

## Basic Dictionary Questions

1) Write a Python script to concatenate 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}

```
In [1]: 1 dic1={1:10, 2:20}
        2 dic2={3:30, 4:40}
        3 dic3={5:50,6:60}
        4
        5
        6
        7 dic1.update(dic2)
        8 dic1.update(dic3)
        9
       10 print(dic1)
```

```
{1: 10, 2: 20, 3: 30, 4: 40, 5: 50, 6: 60}
```

2) 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 ( if n = 5 ) :

Expected Output : {1: 1, 2: 4, 3: 9, 4: 16, 5: 25}

```
In [2]: 1 Dict = {}
        2
        3 inp=int(input("Enter a number: "))
        4 for i in range(1,inp+1):
        5     Dict[i]=i*i
        6
        7 print(Dict)
        8
```

```
Enter a number: 6
```

```
{1: 1, 2: 4, 3: 9, 4: 16, 5: 25, 6: 36}
```

**3) Write a Python program to sum all the value in a dictionary.**

**Sample Dictionary : {1: 10, 2: 20, 3: 30, 4: 40, 5: 50, 6: 60}**

**Output=210**

```
In [3]: 1 Sample={1: 10, 2: 20, 3: 30, 4: 40, 5: 50, 6: 60}
        2
        3 a=0
        4 for i in Sample.values():
        5     a=a+i
        6 print(a)
```

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**4) Write a Python program to sort a dictionary by key.**

**Sample :-Dictionary:{6:'ram',1:'Shiva',4:'Rahul',2:'Shub',3:'Aman',5:'rohit'}**

**Expected Result : {1:'Shiva', 2: 'Shub', 3:'Aman', 4:'Rahul', 5: 'rohit', 6:'ram'}**

```
In [4]: 1 Sample={6:'ram',1:'Shiva',4:'Rahul',2:'Shub',3:'Aman',5: 'rohit'}
        2
        3 new={}
        4 for i in sorted (Sample.keys()) :
        5     new[i]=Sample[i]
        6
        7 print(new)
```

{1: 'Shiva', 2: 'Shub', 3: 'Aman', 4: 'Rahul', 5: 'rohit', 6: 'ram'}

5) Write a Python program to combine two dictionary adding values for common keys.

d1 = {'a': 100, 'b': 200, 'c': 300, 'e': 700}

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

Sample output: Counter({'a': 300, 'b': 400, 'd': 400, 'c': 300, 'e': 900})

```
In [5]: 1 d1 = {'a': 100, 'b': 200, 'c': 300, 'e': 700}
        2 d2 = {'a': 200, 'b': 200, 'd': 400, 'e': 200}
        3 d3 = {}
        4 d3.update(d2)
        5 d3.update(d1)
        6
        7 for i in d1.keys():
        8     for j in d2.keys():
        9         if i==j:
        10             d3[i]=d1[i]+d2[j]
        11
        12
        13
        14 d3
```

Out[5]: {'a': 300, 'b': 400, 'd': 400, 'e': 900, 'c': 300}

6) 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

```
In [6]: 1 Sample={'1': ['a', 'b'], '2': ['c', 'd']}
        2 l1=Sample['1']
        3 l2=Sample['2']
        4
        5 for i in range (len(l1)):
        6     for j in range (len(l2)):
        7         print(l1[i]+" "+l2[j])
```

```
a c
a d
b c
b d
```

7) Write a Python program to create a dictionary from a string. Go to the editor

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

Sample string : 'shiva is back'

Expected output: {'s': 2, 'h':1, 'i':2, 'v':1, 'a':2, 'b':1, 'c':1, 'k':1}

```
In [7]: 1 Sample='shiva is back'
        2 a=''
        3 for i in Sample:
        4     if i not in a:
        5         a=a+i
        6 dic={}
        7 for j in a:
        8     dic[j]=Sample.count(j)
        9
       10 dic
```

```
Out[7]: {'s': 2, 'h': 1, 'i': 2, 'v': 1, 'a': 2, ' ': 2, 'b': 1, 'c': 1, 'k': 1}
```

8) 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

```
In [8]: 1 Sample={'item1': 45.50, 'item2':35, 'item3': 41.30, 'item4':55, 'item5': 24}
        2
        3
        4
        5 from collections import Counter
        6
        7
        8 k = Counter(Sample)
        9 high = k.most_common(3)
       10
       11 print("Sample Dictionary:")
       12 print(Sample, "\n")
       13
       14
       15 print("Dictionary with 3 highest values:")
       16
       17
       18 for i in high:
       19     print(i[0], " :", i[1], " ")
       20
```

```
Sample Dictionary:
{'item1': 45.5, 'item2': 35, 'item3': 41.3, 'item4': 55, 'item5': 24}
```

```
Dictionary with 3 highest values:
item4 : 55
item1 : 45.5
item3 : 41.3
```

9) Write a Python program to convert a given dictionary into a list of lists.

**Original Dictionary:**

**{1: 'red', 2: 'green', 3: 'black', 4: 'white', 5: 'black'}**

**Convert the said dictionary into a list of lists:**

**[[1, 'red'], [2, 'green'], [3, 'black'], [4, 'white'], [5, 'black']]**

```
In [9]: 1 Original={1: 'red', 2: 'green', 3: 'black', 4: 'white', 5: 'black'}
        2
        3
        4 lis=[]
        5 for i in Original.keys():
        6     lis1=[i,Original[i]]
        7     lis.append(lis1)
        8
        9 print(lis)
```

```
[[1, 'red'], [2, 'green'], [3, 'black'], [4, 'white'], [5, 'black']]
```

10) Write a Python program to drop empty Items from a given Dictionary.

**Original Dictionary:**

**{'c1': 'Red', 'c2': 'Green', 'c3': ''}**

**New Dictionary after dropping empty items:**

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

```
In [10]: 1 Original={'c1': 'Red', 'c2': 'Green', 'c3': ''}
        2 duplicate=Original.copy()
        3 for i in duplicate.keys():
        4     if Original[i]=='':
        5         Original.pop(i)
        6 print(Original)
```

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