# Dictionaries Level - 2

## Practice Problem 39

## ★ Description:

- Write a Python program that counts the frequency of each value in a dictionary.
- The program should create a new dictionary to map each value in the original dictionary to its frequency (how many times it occurs).
- If the dictionary is empty, print an empty dictionary.

### Expected Output:

If this is the dictionary:

```
my_dict = {
    "a": 4,
    "b": 4,
    "c": 2,
    "d": 7,
    "e": 4,
    "f": 2,
    "g": 7,
    "h": 7
}
```

The output should be:

```
freq_dict = {
     4: 3
     2: 2
     7: 3
}
```

Each value in my\_dict is a **key** in the freq\_dict and it is mapped to its corresponding frequency as the value.

### Practice Problem 40

# ★ Description:

- Write a Python program that creates a dictionary from the values contained in nested lists.
- Each nested list has this format [value1, value2].
- value1 should be the key in the dictionary and value2 should be its corresponding value.
- If there are no nested lists, print an empty dictionary.

#### Expected Output:

If this is the list that contains nested lists:

```
[["a", 1], ["b", 2], ["c", 3], ["d", 4]]
The result should be:
{"a": 1, "b": 2, "c": 3, "d": 4}
```

### Practice Problem 41

## ★ Description:

- Write a Python program that prints the largest of the values in a dictionary.
- You may assume that all the values in the dictionary are either lists or tuples.

### Expected Output:

If this is the dictionary:

```
my_dict = {
    "a": [1, 2, 3],
    "b": [4, 0, -4],
    "c": [3, 5, 9],
    "d": [45, 12, 100]
}
```

This should be the output:

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#### Hints:

• The sum() function returns the sum of the elements of a list or tuple.

## Practice Problem 42

# ★ Description:

- Write a Python program that creates and displays a dictionary that maps each letter in a string to how many times the character occurs in the string (its frequency).
- The dictionary should only include the characters in the string.
- The test should be case-insensitive ("A" should be counted as "a").
- The keys in the dictionary should be lowercase letters.
- Only include letters in the dictionary.

### Expected Output:

#### Example 1:

For the string:

```
"Hello, World"
```

The output should be this dictionary:

```
{"h": 1, "e": 1, "l": 3, "o": 2, "w": 1, "r": 1, "d": 1}
```

Each letter is mapped to its corresponding frequency.

#### Example 2:

```
"Excellent"
```

The output should be this dictionary:

```
{"e": 3, "x": 1, "c": 1, "l": 2, "n": 1, "t": 1}
```

# Practice Problem 43



## ★ Description:

- Write a Python program that sorts (in ascending order) the lists contained as values in a dictionary.
- The dictionary contains key-value pairs that match strings to lists. You need to sort these lists.
- The lists have to be mutated (changed).

### Expected Output:

If this is the dictionary:

```
my_dict = {
    "a": [4, 3, 2],
    "b": [5, 3, 7],
    "c": [1, 9, 10],
    "d": [3, 4, 1]
}
```

The final output should be:

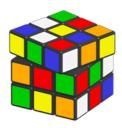
```
my_dict = {
    "a": [2, 3, 4],
    "b": [3, 5, 7],
    "c": [1, 9, 10],
    "d": [1, 3, 4]
}
```

Notice how all the lists are now sorted in ascending order.

#### Hints:

- The .sort() method sorts a list (the list is mutated/changed).
- Be careful with using sorted() because it only returns a sorted copy of the list.

# Practice Problem 44



# ★ Description:

- Write a Python program that takes the content of a dictionary and converts it into a list of lists.
- Each nested list should contain a key as the first element and its corresponding value as the second element.
- Print the final list of lists.

### Expected Output:

If this is the original dictionary:

```
product_info = {
    "description": "shoe",
    "price": 4.56,
    "colors": ["green", "blue", "red"],
}
```

The output should be:

'description', 'shoe'], ['price', 4.56], ['colors', ['green', 'blue', 'red']

### Hints:

• The .items() dictionary method can be helpful to solve this exercise. It returns a sequence with the keys of the dictionary and their corresponding values.