

ASSIGNMENT

DICTIONARY BASIC QUESTIONS

Q1. Ask number of subjects from the user. Ask the **subject name** and **marks** from the user and store that into the dictionary and print it.

```
Enter the number of subjects = 3

Enter the subject name = history
Enter the subject marks = 23
Enter the subject name = sst
Enter the subject marks = 111
Enter the subject name = english
Enter the subject marks = 67

# Output
{'history': '23', 'sst': '111', 'english': '67'}
```

Q2. Given a list of integers, create a dictionary that stores each unique integer as a key and its frequency as the value. Find the integer with the maximum frequency.

Example Input: [4, 5, 6, 5, 4, 4, 7]

Expected Output: 4 (Frequency: 3)

Q3. Create two list. One would be subject name and other would be marks. Join both the list to make it as a dictionary. **(The length of two lists should be the same).**

```
subjects = ["history", "maths", "science", "english"]
marks = [45, 63, 16, 77]

# Output
{'history': 45, 'maths': 63, 'science': 16, 'english': 77}
```

Q4. Write a function that takes a dictionary and a key, and returns **True** if the key is found in the dictionary, otherwise **False**.

Q5. Given two dictionaries, write a function to merge them into a new dictionary. If there is any overlap of keys, the value from the second dictionary should overwrite the one from the first dictionary.

Dictionary 1:

{'apple': 3, 'banana': 5, 'cherry': 7}

Dictionary 2:

{'banana': 8, 'orange': 10, 'apple': 9}

Expected Output:

{'apple': 9, 'banana': 8, 'cherry': 7, 'orange': 10}

Q6. Write a function that updates the values of a dictionary by multiplying them by a given factor only if the value is an integer.

Initial Dictionary:

```
{
    "a": 3, "b": "hello", "c": 7.5, "d": 10
}
```

Factor: 2 (Ask input from user)

Output Dictionary:

```
{
    "a": 6,      # 3 multiplied by 2
    "b": "hello", # Unchanged as it's not an integer
    "c": 7.5,    # Unchanged as it's not an integer
    "d": 20      # 10 multiplied by 2
}
```

Q7. Write a Python script to print a dictionary where the keys are numbers between 1 and 15 (both included) and the values are squares of the keys.

```
{
    1: 1, 2: 4, 3: 9, 4: 16, 5: 25, 6: 36, 7: 49, 8: 64, 9: 81, 10: 100, 11: 121, 12: 144, 13: 169, 14: 196, 15: 225
}
```

Q8. Given a dictionary, write a function that returns a new dictionary containing only the keys that have values of type **str**.

Input:

```
{
    "name": "Alice",
    "age": 30,
    "city": "New York",
    "is_student": False,
    "birthday": "May 5"
}
```

Output:



Q9. Ask a string from user. Store the frequency of each character in the dictionary. Then print the character with the **maximum** frequency.

Input:

Please enter a string: hello world

Output:

The character with the maximum frequency is 'l'.

Q10. Write a Python program to combine two dictionary by adding values for common keys.

```
d1 = {'a': 100, 'b': 200, 'c': 300}
```

```
d2 = {'a': 300, 'b': 200, 'd': 400}
```

Sample output: {'a': 400, 'b': 400, 'd': 400, 'c': 300}

Q11. Given a dictionary with key-value pairs, remove all the keys with values greater than K, including mixed values.

Input : test_dict = {'Gfg' : 3, 'is' : 7, 'best' : 10, 'for' : 6, 'xyzx' : 'CS'}, K = 7

Output : {'Gfg' : 3, 'for' : 6, 'xyzx' : 'CS'}

Explanation : All values greater than K are removed. Mixed value is retained.

Input : test_dict = {'Gfg' : 3, 'is' : 7, 'best' : 10, 'for' : 6, 'qqqq' : 'CS'}, K = 1

Output : {'qqqq' : 'CS'}

Explanation : Only Mixed value is retained.