列表推导式

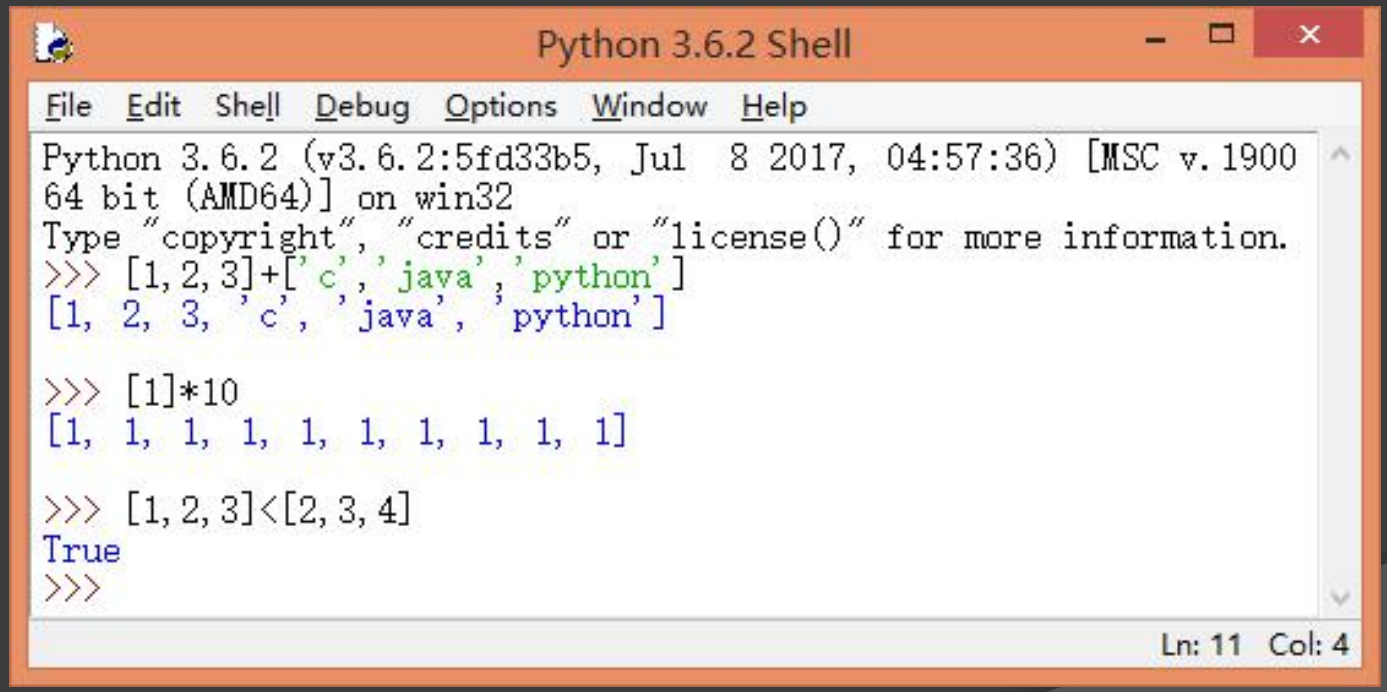
列表

列表是python 最常用数据类型之一：

