

Today topics

- Tasks on dictionaries
- comprehensions

```
In [8]: 1 l = [1,2,3,4,5]  #{1:1,2:4,3:9}
        2 d={}
        3 for i in l:
        4     d[i] = i**i
        5 print(d)
        6
```

{1: 1, 2: 4, 3: 27, 4: 256, 5: 3125}

```
In [3]: 1 print(dir(d))
```

...

```
In [16]: 1 d = {1:"APSSDC",3:"MITS",4:"college"}
        2 # {1:"APSSDC",2:"progrmming",3:"MITS",4:"college"}
        3 for i in d.keys():
        4     if i ==2:
        5         d[i]="Programming"
        6 print(d)
```

{1: 'APSSDC', 3: 'MITS', 4: 'college'}

```
In [14]: 1 d = {1:"APSSDC",3:"MITS",4:"college"}
        2 d[2]="Programming"
        3 d
```

Out[14]: {1: 'APSSDC', 3: 'MITS', 4: 'college', 2: 'Programming'}

```
In [22]: 1 d = {1:"APSSDC",3:"MITS",4:"college"}
        2 for i in d.values():
        3     if i == "MITS":
        4         print("yes")
        5
```

yes

```
In [23]: 1 for i,j in d.items():
        2     if j == "MITS":
        3         d[i]="chittor"
        4 print(d)
```

{1: 'APSSDC', 3: 'chittor', 4: 'college'}

Tasks

```

1. l = [1,2,3,4,"a","b","a","c",1,1,2,3]
   output: {1:3,2:2,3:2,"a":2,"b":1,"c":1}
2. d = {"MITS":"9303439293","APSSDC":"6402132167"}
   two inputs
   name , phone no
   name = "Python"
   {"MITS":"9303439293","APSSDC":"6402132167", "Python":"8976556665"}
   Contact added successfully
   {"MITS":"6703439293","APSSDC":"6402132167"} Contact updated successfully
   enter valid number

```

In [27]:

```

1  #l = [1,2,3,4,"a","b","a","c",1,1,2,3]
2  #{1:3,2:2,3:2,"a":2,"b":1,"c":1,1:3,1:3}
3  l=[1,2,3,4,"a","b","a","c",1,1,2,3]
4  d={}
5  for i in l:  #1  #a
6      d[i] = l.count(i) # 3  d["1"]=3
7  print(d)

```

```
{1: 3, 2: 2, 3: 2, 4: 1, 'a': 2, 'b': 1, 'c': 1}
```

In [22]:

```

1  d = {"MITS":"9303439293","APSSDC":"6402132167"}
2  name = input()
3  phone = input()
4  if len(phone) <= 10:
5      print("enter valid phone number")
6  if len(phone)==10:
7      if (phone[0]!=6 or phone[0]!=7 or phone[0]!=8 or phone[0]!=9):
8          print("enter valid phone number")
9      else:
10         for i in d:
11             if i == name:
12                 d[name]=phone
13                 print(d)
14                 print("contact updated")
15
16         else:
17             d[name] = phone
18             print(d)
19             print("contact added")
20

```

```

Ssri
9885933569
enter valid phone number
enter valid phone number

```

```
In [4]: 1 d = {"MITS": "9303439293", "APSSDC": "6402132167"}
2 name = input()
3 phone = input()
4 pattern = "[+]{0,1}[9][1][6-9][0-9]{9}|[0]{0,1}[6-9][0-9]{9}"
5 import re
6 if re.match(pattern, phone):
7     for i in d.keys():
8         if i == name:
9             d[i]=phone
10            print("updated")
11            break
12        else:
13            d[i]=phone
14            print("added")
15            break
16 else:
17     print("enter valid phone number")
```

```
sri
4430034402
enter valid phone number
```

```
In [5]: 1 phone = input()
2 phone[0]
```

```
3885933569
```

```
Out[5]: '3'
```

```
In [4]: 1 len("9885933569")
```

```
Out[4]: 10
```

Comprehension

- List Comprehension
- set Comprehension
- Dictionary Comprehension

* Advantage is, to reduce

```
1 ### List comprehension
2
3 * syntax:
4 [output loop condition] ==> if only <br>
5 [output if condition else output loop] ==> if and else
6
```

```
In [12]: 1 l = [1,2,3,4,5,6]
2 l1 = []
3 for i in l:
4     if i%2==0:
5         l1.append(i)
6 print("The even no are",l1)
```

The even no are [2, 4, 6]

```
In [9]: 1 s = [i for i in l if i%2==0 ]
2 print("The even no are",s)
```

The even no are [2, 4, 6]

```
In [10]: 1 l = [1,2,3,4,5,6]
2 # ["odd", "even", "odd"]
3 l1 = []
4 for i in l:
5     if i %2==0:
6         l1.append("even")
7     else:
8         l1.append("odd")
9 print(l1)
```

['odd', 'even', 'odd', 'even', 'odd', 'even']

```
In [11]: 1 ["even" if i%2==0 else "odd" for i in l]
```

Out[11]: ['odd', 'even', 'odd', 'even', 'odd', 'even']

```
1 ##### Set comprehension
2 * syntax:
3 {output loop} ==> no condition is there <br>
4 {output loop condition} ==> if only <br>
5 {output if condition else output loop} ==> if and else
6
```

```
In [12]: 1 l = [1,2,3,4,5,1,2,3,4,"a","b","c","d","a","d"]
2 #[1,2,3,4,"a","b","c","d"]
3 l1 = []
4 for i in l:
5     if i not in l1:
6         l1.append(i)
7 l1
```

Out[12]: [1, 2, 3, 4, 5, 'a', 'b', 'c', 'd']

```
In [14]: 1 list(set(l))
```

Out[14]: [1, 2, 3, 4, 5, 'a', 'd', 'c', 'b']

In [15]:

```
1 print(l)
2 #{ "a", "b", "c", "d" }
```

[1, 2, 3, 4, 5, 1, 2, 3, 4, 'a', 'b', 'c', 'd', 'a', 'd']

In [18]:

```
1 l1 = []
2 for i in l:
3     if str(i).isalpha():
4         l1.append(i)
5 print(set(l1))
6
```

{'b', 'a', 'c', 'd'}

In [20]:

```
1 {i for i in l if str(i).isalpha() }
```

Out[20]: {'a', 'b', 'c', 'd'}

```
1 ##### Dictionary comprehension
2 * syntax:
3 {output(key:value) loop} ==> no condition is there <br>
4 {output(key:value) loop condition} ==> if only <br>
5 {output(key:value) if condition else output loop} ==> if and else
6
```

In [21]:

```
1 s = "StringStr"
2 #{S:2,t:2,r:2,i:1,n:1,g:1}
3 {i:s.count(i) for i in s}
4 {i for i in l if str(i).isalpha() }
```

Out[21]: {'S': 2, 't': 2, 'r': 2, 'i': 1, 'n': 1, 'g': 1}

In [24]:

```
1 s = "StringStr1234"
2 #{S:2,t:2,r:2,i:1,n:1,g:1}
3 {i:s.count(i) for i in s if str(i).isalpha() }
4
```

Out[24]: {'S': 2, 't': 2, 'r': 2, 'i': 1, 'n': 1, 'g': 1}

In []:

```
1
```