

Practical No: 3**1. To merge two list and find second largest element in the list using bubble sort****Code:**

```
a = []
c = []
n=int(input("Enter number of elements:"))
for i in range(1,n+1):
    b=int(input("Enter element:"))
    a.append(b)
n=int(input("Enter number of elements:"))
for i in range(1,n+1):
    b=int(input("Enter element:"))
    c.append(b)
s = a+c

n = len(s)
for i in range(n):
    for j in range(0, n-i-1):
        if s[j] > s[j+1] :
            temp = s[j]
            s[j] = s[j+1]
            s[j+1] = temp
for i in range(0,n):
    print("\n \t Element : ",s[i])

print("Sorted :",n)
print("2nd Last element of the list is :",s[n-2])
```

Output:

```
C:\Users\mca_dept\Desktop\Python Pracs\Lab3>python program1.py
Enter number of elements:7
Enter element:123
Enter element:345
Enter element:56
Enter element:2341
Enter element:45623
Enter element:4523
Enter element:12335
Enter number of elements:6
Enter element:123
Enter element:453
Enter element:23
Enter element:1235
Enter element:7886
Enter element:57543

        Element : 23
        Element : 56
        Element : 123
        Element : 123
        Element : 345
        Element : 453
        Element : 1235
        Element : 2341
        Element : 4523
        Element : 7886
        Element : 12335
        Element : 45623
        Element : 57543
Sorted : 13
2nd Last element of the list is : 45623
```

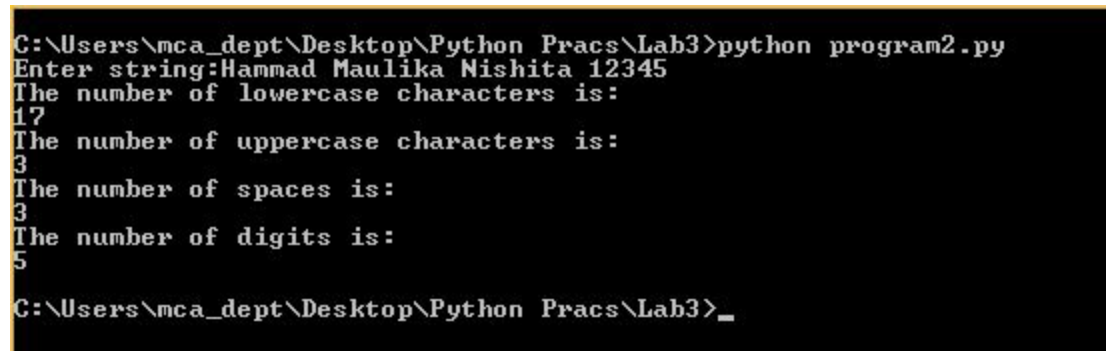
2. To calculate the no of uppercase, lowercase letters, digits and spaces in a string

Code:

```
mystring=input("Enter string:")
n1=0
n2=0
n3=0
n4=0
for i in mystring:
    if(i.islower()):
        n1=n1+1
    elif(i.isupper()):
```

```
        n2=n2+1
    elif(i.isspace()):
        n3=n3+1
    elif(i.isdigit()):
        n4=n4+1

print("The number of lowercase characters is:")
print(n1)
print("The number of uppercase characters is:")
print(n2)
print("The number of spaces is:")
print(n3)
print("The number of digits is:")
print(n4)
```

Output:

