who play either cricket or badminton but not both
3. List of students who play neither cricket nor badminton
4. Number of students who play cricket and football but not badminton
5. Exit

Enter your Choice (from 1 to 5) :2
Difference between Cricket and Badminton (C-B) is :  []
Difference between Badminton and Cricket (B-C) is :  ['rahul']

List of students who play either cricket or badminton but not both is :  ['rahul']
Number of students who play either cricket or badminton but not both :  1


Do you want to continue (yes/no) :yes


--------------------MENU--------------------
```

```
Do you want to continue (yes/no) :yes


--------------------MENU--------------------

1. List of students who play both cricket and badminton
2. List of students who play either cricket or badminton but not both
3. List of students who play neither cricket nor badminton
4. Number of students who play cricket and football but not badminton
5. Exit

Enter your Choice (from 1 to 5) :3


List of students who play neither cricket nor badminton is :  ['yash', 'rakesh']
Number of students who play neither cricket nor badminton :  2


Do you want to continue (yes/no) :yes


--------------------MENU--------------------

1. List of students who play both cricket and badminton
2. List of students who play either cricket or badminton but not both
3. List of students who play neither cricket nor badminton
4. Number of students who play cricket and football but not badminton
5. Exit

Enter your Choice (from 1 to 5) :4


List of students who play cricket and football but not badminton is :  []
Number of students who play cricket and football but not badminton :  0


Do you want to continue (yes/no) :yes


--------------------MENU--------------------
```

```
--------------------MENU--------------------

1. List of students who play both cricket and badminton
2. List of students who play either cricket or badminton but not both
3. List of students who play neither cricket nor badminton
4. Number of students who play cricket and football but not badminton
5. Exit

Enter your Choice (from 1 to 5) :5
Thanks for using this program!
onkar@ubuntu:~$
```