Python if else, for loop, and range()

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 from 1 to a given number

For example, if user entered **10** the output should be **55**.

4: Print multiplication table of a 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 divisible by five, and if you find a number greater than 150, stop the loop iteration.

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

Expected output:

```
15
```

```
55

75

150
```

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]
```

Expected output:

```
50

40

30

20

10
```

9: Display numbers from -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

For example, the following loop will execute without any error.

```
for i in range(5):
    print(i)
```

So the **Expected output should be:**

```
0
1
2
3
```

```
4

Done!
```

11: Write a program to display all 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

The factorial (symbol: `!`) means to multiply all whole numbers from the chosen number down to 1.

For example: calculate the factorial of 5

```
5! = 5 × 4 × 3 × 2 × 1 = 120
```

Expected output:

```
120
```

14: Reverse a given integer number

Given:

76542

Expected output:

24567

15: Use a loop to display elements from a given list that are present at odd index positions

Given:

```
my_list = [10, 20, 30, 40, 50, 60, 70, 80, 90, 100]
```

list index always starts at 0

Expected output:

```
20 40 60 80 100
```

16: Display the cube of the number up to a given integer

Given:

```
input_number = 6
```

Expected output:

```
Current Number is : 1  and the cube is 1

Current Number is : 2  and the cube is 8

Current Number is : 3  and the cube is 27

Current Number is : 4  and the cube is 64

Current Number is : 5  and the cube is 125

Current Number is : 6  and the cube is 216
```

17: Find the sum of the series 2 +22 + 222 + 2222 + .. n terms

Given:

```
number_of_terms = 5
```

So series will become **2 + 22 + 222 + 2222 + 22222**

Expected output:

```
24690
```

18: Print the following pattern

```
*
* *
* * *
* * * *
* * * * *
* * * *
* * *
* *
*
```