

```
In [1]: r=range(10)
r
```

```
Out[1]: range(0, 10)
```

```
In [2]: type(r)
```

```
Out[2]: range
```

```
In [3]: r
```

```
Out[3]: range(0, 10)
```

```
In [5]: r=range(5,10)
r
```

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

```
In [6]: list(r)
```

```
Out[6]: [5, 6, 7, 8, 9]
```

```
In [8]: r=list(range(5,10))
r
```

```
Out[8]: [5, 6, 7, 8, 9]
```

```
In [9]: r1=list(range(2,20,2))
r1
```

```
Out[9]: [2, 4, 6, 8, 10, 12, 14, 16, 18]
```

```
In [10]: len(r1)
```

```
Out[10]: 9
```

```
In [11]: r2=list(range(2,10,2,4))
r2
```

----- TypeError

Traceback (most recent call last)

Cell In[11], line 1

```
----> 1 r2=list(range(2,10,2,4))
      2 r2
```

TypeError: range expected at most 3 arguments, got 4

```
In [12]: r3=list(range(10,100,10))
r3
```

```
Out[12]: [10, 20, 30, 40, 50, 60, 70, 80, 90]
```

```
In [13]: for a in r3:
          print('abc')
          print(a)
```

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

```
In [14]: for a in enumerate(r3):
         print(a)
```

```
(0, 10)
(1, 20)
(2, 30)
(3, 40)
(4, 50)
(5, 60)
(6, 70)
(7, 80)
(8, 90)
```

```
In [15]: r
```

```
Out[15]: [5, 6, 7, 8, 9]
```

```
In [16]: r1
```

```
Out[16]: [2, 4, 6, 8, 10, 12, 14, 16, 18]
```

```
In [17]: r3
```

```
Out[17]: [10, 20, 30, 40, 50, 60, 70, 80, 90]
```

```
In [18]: 10 in r3
```

```
Out[18]: True
```

```
In [19]: 100 in r3
```

```
Out[19]: False
```

```
In [20]: range(1.1,2.0)
```

```
-----  
TypeError                                Traceback (most recent call last)  
Cell In[20], line 1  
----> 1 range(1.1,2.0)  
  
TypeError: 'float' object cannot be interpreted as an integer
```

```
In [21]: range('True')
```

```
-----  
TypeError                                Traceback (most recent call last)  
Cell In[21], line 1  
----> 1 range('True')  
  
TypeError: 'str' object cannot be interpreted as an integer
```

```
In [22]: range(1+2j)
```

```
-----  
TypeError                                Traceback (most recent call last)  
Cell In[22], line 1  
----> 1 range(1+2j)  
  
TypeError: 'complex' object cannot be interpreted as an integer
```

```
In [23]: a1=range(20,30)  
a1
```

```
Out[23]: range(20, 30)
```

```
In [25]: for i in a1:  
         print(i)
```

```
20  
21  
22  
23  
24  
25  
26  
27  
28  
29
```

```
In [26]: range(30,40)
```

```
Out[26]: range(30, 40)
```

```
In [27]: for i in range(30,40):  
         print(i)
```

30
31
32
33
34
35
36
37
38
39

In [28]: `r`

Out[28]: `[5, 6, 7, 8, 9]`

In [29]: `r[3]`

Out[29]: `8`

In [30]: `r[-4]`

Out[30]: `6`

In [31]: `r[1:5]`

Out[31]: `[6, 7, 8, 9]`

In [32]: `del r`

In [33]: `r`

```
-----  
NameError                                Traceback (most recent call last)  
Cell In[33], line 1  
----> 1 r  
  
NameError: name 'r' is not defined
```

In [34]: `r=list(range(1,10))`
`r`

Out[34]: `[1, 2, 3, 4, 5, 6, 7, 8, 9]`

In [35]: `r.append(10)`
`r`

Out[35]: `[1, 2, 3, 4, 5, 6, 7, 8, 9, 10]`

In [36]: `r.count(4)`

Out[36]: `1`

In [37]: `r.clear()`

In [38]: `r`

Out[38]: `[]`

```
In [39]: r=list(range(2,20))  
r
```

```
Out[39]: [2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19]
```

```
In [43]: r3
```

```
Out[43]: [10, 20, 30, 40, 50, 60, 70, 80, 90]
```

```
In [44]: r3.reverse()  
r3
```

```
Out[44]: [90, 80, 70, 60, 50, 40, 30, 20, 10]
```

```
In [45]: r3.remove(70)  
r3
```

```
Out[45]: [90, 80, 60, 50, 40, 30, 20, 10]
```

```
In [46]: r3.pop()  
r3
```

```
Out[46]: [90, 80, 60, 50, 40, 30, 20]
```

```
In [47]: r3.pop(30)  
r3
```

```
-----  
IndexError                                Traceback (most recent call last)  
Cell In[47], line 1  
----> 1 r3.pop(30)  
      2 r3  
  
IndexError: pop index out of range
```

```
In [48]: r3.pop(20)  
r3
```

```
-----  
IndexError                                Traceback (most recent call last)  
Cell In[48], line 1  
----> 1 r3.pop(20)  
      2 r3  
  
IndexError: pop index out of range
```

```
In [49]: r3.pop(-1)  
r3
```

```
Out[49]: [90, 80, 60, 50, 40, 30]
```

```
In [50]: r3.pop(2)  
r3
```

```
Out[50]: [90, 80, 50, 40, 30]
```

```
In [51]: r3.sort()  
r3
```

```
Out[51]: [30, 40, 50, 80, 90]
```

```
In [52]: r3.sort(reverse=False)  
r3
```

```
Out[52]: [30, 40, 50, 80, 90]
```

```
In [53]: r3.sort(reverse=True)  
r3
```

```
Out[53]: [90, 80, 50, 40, 30]
```

```
In [ ]:
```