Zip関数

In [1]:
```
num_list = [1,4,0.4,-3,100]
```

In [2]:
```
for num in num_list:
    print(num)
```

```
1
4
0.4
-3
100
```

In [3]:
```
fluits_list = ["banana", "melon", "orange", "greap"]
```

In [4]:
```
for fluits in fluits_list:
    print(fluits)
```

```
banana
melon
orange
greap
```

In [5]:
```
name = ["Taro", "Hana", "Ken"]
age  = [20, 24, 30]
```

In [6]:
```
my_zip = zip(name, age)
```

In [7]:
```
for tp in my_zip:
    print(tp)
```

```
('Taro', 20)
('Hana', 24)
('Ken', 30)
```

In [8]:
```
type(my_zip)
```

Out[8]:
```
zip
```

In [9]:
```
type(tp)
```

Out[9]:
```
tuple
```

In [10]:
```
for n,a in zip(name, age):
    print(f"name = {n}, age = {a}")
```

```
name = Taro, age = 20
name = Hana, age = 24
name = Ken, age = 30
```

List Conprehension

[式 for 変数 in range()]

In [13]:
```
squares = [i**2 for i in range(5)]
print(squares)
```

```
[0, 1, 4, 9, 16]
```

In [14]:
```
my_list = [1,3,5,7]
```

In [15]:
```
squares = [i**2 for i in my_list]
print(squares)
```

```
[1, 9, 25, 49]
```

In [17]:
```
my_list = ["a","b","c"]
```

In [18]:
```
squares = [i*5 for i in my_list]
print(squares)
```

```
['aaaaa', 'bbbbb', 'ccccc']
```

条件式

[式 for 変数 in range() if 条件式]

In [19]:
```
odds = []
for i in range(10):
    if i % 2 != 0:
        odds.append(i)

print(odds)
```

```
[1, 3, 5, 7, 9]
```

In [20]:
```
odds = [i for i in range(10) if i % 2 != 0]
print(odds)
```

```
[1, 3, 5, 7, 9]
```

In [22]:
```
odd_squares = [i**2 for i in range(10) if i % 2 != 0]
print(odd_squares)
```

```
[1, 9, 25, 49, 81]
```

In [24]:
```
my_list = [1,4,100,3,21,7,8,11]
```

In [25]:
```
odds = [i for i in my_list if i % 2 != 0]
print(odds)
```

```
[1, 3, 21, 7, 11]
```

条件式(if,else)

[真のときの値 if 条件式 else 偽のときの値 for 変数 in range()]

In [26]:
```
odd = [i if i % 2 == 1 else 0 for i in range(10)]
print(odd)
```

```
[0, 1, 0, 3, 0, 5, 0, 7, 0, 9]
```

In [27]:
```
odd = [i if i % 2 == 1 else "not_odd" for i in range(10)]
print(odd)
```

```
['not_odd', 1, 'not_odd', 3, 'not_odd', 5, 'not_odd', 7, 'not_odd', 9]
```

In [28]:
```
odd_even = ['odd' if i % 2 == 1 else 'even' for i in range(10)]
print(odd_even)
```

```
['even', 'odd', 'even', 'odd', 'even', 'odd', 'even', 'odd', 'even', 'odd']
```

その他　例：Zip関数との組み合わせ

In [29]:
```
name_list = ["Taro", "Hana", "Ken"]
age_list  = [20, 24, 30]

tp = [(name, age) for name, age in zip(name_list, age_list)]
print(tp)
```

```
[('Taro', 20), ('Hana', 24), ('Ken', 30)]
```

In [30]:
```
a = [1, 2, 3]
b = [10, 20, 30]

sub = [i_b - i_a for i_a, i_b in zip(a, b)]
print(sub)
```

```
[9, 18, 27]
```

2重内包表記

In [31]:
```
squares = [[j+2*i for j in range(5)] for i in range(5)]
print(squares)
```

```
[[0, 1, 2, 3, 4], [2, 3, 4, 5, 6], [4, 5, 6, 7, 8], [6, 7, 8, 9, 10], [8, 9, 10, 11, 12]]
```

In [33]:
```
mylist = [[1, 2, 3],
          [4, 5, 6],
          [7, 8, 9]]
```

In [34]:
```
new_list = [j**3 for i in mylist for j in i]
print(new_list)
```

```
[1, 8, 27, 64, 125, 216, 343, 512, 729]
```

In [ ]:
```

```