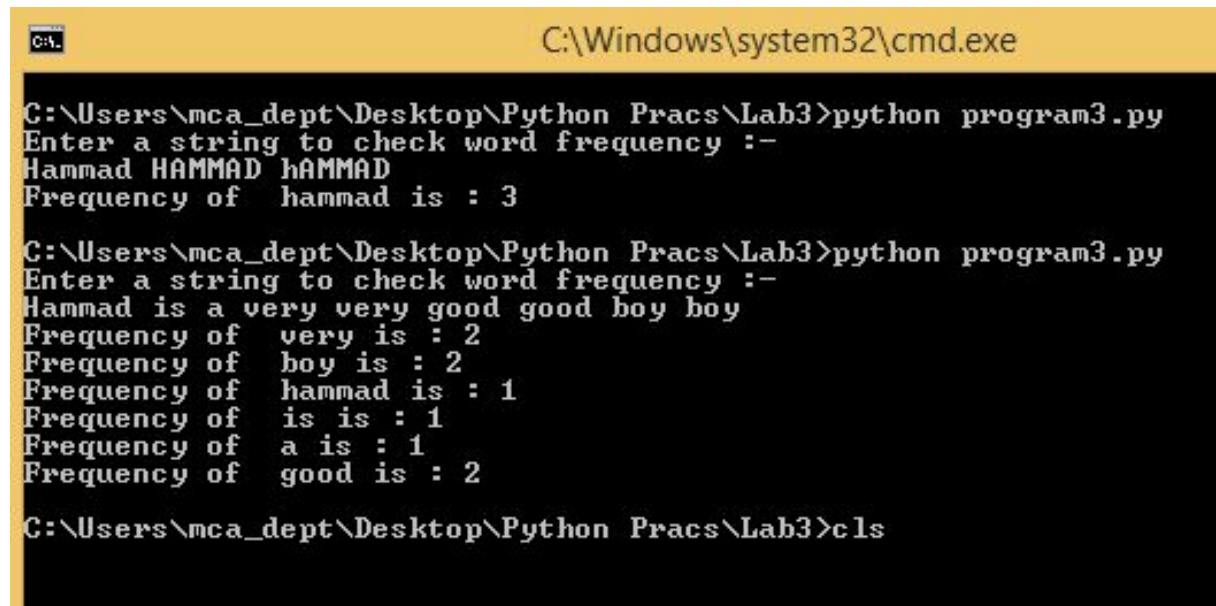
```
C:\Users\mca_dept\Desktop\Python Pracs\Lab3>python program2.py
Enter string:Hammad Maulika Nishita 12345
The number of lowercase characters is:
17
The number of uppercase characters is:
3
The number of spaces is:
3
The number of digits is:
5
C:\Users\mca_dept\Desktop\Python Pracs\Lab3>_
```

3. To count the occurrences of each word in a given string sentence**Code:**

```
class StringFreq(object):
    def freq(self, str):
        str_list = str.split()
        unique_words = set(str_list)
        for words in unique_words :
            print('Frequency of ', words , ' : ', str_list.count(words))

obj = StringFreq()
str = input("Enter a string to check word frequency :- \n")
```

```
str = str.lower()
obj.freq(str)
```

Output:

```
C:\Windows\system32\cmd.exe

C:\Users\mca_dept\Desktop\Python Pracs\Lab3>python program3.py
Enter a string to check word frequency :-
Hammad HAMMAD hAMMAD
Frequency of  hammad is : 3

C:\Users\mca_dept\Desktop\Python Pracs\Lab3>python program3.py
Enter a string to check word frequency :-
Hammad is a very very good boy boy
Frequency of  very is : 2
Frequency of  boy is : 2
Frequency of  hammad is : 1
Frequency of  is is : 1
Frequency of  a is : 1
Frequency of  good is : 2

C:\Users\mca_dept\Desktop\Python Pracs\Lab3>cls
```

