

Sets

how to create set

```
a = { "Arun", "Amit", "Sumit" }  
print(a)  
print(type(a))
```

set items are unordered

```
a = { "Arun", "Amit", "Sumit" }  
print(a[0])
```

```
~~~~~  
TypeError: 'set' object is not subscriptable
```

set cannot store duplicates

```
a = { "Arun", "Amit", "Sumit", "Arun", "Sumit" }  
print(a)
```

```
{'Arun', 'Sumit', 'Amit'}
```

Q: find all the unique elements for the list

[2,1,3,5,1,4,2,6]

o/p=> 2,1,3,5,4,6

```
b = [2,4,2,7,4,5,1,2,9]
s = set()
for x in b:
    s.add(x)
print(s)
```

We cannot add list to a set but we can add tuple to the set

```
a = {[1,2,3,4,5]}

print(a)
```

```
a = {(1,2,3,4,5)}

print(a)
```

```
a = {[1,2,3,4,5], [6,7,8,9]}

print(a)
```

```
TypeError: unhashable type: 'list'
```

```
a= []
```

```
b= ()
```

```
c= {}
```

```
d= set()
```

```
print(type(c))
```

```
print(type(d))
```

Check whether an element is present in set or not

```
a = {"Kiwi", "Apple", "Mango"}
```

```
print("Mango" in a)
```

```
a = {"Kiwi", "Apple", "Mango"}  
b = {1, 2, 3, 4, 5}  
a.update(b)  
  
print(a)
```

Adding and removing element from a set

```
a = {1, 2, 3, 4, 5}  
a.add(6)  
a.remove(2) # remove 2 from the set  
a.pop() # remove any randome element  
print(a)
```

Join 2 sets

```
a = {1, 2, 3, 4, 5}
```

```
b = {6, 7, 8, 9}
```

```
c = a.union(b)
```

```
print(c)
```

to find max and min in a set

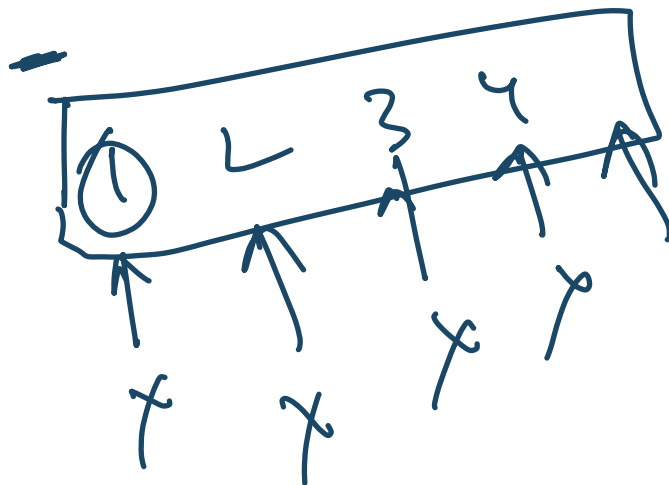
```
a = {1, 2, 3, 4, 5, 6, 7, 8}
print(max(a))
print(min(a))
```

```
a = {1, 2, 3, 4, 5, 6}
b = {2, 4, 5, 7, 8, 9}
print(a.intersection(b))
```


 for(^① i=0 ; ^② i<=N ; ^③ i++) {
 ↓
 print(^④ i)
 }

for x in range(incl):

for x in a:
 ≡



```
b = [2,4,5,7,8,9]
```

```
s = set()
```

```
for x in b:
```

```
    s.add(x)
```

// →

	j	j	j	j	
	↓	↓	↓	↓	
	x	x	x	x	⇒ print("x", end="")
→	x	x	x	x	
→	x	x	x	x	
	x	x	x	x	

n=4

```
for i in range(n):  
    for j in range(n):  
        print("* ", end="")  
    print()
```

* * * *
→ * * * *
→ * * * *
→ * * * *

i ⇒ 0 1 2 3
j ⇒ 0 1 2 3
i=0 * j=0
i=1 * * j=1 2
i=2 * * * j=2 3
i=3 * * * * j=3 4

```
for i in range(4):  
    for j in range(i+1):  
        print("* ", end="")  
    print()
```

Diagram illustrating the iterative steps of the bubble sort algorithm:

- Iteration 0: $i=0$, elements 4, 3, 2, 1
- Iteration 1: $i=1$, elements 4, 3, 2
- Iteration 2: $i=2$, elements 4, 3
- Iteration 3: $i=3$, element 4

A large bracket on the right indicates the process repeats $N-1$ times.

1
2 3
4 5 6
7 8 9 10

The image displays three distinct groups of hand-drawn blue 'x' marks on a white background. The group on the left is the largest and most dense, consisting of approximately 18 marks scattered in a roughly triangular shape. The group in the middle is smaller, with about 8 marks arranged in a loose, horizontal cluster. The group on the right is the smallest, featuring about 7 marks arranged in a vertical column. All marks are drawn with a consistent blue ink and a slightly irregular, hand-drawn style.

Q% Check whether a number is prime or not

(13)

12 \rightarrow 1, 2, 3, 4, 6, 12

13 \rightarrow 1, 13

6 \rightarrow 1, 2, 3, 6

num = 11

```
for i in range(2, num):  
    if (num % i == 0):  
        print("Not prime")  
        break
```

else:

```
    print("prime")
```