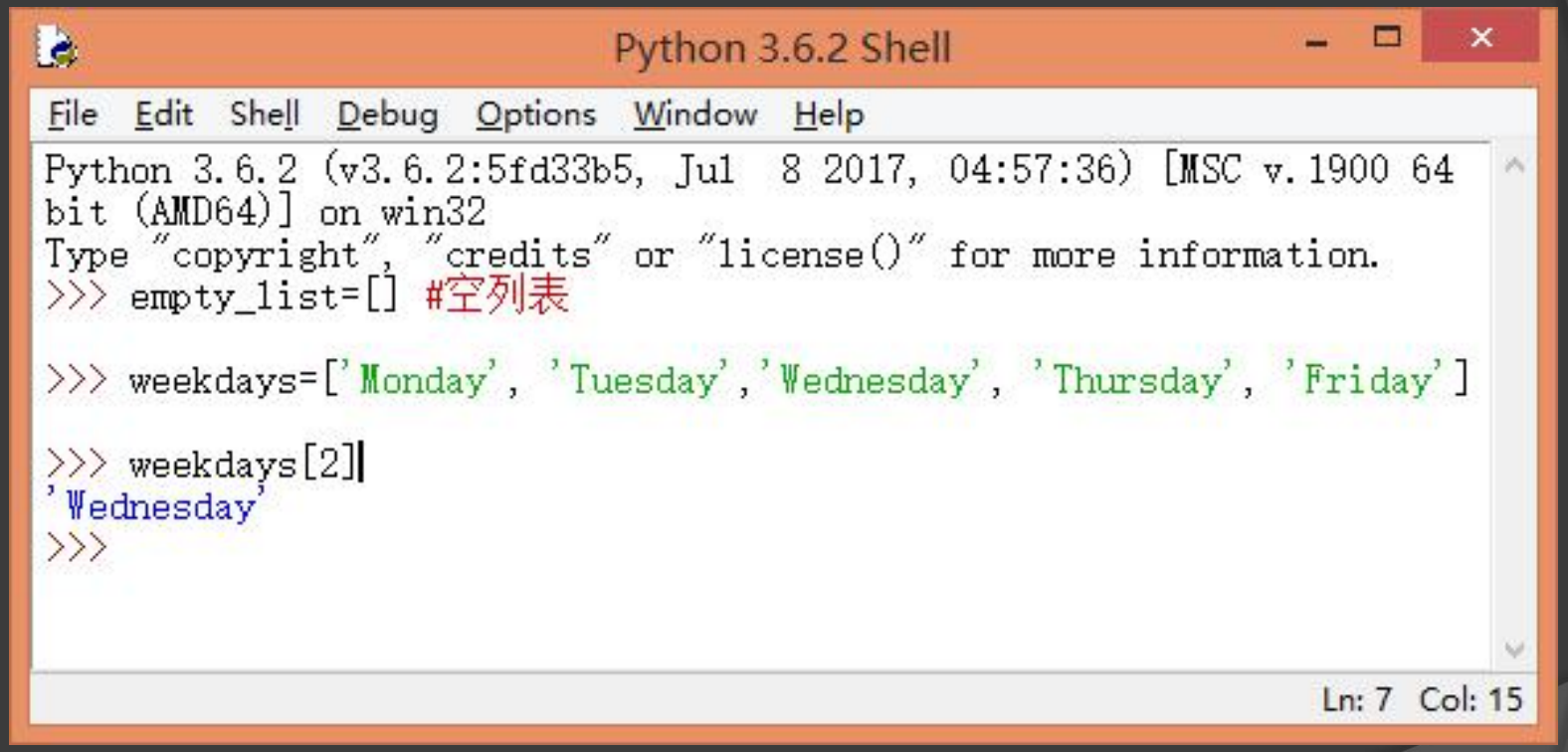
- 由零个或多个元素组成，元素之间用逗号分开，整个列表被方括号所包裹
- 元素类型可以相同也可以不同
- 通过序号可以引用列表中的元素

