# **LIST COMPREHENSION – COREY SCHAFER**

*# I want 'n' for each 'n' in nums*

nums = [1,2,3,4,5,6,7,8,9,10]my\_list = []  
**for** n **in** nums:  
 my\_list.append(n)  
  
print(my\_list) *# [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]*

*# or using list comprehension*  
my\_list = [n **for** n **in** nums]

print(my\_list) *# [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]*

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*# I want 'n\*n' for each 'n' in nums*

nums = [1,2,3,4,5,6,7,8,9,10]my\_list = []  
**for** n **in** nums:  
 my\_list.append(n\*n)  
  
print(my\_list)

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

*# Or using list comprehensions*my\_list = [n\*\*n **for** n **in** nums]  
print(my\_list) *# [1, 4, 9, 16, 25, 36, 49, 64, 81, 100]*

*# or using a map + lambda*my\_list = map(**lambda** n: n\*n, nums)  
print(my\_list)

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

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*# I want 'n' for each 'n' in nums if 'n' is even*nums = [1, 2, 3, 4, 5, 6, 7, 8, 9, 10]  
my\_list = []  
**for** n **in** nums:  
 **if** n%2 == 0:  
 my\_list.append(n)  
print(my\_list) *# [2, 4, 6, 8, 10]  
  
# or using list comprehension*my\_list = [n **for** n **in** nums **if** n % 2 == 0]  
print(my\_list) *# [2, 4, 6, 8, 10]  
  
# or using filter + lambda*x = list(filter(**lambda** x: x % 2 == 0, nums))  
print(x)

*# [2, 4, 6, 8, 10]*

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*# I want a (letter, num) pair for each letter in 'abcd' and each number in '0123'*my\_list = []  
**for** letter **in 'abcd'**:  
 **for** num **in** range(4):  
 my\_list.append((letter, num))  
  
print(my\_list)  
  
*# or using list comprehension*my\_list = [(letter, num) **for** letter **in "abcd" for** num **in** range(4)]  
print(my\_list)  
  
*# output  
# [('a', 0), ('a', 1), ('a', 2), ('a', 3), ('b', 0), ('b', 1),*

*# ('b', 2), ('b', 3), ('c', 0), ('c', 1), ('c', 2),  
# ('c', 3), ('d', 0), ('d', 1), ('d', 2), ('d', 3)]*

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*# Dictionary Comprehensions*names = [**'Bruce'**, **'Clark'**, **'Peter'**, **'Logan'**, **'Wade'**]  
heros = [**'Batman'**, **'Superman'**, **'Spiderman'**, **'Wolverine'**, **'Deadpool'**]  
  
*# using for loop*my\_dict = {}  
**for** name, hero **in** zip(names, heros):  
 my\_dict[name] = hero  
  
print(my\_dict)  
*# {'Bruce': 'Batman', 'Clark': 'Superman',  
# 'Peter': 'Spiderman', 'Logan': 'Wolverine', 'Wade': 'Deadpool'}  
  
# or using list comprehension*my\_dict = {name: hero **for** name, hero **in** zip(names, heros) **if** name != **'Peter'**}  
print(my\_dict)  
*# {'Bruce': 'Batman', 'Clark': 'Superman', 'Logan': 'Wolverine', 'Wade': 'Deadpool'}*