

CS23336-Introduction to Python Programming

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|--------------|------------------------------------|
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| Completed on | Monday, 11 November 2024, 7:30 PM |
| Time taken | 21 hours 11 mins |
| Marks | 10.00/10.00 |
| Grade | 100.00 out of 100.00 |

Question 1

Correct
Mark 1.00 out of 1.00
Flag question

Question text

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:

Input Result

```
2
Gfg 6 7 4   Gfg 17
Best 7 6 5   Best 18
```

Answer:(penalty regime: 0 %)

```
1 n=int(input())
2 data={}
3 for i in range(n):
4     en=input().split()
5     key=en[0]
6     val=[int(num) for num in en[1:]]
7     data[key]=val
8 sum1={}
9 for key in data:
10    sum1[key]=sum(data[key])
11 sorted_data=sorted(sum1.items(),key=lambda item:item[1])
12 for item in sorted_data:
13    print(item[0],item[1])
```

Feedback

Input Expected Got

```
2
Gfg 6 7 4   Gfg 17   Gfg 17
Best 7 6 5   Best 18   Best 18
```

```
2
Gfg 6 6      Best 10   Best 10
Best 5 5     Gfg 12    Gfg 12
```

Passed all tests!

Correct

Marks for this submission: 1.00/1.00.

Question 2

Correct

Mark 1.00 out of 1.00

Flag question

Question text

Given a number, convert it into corresponding alphabet.

| Input | Output |
|-------|--------|
| 1 | A |
| 26 | Z |
| 27 | AA |
| 676 | YZ |

Input Format

Input is an integer

Output Format

Print the alphabets

Constraints

$1 \leq \text{num} \leq 4294967295$

Sample Input 1

26

Sample Output 1

Z

For example:

| Test | Result |
|-------------------------------------|--------|
| <code>print(excelNumber(26))</code> | Z |
| Answer:(penalty regime: 0 %) | |

Reset answer

```
1 def excelNumber(n):
2     res=[]
3     while n>0:
4         n-=1
5         rem=n%26
6         res.append(chr(rem+ord('A')))
7         n//=26
8     return ''.join(res[::-1])
```

Feedback

| Test | Expected | Got |
|------------------------|----------|-----|
| print(excelNumber(26)) | Z | Z |
| print(excelNumber(27)) | AA | AA |

Passed all tests!

Correct
Marks for this submission: 1.00/1.00.

Question 3

Correct
Mark 1.00 out of 1.00
Flag question

Question text

A company wants to send its quotation secretly to its client. The company decided to encrypt the amount they are sending to their client with some special symbols so that the equation amount will not be revealed to any external person. They used the special symbols !, @, #, \$, %, ^, &, *, >, < for 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 respectively. Write a python code to help the company to convert the amount to special symbols.

(Value rounded off to 2 decimal points)

Input

n: Float data type which reads amount to send

Output

s: : String data type which displays symbols

Sample Testcase 1

Input

10000

Output

@!!!!!!

Sample Testcase2

1234.56

Output

@#\$%.^&

For example:

| Input | Result |
|----------|------------|
| 1345.23 | @\$%^.#\$ |
| 15000.59 | @^!!!. ^< |
| 156789 | @^&*><.!!! |

Answer:(penalty regime: 0 %)

```
1 a={'!':'0', '@':'1', '#':'2', '$':'3', '%':'4', '^':'5', '&':'6', '*':'7', '>':'8', '<':'9', '.': '.'}
2 g=float(input())
3 h=f"{g:.2f}"
4 b=str(h)
5 f=''
6 for i in b:
7     for char, val in a.items():
8         if i in val:
9             f+=char
10 if len(b)==len(f):
11     print(f)
```

Feedback

| Input | Expected | Got |
|----------|-------------------|-------------------|
| 1345.23 | @\$%^.#\$ | @\$%^.#\$ |
| 15000.59 | @^!!!!.^< | @^!!!!.^< |
| 1234 | @#\$%.!! | @#\$%.!! |
| 156789 | @^&*><.!@^&*><.!@ | @^&*><.!@^&*><.!@ |

Passed all tests!

