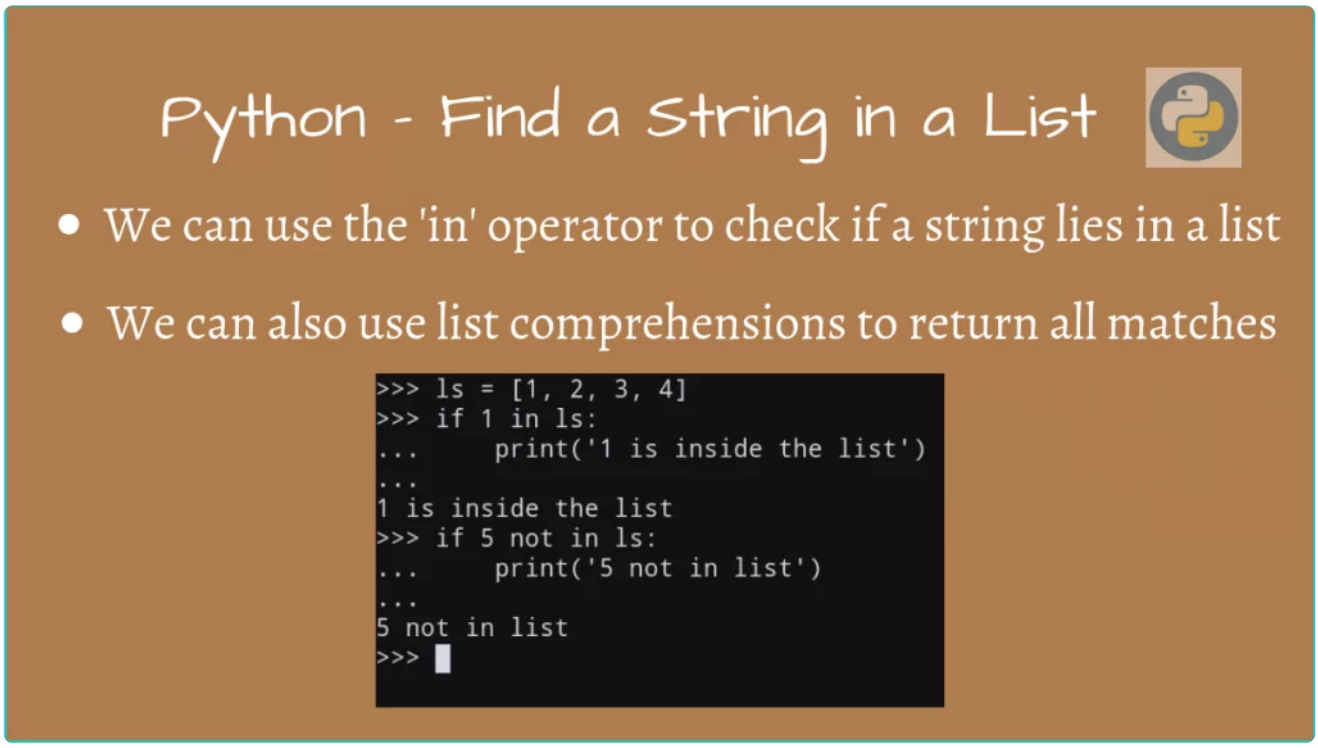
AskPython

Find a string in a List in Python



In this article, we'll take a look at how we can find a string in a list in Python.

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Find a String in a List in Python

There are various approaches to this problem, from the ease of use to efficiency.

Using the 'in' operator

We can use Python's **in** operator to find a string in a list in Python. This takes in two operands `a` and `b`, and is of the form:

```
ret_value = a in b
```

Here, `ret_value` is a boolean, which evaluates to `True` if `a` lies inside `b`, and `False` otherwise.

We can directly use this operator in the following way:

```
a = [1, 2, 3]

b = 4

if b in a:
    print('4 is present!')
else:
    print('4 is not present')
```

Output

```
4 is not present
```

We can also convert this into a function, for ease of use.

```
def check_if_exists(x, ls):
    if x in ls:
        print(str(x) + ' is inside the list')
    else:
        print(str(x) + ' is not present in the list')


ls = [1, 2, 3, 4, 'Hello', 'from', 'AskPython']

check_if_exists(2, ls)
```

```
check_if_exists('Hello', ls)
check_if_exists('Hi', ls)
```

Output

```
2 is inside the list
Hello is inside the list
Hi is not present in the list
```

This is the most commonly used, and recommended way to search for a string in a list. But, for illustration, we'll show you other methods as well.

Using List Comprehension

Let's take another case, where you wish to only check if the string is a part of another word on the list and return *all* such words where your word is a sub-string of the list item.

Consider the list below:

```
ls = ['Hello from AskPython', 'Hello', 'Hello boy!', 'Hi']
```

If you want to search for the substring `Hello` in all elements of the list, we can use list comprehensions in the following format:

```
ls = ['Hello from AskPython', 'Hello', 'Hello boy!', 'Hi']

matches = [match for match in ls if "Hello" in match]

print(matches)
```

This is equivalent to the below code, which simply has two loops and checks for the condition.

```
ls = ['Hello from AskPython', 'Hello', 'Hello boy!', 'Hi']

matches = []

for match in ls:
    if "Hello" in match:
        matches.append(match)

print(matches)
```

In both cases, the output will be:

```
['Hello from AskPython', 'Hello', 'Hello boy!']
```

As you can observe, in the output, all the matches contain the string `Hello` as a part of the string. Simple, isn't it?

Using the 'any()' method

In case you want to check for the existence of the input string in **any** item of the list, We can use the any() method to check if this holds.

For example, if you wish to test whether '**AskPython**' is a part of any of the items of the list, we can do the following:

```
ls = ['Hello from AskPython', 'Hello', 'Hello boy!', 'Hi']

if any("AskPython" in word for word in ls):
    print('\'AskPython\' is there inside the list!')
else:
    print('\'AskPython\' is not there inside the list')
```

Output

```
'AskPython' is there inside the list!
```

Using filter and lambdas

We can also use the `filter()` method on a lambda function, which is a simple function that is only defined on that particular line. Think of lambda as a mini function, that cannot be reused after the call.

```
ls = ['Hello from AskPython', 'Hello', 'Hello boy!', 'Hi']

# The second parameter is the input iterable
# The filter() applies the lambda to the iterable
# and only returns all matches where the lambda evaluates
# to true
filter_object = filter(lambda a: 'AskPython' in a, ls)

# Convert the filter object to list
print(list(filter_object))
```

Output

```
['Hello from AskPython']
```

We do have what we expected! Only one string matched with our filter function, and that's indeed what we get!

Conclusion

In this article, we learned about how we can find a string with an input list with different approaches. Hope this helped you with your problem!

References

JournalDev article on finding a string in a List

StackOverflow question on finding a string inside a List

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