Example 1

In [1]:

# Grab every letter in string

lst = [x for x in 'word']

In [2]:

# Check

lst

Out[2]:

['w', 'o', 'r', 'd']

This is the basic idea of a list comprehension. If you're familiar with mathematical notation this format should feel familiar for example: x^2 : x in { 0,1,2...10 }

Let's see a few more examples of list comprehensions in Python:

Example 2

In [3]:

# Square numbers in range and turn into list

lst = [x\*\*2 for x in range(0,11)]

In [4]:

lst

Out[4]:

[0, 1, 4, 9, 16, 25, 36, 49, 64, 81, 100]

Example 3

Let's see how to add in if statements:

In [5]:

# Check for even numbers in a range

lst = [x for x in range(11) if x % 2 == 0]

In [6]:

lst

Out[6]:

[0, 2, 4, 6, 8, 10]

Example 4

Can also do more complicated arithmetic:

In [7]:

# Convert Celsius to Fahrenheit

celsius = [0,10,20.1,34.5]

​

fahrenheit = [((9/5)\*temp + 32) for temp in celsius ]

​

fahrenheit

Out[7]:

[32.0, 50.0, 68.18, 94.1]