Correct

Marks for this submission: 1.00/1.00.

Question 4

Correct

Mark 1.00 out of 1.00

Flag question

Question text

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 | |

Answer:(penalty regime: 0 %)

```
1 def words(s1,s2):
2     w1=s1.split()
3     w2=s2.split()
4     uncommon=[]
5     for w in w1:
6         if w1.count(w)==1 and w not in w2:
7             uncommon.append(w)
8     for w in w2:
9         if w2.count(w)==1 and w not in w1:
10            uncommon.append(w)
11     return uncommon
12 s1=input()
13 s2=input()
14 print(*words(s1,s2))
```

Feedback

| Input | Expected | Got |
|---|------------|------------|
| this apple is sweet this apple is sour | sweet sour | sweet sour |
| apple apple banana | banana | banana |

Passed all tests!

Correct
Marks for this submission: 1.00/1.00.

Question 5

Correct
Mark 1.00 out of 1.00
Flag question

Question text

Objective:

Develop a Python program that takes an input string from the user and counts the number of occurrences of each vowel (a, e, i, o, u) in the string. The program should be case-insensitive, meaning it should treat uppercase and lowercase vowels as the same.

Description:

Vowels play a significant role in the English language and other alphabet-based languages. Counting vowels in a given string is a fundamental task that can be applied in various text processing applications, including speech recognition, linguistic research, and text analysis. The objective of this problem is to create a Python script that accurately counts and displays the number of times each vowel appears in a user-provided string.

Program Requirements:

Input:

First line reading String as input, The string can contain any characters, including letters, numbers, and special characters.

Output:

Display the number of occurrences of each vowel in the string.

The output should list each vowel followed by its count.

Example:

Consider the following example for better understanding:

- **Input:** "Python Programming"
- **Output**

a = 1
e = 0
i = 1
o = 2
u = 0

For example:

| Input | Result |
|-------------|---|
| Hello World | a = 0 e = 1 i = 0 o = 2 u = 0 |
| Python | a = 0 e = 0 i = 0 o = 1 u = 0 |

Answer:(penalty regime: 0 %)

```
1 def vowel(s):
2     vowel={'a':0, 'e':0, 'i':0, 'o':0, 'u':0}
3     s=s.lower()
4     for char in s:
5         if char in vowel:
6             vowel[char]+=1
7     return vowel
8 s=input()
```



```

9 count=vowel(s)
10 for i in 'aeiou':
11     print(f"{i} = {count[i]}")

```

Feedback

| Input | Expected | Got |
|----------------------------|---|---|
| Hello World | a = 0 e = 1 i = 0 o = 2 u = 0 | a = 0 e = 1 i = 0 o = 2 u = 0 |
| AEIOU aeio u | a = 2 e = 2 i = 2 o = 2 u = 2 | a = 2 e = 2 i = 2 o = 2 u = 2 |
| Python | a = 0 e = 0 i = 0 o = 1 u = 0 | a = 0 e = 0 i = 0 o = 1 u = 0 |
| abcdefghijklmnopqrstuvwxyz | a = 1 e = 1 i = 1 o = 1 u = 1 | a = 1 e = 1 i = 1 o = 1 u = 1 |
| 12345!@#\$\$AEIOU | a = 1 e = 1 i = 1 o = 1 u = 1 | a = 1 e = 1 i = 1 o = 1 u = 1 |

Passed all tests!

Correct
Marks for this submission: 1.00/1.00.

Question 6

Correct
Mark 1.00 out of 1.00

Question text

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. 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

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.

[Sample](#) Input

REC

[Sample](#) Output

REC is worth 5 points.