列表

- 支持加法、乘法、比较、索引、切片操作等等



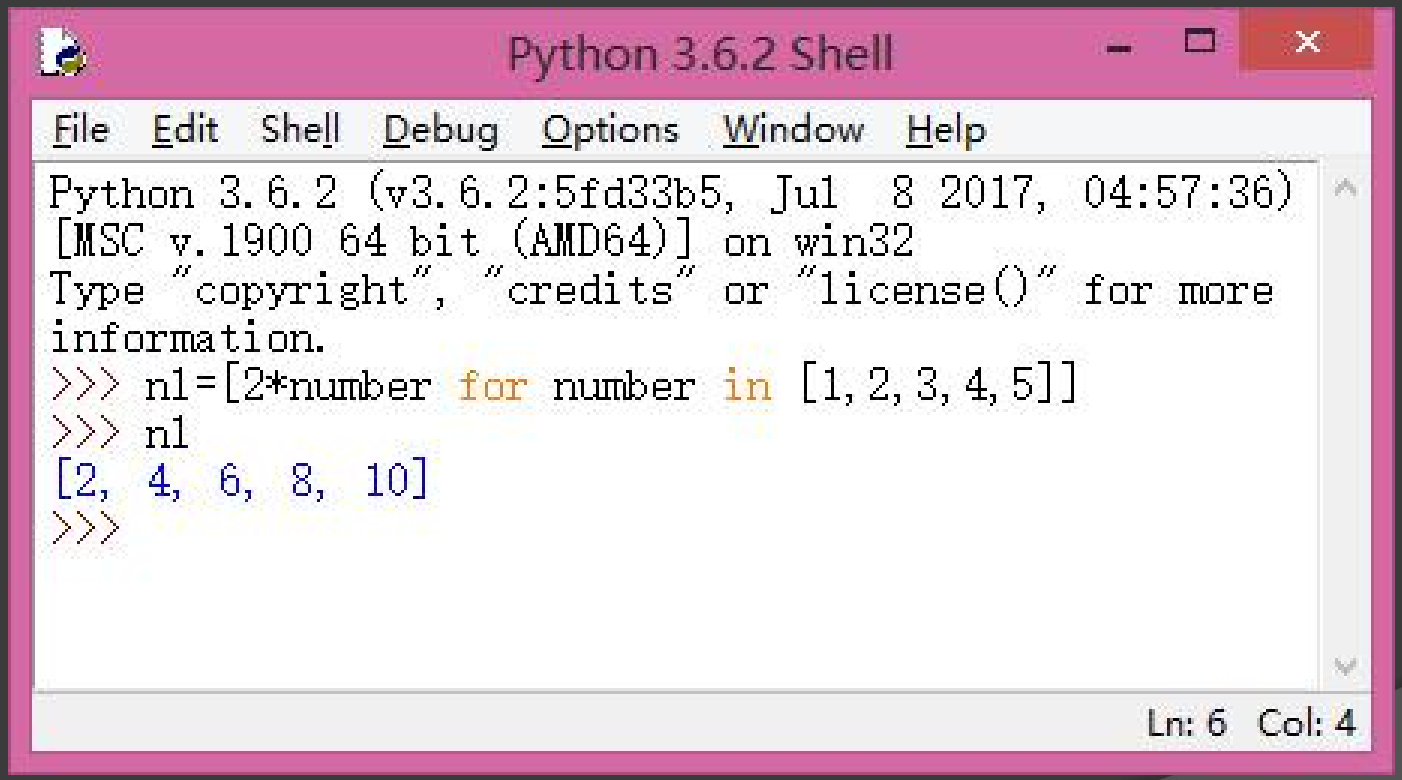
列表运算


Python 3.6.2 Shell
File Edit Shell Debug Options Window Help
Python 3.6.2 (v3.6.2:5fd33b5, Jul 8 2017, 04:57:36) [MSC v.1900 64 bit (AMD64)] on win32
Type "copyright", "credits" or "license()" for more information.
>>> empty_list=[] #空列表
>>> weekdays=['Monday', 'Tuesday','Wednesday', 'Thursday', 'Friday']
>>> weekdays[2]
'Wednesday'
>>>
Ln: 7 Col: 15

列表推导式

- 列表推导式（又称列表解析式）提供了一种简明扼要的方法来创建列表。
- 它可以将循环和条件判断结合，从而避免语法冗长的代码，同时提高程序性能。
- 基本格式：

  [expression for item in iterable]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Python 3.6.2 (v3.6.2:5fd33b5, Jul 8 2017, 04:57:36)
[MSC v.1900 64 bit (AMD64)] on win32
Type "copyright", "credits" or "license()" for more
information.
>>> n1=[2*number for number in [1,2,3,4,5]]
>>> n1
[2, 4, 6, 8, 10]
>>>
Ln: 6 Col: 4

