

# 列表推导式

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所谓的列表推导式，就是指的轻量级循环创建列表

## 1. 基本的方式

```
In [2]: a = [x for x in range(4)]  
  
In [3]: a  
Out[3]: [0, 1, 2, 3]  
  
In [4]: a = [x for x in range(3,4)]  
  
In [5]: a  
Out[5]: [3]  
  
In [6]: a = [x for x in range(3,19)]  
  
In [7]: a  
Out[7]: [3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18]  
  
In [8]: a = [x for x in range(3,19,2)]  
  
In [9]: a  
Out[9]: [3, 5, 7, 9, 11, 13, 15, 17]
```

## 2. 在循环的过程中使用if

```
In [10]: a = [x for x in range(3,10) if x%2==0]  
  
In [11]: a  
Out[11]: [4, 6, 8]  
  
In [12]: a = [x for x in range(3,10) if x%2!=0]  
  
In [13]: a  
Out[13]: [3, 5, 7, 9]  
  
In [14]: a = [x for x in range(3,10)]  
  
In [15]: a  
Out[15]: [3, 4, 5, 6, 7, 8, 9]
```

## 3. 2个for循环

```
In [29]: a = [(x,y) for x in range(1,3) for y in range(3)]
```

```
In [30]: a
```

```
Out[30]: [(1, 0), (1, 1), (1, 2), (2, 0), (2, 1), (2, 2)]
```

## 4. 3个for循环

```
In [26]: a = [(x,y,z) for x in range(1,3) for y in range(3) for z in range(4,6)]
```

```
In [27]: a
```

```
Out[27]:
```

```
[(1, 0, 4),  
(1, 0, 5),  
(1, 1, 4),  
(1, 1, 5),  
(1, 2, 4),  
(1, 2, 5),  
(2, 0, 4),  
(2, 0, 5),  
(2, 1, 4),  
(2, 1, 5),  
(2, 2, 4),  
(2, 2, 5)]
```

## 练习

请写出一段 Python 代码实现分组一个 list 里面的元素,比如 [1,2,3,...100]变成 [[1,2,3],[4,5,6]....]

参考答案:

```
a = [x for x in range(1,101)]  
b = [a[x:x+3] for x in range(0,len(a),3)]
```