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

```
# 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)
```

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

```
# 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)
```

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

```
# 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)
```

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

```
# 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)
```

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)
```

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)
```

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

```
# 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)
```

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.")
```

Example 9: Python program that accepts a word from the user and reverses it.

```
# 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)
```

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

```
# 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.")
```

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

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


# iterate through the list elements
# 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.")
```

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

```
# 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)
```

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

```
# 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)
```

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

```
# 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)
```

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

```
# 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.")
```

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

```
# 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)
```

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

```
# 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")
```

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

```
# 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.")
```