

1. In python which is the most common data structure = range()
2. range() datatypes represent a sequence of values
3. always mutable

```
In [2]: r = range(5)    # 1 argument  
r
```

```
Out[2]: range(0, 5)
```

```
In [4]: r1 = range(10)  
r1
```

```
Out[4]: range(0, 10)
```

```
In [5]: range(10,20)
```

```
Out[5]: range(10, 20)
```

```
In [7]: r2 = list(range(10))    # we declare 1 argument  
r2
```

```
Out[7]: [0, 1, 2, 3, 4, 5, 6, 7, 8, 9]
```

```
In [8]: r_ = list(range(3))  
r_
```

```
Out[8]: [0, 1, 2]
```

```
In [9]: list(range(5,20))
```

```
Out[9]: [5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19]
```

```
In [10]: list(range(10,100,10))
```

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

```
In [11]: list(range(10,100,5))
```

```
Out[11]: [10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 65, 70, 75, 80, 85, 90, 95]
```

```
In [13]: list(range(5,20,5,2))    # only three arguments are allowed
```

-----  
**TypeError**

Traceback (most recent call last)

Cell In[13], line 1

----> 1 list(range(5,20,5,2))

**TypeError:** range expected at most 3 arguments, got 4

```
In [14]: # FORM-1: range(10) -- represents values from 0 to 9 (python index start from
r = range(10)
#type(r)
r
```

Out[14]: range(0, 10)

```
In [15]: list(r)
```

Out[15]: [0, 1, 2, 3, 4, 5, 6, 7, 8, 9]

```
In [16]: for i in r:
          print('yes')
          print(i)
```

```
yes
0
yes
1
yes
2
yes
3
yes
4
yes
5
yes
6
yes
7
yes
8
yes
9
```

```
In [17]: r
```

Out[17]: range(0, 10)

```
In [18]: range(10.0,11.5)  #you cannot declare float arguement
```

```
-----
TypeError                                Traceback (most recent call last)
Cell In[18], line 1
----> 1 range(10.0,11.5)

TypeError: 'float' object cannot be interpreted as an integer
```

```
In [19]: w1 = range(10,20)
w1
```

Out[19]: range(10, 20)

```
In [20]: for i in w1:  
         print(i)
```

```
10  
11  
12  
13  
14  
15  
16  
17  
18  
19
```

```
In [21]: r
```

```
Out[21]: range(0, 10)
```

```
In [22]: r[4]
```

```
Out[22]: 4
```

```
In [23]: r[0]
```

```
Out[23]: 0
```

```
In [24]: r[5]
```

```
Out[24]: 5
```

```
In [25]: r[0:3]
```

```
Out[25]: range(0, 3)
```

```
# FORM 2 :(if we passed 2 arguments)
```

```
In [26]: range(100)
```

```
Out[26]: range(0, 100)
```

```
In [27]: range(10,30)
```

```
Out[27]: range(10, 30)
```

```
Form 3 : (If we passed 3 arguments)
```

```
In [28]: range(40)
```

```
Out[28]: range(0, 40)
```

```
In [29]: range(10,40)
```

```
Out[29]: range(10, 40)
```

```
In [30]: range(10,50,5)
```

```
Out[30]: range(10, 50, 5)
```

```
In [31]: range(10,100,10.56)
```

```
-----  
TypeError                                Traceback (most recent call last)  
Cell In[31], line 1  
----> 1 range(10,100,10.56)  
  
TypeError: 'float' object cannot be interpreted as an integer
```

```
In [32]: for i in range(10):  
         print(i)
```

```
0  
1  
2  
3  
4  
5  
6  
7  
8  
9
```

```
In [34]: for i in range(10,20):  
         print(i)
```

```
10  
11  
12  
13  
14  
15  
16  
17  
18  
19
```

```
In [35]: for i in range(10,100,10):    # start, end , step
          print(i)
```

```
10
20
30
40
50
60
70
80
90
```

```
In [36]: range(10,20,5,6)
```

-----  
**TypeError**

Traceback (most recent call last)

Cell In[36], line 1

----> 1 range(10,20,5,6)

**TypeError:** range expected at most 3 arguments, got 4