Tuple Practice Problems

1. A number is a magic number if the summation of even indexed digits is equal to the summation of odd indexed digits.
Now, write a Python program that will take a number N in the very first line from the user, then take N number of test cases in the next N lines.
The program should print a tuple containing two sub-tuples , where the first sub-tuple will hold the magic numbers and the second sub-tuple will hold the non-magic numbers.

Sample Input

5

1232

4455

1234

9876

1111

Sample Output

((1232,4455,1111),(1234,9876))

2. Write a Python program that takes a tuple of tuples. Calculate the average value of the numbers for each tuple of tuples and find the tuple whose sum is the maximum.[Try to avoid built in functions]

Sample Input:

((33, 22, 11), (30, 45, 56, 45,20), (81, 90, 39, 45), (1, 2, 3, 4,5,6))

Sample Output:

Average : [22.0, 39.2, 63.75, 3.5]

Tuple with maximum sum : (81, 90, 39, 45)

3. We all know that the additive primaries are red, green, and blue.

Now, write a Python program that will take a color sequence as a string from the user where R represents Red , G represents Green and B represents Blue .The program should print the choice of colors that is actually a tuple containing the sub-tuples as (color_name, color_frequency) iff the color_frequency for that color is at least one in the given color sequence.

Sample Input

RGBRRGBBR

Sample Output

(('Red',4),('Green',2),('Blue',3))

Dictionary Practice Problems

1. Suppose dictionaries are given .Write a Python program that combines two or more dictionaries, creates a list of values for each key.

Sample Input:
Original dictionaries:
{'w': 50, 'x': 100, 'y': 'Green', 'z': 400}
{'x': 300, 'y': 'Red', 'z': 600}

Sample Output:
{'w': [50], 'x': [100, 300], 'y': ['Green', 'Red'], 'z': [400, 600]}

2. Suppose,there will be a dictionary named dict_1.The values of the dictionary will be a list or a tuple.Here, in a key value pair ,the key will be a lower case letter if the value is a list . And if the value is a tuple,then the key will be an uppercase letter.
Write a Python program that creates a new dictionary named "dict_primes" which contains only prime numbers in the value.And print the dictionary dict_primes.

Sample Input 1:
dict_1 = {"a":[5,2,55,17],"P":(11,121,222),"B":(37,53,71),"c":[45,92,50]}

Sample Output 1 :
dict_primes = {'a': [5, 2, 17], 'P': (11,), 'B': (37, 53, 71), 'c': []}

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Sample Input 2:
dict_1 = {"N":(4,9,3),"k":[95,37,197],"F":(32,5,97),"s":[31,94,55]}

Sample Output 2 :

dict_primes = {'N': (3,), 'k': [37, 197], 'F': (5, 97), 's': [31]}

3. An Agent has three normal skills along with an ultimate skill. Furthermore, there are three agents in the game named after Rage , Jett and Sage .Now, write a Python program that will detect the Agent from a given dictionary where the keys are "Normal Skills", "Ultimate Skill" and the values are the damages due to the use of the skills on the opponents.

Additive Damage Score: SUM_TOTAL(NORMAL_SKILL_DAMAGE, ULTIMATE_SKILL_DAMAGE)

Constraints:

1. If the additive damage score is less than or equal to 70 then it is Rage .
2. Else If the additive damage score is less than or equal to 100 then it is Jett .
3. Else it is Sage .

Sample Input

Assume a dictionary,

d = { "Normal Skills":[10,15,20], "Ultimate Skill":50 }

Sample Output

Jett