For example:

| Input | Result |
|-------|------------------------|
| REC | REC is worth 5 points. |

Answer:(penalty regime: 0 %)

```

1 a={ 1:['A','E','I','L','N','O','R','S','T','U'],
2     2:['D','G'],
3     3:['B','C','M','Y'],
4     4:['F','H','V','W','Y'],
5     5:['K'],
6     8:['J','X'],
7     10:['Q','Z']
8 }
9 def letterscore(letter):
10     for points,letters in a.items():
11         if letter in letters:
12             return points
13 
```

```

13     return 0
14     b=input().upper()
15     score=0
16     for i in b:
17         score+=letterscore(i)
18     print(f'{b} is worth {score} points.')

```

Feedback

| Input | Expected | Got |
|-------|------------------------|------------------------|
| GOD | GOD is worth 5 points. | GOD is worth 5 points. |
| REC | REC is worth 5 points. | REC is worth 5 points. |

Passed all tests!

Correct
Marks for this submission: 1.00/1.00.

Question 7

Correct
Mark 1.00 out of 1.00
Flag question

Question text

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 Johnny get maximum votes. Since John is alphabetically smaller, we print it. Use dictionary to solve the above problem

Sample Input:

John

John

Johnny

Jamie

Jamie

Johnny

Jack

Johnny

Johnny

Jackie

Sample Output:

Johnny

Answer:(penalty regime: 0 %)

```
1 def find(v):
2     count={}
3     for v1 in v:
4         if v1 in count:
5             count[v1]+=1
6         else:
7             count[v1]=1
8     mv=max(count.values())
9     c=[c1 for c1,co in count.items() if co==mv]
10    return min(c)
11 n=int(input())
12 v=[input() for i in range(n)]
13 print(find(v))
```



Feedback

| Input | Expected | Got |
|--------|----------|--------|
| 10 | | |
| John | | |
| John | | |
| Johnny | | |
| Jamie | | |
| Jamie | Johnny | Johnny |
| Johnny | | |
| Jack | | |
| Johnny | | |
| Johnny | | |
| Jackie | | |

| | | |
|--------|-----|-----|
| 6 | | |
| Ida | | |
| Ida | | |
| Ida | Ida | Ida |
| Kiruba | | |
| Kiruba | | |
| Kiruba | | |

Passed all tests!

Correct

Marks for this submission: 1.00/1.00.

Question 8

Correct

Mark 1.00 out of 1.00

Flag question

Question text

You are given a string word. A letter is called **special** if it appears both in lowercase and uppercase in word.

Your task is to return the number of **special** letters in word.

Constraints

- The input string word will contain only alphabetic characters (both lowercase and uppercase).
- The solution must utilize a dictionary to determine the number of special letters.
- The function should handle various edge cases, such as strings without any special letters, strings with only lowercase or uppercase letters, and mixed strings.

Examples

Example 1:

Input: word = "aaAbcBC"

Output: 3

Explanation:

The special characters in `word` are 'a', 'b', and 'c'.

Example 2:

Input: word = "abc"

Output: 0

Explanation:

No character in `word` appears in uppercase.

For example:

| Test | Result |
|---|--------|
| <code>print(count_special_letters("AaBbCcDdEe"))</code> | 5 |

Answer:(penalty regime: 0 %)

Reset answer

```
1 def count_special_letters(word: str) -> int:
2     count={}
3     for char in word:
4         l=char.lower()
5         if l in count:
6             count[l].add(char)
7         else:
8             count[l]={char}
9     count1=0
10    for i in count.values():
11        if len(i)>1:
12            count1+=1
13    return count1
```

Feedback

| Test | Expected | Got |
|---|----------|-----|
| <code>print(count_special_letters("AaBbCcDdEe"))</code> | 5 | 5 |
| <code>print(count_special_letters("ABCDE"))</code> | 0 | 0 |
| <code>print(count_special_letters("abcde"))</code> | 0 | 0 |

Passed all tests!

Correct
Marks for this submission: 1.00/1.00.

