文字列

```
In [1]: a = 'Hello'
        b = 'World'
```

```
In [2]: c = a+b
        print(c)
```

HelloWorld

```
In [3]: print(a[3])
```

l

```
In [4]: print(a[0])
```

H

```
In [5]: print(a[0:3])
```

Hel

```
In [15]: print(a[0:-1])
```

Hell

```
In [16]: print(a[1:])
```

ello

```
In [17]: print(a[:-1])
```

Hell

```
In [6]: index = a.find('e')
        print(index)
```

1

```
In [7]: index = a.find('l')
        print(index)
```

2

```
In [8]: index = a.find('l',3)
        print(index)
```

3

```
In [9]: print(a.upper())
```

HELLO

```
In [10]: print(a.lower())
```

hello

```
In [11]: print('e'in a)
```

True

```
In [12]: print('a'in a)
```

```
        False
In [13]: print(a.count('e'))

        1

In [14]: print(a.count('l'))

        2
```

リスト：要素の書き換えが可能（削除・挿入）、要素の番号で呼び出し、要素のデータ型は混在できる、リストを要素にすることもできる

タプル：要素の書き換えが不可、番号で要素呼び出し

辞書　：要素とアクセスキーがセット　＝＝＝＝＞　文字列で呼び出し

```
In [ ]:
```

リスト

```
In [18]: a = [1, 2, 3]
```

```
In [34]: mylist = [1,"a",[1,1,2]]
```

```
In [35]: print(mylist[1])

        a
```

```
In [19]: b = a[1:3]
        print(b)

        [2, 3]
```

```
In [20]: b = a[1:-1]
        print(b)

        [2]
```

```
In [21]: b = a[1:]
        print(b)

        [2, 3]
```

```
In [22]: b = a[:-1]
        print(b)

        [1, 2]
```

```
In [23]: b = a[:]
        print(b)

        [1, 2, 3]
```

```
In [24]: a.append(4)
        print(a)

        [1, 2, 3, 4]
```

```
In [25]:   c = []
```

```
In [26]:   c.append(3)
           c.append(5)
           print(c)
```

[3, 5]

```
In [27]:   index = a.index(2)
           print(index)
```

1

```
In [28]:   a = [1,2,4,6]
```

```
In [29]:   print(a.index(2))
```

1

```
In [30]:   print(len(a))
```

4

```
In [31]:   a = [[1,1,1], [2,2,2], [3,3,3]]
           b = [[1,1,1], [2,2,2], [3,3,3]]
```

```
In [32]:   c = []

           for i in range(len(a)):
               c.append([])
               for j in range(len(a[i])):
                   c[i].append(a[i][j] + b[i][j])
```

```
In [33]:   for i in range(len(c)):
               for j in range(len(c[i])):
                   if c[i][j] < 10:
                       print(' ',end='')
                   print('  ' + str(c[i][j]),end='')
               print('')
```

          2   2   2
          4   4   4
          6   6   6

その他のメソッド

insert()、pop()、remove()、extend()、clear()、sort()..

```
In [ ]:
```

タプル

```
In [36]:   mytaple = (2,4,5,2,6)
```

```
In [37]: print(mytaple[4])

6
```

```
In [38]: mytaple.append(7)
```

```
---------------------------------------------------------------------------
AttributeError                            Traceback (most recent call last)
~¥AppData¥Local¥Temp¥ipykernel_24472¥4141894348.py in <module>
----> 1 mytaple.append(7)

AttributeError: 'tuple' object has no attribute 'append'
```

辞書

```
In [39]: mydict = {"apple":7, "orange":2, "banana":4}
```

```
In [40]: mydict = {"orange":2, "apple":7, "banana":4}
```

```
In [41]: val = mydict["apple"]
         print(val)

7
```

```
In [42]: mydict["glape"] = 1
```

```
In [43]: print(mydict)

{'orange': 2, 'apple': 7, 'banana': 4, 'glape': 1}
```

```
In [44]: mydict.pop("glape")
         print(mydict)

{'orange': 2, 'apple': 7, 'banana': 4}
```

```
In [45]: mydict["apple"] = 1
         print(mydict)

{'orange': 2, 'apple': 1, 'banana': 4}
```

```
In [ ]:
```

```
In [ ]:
```

```
In [46]: a = [1, 2, 4]
         b = a
         b[0] = 10
```

```
In [47]: print(a)
         print(b)

[10, 2, 4]
[10, 2, 4]
```

```
In [ ]: ## copy.copy(), copy.deapcopy() でコピー
```