**Python if else, for loop, and range() Exercises with Solutions**

* [Exercise 1: Print First 10 natural numbers using while loop](https://pynative.com/python-if-else-and-for-loop-exercise-with-solutions/#h-exercise-1-print-first-10-natural-numbers-using-while-loop)
* [Exercise 2: Print the following pattern](https://pynative.com/python-if-else-and-for-loop-exercise-with-solutions/#h-exercise-2-print-the-following-pattern)
* [Exercise 3: Calculate the sum of all numbers from 1 to a given number](https://pynative.com/python-if-else-and-for-loop-exercise-with-solutions/#h-exercise-3-calculate-the-sum-of-all-numbers-from-1-to-a-given-number)
* [Exercise 4: Write a program to print multiplication table of a given number](https://pynative.com/python-if-else-and-for-loop-exercise-with-solutions/#h-exercise-4-write-a-program-to-print-multiplication-table-of-a-given-number)
* [Exercise 5: Display numbers from a list using loop](https://pynative.com/python-if-else-and-for-loop-exercise-with-solutions/#h-exercise-5-display-numbers-from-a-list-using-loop)
* [Exercise 6: Count the total number of digits in a number](https://pynative.com/python-if-else-and-for-loop-exercise-with-solutions/#h-exercise-6-count-the-total-number-of-digits-in-a-number)
* [Exercise 7: Print the following pattern](https://pynative.com/python-if-else-and-for-loop-exercise-with-solutions/#h-exercise-7-print-the-following-pattern)
* [Exercise 8: Print list in reverse order using a loop](https://pynative.com/python-if-else-and-for-loop-exercise-with-solutions/#h-exercise-8-print-list-in-reverse-order-using-a-loop)
* [Exercise 9: Display numbers from -10 to -1 using for loop](https://pynative.com/python-if-else-and-for-loop-exercise-with-solutions/#h-exercise-9-display-numbers-from-10-to-1-using-for-loop)
* [Exercise 10: Use else block to display a message “Done” after successful execution of for loop](https://pynative.com/python-if-else-and-for-loop-exercise-with-solutions/#h-exercise-10-use-else-block-to-display-a-message-done-after-successful-execution-of-for-loop)
* [Exercise 11: Write a program to display all prime numbers within a range](https://pynative.com/python-if-else-and-for-loop-exercise-with-solutions/#h-exercise-11-write-a-program-to-display-all-prime-numbers-within-a-range)
* [Exercise 12: Display Fibonacci series up to 10 terms](https://pynative.com/python-if-else-and-for-loop-exercise-with-solutions/#h-exercise-12-display-fibonacci-series-up-to-10-terms)
* [Exercise 13: Find the factorial of a given number](https://pynative.com/python-if-else-and-for-loop-exercise-with-solutions/#h-exercise-13-find-the-factorial-of-a-given-number)
* [Exercise 14: Reverse a given integer number](https://pynative.com/python-if-else-and-for-loop-exercise-with-solutions/#h-exercise-14-reverse-a-given-integer-number)
* [Exercise 15: Use a loop to display elements from a given list present at odd index positions](https://pynative.com/python-if-else-and-for-loop-exercise-with-solutions/#h-exercise-15-use-a-loop-to-display-elements-from-a-given-list-present-at-odd-index-positions)
* [Exercise 16: Calculate the cube of all numbers from 1 to a given number](https://pynative.com/python-if-else-and-for-loop-exercise-with-solutions/#h-exercise-16-calculate-the-cube-of-all-numbers-from-1-to-a-given-number)
* [Exercise 17: Find the sum of the series upto n terms](https://pynative.com/python-if-else-and-for-loop-exercise-with-solutions/#h-exercise-17-find-the-sum-of-the-series-upto-n-terms)
* [Exercise 18: Print the following pattern](https://pynative.com/python-if-else-and-for-loop-exercise-with-solutions/#h-exercise-18-print-the-following-pattern)

### Exercise 1: Print First 10 natural numbers using while loop

**Expected output:**

1

2

3

4

5

6

7

8

9

10

### Exercise 2: Print the following pattern

Write a program to print the following number pattern using a loop.

