**Common Matching Symbol:**

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| --- | --- |
| **Character Class** | **Description** |
| . | Matches any character |
| ^regex | Finds regex that must match at the beginning of the line |
| regex$ | Finds regex that must match at the end of the line |
| [abc] | a,b or c |
| [^abc] | Any character except a,b or c |
| [a-zA-Z] | a through z or A through Z, inclusive |
| [a-d[m-p]] | a through d or m through p |
| [a-z&&[def]] | d, e, or f (intersection) |
| [a-z&&[^bc]] | a to z except b and c |
| [a-z&&[^m-p]] | a through z, and not m through p: [a-lq-z](subtraction) |
| X|Z | X or Z |
| XZ | Finds X directly followed by Z |
| $ | Check if a line end follows |

**Meta Characters:**

|  |  |
| --- | --- |
| **Regular Expression** | **Description** |
| \d | Any digit short for [0-9] |
| \D | Any non digit short for [^0-9] |
| \s | A whitespace character, short for [ \t\n\x0b\r\f] |
| \S | A non whitespace character |
| \w | A word character, short for [a-zA-Z\_0-9] |
| \W | A non-word character [^\w] |
| \b | Matches a word boundary where a word character is [a-zA-Z0-9\_] |

**Quantifier:**

|  |  |
| --- | --- |
| **Regular Expression** | **Description** |
| \* | Occurs zero or more times. |
| + | Occurs one or more times. |
| ? | Occurs 0 or 1 time. |
| {x} | Occurs x number of times. |
| {x,} | Occurs at least x number of times. |
| {,y} | Occurs at most y number of times. |
| {x,y} | Occurs at least x number of times and at most y number of times. |
| \*? | ? after a quantifier makes it a reluctant quantifier. It tries to find the smallest match. This makes the regular expression stop at the first match. |

**These are quantifiers example of using them are like:**

X\*: X occurs zero or more times.