

Regular Expression Syntax

A regular expression is a pattern of text that consists of ordinary characters (for example, letters a through z) and special characters, known as *metacharacters*. The pattern describes one or more strings to match when searching a body of text. The regular expression serves as a template for matching a character pattern to the string being searched.

Here are some examples of regular expression you might encounter:

JScript	VBScript	Matches
<code>/^\s[\t]*\$/</code>	<code>"^\s*\$"</code>	Match a blank line.
<code>/\d{2}-\d{5}/</code>	<code>"\d{2}-\d{5}"</code>	Validate an ID number consisting of 2 digits, a hyphen, and another 5 digits.

The following table contains the complete list of metacharacters and their behavior in the context of regular expressions:

Character	Description
<code>\</code>	Marks the next character as a special character, a literal, a backreference, or an octal escape. For example, 'n' matches the character "n". '\n' matches a newline character. The sequence '\\' matches "\" and \"(\" matches "(".
<code>^</code>	Matches the position at the beginning of the input string. If the RegExp object's Multiline property is set, ^ also matches the position following '\n' or '\r'.
<code>\$</code>	Matches the position at the end of the input string. If the RegExp object's Multiline property is set, \$ also matches the position preceding '\n' or '\r'.
<code>*</code>	Matches the preceding character or subexpression zero or more times. For example, zo* matches "z" and "zoo". * is equivalent to {0,}.
<code>+</code>	Matches the preceding character or subexpression one or more times. For example, 'zo+' matches "zo" and "zoo", but not "z". + is equivalent to {1,}.
<code>?</code>	Matches the preceding character or subexpression zero or one time. For example, "do(es)?" matches the "do" in "do" or "does". ? is equivalent to {0,1}.
<code>{n}</code>	<i>n</i> is a nonnegative integer. Matches exactly <i>n</i> times. For example, 'o{2}' does not match the 'o' in "Bob," but matches the two o's in "food".
<code>{n,}</code>	<i>n</i> is a nonnegative integer. Matches at least <i>n</i> times. For example, 'o{2,}' does not match the "o" in "Bob" and matches all the o's in "fooooood". 'o{1,}' is equivalent to 'o+'. 'o{0,}' is equivalent to 'o*'.
<code>{n,m}</code>	<i>m</i> and <i>n</i> are nonnegative integers, where <i>n</i> <= <i>m</i> . Matches at least <i>n</i> and at most <i>m</i> times. For example, "o{1,3}" matches the first three o's in "fooooood". 'o{0,1}' is equivalent to 'o?'. Note that you cannot put a space between the comma and the numbers.
<code>?</code>	When this character immediately follows any of the other quantifiers (*, +, ?, {n},

{*n*,}, {*n*,*m*}), the matching pattern is non-greedy. A non-greedy pattern matches as little of the searched string as possible, whereas the default greedy pattern matches as much of the searched string as possible. For example, in the string "oooo", 'o+?' matches a single "o", while 'o+' matches all 'o's.

