# 3.列表

## （x3）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？