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

Out[4]: range(0, 10)

In [5]:
```
type(r)
```

Out[5]: range

In [6]:
```
r
```

Out[6]: range(0, 10)

In [7]:
```
r=range(5,10)
r
```

Out[7]: range(5, 10)

In [20]:
```
list(r)
```

Out[20]: [5, 6, 7, 8, 9]

In [9]:
```
r=list(range(5,10))
r
```

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

In [10]:
```
r1=list(range(2,20,2))
r1
```

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

In [13]:
```
len(r1)
```

Out[13]: 9

In [15]:
```
r2=list(range(2,10,2,4))
r2
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[15], line 1
----> 1 r2=list(range(2,10,2,4))
      2 r2

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

In [19]:
```
r3=list(range(10,100,10))
r3
```

Out[19]: [10, 20, 30, 40, 50, 60, 70, 80, 90]

In [21]:
```
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 [23]:
```
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 [24]:
```
r
```

Out[24]: [5, 6, 7, 8, 9]

In [25]:
```
r1
```

Out[25]: [2, 4, 6, 8, 10, 12, 14, 16, 18]

In [27]:
```
r3
```

Out[27]: [10, 20, 30, 40, 50, 60, 70, 80, 90]

In [29]:
```
10 in r3
```

Out[29]: True

In [30]:
```
100 in r3
```

Out[30]: False

In [31]:
```
range(1.1,2.0) # float values
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[31], line 1
----> 1 range(1.1,2.0)

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

In [32]:
```
range('True') # str value
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[32], line 1
----> 1 range('True')

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

In [33]:
```
range(1+2j) # complex value
```

```
---------------------------------------------------------------------------
TypeError                                 Traceback (most recent call last)
Cell In[33], line 1
----> 1 range(1+2j)

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

In [34]:
```
a1=range(20,30)
a1
```

Out[34]: range(20, 30)

In [35]:
```
for i in a1:
    print(i)
```

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

In [36]:
```
range(30,40)
```

Out[36]: range(30, 40)

In [37]:
```
for i in range(30,40):
    print(i)
```

```
30
31
32
33
34
35
36
37
38
39
```

In [39]:
```
r
```

Out[39]:
```
[5, 6, 7, 8, 9]
```

In [40]:
```
r[3] # indexing
```

Out[40]:
```
8
```

In [42]:
```
r[-4]
```

Out[42]:
```
6
```

In [43]:
```
r[1:5] # slicing
```

Out[43]:
```
[6, 7, 8, 9]
```

In [47]:
```
del r
```

In [48]:
```
r
```

```
---------------------------------------------------------------------------
NameError                                 Traceback (most recent call last)
Cell In[48], line 1
----> 1 r

NameError: name 'r' is not defined
```

In [50]:
```
r=list(range(1,10))
r
```

Out[50]:
```
[1, 2, 3, 4, 5, 6, 7, 8, 9]
```

In [51]:
```
r.append(10)
r
```

Out[51]:
```
[1, 2, 3, 4, 5, 6, 7, 8, 9, 10]
```

In [54]:
```
r.count(4)
```

Out[54]:
```
1
```

In [60]:
```
r.clear()
```

In [61]:
```
r
```

Out[61]:
```
[]
```

In [63]:
```
r=list(range(2,20))
r
```

Out[63]:
```
[2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19]
```

In [78]:
```
r3
```

Out[78]:
```
[10, 20, 30, 40, 50, 60, 70, 80, 90]
```

In [79]:
```
r3.reverse()
r3
```

Out[79]:
```
[90, 80, 70, 60, 50, 40, 30, 20, 10]
```

In [80]:
```
r3.remove(70)
r3
```

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

In [82]:
```
r3.pop()
r3
```

Out[82]:
```
[90, 80, 60, 50, 40, 30, 20]
```

In [83]:
```
r3.pop(30)
r3
```

```
---------------------------------------------------------------------------
IndexError                                Traceback (most recent call last)
Cell In[83], line 1
----> 1 r3.pop(30)
      2 r3

IndexError: pop index out of range
```

In [84]:
```
r3.pop(20)
r3
```

```
---------------------------------------------------------------------------
IndexError                                Traceback (most recent call last)
Cell In[84], line 1
----> 1 r3.pop(20)
      2 r3

IndexError: pop index out of range
```

In [85]:
```
r3.pop(-1)
r3
```

Out[85]: [90, 80, 60, 50, 40, 30]

In [86]:
```
r3.pop(2)
r3
```

Out[86]: [90, 80, 50, 40, 30]

In [88]:
```
r3.sort()
r3
```

Out[88]: [30, 40, 50, 80, 90]

In [89]:
```
r3.sort(reverse=False)
r3
```

Out[89]: [30, 40, 50, 80, 90]

In [91]:
```
r3.sort(reverse=True)
r3
```

Out[91]: [90, 80, 50, 40, 30]

In [ ]:
```

```