4. To add key value pair to the dictionary and search and then delete the given key from the dictionary

Code:

```
class OxfordDictionary(object):
    oxfordDict = {'person': 'a human being','marathon': 'a running race that is about 4
miles','resist': 'to remain strong against the force','run': 'to move with haste; act quickly'}

    def __init__(self):
        print(self.oxfordDict)

    def random(self):
        self.oxfordDict['shoe'] = 'an external covering for the human foot'
        print (" Shoe : ",self.oxfordDict['shoe'])

    def added(self):
        k = input("Enter the key\n")
```

```
p = input("Enter the pair\n")
self.oxfordDict[k] = p
print(" Added ",k," : ",self.oxfordDict[k])

def display(self):
    print (self.oxfordDict)

def search(self):
    key = input("Enter Key Value to Search\n")
    if key in self.oxfordDict:
        print("Searched Element is ",key," : ",self.oxfordDict[key])
    else :
        print("Key Not Found");

def delete(self):
    key = input("Enter Key Value to delete\n")
    if key in self.oxfordDict:
        print("Deleting Element ",key," : ",self.oxfordDict[key])
        del self.oxfordDict[key]
    else :
        print("Key Not Found");

obj = OxfordDictionary()

while True:
    print("\n1.To Add \n2.To add static value \n3.To Delete\n4.To Search\n5.To
Display\n6.To Quit")
    choice = int(input("Enter choice\n"))
    if choice==1:
        obj.added()
    elif choice==2:
        obj.random()
    elif choice==3:
        obj.delete()
    elif choice==4:
        obj.search()
    elif choice==5:
        obj.display()
    elif choice==6:
```

```

        break
    else:
        print("Invalid choice, please choose again\n")
print("Thank you!!!")

```

Output :

```

C:\Users\mca_dept\Desktop\Python Pracs\Lab3>python -tt program4.py
{'person': 'a human being', 'marathon': 'a running race that is about 4 miles',
'resist': 'to remain strong against the force', 'run': 'to move with haste; act
quickly'}

1.To Add
2.To add static value
3.To Delete
4.To Search
5.To Display
6.To Quit
Enter choice
3
Enter Key Value to delete
person
Deleting Element  person :  a human being

1.To Add
2.To add static value
3.To Delete
4.To Search
5.To Display
6.To Quit
Enter choice
5
{'marathon': 'a running race that is about 4 miles', 'resist': 'to remain strong
against the force', 'run': 'to move with haste; act quickly'}

1.To Add
2.To add static value
3.To Delete
4.To Search
5.To Display
6.To Quit
Enter choice
6
Thank you!!!

```

5. Create one dictionary of 5 students with their name, address, age, class and marks of 5 subjects. Perform all the operations on the created dictionary

Code:

```

all_students = {}
n = 0

```

```

class StudentDictionary(object):
    def __init__(self, x):

