For Loop in Python (Practice Problem) – Python Tutorial

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for loop in python is used to iterate over a sequence or an iterable object (such as a list, tuple, or string). In this article, we will discuss 18 different examples of python for loop.

For loops in Python is designed to repeatedly execute the code block while iterating over a sequence or an iterable object such as list, tuple, dictionary, sets. In this article, we will briefly discuss for loop in Python with different examples.

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Example 1: Print the first 10 natural numbers using for loop.

Copy code

```
# between 0 to 10
# there are 11 numbers
# therefore, we set the value
# of n to 11
n = 11

# since for loop starts with
# the zero indexes we need to skip it and
# start the loop from the first index
for i in range(1,n):
    print(i)
```

Output

```
1
2
3
```

```
4
5
6
7
8
9
10
```

Also Read: Tutorial: for loop in Python

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Example 2: Python program to print all the even numbers within the given range.

Copy code

```
# if the given range is 10
given_range = 10

for i in range(given_range):

    # if number is divisble by 2
    # then it's even
    if i%2==0:

        # if above condition is true
        # print the number
        print(i)
```

Output

0
2
4
6
8

Also Read: Understanding Python for loop with example

Example 3: Python program to calculate the sum of all numbers from 1 to a given number.

Copy code

```
# if the given number is 10
given_number = 10

# set up a variable to store the sum
# with initial value of 0
sum = 0

# since we want to include the number 10 in the sum
# increment given number by 1 in the for loop
for i in range(1,given_number+1):
        sum+=i

# print the total sum at the end
print(sum)
```

Output

55

Also Read: Python While Loop with Example

Example 4: Python program to calculate the sum of all the odd numbers within the given range.

Copy code

```
# if the given range is 10
given_range = 10

# set up a variable to store the sum
# with initial value of 0
sum = 0

for i in range(given_range):

    # if i is odd, add it
    # to the sum variable
    if i%2!=0:
        sum+=i

# print the total sum at the end
print(sum)
```

Output

25

Also Read: Pattern Program in Python

Example 5: Python program to print a multiplication table of a given number

```
# if the given range is 10
given_number = 5

for i in range(11):
    print (given_number," x",i," =",5*i)
```

Copy code

Output

5 x 0 = 0
5 x 1 = 5
5 x 2 = 10
5 x 3 = 15
5 x 4 = 20
5 x 5 = 25
5 x 6 = 30
5 x 7 = 35
5 x 8 = 40
5 x 9 = 45
5 x 10 = 50

Also Read: Flow Control in Python

Example 6: Python program to display numbers from a list using a for loop.

```
# if the below list is given
list = [1,2,4,6,88,125]
 for i in list:
    print(i)
```

Copy code

Output

1
2
4
6
88
125

Also Read: How to use Pass statement in Python

Example 7: Python program to count the total number of digits in a number.

Copy code

```
# if the given number is 129475
given_number = 129475

# since we cannot iterate over an integer
# in python, we need to convert the
# integer into string first using the
# str() function
given_number = str(given_number)

# declare a variable to store
# the count of digits in the
# given number with value 0
count=0

for i in given_number:
        count += 1

# print the total count at the end
print(count)
```

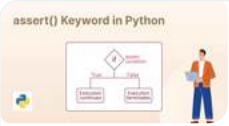
Output

6

Also Read: Iterators in iterators in Python

Packing and Unpacking Arguments in Python

When talking about functions in Python, the terms “arguments” and “keyword arguments” are introduced. During the function definition, we frequently encounter *args and **kwargs being passed as arguments.



