Python String [101 exercises with solution]

Python has a built-in string class named "str" with many useful features. String literals can be enclosed by either single or double, although single quotes are more commonly used.

**You may read our**[Python string](https://www.w3resource.com/python/python-string.php)**tutorial before solving the following exercises.**

[*An editor is available at the bottom of the page to write and execute the scripts.*]

**1.** Write a Python program to calculate the length of a string. 

**2.** Write a Python program to count the number of characters (character frequency) in a string.   
Sample String : google.com'  
Expected Result : {'g': 2, 'o': 3, 'l': 1, 'e': 1, '.': 1, 'c': 1, 'm': 1}

**3.** Write a Python program to get a string made of the first 2 and the last 2 chars from a given a string. If the string length is less than 2, return instead of the empty string.   
Sample String : 'w3resource'  
Expected Result : 'w3ce'  
Sample String : 'w3'  
Expected Result : 'w3w3'  
Sample String : ' w'  
Expected Result : Empty String

**4.** Write a Python program to get a string from a given string where all occurrences of its first char have been changed to '$', except the first char itself.   
Sample String : 'restart'  
Expected Result : 'resta$t'

**5.** Write a Python program to get a single string from two given strings, separated by a space and swap the first two characters of each string.   
Sample String : 'abc', 'xyz'  
Expected Result : 'xyc abz'

**6.** Write a Python program to add 'ing' at the end of a given string (length should be at least 3). If the given string already ends with 'ing' then add 'ly' instead. If the string length of the given string is less than 3, leave it unchanged.   
Sample String : 'abc'  
Expected Result : 'abcing'  
Sample String : 'string'  
Expected Result : 'stringly'

**7.** Write a Python program to find the first appearance of the substring 'not' and 'poor' from a given string, if 'not' follows the 'poor', replace the whole 'not'...'poor' substring with 'good'. Return the resulting string.   
Sample String : 'The lyrics is not that poor!'  
'The lyrics is poor!'  
Expected Result : 'The lyrics is good!'  
'The lyrics is poor!'

**8.** Write a Python function that takes a list of words and return the longest word and the length of the longest one.   
Sample Output:  
Longest word: Exercises  
Length of the longest word: 9

**9.** Write a Python program to remove the nth index character from a nonempty string. 

**10.** Write a Python program to change a given string to a new string where the first and last chars have been exchanged. 

**11.** Write a Python program to remove the characters which have odd index values of a given string. 

**12.** Write a Python program to count the occurrences of each word in a given sentence. 

**13.** Write a Python script that takes input from the user and displays that input back in upper and lower cases. 

**14.** Write a Python program that accepts a comma separated sequence of words as input and prints the unique words in sorted form (alphanumerically).   
Sample Words : red, white, black, red, green, black  
Expected Result : black, green, red, white,red

**15.** Write a Python function to create the HTML string with tags around the word(s).   
Sample function and result :  
add\_tags('i', 'Python') -> '<i>Python</i>'  
add\_tags('b', 'Python Tutorial') -> '<b>Python Tutorial </b>'

**16.** Write a Python function to insert a string in the middle of a string.   
Sample function and result :  
insert\_sting\_middle('[[]]<<>>', 'Python') -> [[Python]]  
insert\_sting\_middle('{{}}', 'PHP') -> {{PHP}}

**17.** Write a Python function to get a string made of 4 copies of the last two characters of a specified string (length must be at least 2).   
Sample function and result :  
insert\_end('Python') -> onononon  
insert\_end('Exercises') -> eseseses

**18.** Write a Python function to get a string made of its first three characters of a specified string. If the length of the string is less than 3 then return the original string.   
Sample function and result :  
first\_three('ipy') -> ipy  
first\_three('python') -> pyt

**19.** Write a Python program to get the last part of a string before a specified character.   
https://www.w3resource.com/python-exercises  
https://www.w3resource.com/python

**20.** Write a Python function to reverses a string if it's length is a multiple of 4. 

**21.** Write a Python function to convert a given string to all uppercase if it contains at least 2 uppercase characters in the first 4 characters. 

**22.**Write a Python program to sort a string lexicographically. 

**23.** Write a Python program to remove a newline in Python. 

**24.** Write a Python program to check whether a string starts with specified characters.

**25.** Write a Python program to create a Caesar encryption.

Note : In cryptography, a Caesar cipher, also known as Caesar's cipher, the shift cipher, Caesar's code or Caesar shift, is one of the simplest and most widely known encryption techniques. It is a type of substitution cipher in which each letter in the plaintext is replaced by a letter some fixed number of positions down the alphabet. For example, with a left shift of 3, D would be replaced by A, E would become B, and so on. The method is named after Julius Caesar, who used it in his private correspondence.

