

Regular Expressions

Simple matching and searching

String: My name is Claus


Regex: My name is

Simple matching and searching

String: My name is Claus

Regex: My name is

Match: My name is Claus


matched part
of string


unmatched part
of string

Simple matching and searching

String: My name is Claus

Regex: My age is

Simple matching and searching

String: My name is Claus

Regex: My age is

Match: *Does not match!*

Commonly used special symbols in Python regular expressions

Symbol	Meaning
.	matches any character
+	1 or more
*	0 or more
()	capture group
\d	digit
\D	non-digit
\s	whitespace
\S	non-whitespace
\w	alphanumeric
\W	non-alphanumeric
^	beginning of string
\$	end of string

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. matches any character,
+ means one or more

String: My name is Claus

Regex: My .+ is

. matches any character,
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String: My name is Claus

Regex: My .+ is

Match: My name is Claus

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String: My is Claus

Regex: My .+ is

. matches any character,
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String: My is Claus

Regex: My .+ is

Match: *Does not match!*

* means zero or more

String: My is Claus

Regex: My .* is

* means zero or more

String: My is Claus

Regex: My .* is

Match: My is Claus

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Capture groups

String: My name is Claus

Regex: My name is (.+)

Capture groups

String: My name is Claus

Regex: My name is (.+)

Match: My name is Claus

Group 1: Claus

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Capture groups

String: My name is Claus

Regex: My name is\s+(\S+)

Match: My name is Claus

Group 1: Claus

Try it yourself

<http://pythex.org/>

pythex

Your regular expression:

My name is\s+(\S+)

IGNORECASE

MULTILINE

DOTALL

VERBOSE

Your test string:

My name is Claus

Match result:

My name is Claus

Match captures:

Match 1

1. Claus

Regular Expressions in Python

Digression: Raw strings

```
In [1]: print("line1\nline2")
```

```
Out[1]: line1
        line2
```

How can we print out "line1\nline2"?

```
In [2]: print("line1\\nline2") # escape the backslash
```

```
Out[2]: line1\nline2
```

Simpler alternative: use a raw string

```
In [3]: print(r"line1\nline2") # r stands for raw
```

```
Out[3]: line1\nline2
```

The key regex function we will use is `re.search()`

```
In [1]: import re # load regular expression module

test_string = "My name is Claus"
match = re.search(r"name", test_string)
if match: # did we find a match?
    print("Test string matches.")
    print("Match:", match.group())
```

```
Out[1]: Test string matches.
Match: name
```

`match.group()` returns the part of the string that matched

```
In [1]: test_string = "My age is secret."  
        match = re.search(r"My \S+ is", test_string)  
        print(match.group())
```

```
Out[1]: My age is
```

```
In [2]: test_string = "My mood is good."  
        match = re.search(r"My \S+ is", test_string)  
        print(match.group())
```

```
Out[2]: My mood is
```

match.group() also recovers any captured groups

```
In [1]: test_string = "My age is secret."
        match = re.search(r"My (\S+) is (\S+)", \
                           test_string)
        print("Match:", match.group(0))
        print("Captured group 1:" , match.group(1))
        print("Captured group 2:" , match.group(2))
```

```
Out[1]: Match: My age is secret.
        Captured group 1: age
        Captured group 2: secret.
```