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How to Use float () Function in Python

Float function is a built-in function in python that returns the floating-point number of a numeric value or a string representation of a numeric value. In this article, we will...**read more**

Example 8: Python program to check if the given string is a palindrome.

```
# given string
given_string = "madam"

# an empty string variable to store
# the given string in reverse
reverse_string = ""

# iterate through the given string
# and append each element of the given string
# to the reverse_string variable
for i in given_string:
    reverse_string = i + reverse_string

# if given_string matches the reverse_srting exactly
# the given string is a palindrome
if(given_string == reverse_string):
   print("The string", given_string,"is a Palindrome.")

# else the given string is not a palindrome
else:
   print("The string",given_string,"is NOT a Palindrome.")
```

Copy code

Output

The string madam is a Palindrome String.

Also Read: Difference between while and do while loop

Example 9: Python program that accepts a word from the

user and reverses it.

Copy code

```
# input string from user
given_string = input()

# an empty string variable to store
# the given string in reverse
reverse_string = ""

# iterate through the given string
# and append each element of the given string
# to the reverse_string variable
for i in given_string:
    reverse_string = i + reverse_string

# print the reverse_string variable
print(reverse_string)
```

Input

Naukri

Output

irkuaN

Also Read: Getting started with Python String

Example 10: Python program to check if a given number is an Armstrong number

Copy code

```
# the given number
given_number = 153

# convert given number to string
# so that we can iterate through it
given_number = str(given_number)

# store the lenght of the string for future use
string_length = len(given_number)

# initialize a sum variable with
# 0 value to store the sum of the product of
# each digit
sum = 0

# iterate through the given string
for i in given_number:
    sum += int(i)**string_length

# if the sum matches the given string
# its an amstrong number
if sum == int(given_number):
    print("The given number",given_number,"is an Amstrong number.")

# if the sum do not match with the given string
# its an amstrong number
else:
    print("The given number",given_number,"is Not an Amstrong number.")
```

Output

The given number 153 is an Amstrong number.

Also Read: Generators in Python

Example 11: Python program to count the number of even and odd numbers from a series of numbers.

Copy code

```
# given list of numbers
num_list = [1,3,5,6,99,134,55]


# iterate through the list elemets
# using for loop
for i in num_list:

    # if divided by 2, all even
    # number leave a remainder of 0
    if i%2==0:
        print(i,"is an even number.")

    # if remainder is not zero
    # then it's an odd number
    else:
        print(i,"is an odd number.")
```

Output

1 is an odd number.

3 is an odd number.
5 is an odd number.
6 is an even number.
99 is an odd number.
134 is an even number.
55 is an odd number.

Also Read: Lists in Python

Example 12: Python program to display all numbers within a range except the prime numbers.

Copy code

```
# import the math library
import math

# function to print all
# non-primes in a range
def is_not_prime(n):

    # flag to track
    # if no. is prime or not
    # initially assume all numbers are
    # non prime
    flag = False

    # iterate in the given range
    # using for loop starting from 2
    # as 0 & 1 are neither prime
    # nor composite
    for i in range(2, int(math.sqrt(n)) + 1):
```

```
        # condition to check if a
        # number is prime or not
        if n % i == 0:
            flag = True
    return flag

# lower bound of the range
range_starts = 10

# upper bound of the range
range_ends = 30
print("Non-prime numbers between",range_starts,"and", range_ends,"are:")

for number in filter(is_not_prime, range(range_starts, range_ends)):
    print(number)
```

Output

Non-prime numbers between 10 and 30 are:
10
12
14
15
16
18
20
21
22
24
25
26
27

Also Read: Python Sets Practice Program for Beginners

Example 13: Python program to get the Fibonacci series between 0 to 50.

Copy code

```
# given upper bound
num = 50

# initial values in the series
first_value,second_value = 0, 1

# iterate in the given range
# of numbers
for n in range(0, num):

    # if no. is less than 1
    # move to next number
    if(n <= 1):
        next = n

    # if number is within range
    # execute the below code block
    if nextnum:
        break
    # print each element that
    # satisfies all the above conditions
    print(next)
```

Output

```
1
2
3
5
8
13
21
34
```

Example 14: Python program to find the factorial of a given number.

