

For Loop (in list) 迴圈

For loop (Indent; 縮排)

1)
for i in [1,2,3]:
 print(i)

```
1  
2  
3  
>>>
```

2)
for i in [1,2,3]:
 print(i)
 print(4)

```
1  
4  
2  
4  
3  
4  
>>>
```

3)
for i in [1,2,3]:
 print(i)
print(4)

```
1  
2  
3  
4  
>>> |
```

for loop

- for 是一個迴圈，會重複執行相同的東西。
- 在重複執行時，有一個變數會一直在改變。
- 語法：

```
for i in [1,2,3]:  
    for block here  
next statement
```

Assignment(review) : 1+2+3

```
sum = 0  
i = 1  
sum = sum + i  
i = i + 1  
sum = sum + i  
i = i + 1  
sum = sum + i  
print('sum = ' , sum)
```

i	*	*	3
sum	*	*	* 6

```
sum = 0  
for i in [1, 2, 3]:  
    sum = sum + i  
print('sum = ' , sum)
```

- sum = 0
- for i in [1,2,3]
 - sum = sum + i

i		*	*		3
sum	0	1	0	1	2
	0 + 1 + 2 + 3				

For Loop: example 2

- 假設您還不會減法，如何使用for loop找出與3相加等於10的數?(3 and x make 10)

```
for i in [1,2,3,4,5,6,7,8,9]:
    if i+3 == 10:
        print('3 and', i, 'make 10')
```

```
3 and 7 make 10
>>>
```

For Loop: example 1

- 請將 $2 \times 2 = 4$, $2 \times 3 = 6$, ..., $2 \times 9 = 18$ 列印成一列。

```
for i in [2,3,4,5,6,7,8,9]:
    print('2 x', i, '=', 2*i, end='; ')
```

```
2 x 2 = 4; 2 x 3 = 6; 2 x 4 = 8; 2 x 5 = 10; 2 x 6 = 12; 2 x 7 = 14; 2 x 8 = 16; 2 x 9 = 18;
>>>
```

```
for i in [2,3,4,5,6,7,8,9]:
    print('2x', i, '=', 2*i, sep=" ", end='; ')
```

```
2x2=4; 2x3=6; 2x4=8; 2x5=10; 2x6=12; 2x7=14; 2x8=16; 2x9=18;
>>>
```

For Loop: example 2

- 假設您會減法，如何使用for loop找出所有兩正整數相加等於10的例子?

```
for i in [1,2,3,4,5,6,7,8,9]:
    print(i, 'and', 10-i, 'make 10')
```

```
1 and 9 make 10
2 and 8 make 10
3 and 7 make 10
4 and 6 make 10
5 and 5 make 10
6 and 4 make 10
7 and 3 make 10
8 and 2 make 10
9 and 1 make 10
>>>
```