Assignment – 8 (Operations on Dictionaries)

Objective:

- to introduce the concept of Python dictionary
- to make the students understand all the operations that can be performed on dictionary
- to make the students understand several use cases where dictionary will be helpful to use.

Programs:

1. Write a Python script to concatenate the following dictionaries to create a new one.
Sample Dictionary:
dic1={1:10, 2:20}
dic2={3:30, 4:40}
dic3={5:50,6:60}
Expected Result : {1: 10, 2: 20, 3: 30, 4: 40, 5: 50, 6: 60}

2. Write a Python script to check whether a given key already exists in a dictionary.

3. Write a Python script to concatenate the following dictionaries to create a new one.
Sample Dictionary :
dic1={1:10, 2:20,4:6}
dic2={3:30, 4:40,5:2}
dic3={5:50,6:60}
Expected Result : {1: 10, 2: 20, 3: 36, 4: 40, 5: 52, 6: 60}

4. Write a Python program to iterate over dictionaries using for loops.

5. Write a Python script to generate and print a dictionary that contains a number (between 1 and n) in the form (x, x*x).
Sample Dictionary (n = 5) :
Expected Output : {1: 1, 2: 4, 3: 9, 4: 16, 5: 25}

5. Write a Python script to merge two Python dictionaries.

6. Write a Python program to map two lists into a dictionary.

7. Write a Python program to get the maximum and minimum values of a dictionary.

8. Write a Python program to create a dictionary from a string.
Note: Track the count of the letters from the string.
Sample string : 'MCA1stsem'
Expected output: {'M':1,'C':2,'A':3,'1':4,'s':5,'t':6,'s':7,'e':8,'m':10}

9. Write a Python program to print a dictionary in table format.

10. Write a Python program to get the top three items in terms of cost in a shop.
d1={'dress':23,'pant':45,'shoe':12,'bungle':55,'book':8}
output:
bungle 55
pant 45
dress 23

11. Write a Python program to match key values in two dictionaries.
Sample dictionary: {'key1': 1, 'key2': 3, 'key3': 2}, {'key1': 1, 'key2': 2}
Expected output: key1: 1 is present in both x and y

12. 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]}
15
25
35
x has value [11, 12, 13, 14, 15, 16, 17, 18, 19]
y has value [21, 22, 23, 24, 25, 26, 27, 28, 29]
z has value [31, 32, 33, 34, 35, 36, 37, 38, 39]

13. Write a Python program to filter a dictionary based on values.
Original Dictionary:
{'Cierra Vega': 175, 'Alden Cantrell': 180, 'Kierra Gentry': 165, 'Pierre Cox': 190}
Marks greater than 170:
{'Cierra Vega': 175, 'Alden Cantrell': 180, 'Pierre Cox': 190}

14. Write a Python program to convert more than one list to a nested dictionary.
Original strings:
['S001', 'S002', 'S003', 'S004']
['Adina Park', 'Leyton Marsh', 'Duncan Boyle', 'Saim Richards']
[85, 98, 89, 92]
Nested dictionary:
[{'S001': {'Adina Park': 85}}, {'S002': {'Leyton Marsh': 98}}, {'S003': {'Duncan Boyle': 89}}, {'S004': {'Saim Richards': 92}}]