```

```
for i in range(0,x):
    all_students[i] = {}
for i in range(0,x):
    all_students[i]['Name']=input('Enter the name of student ')
    print (all_students[i]['Name'])
    all_students[i]['RollNo']=input('Enter the roll number of student ')
    print (all_students[i]['RollNo'])
    all_students[i]['Address']=input('Enter the address of student ')
    print (all_students[i]['Address'])
    all_students[i]['Age']=input('Enter the age of student ')
    print (all_students[i]['Age'])
    all_students[i]['Class']=input('Enter the class of student ')
    print (all_students[i]['Class'])
    all_students[i]['Mark1']=int(input('Enter the marks in subject 1 '))
    print (all_students[i]['Mark1'])
    all_students[i]['Mark2']=int(input('Enter the marks in subject 2 '))
    print (all_students[i]['Mark2'])
    all_students[i]['Mark3']=int(input('Enter the marks in subject 3 '))
    print (all_students[i]['Mark3'])
    all_students[i]['Mark4']=int(input('Enter the marks in subject 4 '))
    print (all_students[i]['Mark4'])
    all_students[i]['Mark5']=int(input('Enter the marks in subject 5 '))
    print (all_students[i]['Mark5'])
    all_students[i]['Total'] = all_students[i]['Mark1'] + all_students[i]['Mark2'] +
all_students[i]['Mark3'] +all_students[i]['Mark4'] + all_students[i]['Mark5']
    print('Total is' , all_students[i]['Total'])
    all_students[i]['Average'] = all_students[i]['Total']/5
    print ('Average is' , all_students[i]['Average'])
```

```
print(all_students)
```

```
def added(self):
    n = n + 1
    i = n
    all_students[i]['Name']=input('Enter the name of student ')
    print (all_students[i]['Name'])
    all_students[i]['RollNo']=input('Enter the roll number of student ')
    print (all_students[i]['RollNo'])
    all_students[i]['Address']=input('Enter the address of student ')
```

```
print (all_students[i]['Address'])
all_students[i]['Age']=input('Enter the age of student ')
print (all_students[i]['Age'])
all_students[i]['Class']=input('Enter the class of student ')
print (all_students[i]['Class'])
all_students[i]['Mark1']=int(input('Enter the marks in subject 1 '))
print (all_students[i]['Mark1'])
all_students[i]['Mark2']=int(input('Enter the marks in subject 2 '))
print (all_students[i]['Mark2'])
all_students[i]['Mark3']=int(input('Enter the marks in subject 3 '))
print (all_students[i]['Mark3'])
all_students[i]['Mark4']=int(input('Enter the marks in subject 4 '))
print (all_students[i]['Mark4'])
all_students[i]['Mark5']=int(input('Enter the marks in subject 5 '))
print (all_students[i]['Mark5'])
all_students[i]['Total'] = all_students[i]['Mark1'] + all_students[i]['Mark2'] +
all_students[i]['Mark3'] + all_students[i]['Mark4'] + all_students[i]['Mark5']
print('Total is ', all_students[i]['Total'])
all_students[i]['Average'] = all_students[i]['Total']/5
print ('Average is ', all_students[i]['Average'])
```

```
def display(self):
print (self.all_students)
```

```
def search(self):
key = input('Enter Key Value to Search\n')
if key in self.all_students:
print('Searched Element is ',key,' ',self.all_students[key])
else :
print('Key Not Found');
```

```
def delete(self):
key = input('Enter Key Value to Delete\n')
if key in self.all_students:
print('Deleting Element ',key,' ',self.all_students[key])
del self.oxfordDict[key]
else :
print('Key Not Found');
```



```
def update(self):
    key = input('Enter Key Value to Update\n')
    i = key
    if i in self.all_students:
        all_students[i]['Name']=input('Enter the name of student ')
        print (all_students[i]['Name'])
        all_students[i]['RollNo']=input('Enter the roll number of student ')
        print (all_students[i]['RollNo'])
        all_students[i]['Address']=input('Enter the address of student ')
        print (all_students[i]['Address'])
        all_students[i]['Age']=input('Enter the age of student ')
        print (all_students[i]['Age'])
        all_students[i]['Class']=input('Enter the class of student ')
        print (all_students[i]['Class'])
        all_students[i]['Mark1']=int(input('Enter the marks in subject 1 '))
        print (all_students[i]['Mark1'])
        all_students[i]['Mark2']=int(input('Enter the marks in subject 2 '))
        print (all_students[i]['Mark2'])
        all_students[i]['Mark3']=int(input('Enter the marks in subject 3 '))
        print (all_students[i]['Mark3'])
        all_students[i]['Mark4']=int(input('Enter the marks in subject 4 '))
        print (all_students[i]['Mark4'])
        all_students[i]['Mark5']=int(input('Enter the marks in subject 5 '))
        print (all_students[i]['Mark5'])
        all_students[i]['Total'] = all_students[i]['Mark1'] + all_students[i]['Mark2'] +
        all_students[i]['Mark3'] + all_students[i]['Mark4'] + all_students[i]['Mark5']
        print('Total is ', all_students[i]['Total'])
        all_students[i]['Average'] = all_students[i]['Total']/5
        print ('Average is ', all_students[i]['Average'])
    else :
        print('Key Not Found');

n = int(input('Please enter number of students'))
obj = StudentDictionary(n)
print(all_students)
while True:
```

```
print('\n1.To Add. \n2.To Update. \n3.To Delete. \n4.To Search. \n5.To Display. \n6.To Quit.')
choice = int(input('Enter choice -\n'))
if choice==1:
    obj.added()
elif choice==2:
    obj.update()
elif choice==3:
    obj.delete()
elif choice==4:
    obj.search()
elif choice==5:
    obj.display()
elif choice==6:
    break
else:
    print('Invalid choice, please choose again.\n')
print('Thank you!!!')
```

Output:

