

Python regex `search` function

Python Regex search() function explained with examples.

WE'LL COVER THE FOLLOWING

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- Why we need to use `search` instead of the `match`?

The Search Function

The `search` function searches for first occurrence of a `re` pattern to string with optional flags.

Here is the syntax for this function –

```
re.search(pattern, string, flags=0)
```

Where, `pattern` is the regular expression to be matched, `string` is the string to be searched to match the pattern at the beginning of string and `flags`, which you can specify different flags using bitwise OR (|).

Match Flags

Modifier	Description
	By default, re module is case sensitive.

<code>re.I</code>	Performs case-insensitive matching.
<code>re.L</code>	Interprets words according to the current locale. This interpretation affects the alphabetic group (<code>\w</code> and <code>\W</code>), as well as word boundary behavior (<code>\b</code> and <code>\B</code>).
<code>re.M</code>	Makes <code>\$</code> match the end of a line and makes <code>^</code> match the start of any line.
<code>re.S</code>	Makes a period (dot) match any character, including a newline.
<code>re.U</code>	Interprets letters according to the Unicode character set. This flag affects the behavior of <code>\w</code> , <code>\W</code> , <code>\b</code> , <code>\B</code> .
<code>re.X</code>	It ignores whitespace (except inside a set <code>[]</code> or when escaped by a <code>backslash</code> and treats unescaped <code>#</code> as a comment marker.

Return values

- The `re.search` function returns a match `object` on **success** and `None` upon failure. -
- Use `group(n)` or `groups()` function of match object to get matched expression, e.g., `group(n=0)` returns entire match (or specific subgroup `n`)
- The function `groups()` returns all matching subgroups in a tuple (empty if there weren't any).

Example 1

Let's find the first match of a regular expression in a string.

Let's find the words before and after the word **to**:

```
#!/usr/bin/python
import re

line = "Learn to Analyze Data with Scientific Python";

m = re.search( r'(.*) to (.*) .*', line, re.M|re.I)

if m:
    print "m.group() : ", m.group()
    print "m.group(1) : ", m.group(1)
    print "m.group(2) : ", m.group(2)
else:
    print "No match!!"
```



The first group **(.*)** identified the string: Learn and the next group **(.*)** identified the string: Analyze.

Example 2

groups([default]) returns a tuple containing all the subgroups of the match, from 1 up to however many groups are in the pattern.

```
#!/usr/bin/python
import re

line = "Learn Data, Python";

m = re.search( r'(\w+) (\w+)', line, re.M|re.I)

if m:
    print "m.group() : ", m.groups()
    print "m.group (1,2)", m.group(1, 2)
else:
    print "No match!!"
```



Example 3

groupdict([default]) returns a dictionary containing all the named subgroups of the match, keyed by the subgroup name.

```
#!/usr/bin/python
```

```
import re

number = "124.13";

m = re.search( r'(?P<Exponent>\d+)\.(?P<Fraction>\d+)', number)

if m:
    print "m.groupdict() : ", m.groupdict()
else:
    print "No match!!"
```



Example 4

`start([group])` and `end([group])` return the indices of the start and end of the substring matched by `group`. We need to use `search` instead of `match` for this example:

```
#!/usr/bin/python
import re

email = "hello@1remove_thisarntoanalyzedata.com ";

# m = re.match ("remove_this", email) // This will not work!
m = re.search("remove_this", email)

if m:
    print "email address : ", email[:m.start()] + email[m.end():]
else:
    print "No match!!"
```



Why we need to use `search` instead of the `match`? #

Can you guess from the example above?

Show Hint

See in the next lesson!