WEEK 5 - ASSIGNMENT 2 DICTIONARY

Q1. Write a function that takes a dictionary and a key, and returns **True** if the key is found in the dictionary, otherwise **False**.

Q2. 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}

Q3. 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:

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
}
```

Q4. 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
}
```

Q5. 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:

```
{
    "name": "Alice",
    "city": "New York",
    "birthday": "May 5"
}
```

Q6. 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'.

Q7. Write a Python function that takes a dictionary as input where the values are lists of integers. The function should return a new dictionary where the values are lists containing only the even integers from the original lists.

```
Input dictionary: {'A': [1, 2, 3, 4], 'B': [5, 6, 7, 8]}

Output: {'A': [2, 4], 'B': [6, 8]}
```

Q8. 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}

Q9. Write a Python program to create a dictionary of keys x, y, and z where each key has as value a list from 11-20, 21-30, and 31-40 respectively. Access the fifth value of each key from the dictionary.

{'x': [11, 12, 13, 14, 15, 16, 17, 18, 19],

'y': [21, 22, 23, 24, 25, 26, 27, 28, 29],

'z': [31, 32, 33, 34, 35, 36, 37, 38, 39]}

Output

15

25

35

Q10. Store name as a Key, and 5 marks in a List as a value in dictionary. Store details of at least 5 students. Print the total marks with percentage of each and every student.

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.

Q12. A Python dictionary contains List as a value. Write a Python program to clear the list values in the said dictionary.

Original Dictionary:

{'C1': [10, 20, 30], 'C2': [20, 30, 40], 'C3': [12, 34]}

Clear the list values in the said dictionary:

{'C1': [], 'C2': [], 'C3': []}