6. To concatenate two dictionaries and find sum of all values in dictionary

Code:

```
print("Items of my books:")

MyBooks = {'Absalom, Absalom!': 1, 'Ah, Wilderness!': 2, 'An Acceptable Time': 3}

print(MyBooks)

print("sum of all values of my books:")

print(sum(MyBooks.values()))

print("Items of your books:")

YourBooks = {'Antic Hay': 2, 'Death Be Not Proud': 4, 'A Fanatic Heart': 5}
```

```
print(YourBooks)

print("sum of all values of your books:")

print(sum(YourBooks.values()))


print("merging of My Books and Your Books:")

MyBooks.update(YourBooks)

print (MyBooks)
```

Output:

```
C:\Users\mca_dept\Desktop\Python Pracs\Lab3>python program6.py
Items of my books:
{'Absalom, Absalom!': 1, 'Ah, Wilderness!': 2, 'An Acceptable Time': 3}
sum of all values of my books:
6
Items of your books:
{'Antic Hay': 2, 'Death Be Not Proud': 4, 'A Fanatic Heart': 5}
sum of all values of your books:
11
merging of My Books and Your Books:
{'Absalom, Absalom!': 1, 'Ah, Wilderness!': 2, 'An Acceptable Time': 3, 'Antic Hay': 2, 'Death Be Not Proud': 4, 'A Fanatic Heart': 5}
C:\Users\mca_dept\Desktop\Python Pracs\Lab3>_
```

7. To add and remove elements from set and perform all the set operations like Union, Intersection, Difference and Symmetric Difference**Code:**

```
A = {0, 2, 4, 6, 8};

B = {1, 2, 3, 4, 5};

print(A)

print(B)
```

```
A.add(11)

print ("Updated set:",A)

B.remove(5)

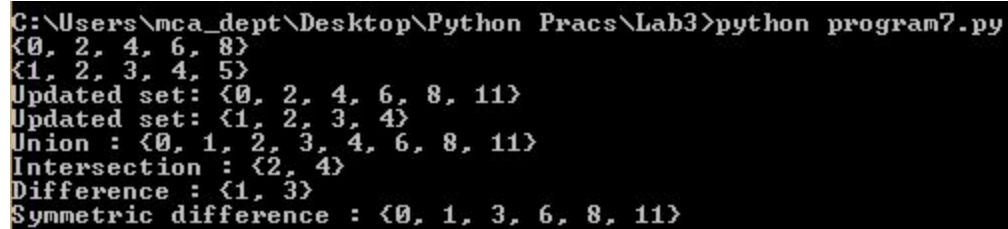
print ("Updated set:",B)

print("Union :", A | B)

print("Intersection :", A & B)

print("Difference :", B - A)

print("Symmetric difference :", A ^ B)
```

Output:

```
C:\Users\mca_dept\Desktop\Python Pracs\Lab3>python program7.py
<0, 2, 4, 6, 8>
<1, 2, 3, 4, 5>
Updated set: <0, 2, 4, 6, 8, 11>
Updated set: <1, 2, 3, 4>
Union : <0, 1, 2, 3, 4, 6, 8, 11>
Intersection : <2, 4>
Difference : <1, 3>
Symmetric difference : <0, 1, 3, 6, 8, 11>
```

8. Perform different operations on Tuple.**Code:**

```
t=(1,2,3,4,5,6)
print (max(t)) #max element
print (min(t)) #min element
print (t*2)    #multiply the elements of tuple
print (2 in t) #if that element is present in the tuple
print (8 in t)
print (t[-5]) #backward indexing
print (t[3])  #forward indexing
print (t[2:4]) #slicing
```

Output:

```
C:\Users\mca_dept\Desktop\Python Pracs\Lab3>python program8.py
6
1
<1, 2, 3, 4, 5, 6, 1, 2, 3, 4, 5, 6>
True
False
2
4
<3, 4>
```

9. Write a Python program to count the elements in a list until an element is a tuple.

Code:

```
def Count(f):
```

```
    count = 0
```

```
    for i in f:
```

```
        if isinstance(i, tuple):
```

```
            break
```

```
        count = count + 1
```

```
    return count
```

```
MyList = [4, 5, 6, 10, 11, 2, 4, (7, 8, 9)]
```

```
print(Count(MyList))
```

Output:

```
C:\Users\mca_dept\Desktop\Python Pracs\Lab3>python program9.py
7
```