In [1]:

```python
# [Exercises: Level 1] Python Fundamentals - Loops

'''
Iterate 0 to 10 using for loop, do the same using while loop.

Iterate 10 to 0 using for loop, do the same using while loop.

Write a loop that makes seven calls to print(), so we get on the output the following triangle:

  #
  ##
  ###
  ####
  #####
  ######
  #######
Use nested loops to create the following:

# # # # # # # #
# # # # # # # #
# # # # # # # #
# # # # # # # #
# # # # # # # #
# # # # # # # #
# # # # # # # #
# # # # # # # #
Print the following pattern:

0 x 0 = 0
1 x 1 = 1
2 x 2 = 4
3 x 3 = 9
4 x 4 = 16
5 x 5 = 25
6 x 6 = 36
7 x 7 = 49
8 x 8 = 64
9 x 9 = 81
10 x 10 = 100
Iterate through the list, ['Python', 'Numpy','Pandas','Django', 'Flask'] using a for loop
and print out the items.

Use for loop to iterate from 0 to 100 and print only even numbers

Use for loop to iterate from 0 to 100 and print only odd numbers
'''

# Iterate 0 to 10 using for loop
print("For loop from 0 to 10:")
for i in range(11):
    print(i)

# Iterate 0 to 10 using while loop
print("\nWhile loop from 0 to 10:")
i = 0
while i <= 10:
    print(i)
    i += 1

# Iterate 10 to 0 using for loop
print("\nFor loop from 10 to 0:")
for i in range(10, -1, -1):
    print(i)

# Iterate 10 to 0 using while loop
print("\nWhile loop from 10 to 0:")
```

```python
i = 10
while i >= 0:
    print(i)
    i -= 1

# Print triangle pattern
print("\nTriangle pattern:")
for i in range(1, 8):
    print('#' * i)

# Nested loops to create 8x8 grid pattern
print("\n8x8 grid pattern:")
for i in range(8):
    for j in range(8):
        print('#', end=' ')
    print()

# Print multiplication pattern
print("\nMultiplication pattern:")
for i in range(11):
    print(f"{i} x {i} = {i * i}")

# Iterate through the list and print items
print("\nIterate through list:")
items = ['Python', 'Numpy', 'Pandas', 'Django', 'Flask']
for item in items:
    print(item)

# Print only even numbers from 0 to 100
print("\nEven numbers from 0 to 100:")
for i in range(101):
    if i % 2 == 0:
        print(i)

# Print only odd numbers from 0 to 100
print("\nOdd numbers from 0 to 100:")
for i in range(101):
    if i % 2 != 0:
        print(i)
```

```
For loop from 0 to 10:
0
1
2
3
4
5
6
7
8
9
10

While loop from 0 to 10:
0
1
2
3
4
5
6
7
8
9
10

For loop from 10 to 0:
10
9
8
7
6
```

```
5
4
3
2
1
0

While loop from 10 to 0:
10
9
8
7
6
5
4
3
2
1
0

Triangle pattern:
#
##
###
####
#####
######
#######

8x8 grid pattern:
# # # # # # # #
# # # # # # # #
# # # # # # # #
# # # # # # # #
# # # # # # # #
# # # # # # # #
# # # # # # # #
# # # # # # # #

Multiplication pattern:
0 x 0 = 0
1 x 1 = 1
2 x 2 = 4
3 x 3 = 9
4 x 4 = 16
5 x 5 = 25
6 x 6 = 36
7 x 7 = 49
8 x 8 = 64
9 x 9 = 81
10 x 10 = 100

Iterate through list:
Python
Numpy
Pandas
Django
Flask

Even numbers from 0 to 100:
0
2
4
6
8
10
12
14
16
18
20
22
```

```
24
26
28
30
32
34
36
38
40
42
44
46
48
50
52
54
56
58
60
62
64
66
68
70
72
74
76
78
80
82
84
86
88
90
92
94
96
98
100

Odd numbers from 0 to 100:
1
3
5
7
9
11
13
15
17
19
21
23
25
27
29
31
33
35
37
39
41
43
45
47
49
51
53
55
57
59
61
```

```
63
65
67
69
71
73
75
77
79
81
83
85
87
89
91
93
95
97
99
```