```
# Python Set:

set={12,"rad",112,5,45,55,55,847,554,5,4,}
print(set)
```

```
{4, 5, 554, 12, 45, 847, 112, 55, 'rad'}
```

```
A={11,1,11,1,45,4,5,4,5,5555,5555,'ram','chandan','papa'}
print(A)
```

```
{'chandan', 1, 4, 5, 'papa', 11, 45, 'ram', 5555}
```

```
A={11,1,11,1,45,4,5,4,5,5555,5555,'ram','chandan','papa'}
A.add(40)
print(A)
```

```
{'chandan', 1, 4, 5, 'papa', 40, 11, 45, 'ram', 5555}
```

```
A={11,1,11,1,45,4,5,4,5,5555,5555,'ram','chandan','papa'}
A.update([40,2,1,2,4])
print(A)
```

```
{'chandan', 1, 2, 4, 5, 'papa', 40, 11, 45, 'ram', 5555}
```

```
A={11,1,11,1,45,4,5,4,5,5555,5555,'ram','chandan','papa'}
A.remove(40)
print(A)
```

```
---------------------------------------------------------------------------
KeyError                                  Traceback (most recent call last)
<ipython-input-14-722c412ae527> in <module>()
      1 A={11,1,11,1,45,4,5,4,5,5555,5555,'ram','chandan','papa'}
----> 2 A.remove(40)
      3 print(A)

KeyError: 40
```

SEARCH STACK OVERFLOW

```
# 4   has been removed
A={11,1,11,1,45,4,5,4,5,5555,5555,'ram','chandan','papa'}
A.remove(4)
print(A)
```

```
{'chandan', 1, 5, 'papa', 11, 45, 'ram', 5555}
```

```
# 11   has been removed
A={11,1,11,1,45,4,5,4,5,5555,5555,'ram','chandan','papa'}
A.discard(11)
print(A)
```

```
{'chandan', 1, 4, 5, 'papa', 45, 'ram', 5555}
```

```
a={1,2,5,4,5,6,5,452,55,56,56,548,241,54,52,154}
b={4,5,1,2,4,5,4,5,4,2,5,45,5,552,2,2222,2555,4455,455,4,55,5555}
print(a|b)
print(b|a)
print(a.union(b))
print(b.union(a))
```

```
{1, 2, 4, 5, 6, 452, 455, 154, 548, 4455, 552, 45, 2222, 241, 5555, 52, 54, 55, 56, 2
{1, 2, 4, 5, 6, 455, 452, 154, 548, 4455, 552, 45, 2222, 241, 5555, 52, 54, 55, 56, 2
{1, 2, 4, 5, 6, 452, 455, 154, 548, 4455, 552, 45, 2222, 241, 5555, 52, 54, 55, 56, 2
{1, 2, 4, 5, 6, 455, 452, 154, 548, 4455, 552, 45, 2222, 241, 5555, 52, 54, 55, 56, 2
```

```
a={1,2,5,4,5,6,5,452,55,56,56,548,241,54,52,154}
b={4,5,1,2,4,5,4,5,4,2,5,45,5,552,2,2222,2555,4455,455,4,55,5555}
print(a&b)
print(b&a)
print(a.difference(b))
print(b.difference(a))
```

```
{1, 2, 4, 5, 55}
{1, 2, 4, 5, 55}
{452, 548, 6, 241, 52, 54, 56, 154}
{455, 552, 4455, 45, 2222, 5555, 2555}
```

```
a={1,2,5,4,5,6,5,452,55,56,56,548,241,54,52,154}
b={4,5,1,2,4,5,4,5,4,2,5,45,5,552,2,2222,2555,4455,455,4,55,5555}
print(2 in a)
print(54 in a)
print(55 in a)
print(255 in b)
```

```
#python Dictionary:
a={1:"read",2:"set",3:"aaa",4:"ram",5:"mona",6:"anky"}
print(a)
```

```
{1: 'read', 2: 'set', 3: 'aaa', 4: 'ram', 5: 'mona', 6: 'anky'}
```

```
a={1:"read",2:"set",3:"aaa",4:"ram",5:"mona",6:"anky"}
print(a)
print(a[2])
print(a[5])
```

```
{1: 'read', 2: 'set', 3: 'aaa', 4: 'ram', 5: 'mona', 6: 'anky'}
set
mona
```

```
a={1:1,2:4,5:25,6:36,7:49}
print(a)
```

```
{1: 1, 2: 4, 5: 25, 6: 36, 7: 49}
```

```
a={1:1,2:4,5:25,6:36,7:49}
print(a[2])
```

```
4
```

```
a={1:1,2:4,5:25,6:36,7:49}
print(a[5])
```

```
25
```

```
a={1:1,2:4,5:25,6:36,7:49}
a.pop(6)
print(a)
```

```
```

```
a={x:x*x for x in range(7)}
print(a)
```

```
```

```
a={x:x*x for x in range(8)}
print(a, "end= ")
print(a,"completed")
```

```
```

```
people={1: {"name":"johna","age":27,"sex":"male"},
        2:{"name":"mari","age":25,"sex":"female"}}
print(people)
print(people[1]["age"])
print(people[1]["sex"])
print(people[2]["age"])
print(people[2]["sex"])
```

```
```

```
people={1: {"name":"johna","age":27,"sex":"male"},
        2:{"name":"mari","age":25,"sex":"female"},
        3:{"name":"sakshee","age":11,"sex":"female"},
        4:{"name":"sahas","age":5,"sex":"male"}}
print(people)
```

```
{1: {'name': 'johna', 'age': 27, 'sex': 'male'}, 2: {'name': 'mari', 'age': 25, 'sex'
```

```
people={1: {"name":"johna","age":27,"sex":"male"},
        2:{"name":"mari","age":25,"sex":"female"},
```

```
