**Dictionary Comprehensions**

Dictionary comprehension is an elegant and concise way to create dictionaries.

dictionary comprehension shortens the process of dictionary initialization by a lot. It makes the code more pythonic.

Using dictionary comprehension in our code can shorten the lines of code while keeping the logic intact.

Even though dictionary comprehensions are great for writing elegant code that is easy to read, they are not always the right choice.

We must be careful while using them as :

They can sometimes make the code run slower and consume more memory.

They can also decrease the readability of the code.

We must not try to fit a difficult logic or a large number of dictionary comprehension inside them just for the sake of making the code single lined. In these cases, It is better to choose other alternatives like loops.

Ex:

#Fill dictionary with squares of numbers between 1 to 10

sq=dict()

for num in range(1,11):

sq[num]=num\*num

print(sq)

o/p:

{1: 1, 2: 4, 3: 9, 4: 16, 5: 25, 6: 36, 7: 49, 8: 64, 9: 81, 10: 100}

Ex: Using dictionary comprehensions

sq={num:num\*num for num in range(1,11)}

print(sq)

we can use dictionary comprehension using data from another dictionary.

Ex: Get people who can vote

people={'rama':12,'david':19,'adams':32,'alice':23,'james':14}

voters={x:y for (x,y) in people.items() if y>=18}

print(voters)

o/p:

{'david': 19, 'adams': 32, 'alice': 23}

Ex:

prices={'oranges':40,'apples':20,'cherries':2,'lemon':5}

new={x:y\*2 for (x,y) in prices.items()}

print(new)

o/p:

{'oranges': 80, 'apples': 40, 'cherries': 4, 'lemon': 10}

Ex: Multiple conditions

Get fruits whose price is more than 10 but less than 30

prices={'oranges':40,'apples':20,'cherries':2,'lemon':5}

new={x:y for (x,y) in prices.items() if y>10 if y<30}

print(new)

(or)

prices={'oranges':40,'apples':20,'cherries':2,'lemon':5}

new={x:y for (x,y) in prices.items() if y>10 and y<30}

print(new)

Ex: if—else with dictionary comprehensions

Prepare a new dictionary, with username:Can vote or username:can’t vote

ages={'smith':19,'john':21,'alice':12,'james':18,'david':13}

voters={x:("Can Vote" if y>=18 else "can't vote")

for (x,y) in ages.items()}

print(voters)

O/p:

{'smith': 'Can Vote', 'john': 'Can Vote', 'alice': "can't vote", 'james': 'Can Vote', 'david': "can't vote"}