**26.** Write a Python program to display formatted text (width=50) as output. 

**27.** Write a Python program to remove existing indentation from all of the lines in a given text. 

**28.** Write a Python program to add a prefix text to all of the lines in a string. 

**29.** Write a Python program to set the indentation of the first line. 

**30.** Write a Python program to print the following floating numbers upto 2 decimal places. 

**31.** Write a Python program to print the following floating numbers upto 2 decimal places with a sign. 

**32.** Write a Python program to print the following floating numbers with no decimal places. 

**33.** Write a Python program to print the following integers with zeros on the left of specified width. 

**34.** Write a Python program to print the following integers with '\*' on the right of specified width. 

**35.** Write a Python program to display a number with a comma separator. 

**36.** Write a Python program to format a number with a percentage. 

**37.** Write a Python program to display a number in left, right and center aligned of width 10. 

**38.** Write a Python program to count occurrences of a substring in a string. 

**39.** Write a Python program to reverse a string. 

**40.** Write a Python program to reverse words in a string. 

**41.** Write a Python program to strip a set of characters from a string. 

**42.** Write a Python program to count repeated characters in a string.   
Sample string: 'thequickbrownfoxjumpsoverthelazydog'  
Expected output :  
o 4  
e 3  
u 2  
h 2  
r 2  
t 2

**43.** Write a Python program to print the square and cube symbol in the area of a rectangle and volume of a cylinder.   
Sample output:  
The area of the rectangle is 1256.66cm2  
The volume of the cylinder is 1254.725cm3

**44.** Write a Python program to print the index of the character in a string.   
Sample string: w3resource  
Expected output:  
Current character w position at 0  
Current character 3 position at 1  
Current character r position at 2  
- - - - - - - - - - - - - - - - - - - - - - - - -  
Current character c position at 8  
Current character e position at 9

**45.** Write a Python program to check whether a string contains all letters of the alphabet. 

**46.** Write a Python program to convert a given string into a list of words.   
Sample Output:  
['The', 'quick', 'brown', 'fox', 'jumps', 'over', 'the', 'lazy', 'dog.']  
['The', 'quick', 'brown', 'fox', 'jumps', 'over', 'the', 'lazy', 'dog.']

**47.** Write a Python program to lowercase first n characters in a string. 

**48.** Write a Python program to swap comma and dot in a string.   
Sample string: "32.054,23"  
Expected Output: "32,054.23"

**49.** Write a Python program to count and display the vowels of a given text. 

**50.** Write a Python program to split a string on the last occurrence of the delimiter. 

**51.** Write a Python program to find the first non-repeating character in given string. 

**52.**Write a Python program to print all permutations with given repetition number of characters of a given string. 

**53.** Write a Python program to find the first repeated character in a given string. 

**54.** Write a Python program to find the first repeated character of a given string where the index of first occurrence is smallest. 

**55.**Write a Python program to find the first repeated word in a given string. 

**56.** Write a Python program to find the second most repeated word in a given string. 

**57.**Write a Python program to remove spaces from a given string. 

**58.** Write a Python program to move spaces to the front of a given string. 

**59.** Write a Python program to find the maximum occurring character in a given string. 

**60.** Write a Python program to capitalize first and last letters of each word of a given string. 

**61.** Write a Python program to remove duplicate characters of a given string. 

**62.** Write a Python program to compute sum of digits of a given string. 

**63.** Write a Python program to remove leading zeros from an IP address. 

**64.** Write a Python program to find maximum length of consecutive 0's in a given binary string. 

**65.** Write a Python program to find all the common characters in lexicographical order from two given lower case strings. If there are no common letters print "No common characters". 

**66.** Write a Python program to make two given strings (lower case, may or may not be of the same length) anagrams removing any characters from any of the strings. 

**67.** Write a Python program to remove all consecutive duplicates of a given string. 

**68.** Write a Python program to create two strings from a given string. Create the first string using those character which occurs only once and create the second string which consists of multi-time occurring characters in the said string. 

**69.** Write a Python program to find the longest common sub-string from two given strings. 

**70.** Write a Python program to create a string from two given strings concatenating uncommon characters of the said strings. 

**71.** Write a Python program to move all spaces to the front of a given string in single traversal. 

**72.** Write a Python code to remove all characters except a specified character in a given string.   
Original string  
Python Exercises  
Remove all characters except P in the said string:  
P  
Original string  
google  
Remove all characters except g in the said string:  
gg  
Original string  
exercises  
Remove all characters except e in the said string:  
eee

**73.** Write a Python program to count Uppercase, Lowercase, special character and numeric values in a given string. 

**74.** Write a Python program to find the minimum window in a given string which will contain all the characters of another given string.   
Example 1  
Input : str1 = " PRWSOERIUSFK "  
str2 = " OSU "  
Output: Minimum window is "OERIUS"

**75.** Write a Python program to find smallest window that contains all characters of a given string. 

**76.** Write a Python program to count number of substrings from a given string of lowercase alphabets with exactly k distinct (given) characters. 

**77.** Write a Python program to count number of non-empty substrings of a given string. 

**78.** Write a Python program to count characters at same position in a given string (lower and uppercase characters) as in English alphabet. 