        3:{"name":"sakshee","age":11,"sex":"female"},
        4:{"name":"sahas","age":5,"sex":"male"}}
print(people)
```

```
{1: {'name': 'johna', 'age': 27, 'sex': 'male'}, 2: {'name': 'mari', 'age': 25, 'sex'
```

```
people={1: {"name":"johna","age":27,"sex":"male"},
        2:{"name":"mari","age":25,"sex":"female"},
        3:{"name":"sakshee","age":11,"sex":"female"},
        4:{"name":"sahas","age":5,"sex":"male"}}
del people[1],people[3]
print(people)
```

```
{2: {'name': 'mari', 'age': 25, 'sex': 'female'}, 4: {'name': 'sahas', 'age': 5, 'sex
```

```
# Python Arrays Implementation:
arr[1,2,3,1,45,4,5,8]
print(arr)
```

```
[1, 2, 3, 1, 45, 4, 5, 8]
```

```
arr=[1,2,3,1,45,4,5,8,9]
print(arr)
print(arr[1])
print(arr[2])
print(arr[3])
print(arr[4])
print(arr[5])
print(arr[7])
print(arr[8])
```

```
[1, 2, 3, 1, 45, 4, 5, 8, 9]
2
3
1
45
4
8
9
```

```
arr=[1,2,3,1,45,4,5,8,9]
print(arr)
print(arr[-1])
print(arr[2])
print(arr[-3])
print(arr[-4])
print(arr[5])
print(arr[-7])
print(arr[-8])
```

```
[1, 2, 3, 1, 45, 4, 5, 8, 9]
9
3
```

```
a=["aa","bb","cc","dd","hh","yy","hy"]
print(a)
print(len(a))
```

```
['aa', 'bb', 'cc', 'dd', 'hh', 'yy', 'hy']
7
```

```
color=["read","blue","pink","readblue","white","orange"]
print(color)
```

```
['read', 'blue', 'pink', 'readblue', 'white', 'orange']
```

```
color=["read","blue","pink","readblue","white","orange"]
color.append("skyblue")
print(color)
```

```
['read', 'blue', 'pink', 'readblue', 'white', 'orange', 'skyblue']
```

```
color=["read","blue","pink","readblue","white","orange","skyblue"]
color.remove("skyblue")
print(color)
```

```
['read', 'blue', 'pink', 'readblue', 'white', 'orange']
```

```
color=["read","blue","pink","readblue","white","orange"]
print(color[3])
print(color[2])
print(color[-3])
print(color[-2])
```

```
readblue
pink
readblue
white
```

```
#repeating element in an array
repeat=[5]
repeat=repeat*5
print(repeat)
```

```
[5, 5, 5, 5, 5]
```

```
repeat=["chandan"]
repeat=repeat*5
print(repeat)
```

```
['chandan', 'chandan', 'chandan', 'chandan', 'chandan']
```

```
# Python Matrix implementation:

# a two 2-D matrix with integer:
```

```
a=[["anky",25,26,32,585,255,215,36,58,39],["chandan",14,853,2,33,22,32,30],["sakshee",258,36
b=[["anky",25,26,32,585,255,215,36,58,39],["chandan",14,853,2,33,22,32,30],["sakshee",258,36

print(a)
print()
print(b)
```

```
[['anky', 25, 26, 32, 585, 255, 215, 36, 58, 39], ['chandan', 14, 853, 2, 33, 22, 32,

[['anky', 25, 26, 32, 585, 255, 215, 36, 58, 39], ['chandan', 14, 853, 2, 33, 22, 32,
```

```
# list with comperhension:
h_letter=[]
for letter in "umbralla":
  h_letter.append(letter)
  print(h_letter)
```

```
['u']
['u', 'm']
['u', 'm', 'b']
['u', 'm', 'b', 'r']
['u', 'm', 'b', 'r', 'a']
['u', 'm', 'b', 'r', 'a', 'l']
['u', 'm', 'b', 'r', 'a', 'l', 'l']
['u', 'm', 'b', 'r', 'a', 'l', 'l', 'a']
```

```
h_letter=[]
for letter in "chandan":
  h_letter.append(letter)
  print(h_letter)
```

```
[6, 'c']
[6, 'c', 'h']
[6, 'c', 'h', 'a']
[6, 'c', 'h', 'a', 'n']
[6, 'c', 'h', 'a', 'n', 'd']
[6, 'c', 'h', 'a', 'n', 'd', 'a']
[6, 'c', 'h', 'a', 'n', 'd', 'a', 'n']
```

```
h_letter=[6,5]
for letter in "chandan":
  h_letter.append(letter)
  print(h_letter)
```

```
[6, 5, 'c']
[6, 5, 'c', 'h']
[6, 5, 'c', 'h', 'a']
[6, 5, 'c', 'h', 'a', 'n']
[6, 5, 'c', 'h', 'a', 'n', 'd']
[6, 5, 'c', 'h', 'a', 'n', 'd', 'a']
[6, 5, 'c', 'h', 'a', 'n', 'd', 'a', 'n']
```

```
list=[x for x  in range(25 ) if x % 2==0]
print(list)
```

```
[0, 2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24]
```

```
list=[x for x  in range(100) if x % 5==0]
print(list)
```

```
[0, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95]
```

```
list=[x for x  in range(100) if x % 5==0 if x % 2==0]
print(list)
```

```
[0, 10, 20, 30, 40, 50, 60, 70, 80, 90]
```

```
#Python read and write
```