带条件的列表解析

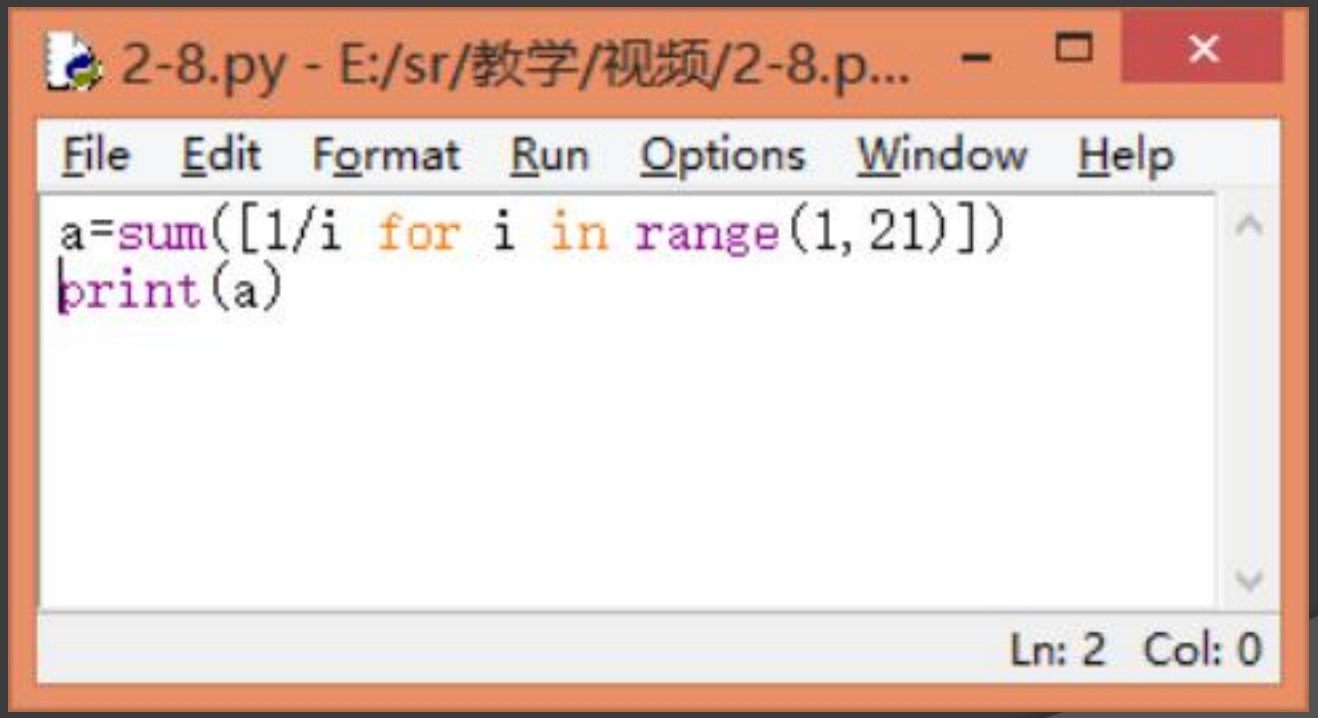
[expression for item in iterable if condition]

- >>> nl=[number for number in \
  range(1,8) if number % 2 == 1]
- >>> number_list

  [1, 3, 5, 7]

