

Python Dictionary Assignment Question

1. Write a Python script to sort (ascending and descending) a dictionary by value.
2. Write a Python script to add a key to a dictionary.

Sample Dictionary : {0: 10, 1: 20}

Expected Result : {0: 10, 1: 20, 2: 30}

3. 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}

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

6. Write a Python program to sum all the items in a dictionary.
7. Write a Python program to get the maximum and minimum values of a dictionary.
8. 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: Counter({'a': 400, 'b': 400, 'd': 400, 'c': 300})
```

9. Write a Python program to print all distinct values in a dictionary.

Sample Data : [{"V": "S001"}, {"V": "S002"}, {"VI": "S001"}, {"VI": "S005"}, {"VII": "S005"}, {"V": "S009"}, {"VIII": "S007"}]

Expected Output : Unique Values: {'S005', 'S002', 'S007', 'S001', 'S009'}

10. Write a Python program to create and display all combinations of letters, selecting each letter from a different key in a dictionary.

Sample data : {'1': ['a', 'b'], '2': ['c', 'd']}

Expected Output:

```
ac
ad
bc
bd
```

11. Write a Python program to combine values in a list of dictionaries.

Sample data: [{'item': 'item1', 'amount': 400}, {'item': 'item2', 'amount': 300}, {'item': 'item1', 'amount': 750}]

Expected Output: Counter({'item1': 1150, 'item2': 300})

12. Write a Python program to create a dictionary from a string.

Note: Track the count of the letters from the string.

Sample string : 'google'

Expected output: {'g': 2, 'o': 2, 'r': 2, 'e': 1, 'l': 1}

13. Write a Python program to get the top three items in a shop.

Sample data: {'item1': 45.50, 'item2': 35, 'item3': 41.30, 'item4': 55, 'item5': 24}

Expected Output:

```
item4 55
item1 45.5
item3 41.3
```

14. Write a Python program to sort Counter by value.

Sample data : {'Math': 81, 'Physics': 83, 'Chemistry': 87}

Expected data: [('Chemistry', 87), ('Physics', 83), ('Math', 81)]

15. 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]

16. Write a Python program to drop empty items from a given dictionary.

Original Dictionary:

```
{'c1': 'Red', 'c2': 'Green', 'c3': None}
```

New Dictionary after dropping empty items:

```
{'c1': 'Red', 'c2': 'Green'}
```

17. Write a Python program to verify that all values in a dictionary are the same.

Original Dictionary:

```
{'Cierra Vega': 12, 'Alden Cantrell': 12, 'Kierra Gentry': 12, 'Pierre Cox': 12}
```

Check all are 12 in the dictionary.

True

Check all are 10 in the dictionary.

False

18. Write a Python program to create a dictionary grouping a sequence of key-value pairs into a dictionary of lists.

Original list:

```
[('yellow', 1), ('blue', 2), ('yellow', 3), ('blue', 4), ('red', 1)]
```

Grouping a sequence of key-value pairs into a dictionary of lists:

```
{'yellow': [1, 3], 'blue': [2, 4], 'red': [1]}
```

19. Write a Python program to split a given dictionary of lists into lists of dictionaries.

Original dictionary of lists:

```
{'Science': [88, 89, 62, 95], 'Language': [77, 78, 84, 80]}
```

Split said dictionary of lists into list of dictionaries:

```
[{'Science': 88, 'Language': 77}, {'Science': 89, 'Language': 78}, {'Science': 62, 'Language': 84}, {'Science': 95, 'Language': 80}]
```

20. Write a Python program to extract a list of values from a given list of dictionaries.

Original Dictionary:

```
[{'Math': 90, 'Science': 92}, {'Math': 89, 'Science': 94}, {'Math': 92, 'Science': 88}]
```

Extract a list of values from said list of dictionaries where subject = Science
[92, 94, 88]

Original Dictionary:

```
[{'Math': 90, 'Science': 92}, {'Math': 89, 'Science': 94}, {'Math': 92, 'Science': 88}]
```

Extract a list of values from said list of dictionaries where subject = Math
[90, 89, 92]