**79.** Write a Python program to find smallest and largest word in a given string. 

**80.** Write a Python program to count number of substrings with same first and last characters of a given string. 

**81.** Write a Python program to find the index of a given string at which a given substring starts. If the substring is not found in the given string return 'Not found'. 

**82.** Write a Python program to wrap a given string into a paragraph of given width.   
Sample Output:  
Input a string: The quick brown fox.  
Input the width of the paragraph: 10  
Result:  
The quick  
brown fox.

**83.** Write a Python program to print four values decimal, octal, hexadecimal (capitalized), binary in a single line of a given integer.   
Sample Output:  
Input an integer: 25  
Decimal Octal Hexadecimal (capitalized), Binary  
25 31 19 11001

**84.** Write a Python program to swap cases of a given string.   
Sample Output:  
pYTHON eXERCISES  
jAVA  
nUMpY

**85.** Write a Python program to convert a given Bytearray to Hexadecimal string.   
Sample Output:  
Original Bytearray :  
[111, 12, 45, 67, 109]  
Hexadecimal string:  
6f0c2d436d

**86.** Write a Python program to delete all occurrences of a specified character in a given string.   
Sample Output:  
Original string:  
Delete all occurrences of a specified character in a given string  
Modified string:  
Delete ll occurrences of specified chrcter in given string

**87.** Write a Python program find the common values that appear in two given strings.   
Sample Output:  
Original strings:  
Python3  
Python2.7  
Intersection of two said String:  
Python

**88.** Write a Python program to check whether a given string contains a capital letter, a lower case letter, a number and a minimum length.   
Sample Output:  
Input the string: W3resource  
['Valid string.']

**89.** Write a Python program to remove unwanted characters from a given string.   
Sample Output:  
Original String : Pyth\*^on Exercis^es  
After removing unwanted characters:  
Python Exercises  
Original String : A%^!B#\*CD  
After removing unwanted characters:  
ABCD

**90.** Write a Python program to remove duplicate words from a given string.   
Sample Output:  
Original String:  
Python Exercises Practice Solution Exercises  
After removing duplicate words from the said string:  
Python Exercises Practice Solution

**91.** Write a Python program to convert a given heterogeneous list of scalars into a string.   
Sample Output:  
Original list:  
['Red', 100, -50, 'green', 'w,3,r', 12.12, False]  
Convert the heterogeneous list of scalars into a string:  
Red,100,-50,green,w,3,r,12.12,False

**92.** Write a Python program to find the string similarity between two given strings.   
Sample Output:  
Original string:  
Python Exercises  
Python Exercises  
Similarity between two said strings:  
1.0  
Original string:  
Python Exercises  
Python Exercise  
Similarity between two said strings:  
0.967741935483871  
Original string:  
Python Exercises  
Python Ex.  
Similarity between two said strings:  
0.6923076923076923  
Original string:  
Python Exercises  
Python  
Similarity between two said strings:  
0.5454545454545454  
Original string:  
Java Exercises  
Python  
Similarity between two said strings:  
0.0

**93.** Write a Python program to extract numbers from a given string.   
Sample Output:  
Original string: red 12 black 45 green  
Extract numbers from the said string: [12, 45]

**94.** Write a Python program to convert a hexadecimal color code to a tuple of integers corresponding to its RGB components.   
Sample Output:  
(255, 165, 1)  
(255, 255, 255)  
(0, 0, 0)  
(255, 0, 0)  
(0, 0, 128)  
(192, 192, 192)

**95.** Write a Python program to convert the values of RGB components to a hexadecimal color code.   
Sample Output:  
FFA501  
FFFFFF  
000000  
000080  
C0C0C0

**96.** Write a Python program to convert a given string to camelcase.   
Sample Output:  
javascript  
fooBar  
fooBar  
foo.Bar  
fooBar  
foobar  
fooBar

**97.** Write a Python program to convert a given string to snake case.   
Sample Output:  
java\_script  
foo\_bar  
foo\_bar  
foo.bar  
foo\_bar  
foo\_bar  
foo\_bar

**98.** Write a Python program to decapitalize the first letter of a given string.   
Sample Output:  
java Script  
python

**99.** Write a Python program to split a given multiline string into a list of lines.   
Sample Output:  
Original string: This  
is a  
multiline  
string.  
Split the said multiline string into a list of lines:  
['This', 'is a', 'multiline', 'string.', '']

**100.** Write a Python program to check whether any word in a given sting contains duplicate characrters or not. Return True or False.   
Sample Output:  
Original text:  
Filter out the factorials of the said list.  
Check whether any word in the said sting contains duplicate characrters or not!  
False  
Original text:  
Python Exercise.  
Check whether any word in the said sting contains duplicate characrters or not!  
False  
Original text:  
The wait is over.  
Check whether any word in the said sting contains duplicate characrters or not!  
True

**101.** Write a Python program to add two strings as they are numbers (Positive integer values). Return a message if the numbers are string.   
Sample Output:  
42  
Error in input!  
Error in input!