.	Matches any single character except "\n". To match any character including the '\n', use a pattern such as '[\s\S]'.
(<i>pattern</i>)	Matches <i>pattern</i> and captures the match. The captured match can be retrieved from the resulting Matches collection, using the SubMatches collection in VBScript or the \$0...\$9 properties in JScript. To match parentheses characters (), use \"(' or \)".
(?: <i>pattern</i>)	Matches <i>pattern</i> but does not capture the match, that is, it is a non-capturing match that is not stored for possible later use. This is useful for combining parts of a pattern with the "or" character (). For example, 'industr(?:y ies) is a more economical expression than 'industry industries'.
(?= <i>pattern</i>)	Positive lookahead matches the search string at any point where a string matching <i>pattern</i> begins. This is a non-capturing match, that is, the match is not captured for possible later use. For example 'Windows (?:95 98 NT 2000)' matches "Windows" in "Windows 2000" but not "Windows" in "Windows 3.1". Lookaheads do not consume characters, that is, after a match occurs, the search for the next match begins immediately following the last match, not after the characters that comprised the lookahead.
(?! <i>pattern</i>)	Negative lookahead matches the search string at any point where a string not matching <i>pattern</i> begins. This is a non-capturing match, that is, the match is not captured for possible later use. For example 'Windows (?!95 98 NT 2000)' matches "Windows" in "Windows 3.1" but does not match "Windows" in "Windows 2000". Lookaheads do not consume characters, that is, after a match occurs, the search for the next match begins immediately following the last match, not after the characters that comprised the lookahead.
<i>x</i> <i>y</i>	Matches either <i>x</i> or <i>y</i> . For example, 'z food' matches "z" or "food". '(z f)ood' matches "zood" or "food".
[<i>xyz</i>]	A character set. Matches any one of the enclosed characters. For example, '[abc]' matches the 'a' in "plain".
[^ <i>xyz</i>]	A negative character set. Matches any character not enclosed. For example, '[^abc]' matches the 'p' in "plain".
[<i>a-z</i>]	A range of characters. Matches any character in the specified range. For example, '[a-z]' matches any lowercase alphabetic character in the range 'a' through 'z'.
[^ <i>a-z</i>]	A negative range characters. Matches any character not in the specified range. For example, '[^a-z]' matches any character not in the range 'a' through 'z'.
\b	Matches a word boundary, that is, the position between a word and a space. For example, 'er\b' matches the 'er' in "never" but not the 'er' in "verb".
\B	Matches a nonword boundary. 'er\B' matches the 'er' in "verb" but not the 'er' in "never".
\c <i>x</i>	Matches the control character indicated by <i>x</i> . For example, \cM matches a Control-M or carriage return character. The value of <i>x</i> must be in the range of A-Z or a-z. If not, c is assumed to be a literal 'c' character.
\d	Matches a digit character. Equivalent to [0-9].
\D	Matches a nondigit character. Equivalent to [^0-9].

<code>\f</code>	Matches a form-feed character. Equivalent to <code>\x0c</code> and <code>\cL</code> .
<code>\n</code>	Matches a newline character. Equivalent to <code>\x0a</code> and <code>\cJ</code> .
<code>\r</code>	Matches a carriage return character. Equivalent to <code>\x0d</code> and <code>\cM</code> .
<code>\s</code>	Matches any white space character including space, tab, form-feed, and so on. Equivalent to <code>[\f\n\r\t\v]</code> .
<code>\S</code>	Matches any non-white space character. Equivalent to <code>[^ \f\n\r\t\v]</code> .
<code>\t</code>	Matches a tab character. Equivalent to <code>\x09</code> and <code>\cI</code> .
<code>\v</code>	Matches a vertical tab character. Equivalent to <code>\x0b</code> and <code>\cK</code> .
<code>\w</code>	Matches any word character including underscore. Equivalent to <code>'[A-Za-z0-9_]'</code> .
<code>\W</code>	Matches any nonword character. Equivalent to <code>'[^A-Za-z0-9_]'</code> .
<code>\xn</code>	Matches <i>n</i> , where <i>n</i> is a hexadecimal escape value. Hexadecimal escape values must be exactly two digits long. For example, <code>"\x41"</code> matches "A". <code>"\x041"</code> is equivalent to <code>"\x04"</code> & <code>"1"</code> . Allows ASCII codes to be used in regular expressions.
<code>\num</code>	Matches <i>num</i> , where <i>num</i> is a positive integer. A reference back to captured matches. For example, <code>'(.)\1'</code> matches two consecutive identical characters.
<code>\n</code>	Identifies either an octal escape value or a backreference. If <code>\n</code> is preceded by at least <i>n</i> captured subexpressions, <i>n</i> is a backreference. Otherwise, <i>n</i> is an octal escape value if <i>n</i> is an octal digit (0-7).
<code>\nm</code>	Identifies either an octal escape value or a backreference. If <code>\nm</code> is preceded by at least <i>nm</i> captured subexpressions, <i>nm</i> is a backreference. If <code>\nm</code> is preceded by at least <i>n</i> captures, <i>n</i> is a backreference followed by literal <i>m</i> . If neither of the preceding conditions exist, <code>\nm</code> matches octal escape value <i>nm</i> when <i>n</i> and <i>m</i> are octal digits (0-7).
<code>\nml</code>	Matches octal escape value <i>nml</i> when <i>n</i> is an octal digit (0-3) and <i>m</i> and <i>l</i> are octal digits (0-7).
<code>\un</code>	Matches <i>n</i> , where <i>n</i> is a Unicode character expressed as four hexadecimal digits. For example, <code>\u00A9</code> matches the copyright symbol (©).

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