

* Regex Quick Reference

Regular expressions metacharacters, quantifiers, anchors, groups, and lookahead/lookbehind syntax with examples.

Metacharacters

Pattern	Matches	Example
.	Any character (except newline)	a.c → abc, aXc
\d	Any digit [0-9]	\d+ → 42, 100
\D	Non-digit	\D+ → hello
\w	Word char [a-zA-Z0-9_]	\w+ → hello_1
\W	Non-word char	\W → space, !
\s	Whitespace (space, tab, newline)	\s+ → spaces
\S	Non-whitespace	\S+ → word

Quantifiers

Quantifier	Meaning	Example
*	0 or more (greedy)	a* → "", a, aaa
+	1 or more (greedy)	a+ → a, aaa
?	0 or 1 (optional)	colou?r → color, colour
{n}	Exactly n times	\d{4} → 2026
{n,}	n or more times	\d{2,} → 12, 100
{n,m}	Between n and m times	\d{2,4} → 12, 123
*?, +?, ??	Lazy (non-greedy)	<.+?> → only

Anchors & Boundaries

Pattern	Matches
^	Start of string (or line in multiline mode)
\$	End of string (or line in multiline mode)
\b	Word boundary
\B	Non-word boundary
\A	Start of entire string
\Z	End of entire string

Groups & Alternation

Pattern	Meaning	Example
(abc)	Capture group	(foo)+ → foo, foofoo
(?:abc)	Non-capture group	(?:foo)+
(?P<name>)	Named capture group	(?P<year>\d{4})
a b	Alternation (a or b)	cat dog
[abc]	Character class	[aeiou] → vowels
[^abc]	Negated class	[^0-9] → non-digit

Pattern	Meaning	Example
[a-z]	Range	[a-z] → lowercase

Lookahead & Lookbehind

Pattern	Type	Matches
(?=...)	Positive lookahead	foo(=bar) → foo in foobar
(?!...)	Negative lookahead	foo(!bar) → foo not before bar
(?<=...)	Positive lookbehind	(?<=foo)bar → bar after foo
(?<!...)	Negative lookbehind	(?<!foo)bar → bar not after foo

Common Patterns

```

Email:      [a-zA-Z0-9._%+-]+@[a-zA-Z0-9.-]+\.[a-zA-Z]{2,}
URL:        https?://[\w.-]+(?:/[\w./?=&#-]*)?
IP addr:    \b(?:\d{1,3}\.){3}\d{1,3}\b
Date:       \d{4}-\d{2}-\d{2}
Hex:        #?([a-fA-F0-9]{6}|[a-fA-F0-9]{3})
Phone:      [+]?([0-9]{3})?[-\s.]?[0-9]{3}[-\s.]?[0-9]{4,6}

```