Copy code

```
# given number
given_number= 5

 # since 1 is a factor
 # of all number
 # set the factorial to 1
factorial = 1

# iterate till the given number
for i in range(1, given_number + 1):
    factorial = factorial * i

print("The factorial of ", given_number, " is ", factorial)
```

Output

The factorial of 5 is 120

Example 15: Python program that accepts a string and calculates the number of digits and letters.

Copy code

```
# take string input from user
user_input = input()

# declare 2 variable to store
# letters and digits
digits = 0
letters = 0

# iterate through the input string
for i in user_input:

    # check if the character
    # is a digit using
    # the isdigit() method
    if i.isdigit():

        # if true, increment the value
        # of digits variable by 1
        digits=digits+1

    # check if the character
    # is an alphabet using
    # the isalpha() method
    elif i.isalpha():

        # if true, increment the value
```

```
        # of letters variable by 1
        letters=letters+1

print(" The input string",user_input, "has", letters, "letters and", digits,"digits.")
```

Input

Naukri1234

Output

The input string Naukri12345 has 6 letters and 5 digits.

Example 16: Write a Python program that iterates the integers from 1 to 25.

Copy code

```
# given range
given_range = 25

# iterate using a for loop till the
# given range
for i in range(given_range+1):

    # if no. is multiple of 4 and 5
    # print fizzbuzz
    if i % 4 == 0 and i % 5 == 0:
        print("fizzbuzz")

        # continue with the loop
        continue

    # if no. is divisible by 4
```

```
    # print fizz and no by 5
    if i % 4 == 0 and i%5!=0:
        print("fizz")

        # continue with the loop
        continue
    # if no. is divisible by 5
    # print buzz and not by 4
    if i % 5 == 0 and i % 4 != 0:
        print("buzz")

    else:

        # else just print the no.
        print(i)
```

Output

fizzbuzz
1
2
3
fizz
buzz
6
7
fizz
9
buzz
11
fizz

```
13
14
buzz
fizz
17
18
19
fizzbuzz
21
22
23
fizz
buzz
```

Example 17: Python program to check the validity of password input by users.

Copy code

```python
# input password from user
password = input()

# set up flags for each criteria
# of a valid password
has_valid_length = False
has_lower_case = False
has_upper_case = False
has_digits = False
has_special_characters = False


# first verify if the length of password is
```

```
# higher or equal to 8 and lower or equal to 16
if (len(password) >= 8) and (len(password)<=16):

    has_valid_length = True

    # iterate through each characters
    # of the password
    for i in password:

        # check if there are lowercase alphabets
        if (i.islower()):
                has_lower_case = True

        # check if there are uppercase alphabets
        if (i.isupper()):
                has_upper_case = True

        # check if the password has digits
        if (i.isdigit()):
                has_digits = True

        # check if the password has special characters
        if(i=="@" or i=="$" or i=="_"or i=="#" or i=="^" or i=="&" or i=="*"):
                has_special_characters = True



if (has_valid_length==True and has_lower_case ==True and has_upper_case == True
and has_digits == True and has_special_characters == True):
    print("Valid Password")
else:
        print("Invalid Password")
```

Input

Naukri12345@

Output

Naukri12345@

Example 18: Python program to convert the month name to a number of days.

Copy code

```
# given list of month name
month = ["January", "April", "August","June","Dovember"]

# iterate through each mont in the list
for i in month:
    if i == "February":
            print("The month of February has 28/29 days")
    elif i in ("April", "June", "September", "November"):
            print("The month of",i,"has 30 days.")
    elif i in ("January", "March", "May", "July", "August", "October", "December"):
            print("The month of",i,"has 31 days.")
    else:
            print(i,"is not a valid month name.")
```

Output

The month of January has 31 days.
The month of April has 30 days.
The month of August has 31 days.
The month of June has 30 days.
November is not a valid month name

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FAQs

What is a for loop in Python?

How do I use a for loop in Python?

What is the range() function in Python?

Can I use a for loop with a dictionary in Python?