Question 9

Correct
Mark 1.00 out of 1.00
Flag question

Question text

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
James 67 89 56 Ram
Lalith 89 45 45 James Ram
Ram 89 89 89 Lalith
Sita 70 70 70 Lalith

Answer:(penalty regime: 0 %)

```
1 st={}
2 n=int(input())
3 for i in range(n):
4     data=input().split()
5     name=data[0]
6     test=int(data[1])
7     ass=int(data[2])
8     lab=int(data[3])
9     st[name]=(test, ass, lab)
10 havg=float('-inf')
11 lavg=float('inf')
12 hass=float('-inf')
13 llab=float('inf')
14 havgst=[]
15 lavgst=[]
16 hassst=[]
17 llabst=[]
18 for name,marks in st.items():
19     test,ass,lab=marks
20     avgscore=(test+ass+lab)/3
21     if avgscore>havg:
22         havg=avgscore
23         havgst=[name]
24     elif avgscore==havg:
25         havgst.append(name)
26     if ass>hass:
27         hass=ass
28         hassst=[name]
29     elif ass==hass:
30         hassst.append(name)
31     if lab<llab:
32         llab=lab
33         llabst=[name]
34     elif lab==llab:
35         llabst.append(name)
36     if avgscore<lavg:
37         lavg=avgscore
38         lavgst=[name]
39     elif avgscore==lavg:
40         lavgst.append(name)
41 print(*sorted(havgst))
42 print(*sorted(hassst))
43 print(*sorted(llabst))
44 print(*sorted(lavgst))
45
```


| Input | Expected | Got |
|-------------------|------------|------------|
| 4 | | |
| James 67 89 56 | Ram | Ram |
| Lalith 89 45 45 | James Ram | James Ram |
| Ram 89 89 89 | Lalith | Lalith |
| Sita 70 70 70 | Lalith | Lalith |
| 3 | | |
| Raja 95 67 90 | ShadhanA | ShadhanA |
| Aarav 89 90 90 | ShadhanA | ShadhanA |
| ShadhanA 95 95 91 | Aarav Raja | Aarav Raja |
| | Raja | Raja |

Passed all tests!

Correct
Marks for this submission: 1.00/1.00.

Question 10

Correct
Mark 1.00 out of 1.00
Flag question

Question text

A sentence is a list of words that are separated by a single space with no leading or trailing spaces. Each word consists of lowercase and uppercase English letters.

A sentence can be shuffled by appending the 1-indexed word position to each word then rearranging the words in the sentence.

For example, the sentence "This is a sentence" can be shuffled as "sentence4 a3 is2 This1" or "is2 sentence4 This1 a3".

Given a shuffled sentence s containing no more than 9 words, reconstruct and return the original sentence.

Example 1:

Input:
is2 sentence4 This1 a3

Output:
This is a sentence

Explanation: Sort the words in s to their original positions "This1 is2 a3 sentence4", then remove the numbers.

Example 2:

Input:
Myself2 Me1 I4 and3

Output:

Me Myself and I

Explanation: Sort the words in s to their original positions "Me1 Myself2 and3 I4", then remove the numbers.

Constraints:

$2 \leq s.length \leq 200$

s consists of lowercase and uppercase English letters, spaces, and digits from 1 to 9.

The number of words in s is between 1 and 9.

The words in s are separated by a single space.

s contains no leading or trailing spaces.

Answer:(penalty regime: 0 %)

```
1 def fun():
2     s=input()
3     w=s.split()
4     sw=sorted(w,key=lambda w1:int(''.join(filter(str.isdigit,w1))))
5     o=' '.join(''.join(filter(str.isalpha,w1)) for w1 in sw)
6     return o
7 print(fun())
```

Feedback

Input

Expected

Got

is2 sentence4 This1 a3 This is a sentence This is a sentence

Passed all tests!

Correct

Marks for this submission: 1.00/1.00.

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