NESTED FOR LOOPS

What is a Nested For Loop?

- A for loop inside another for loop.
- The **outer loop** runs first, and for each iteration of the outer loop, the inner loop runs completely.

EXAMPLE:

```
# tables 1 to 10
for i in range(1,11,1):
    for j in range(1,11,1):
        num=j*i
        print(f"{j}x{i}={num}", end="\t")
    print()
```

OUTPUT:

```
1x1=1   2x1=2   3x1=3   4x1=4   5x1=5   6x1=6   7x1=7   8x1=8   9x1=9   10x1=10
1x2=2   2x2=4   3x2=6   4x2=8   5x2=10  6x2=12  7x2=14  8x2=16  9x2=18  10x2=20
1x3=3   2x3=6   3x3=9   4x3=12  5x3=15  6x3=18  7x3=21  8x3=24  9x3=27  10x3=30
1x4=4   2x4=8   3x4=12  4x4=16  5x4=20  6x4=24  7x4=28  8x4=32  9x4=36  10x4=40
1x5=5   2x5=10  3x5=15  4x5=20  5x5=25  6x5=30  7x5=35  8x5=40  9x5=45  10x5=50
1x6=6   2x6=12  3x6=18  4x6=24  5x6=30  6x6=36  7x6=42  8x6=48  9x6=54  10x6=60
1x7=7   2x7=14  3x7=21  4x7=28  5x7=35  6x7=42  7x7=49  8x7=56  9x7=63  10x7=70
1x8=8   2x8=16  3x8=24  4x8=32  5x8=40  6x8=48  7x8=56  8x8=64  9x8=72  10x8=80
1x9=9   2x9=18  3x9=27  4x9=36  5x9=45  6x9=54  7x9=63  8x9=72  9x9=81  10x9=90
1x10=10 2x10=20 3x10=30 4x10=40 5x10=50 6x10=60 7x10=70 8x10=80 9x10=90 10x10=100
```

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-> I want to print 1 to 5 tables

```
for i in range (1,11,1):
    for j in range (1,6,1):
        num = j*i
        print (f"{j} *{i} ={num} ", end = "\t")
    print ( )
```

i = 1, 2, 3, 4, 5, 6, 7, 8, 9, 10

j = 1, 2, 3, 4, 5

Here we declear Row's for i , elements for j

num = j*i

num = 1*1 =1

J=1 = 1*2 = 2

= 1*3 = 3

= 1*4 = 4

⋮

= 1* 10 = 10

-> Here J =1 (first 1 will loop every element in i)

next J=2 (2 will loop every element in i)

num = J* i (I = 1,2,3,4,5,6,7,8,9,10)

=2 *1 = 2

=2 * 2 = 4

=2* 3 = 6

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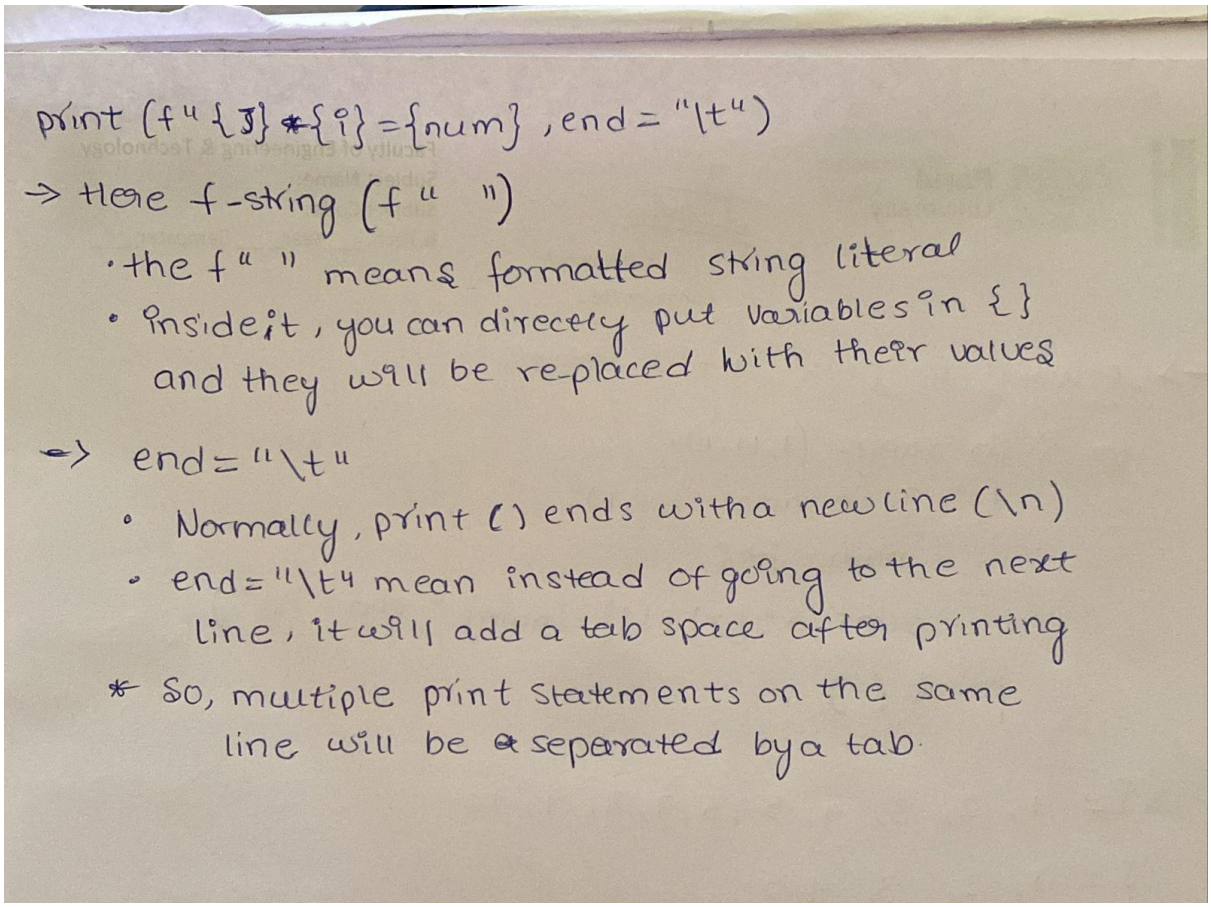

print (f"{j} * {i} = {num}", end = "\t")

→ here f-string (f" ")

- the f" " means formatted string literal
- inside it, you can directly put variables in {} and they will be replaced with their values

→ end = "\t"

- Normally, print() ends with a newline (\n)
- end = "\t" mean instead of going to the next line, it will add a tab space after printing

* So, multiple print statements on the same line will be separated by a tab.