



PYTHON BASICS

PYTHON OOPS

PYTHON STRING

Print Colourful Text

String Slicing

Remove numbers from String

String to Char Array

Remove trailing newlines

Create MultiLine String

Convert String to String Array

Convert String to Byte

Convert Byte to String

Remove Space from String

Count the String Occurrence

Convert String to UTF-8

Replace String

MD5 Sum Of String

Decode HTML Entities

PYTHON LIST

PYTHON TUPLE

PYTHON DATE & TIME

PYTHON SET

PYTHON DICTIONARY

PYTHON FILE AND I/O

PYTHON JSON

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Home / Python How Tos / Remove numbers from string in Python

← Prev

Next →

Remove numbers from string in Python

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In this article, we will learn to delete numerical values from a given string in [Python](#). We will use some built-in functions and some custom codes as well. Let's first have a quick look over what is a string in Python.

Python String

The string is a type in python language just like integer, float, boolean, etc. Data surrounded by single quotes or double quotes are said to be a string. A string is also known as a sequence of characters.

```
string1 = "apple"
string2 = "Preeti125"
string3 = "12345"
string4 = "pre@12"
```

A string in Python can contain numbers, characters, special characters, spaces, commas, etc. We will learn four different ways to remove numbers from a string and will print a new modified string.

Example: Remove Numbers from String using regex

Python provides a regex module that has a built-in function `sub()` to remove numbers from the string. This method replaces all the occurrences of the given pattern in the string with a replacement string. If the pattern is not found in the string, then it returns the same string.

In the below example, we take a pattern as `r'[0-9]'` and an empty string as a replacement string. This pattern matches with all the numbers in the given string and the `sub()` function replaces all the matched digits with an empty string. It then deletes all the matched numbers.

```
#regex module
import re

#original string
string1 = "Hello!James12,India2020"

pattern = r'[0-9]'

# Match all digits in the string and replace them with an empty string
new_string = re.sub(pattern, '', string1)

print(new_string)
```

OUTPUT:

Hello!James,India

Example: Remove Numbers from String using join() & isdigit()

This method uses `isdigit()` to check whether the element is a digit or not. It returns True if the element is a digit. This method uses for loop to iterate over each character in the string.

The below example skips all numbers from the string while iterating and joins all remaining characters to print a new string.

```
string1 = "Hello!James12,India2020"

#iterating over each element
new_string = ''.join((x for x in string1 if not x.isdigit()))

print(new_string)
```

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OUTPUT:

Hello!James,India

Example: Remove Numbers from String using translate()

This method uses `string` Python library. With the help of a string object, `maketrans()` separates numbers from the given string. Afterward, a translation table is created where each digit character i.e. '0' to '9' will be mapped to None and this translation table is passed to `translate()` function.

The below example creates a translation table and replaces characters in string based on this table, so it will delete all numbers from the string

```
import string

string1 = "Hello!James12,India2020"

#digits are mapped to None
translation_table = string.maketrans('', '', string.digits)

#deletes all number
new_string = string1.translate(translation_table)

print(new_string)
```

OUTPUT:

Hello!James,India

Example: Remove Numbers from String

This example uses the `filter()` and `lambda` in the generating expression. It filters or deletes all the numbers from the given string and joins the remaining characters of the string to create a new string.

The `filter()` function uses the original string and `lambda` expression as its arguments. First, we filtered all digit characters from a string and then joined all the remaining characters.

```
#original string
string1 = "Hello!James12,India2020"

#Filters all digits
new_string = ''.join(filter(lambda x: not x.isdigit(), string1))

print(new_string)
```

OUTPUT:

Hello!James,India

Conclusion

In this article, we learned to remove numerical values from the given string of characters. We used different built-in functions such as `join()`, `isdigit()`, `filter()`, `lambda`, `sub()` of `regex` module. We used custom codes as well to understand the topic.

[← String Slicing](#)

[String to Char Array →](#)

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