

## **08 – Dictionary**

**Ex. No. : 8.1**

**Date: 25.05.24**

**Register No.:231901040**

**Name: Ramanitharan S**

## **Sort Dictionary by Values Summation**

Give a dictionary with value lists, sort the keys by summation of values in value list.

**Input** : test\_dict = {'Gfg' : [6, 7, 4], 'best' : [7, 6, 5]}

**Output** : {'Gfg': 17, 'best': 18}

**Explanation** : Sorted by sum, and replaced.

**Input** : test\_dict = {'Gfg' : [8,8], 'best' : [5,5]}

**Output** : {'best': 10, 'Gfg': 16}

**Explanation** : Sorted by sum, and replaced.

Sample Input:

2

Gfg 6 7 4

Best 7 6 5

Sample Output

Gfg 17

Best 18

**For example:**

<b>Input</b>	<b>Result</b>
2	Gfg 17
Gfg 6 7 4	Best 18
Best 7 6 5	

**Program:**

```
n = int(input())
d = {}
for i in range(n):
    s = input().split()
    d[s[0]] = list(map(int, s[1:]))
d1 = {k: sum(v) for k, v in d.items()}
sorted_d = dict(sorted(d1.items(), key=lambda x: x[1]))
for k, v in sorted_d.items():
    print(k, v)
```

Ex. No. : 8.2

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## Student Record

Create a student dictionary for n students with the student name as key and their test mark assignment mark and lab mark as values. Do the following computations and display the result.

1. Identify the student with the highest average score
2. Identify the student who has the highest Assignment marks
3. Identify the student with the Lowest lab marks
4. Identify the student with the lowest average score

Note:

If more than one student has the same score display all the student names

Sample input:

4

James 67 89 56

Lalith 89 45 45

Ram 89 89 89

Sita 70 70 70

Sample Output:

Ram

James Ram

Lalith

Lalith

**For example:**

Input	Result
4	Ram
James 67 89 56	James Ram

Input	Result
Lalith 89 45 45	Lalith
Ram 89 89 89	Lalith
Sita 70 70 70	

**Program:**

```
n=int(input())
d={}
for i in range(n):
    na=input().split()
    d[na[0]]=int(na[1]),int(na[2]),int(na[3])
    l=int(na[3])
```

```
h=0
for i in d:
    if h< sum(d[i]):
        h=sum(d[i])
        j=i
        h1=sum(d[i])
print(j)
h=0
```

```
for i in d:
    if(h<d[i][1]):
        h=d[i][1]
        j=i
for i in d:
```

```

    if(h==d[i][1]):
        print(i,end=" ")
l1=[]
k=[]
print()
for i in d:
    if(l>d[i][2]):
        l=d[i][2]
        j=i
for i in d:
    if(l==d[i][2]):
        l1.append(i)
for i in range(-1,-len(l1)-1,-1):
    print(l1[i],end=" ")
print()

for i in d:
    if h1> sum(d[i]):
        h1=sum(d[i])
        j=i
print(j)

```

**Ex. No. : 8.3**

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## **Scramble Score**

In the game of Scrabble™, each letter has points associated with it. The total score of a word is the sum of the scores of its letters. More common letters are worth fewer points while less common letters are worth more points.

Write a program that computes and displays the Scrabble™ score for a word. Create a dictionary that maps from letters to point values. Then use the dictionary to compute the score.

A Scrabble™ board includes some squares that multiply the value of a letter or the value of an entire word. We will ignore these squares in this exercise.

The points associated with each letter are shown below:

Points Letters

1 A, E, I, L, N, O, R, S, T and U

2 D and G

3 B, C, M and P

4 F, H, V, W and Y

5 K

8 J and X

10 Q and Z

### Sample Input

REC

### Sample Output

REC is worth 5 points.

### **For example:**

<b>Input</b>	<b>Result</b>
REC	REC is worth 5 points.

### **Program:**

```
def calculate_scrabble_score(word):  
    # Dictionary mapping letters to points  
    letter_points = {  
        'A': 1, 'B': 3, 'C': 3, 'D': 2, 'E': 1, 'F': 4, 'G': 2, 'H': 4,  
        'I': 1, 'J': 8, 'K': 5, 'L': 1, 'M': 3, 'N': 1, 'O': 1, 'P': 3,  
        'Q': 10, 'R': 1, 'S': 1, 'T': 1, 'U': 1, 'V': 4, 'W': 4, 'X': 8,  
        'Y': 4, 'Z': 10  
    }  
  
    score = 0  
    for letter in word:  
        letter = letter.upper()  
        score += letter_points.get(letter, 0) # Add the points for each letter, defaulting to 0 if not  
        found  
  
    return score
```



```
word=input()
score = calculate_scrabble_score(word)
print(f"{word} is worth {score} points.")
```

**Ex. No. : 8.4**

**Date: 25.05.24**

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## **Uncommon words**

A sentence is a string of single-space separated words where each word consists only of lowercase letters. A word is uncommon if it appears exactly once in one of the sentences, and does not appear in the other sentence.

Given two sentences s1 and s2, return a list of all the uncommon words. You may return the answer in any order.

Example 1:

Input: s1 = "this apple is sweet", s2 = "this apple is sour"

Output: ["sweet", "sour"]

Example 2:

Input: s1 = "apple apple", s2 = "banana"

Output: ["banana"]

Constraints:

1 <= s1.length, s2.length <= 200

s1 and s2 consist of lowercase English letters and spaces.

s1 and s2 do not have leading or trailing spaces.

All the words in s1 and s2 are separated by a single space.

Note:

Use dictionary to solve the problem

**For example:**

Input	Result
this apple is sweet	sweet sour
this apple is sour	

**Program:**

```
s1 = input().split()
s2 = input().split()
d = {}
for i in s1:
    if i not in d:
        d[i] = 1
    else:
        d[i] += 1
for i in s2:
    if i not in d:
        d[i] = 1
    else:
        d[i] += 1
for i in d:
    if d[i] == 1:
        print(i, end=" ")
```

**Ex. No. : 8.5**

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**+Name: Ramanitharan S**

## **Winner of Election**

Given an array of names of candidates in an election. A candidate name in the array represents a vote cast to the candidate. Print the name of candidates received Max vote. If there is tie, print a lexicographically smaller name.

### **Examples:**

Input : votes[] = {"john", "johnny", "jackie",  
                  "johnny", "john", "jackie",  
                  "jamie", "jamie", "john",  
                  "johnny", "jamie", "johnny",  
                  "john"};

Output : John

We have four Candidates with name as 'John', 'Johnny', 'jamie', 'jackie'. The candidates John and Johny get maximum votes. Since John is alphabetically smaller, we print it. Use dictionary to solve the above problem

### **Sample Input:**

10  
John  
John  
Johny  
Jamie  
Jamie  
Johny

Jack  
Johny  
Johny  
Jackie

**Sample Output:**  
Johny

**For example:**

Input	Result
10	Johny
John	
John	
Johny	
Jamie	
Jamie	
Johny	
Jack	
Johny	
Johny	
Jackie	

**Program:**

```
n=int(input())  
  
d={}  
  
for i in range(n):  
    s=input()  
    if s not in d:  
        d[s]=1
```

```
    else:
        d[s]+=1
h=0
for i in d:
    if h<d[i]:
        h=d[i]
        j=i
print(j)
```