

Assertions				
(?=...)	Positive Lookahead	question(?=s)	questions	question
(?!...)	Negative Lookahead	answer(?!s)	answer	answers
(?<=...)	Positive Lookbehind	(?<=apple)	apple	application
(?<!...)	Negative Lookbehind	(?<!goo)d	mood	good
(?(condition)...)	if-then pattern	(<)?p(?(1)>)	<p>, p	<p
(?(condition)... ...)	if-then-else pattern	^(?(?=q)que ans)	question, answer	quote

Anchors	
^	Start of string or line
\$	End of string, or end of line in multi-line pattern
\A	Start of string, ignores m flag
\Z	End of string, ignores m flag
\Z	End of string or char before last new line, ignores m flag
\b	Word boundary; position between a word character (w), and a nonword character (\W)
\B	Not word boundary
\G	End of the previous match or the start of the string for the first match

Flags or Modifiers	
g	Global match
i	Ignore case
m	Multiple lines (^ and \$ match start and end of a line)
s	Single line (. matches newline)
x	Specifies that whitespace characters in the pattern are ignored except when escaped or inside a character class
J	Duplicate group names allowed
U	Ungreedy quantifiers
A	Anchored, the pattern is forced to match only at the beginning (^)
E	Anchored, the pattern is forced to match only at the end (\$)

Quantifiers	
a b	a or b
+	1 or more
*	0 or more
?	0 or 1
??	0 or 1, as few times as possible (lazy)
+?	1 or more, as few times as possible (lazy)
*?	0 or more, as few times as possible (lazy)
{n}	n times exactly
{n,m}	From n to m times
{n,}	At least n time

Lazy or Ungreedy means match the pattern the least times as possible.  
Greedy means match the pattern the most times as possible.  
Quantifiers (+, \*) are greedy by default

Groups	
(...)	Capturing
(? P<obj- j>...)	Capturing group named "obj"
(? P=obj)	Match the named group "obj"
\g{Z}	Match the named or numbered group Z
\Y	Match the Y'th captured group
(?>...)	Atomic group: This group does not allow any backtracking to occur

Groups (cont)	
(? ...)	Duplicate group numbers
(? #...)	Comment between parenthesis
(?...)	Matches but does not capture the group
(? &obj)	Recurse into the named group "-obj"
(?Y)	Recurse into numbered group Y
(?R)	Recurse into entire pattern
\g<- Z>	Recurse into the named or numbered group Z

Character Classes and Ranges	
.	Any character except new line (\n)
[abc-f]	One character of: a, b, c, d, e, f
[^abc-f]	One character except: a, b, c, d, e, f
\d	One digit
\D	One non-digit
\s	One whitespace
\S	One non-whitespace
\w	One word [a-zA-Z0-9_]
\W	One non-word [^a-zA-Z0-9_]



### Special Character Classes

<code>\\</code>	General Escape
<code>\n</code>	New line or line feed
<code>\r</code>	Carriage return (used to reset a device's position to the beginning of a line of text)
<code>\t</code>	Tab
<code>\0</code>	Null character
<code>\xHH</code>	Hexadecimal digit HH
<code>\oOOO</code>	Octal digit OOO
<code>[b]</code>	Backspace (yes it's inside brackets)
<code>\f</code>	Form feed (next page)
<code>\v</code>	Vertical tab
<code>\Q...\E</code>	Remove special meaning from a sequence of characters

### Posix Classes

<code>[:xdigit:]</code>	Hexadecimal digits
<code>[:upper:]</code>	Uppercase letters
<code>[:lower:]</code>	Lowercase letters
<code>[:alpha:]</code>	Letters
<code>[:alnum:]</code>	Letters and digits
<code>[:ascii:]</code>	Ascii codes 0 - 127
<code>[:cntrl:]</code>	Control characters
<code>[:print:]</code>	Visible characters
<code>[:punct:]</code>	Visible punctuation characters



By [tempusername12346455](https://cheatography.com/170864/cs/35809/)

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