Strings

Python string is the collection of the characters surrounded by single quotes, double quotes, or triple quotes.

Example 1:

var1 = 'Hello World!'

var2 = "Python Programming"

var3 = '''THis is a string'''

var4 = """This is also a string"""

print(type(var1), type(var2), type(var3), type(var4))

print(var1,var2, var3, var4,sep='\n')

Example 2:

# Python strings have indexes

v1 = 'Hello World'

print(v1[0]) # forward indexing

print(v1[1])

print(v1[2])

print("\*\*\*\*\*\*\*\*\*\*\*\*\*\*")

print(v1[-1]) # reverse indexing

print(v1[-2])

Python does not support a character type; these are treated as strings of length one, thus also considered a substring.

Example 3:

# string slicing

s = 'FIRSTMAN COMPUTERS'

print(s[:])

print(s[1:])

print(s[2:])

print(s[:1])

print(s[:2])

print(s[-1:])

print(s[-2:])

print(s[:-1])

print(s[:-2])

print(s[1:4])

Example 4:

var1 = 'Hello World!'

print ("Updated String :- ", var1[:6] + 'Python')

# Strings are immutable.

# We cannot delete or remove the characters from the string.

# But we can delete the entire string using the del keyword.

str = "Firstman Computers"

del str[1]

print(str)

Example 5:

str = "Hello"

str1 = " world"

print(str\*3) # prints HelloHelloHello

print(str+str1)# prints Hello world

print(str[4]) # prints o

print(str[2:4]); # prints ll

print('w' in str) # prints false as w is not present in str

print('wo' not in str1) # prints false as wo is present in str1.

print(r'C://python37') # prints C://python37 as it is written

print("The string str : %s"%(str)) # prints The string str : Hello

More examples on string Functions:

Ex: 1

# string captilize : Capitalizes first letter of string

str = "this is string example. lets try."

print ("str.capitalize() : ", str.capitalize())

Ex 2:

# find() fun is used to get the index of a string

s = "This is a sample line"

print(s)

print("Index of a: ", s.find('a'))

print("Index of 's' in the word 'sample' :", s.find('sample'))

Ex 3:

# find() fun is used to get the second occurance of a string

s = "This is a sample line with sample text"

print(s)

first\_occr = s.find('sample')

second\_occr = s.find('sample', first\_occr + 1)

print("First occurance: ", first\_occr)

print("Second occurance: ", second\_occr)

Ex 4:

#index() method is same as the find() method except it

# returns error on failure.

# This method returns index of first occurred

# substring and an error if there is no match found.

str = "Welcome to vizag."

# Calling function

str2 = str.index("to")

# Displaying result

print("Index of 'to' is: ", str2)

Ex 5:

# isalnum()

# It returns true if the characters in the string are alphanumeric i.e., alphabets or numbers and there is at least 1 character. Otherwise, it returns false.

str = "Welcome"

print(str.isalnum())

str = "Welcome"

print(str.isalnum())

str1 = "Welcome123" # True

str2 = "Welcome 123" # False

print(str1.isalnum())

print(str2.isalnum())

Ex 6:

str = "Java is a programming language"

# Calling function

str2 = str.replace("Java","C")

# Displaying result

print("Old String: \n",str)

print("New String: \n",str2)

Ex 7:

# Python split() method example

str = "Java is a programming language"

# Calling function

str2 = str.split()

# Displaying result

print(str)

print(str2)

Ex 8:

str = "Java is a programming language"

# Calling function

str2 = str.split('a')

# Displaying result

print(str)

print(str2)

Ex 9:

# Python String startswith() and endswith() method

str = "Hello Python Developer"

str2 = str.startswith("Hello")

print(str2)

str3 = str.endswith('loper')

print(str3)

Ex 10:

# Python String swapcase() method is used to convert upper to lower or vice versa

str = "Hello FirstManComputers"

str2 = str.swapcase()

print (str2)

Ex 11:

# title() is used to captilize every first char of a word in the string

s = 'first man computers. in nad vizag'

print(s.title())

Ex 12:

# The count() method returns the number of occurrences of substring sub in the range [start, end].

str = "this is string example....wow!!!"

print(len(str)) # To find the no of characters in a string

print ("str.count('i') : ", str.count('i'))

print ("str.count('w', 10, 32) : ", str.count('w',10,32))

# Numbers

Number data types store numeric values. They are immutable data types. This means, changing the value of a number data type results in a newly allocated object.

Ex 1:

import math   # This will import math module

print ("math.ceil(-45.17) : ", math.ceil(-45.17))

print ("math.ceil(100.12) : ", math.ceil(100.12))

print ("math.ceil(100.72) : ", math.ceil(100.72))

print ("math.ceil(math.pi) : ", math.ceil(math.pi))

Ex 2:

import math   # This will import math module

print ("math.floor(-45.17) : ", math.floor(-45.17))

print ("math.floor(100.12) : ", math.floor(100.12))

print ("math.floor(100.72) : ", math.floor(100.82))

print ("math.floor(math.pi) : ", math.floor(math.pi))

Ex 3:

import math   # This will import math module

print ("math.log(100.12) : ", math.log(100.12))

print ("math.log(100.72) : ", math.log(100.72))

print ("math.log(math.pi) : ", math.log(math.pi))

Ex 4:

import math   # This will import math module

print ("max(80, 100, 1000) : ", max(80, 100, 1000))

print ("max(-20, 100, 400) : ", max(-20, 100, 400))

print ("min(-80, -20, -10) : ", min(-80, -20, -10))

print ("min(0, 100, -400) : ", min(0, 100, -400))

Ex 5:

import math   # This will import math module

print ("math.pow(100, 2) : ", math.pow(100, 2))

print ("math.pow(100, -2) : ", math.pow(100, -2))

print ("math.pow(2, 4) : ", math.pow(2, 4))

print ("math.pow(3, 0) : ", math.pow(3, 0))

Ex 6:

import math   # This will import math module

print ("math.sqrt(100) : ", math.sqrt(100))

print ("math.sqrt(7) : ", math.sqrt(7))

print ("math.sqrt(math.pi) : ", math.sqrt(math.pi))

Ex 7:

import math

print ("sin(0) : ",  math.sin(0))

print ("sin(1) : ",  math.sin(1))

print ("cos(0) : ",  math.cos(0))

print ("cos(1) : ",  math.cos(1))