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# -*- coding: utf-8 -*-
"""
list comprehension

Summary By: Varpe K. M.
Reference: https://www.pythonforbeginners.com/basics/list-comprehensions-in-python

The list comprehension starts with a '[' and ']', to help you remember that the
result is going to be a lis
"""
new_list = [expression(i) for i in old_list if filter(i)]
new_list
The new list (result).

expression(i)
Expression is based on the variable used for each element in the old list.

for i in old_list
The word for followed by the variable name to use, followed by the word in the
old list.

if filter(i)
Apply a filter with an If-statement.
"""
new_range = [i * i for i in range(5) if i % 2 == 0]

print(new_range)

#####

x = [i for i in range(10)]
print(x)

#####
squares = []

for x in range(10):
    squares.append(x**2)

print(squares)

# Or you can use list comprehensions to get the same result:
squares = [x**2 for x in range(10)]

print(squares)

#####
list1 = [3,4,5]

multiplied = [item*3 for item in list1]

print(multiplied)

#####
"""
We will take the first letter of each word and make a list out of it.
"""

listOfWords = ["this", "is", "a", "list", "of", "words"]

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items = [ word[0] for word in listOfWords ]

print(items)

#####
"""
Let's show how easy you can convert lower case / upper case letters.
"""

print([x.lower() for x in ["A","B","C"]])

print([x.upper() for x in ["a","b","c"]])

#####
string = "Hello 12345 World"
numbers = [x for x in string if x.isdigit()]
print(numbers)

```