**LIST COMPREHENSIONS**

List comprehensions gives us a easy to use syntax to create one list out of another while applying some logic and conditions.

Syntax: **lst = [Expression for item in iterable if condition]**

List Comprehensions are a shortcut to create one list out of another by applying the logic we want on the first list as well as we can also apply conditions on the right hand side only if the condition is satisfied, that item will be included in the resulting list.

**List Comprehensions Examples (Cube, Even Number):**

**Code**

# NORMAL WAY

print(*"CALCULATION OF CUBES USING NORMAL WAY"*)

lst = []

for x in range(1,11):

lst.append(x\*\*3)

print(lst)

print(*"=============================================="*)

# LIST COMPREHENSION - CUBES FOR A RANGE

print(*"CALCULATION OF CUBES USING LIST COMPRENEHSION"*)

lstComp=[]

lstComp = [a\*\*3 for a in range(1,11)]

print(lstComp)

print(*"=============================================="*)

# LIST COMPREHENSION - DISPLAY EVEN NUMBERS

print(*"FIND EVEN NUMBERS USING LIST COMPRENEHSION"*)

lstEven=[x for x in range(2,25,2)]

print(lstEven)

print(*"=============================================="*)

# LIST COMPREHENSION - DISPLAY EVEN NUMBERS

print(*"FIND EVEN NUMBERS USING LIST COMPRENEHSION"*)

lstEven1 = [x for x in range(1,25) if x%2 ==0]

print(lstEven1)

**Output**

CALCULATION OF CUBES USING NORMAL WAY

[1, 8, 27, 64, 125, 216, 343, 512, 729, 1000]

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CALCULATION OF CUBES USING LIST COMPRENEHSION

[1, 8, 27, 64, 125, 216, 343, 512, 729, 1000]

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FIND EVEN NUMBERS USING LIST COMPRENEHSION

[2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24]

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FIND EVEN NUMBERS USING LIST COMPRENEHSION

[2, 4, 6, 8, 10, 12, 14, 16, 18, 20, 22, 24]

**Product of elements in 2 list using List Comprehension**

**Code**

#REGULAR WAY

lst1=[1,2,3,4,5,6,7,8,9,10]

lst2=[11,12,13,14,15,16,17,18,19,20]

output1= []

for i in range(len(lst1)):

output1.append(lst1[i]\*lst2[i])

print(*"NORMAL METHOD : "*, output1)

#USING LIST COMPREHENSION

output2 = [lst1[i]\*lst2[i] for i in range(len(lst1))]

print(*"LIST COMPREHENSION METHOD : "*, output2)

**Output**

NORMAL METHOD : [11, 24, 39, 56, 75, 96, 119, 144, 171, 200]

LIST COMPREHENSION METHOD : [11, 24, 39, 56, 75, 96, 119, 144, 171, 200]

**Find the common elements in 2 list using List Comprehension**

**Code**

#REGULAR METHOD

lst1=[1,2,3,4,5,6,7,8,9,10]

lst2=[1,3,5,7,9,11,15,17,19,21]

output1= []

for i in lst1:

if(i in lst2):

output1.append(i)

print(*"NORMAL METHOD : "*, output1)

print(*"=============================================="*)

#LIST COMPREHENSION

output2=[x for x in lst1 if x in lst2]

print(*"LIST COMPREHENSION METHOD : "*, output2)

**Output**

NORMAL METHOD : [1, 3, 5, 7, 9]

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LIST COMPREHENSION METHOD : [1, 3, 5, 7, 9]