

## 3. 列表

(xc) Python列表

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## Python List

❖ 在Python中, List属于内置的标准数据类型

❖ `box = [ 'pencil', 'pen', 'ruler', 'rubber' ]; print box`

`# ['pencil', 'pen', 'ruler', 'rubber']`

❖ `for item in box: print item,`

`# pencil pen ruler rubber`

❖ `box.reverse()`

`for item in box: print item,`

`# rubber ruler pen pencil`

❖ `box.sort()`

`for item in box: print item,`

`# pen pencil rubber ruler`

## Python List

```
❖ for i in range(0, len(box)): # [0, n)
    print box[i],
    # pen pencil rubber ruler

❖ for i in range(len(box)-1, -1, -1): # [n-1, -1)
    print box[i],
    # ruler rubber pencil pen

❖ for i in range(-1, -len(box)-1, -1): # [-1, -n-1)
    print box[i],
    # ruler rubber pencil pen
```

## Python List

```
❖ bag = [ 'data structures', 'calculus', box, 2012012012 ]  
    print bag  
  
    # ['data structures', 'calculus',  
      ['pen', 'pencil', 'rubber', 'ruler'], 2012012012]  
  
❖ for item in bag: print item,  
    # data structures calculus  
      ['pen', 'pencil', 'rubber', 'ruler'] 2012012012  
  
❖ for item in bag[2]: print item,  
    # pen pencil rubber ruler  
  
❖ for item in bag[2][1:3]: print item,  
    # pencil rubber
```

## reverse()

❖ def reverse\_1(L): # 循位置访问？

for i in range(0, len(L)): # 对[0, n)内的每个i，依次

L.insert(i, L.pop()) # 将末元素转移至位置i

return L # 最终即得倒置后的列表

❖ def reverse\_2(L): # 循秩访问？

i, j = 0, len(L) - 1 # 从首、末元素开始

while i < j: # 依次令对称的L[i]及L[n-1-i]

L[i], L[j] = L[j], L[i] # 互换，然后

i, j = i + 1, j - 1 # 考查下一对元素

return L # 最终即得倒置后的列表

❖ 哪个版本效率更高？实测结果如何解释？