Python Exercises

Loop and if-else:

1. Print First 10 natural numbers using while loop.

Expected output:
0
1
2
3
4
5
6
7
8
9
10

2. Print the following pattern.

1
1 2
1 2 3
1 2 3 4
1 2 3 4 5

3. Accept number from user and calculate the sum of all number between 1 and given number.

For example user given 10 so the output should be 55

4. Print multiplication table of given number.
For example num = 2 so the output should be

2
4
6
8
10
12
14
16
18
20

5. Given a list iterate it and display numbers which are divisible by 5 and if you find number greater than 150 stop the loop iteration.

list1 = [12, 15, 32, 42, 55, 75, 122, 132, 150, 180, 200]

6. Given a number count the total number of digits in a number.

For example, the number is 75869, so the output should be 5.

7. Print the following pattern using for loop.

5 4 3 2 1
4 3 2 1
3 2 1
2 1
1

8. Reverse the following list using for loop.

list1 = [10, 20, 30, 40, 50]

9. Display -10 to -1 using for loop.

Expected output:
-10
-9
-8
-7
-6
-5
-4
-3
-2
-1

10. Display a message "Done" after successful execution of for loop.

Expected output:
0
1
2
3
4
Done!

11. Python program to display all the prime numbers within a range.
Note: A Prime Number is a whole number that cannot be made by multiplying other whole numbers.

Examples:
6 is not a Prime Number because it can be made by 2×3 = 6
37 is a Prime Number because no other whole numbers multiply together to make it.
Given:
start = 25
end = 50
Expected output:
Prime numbers between 25 and 50 are:
29
31
37
41
43
47

12. Display Fibonacci series up to 10 terms.

Expected output:
Fibonacci sequence:
0 1 1 2 3 5 8 13 21 34

13. Write a loop to find the factorial of any number.

14. Reverse a given integer number.

Given:
76542
Expected output:
24567

15. Use a loop to display elements from a given list which are present at even positions.

Given:
my_list = [10, 20, 30, 40, 50, 60, 70, 80, 90, 100]
Expected output:
20 40 60 80 100

Functions:

1. **Create a function that can accept two arguments employee name and ID and print its value as shown in the example, and if the ID is missing in function call it should show it as 001:**

   Example: Employee Name - XYZ
   Employee ID - 555

2. **Write a function func1() such that it can accept a variable length of arguments and print all argument's value.**

3. **Write a function calculation() such that it can accept two variables and calculate the addition and subtraction of it. And also it must return both addition and subtraction in a single return call.**

4. **Create an inner function to calculate the addition in the following way:**

   - Create an outer function that will accept two parameters a and b
   - Create an inner function inside an outer function that will calculate the addition of a and b
   - At last, an outer function will add 5 into addition and return it

5. **Write a recursive function to calculate the sum of numbers from 0 to 10.**

6. **Create a function which generates a Python list of all the even numbers between 0 to N.** (Where N = Any positive number provided in the function argument)

7. **Create a function which returns the largest and smallest number from the given list.**
   (Without using max() and min() function.)