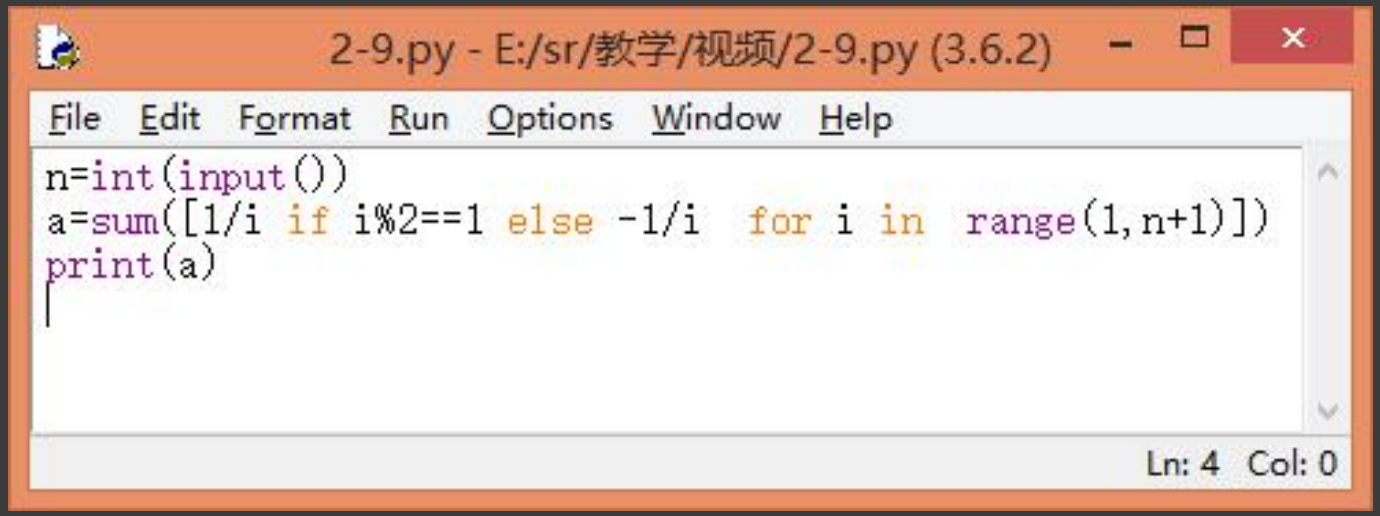
列表推导式应用

求1+1/2+...+1/20之和



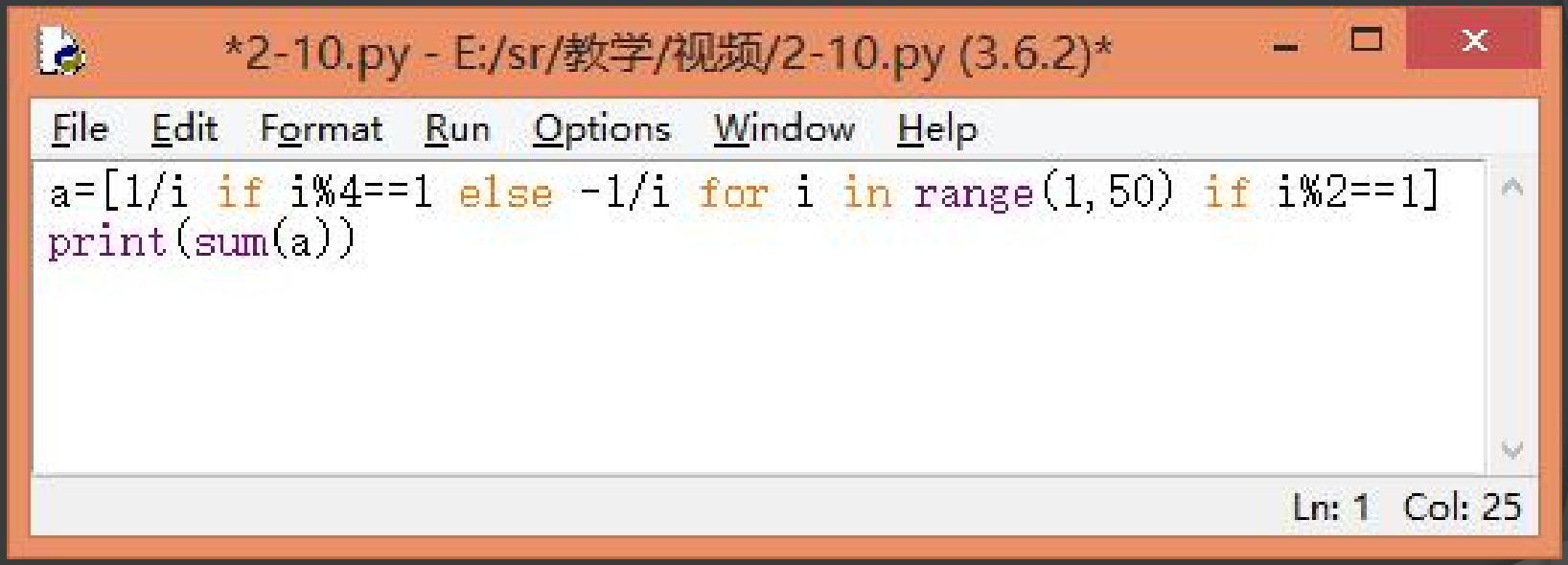
列表推导式应用

求 1-1/2+1/3-1/4+...之前n项和(n>=10)



列表推导式应用

求 1-1/3+1/5-1/7+...-1/47+1/49



列表推导式应用

求 6+66+666+...+666...666