1

1 2

1 2 3

1 2 3 4

1 2 3 4 5

### Exercise 3: Calculate the sum of all numbers from 1 to a given number

Write a program to accept a number from a user and calculate the sum of all numbers from 1 to a given number

For example, if the user entered **10** the output should be **55** (1+2+3+4+5+6+7+8+9+10)

**Expected Output**:

Enter number 10

Sum is: 55

### Exercise 4: Write a program to 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

### Exercise 5: Display numbers from a list using loop

Write a program to display only those numbers from a [list](https://pynative.com/python-lists/) that satisfy the following conditions

* The number must be divisible by five
* If the number is greater than 150, then skip it and move to the next number
* If the number is greater than 500, then stop the loop

**Given**:

numbers = [12, 75, 150, 180, 145, 525, 50]

**Expected output:**

75

150

145

### Exercise 6: Count the total number of digits in a number

Write a program to count the total number of digits in a number using a [while loop](https://pynative.com/python-while-loop/).

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

### Exercise 7: Print the following pattern

Write a program to use for loop to print the following reverse number pattern

5 4 3 2 1

4 3 2 1

3 2 1

2 1

1

### Exercise 8: Print list in reverse order using a loop

**Given**:

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

**Expected output:**

50

40

30

20

10

### Exercise 9: Display numbers from -10 to -1 using for loop

**Expected output:**

-10

-9

-8

-7

-6

-5

-4

-3

-2

-1

### Exercise 10: Use else block to display a message “Done” after successful execution of for loop

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

**Given**:

**for** i **in** **range**(5):

**print**(i)

**Expected output:**

0

1

2

3

4

Done!

### Exercise 11: Write a program to display all prime numbers within a range

**Note**: A Prime Number is a number that cannot be made by multiplying other whole numbers. A prime number is a natural number greater than 1 that is not a product of two smaller natural numbers

**Examples**:

* 6 is not a prime mumber 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**:

# range

start = 25

end = 50

**Expected output:**

Prime numbers between 25 and 50 are:

29

31

37

41

43

47

### Exercise 12: Display Fibonacci series up to 10 terms

The Fibonacci Sequence is a series of numbers. The next number is found by adding up the two numbers before it. The **first two numbers are 0 and 1**.

For example, 0, 1, 1, 2, 3, 5, 8, 13, 21. The next number in this series above is 13+21 = 34.

**Expected output:**

Fibonacci sequence:

0 1 1 2 3 5 8 13 21 34

### Exercise 13: Find the factorial of a given number

Write a program to use the loop to find the factorial of a given 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

### Exercise 14: Reverse a given integer number

**Given**:

76542

**Expected output:**

24567

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

**Given:**

my\_list = [10, 20, 30, 40, 50, 60, 70, 80, 90, 100]

**Note**: [list](https://pynative.com/python-lists/) index always starts at 0

**Expected output:**

20 40 60 80 100

### Exercise 16: Calculate the cube of all numbers from 1 to a given number

Write a program to rint the cube of all numbers from 1 to a given number

**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

### Exercise 17: Find the sum of the series upto n terms

Write a program to calculate the sum of series up to n term. For example, if n =5 the series will become 2 + 22 + 222 + 2222 + 22222 = 24690

**Given**:

# number of terms

n = 5

**Expected output:**

24690

### Exercise 18: Print the following pattern

Write a program to print the following start pattern using the for loop

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\* \* \* \*

\* \* \* \* \*

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\*

Use two for loops. First for loop to print the upper pattern and second for loop to print lower pattern

**First Pattern**:

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\* \* \* \* \*

**Second Pattern**:

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