Regular Expression
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A regular expression provides a concise and flexible means for matching strings of text or patterns of characters. A regular expression is interpreted by a regular expression processor.

- grep: Linux tool for regex

Examples:

`b[a-z]*t`	Start with «b», end with «t»
`\S+@\S+\.\S+`	Email Validation
`^[a-z0-9_-]{3,16}$`	Username Validation

$ Regular Expression Quick Guide

^	Matches the beginning of a line
$	Matches the end of the line
.	Matches any character
\s	Matches whitespace
\S	Matches any non-whitespace character
*	Repeats a character zero or more times
*?	Repeats a character zero or more times (non-greedy)
+	Repeats a character one or more times
+?	Repeats a character one or more times (non-greedy)
[aeiou]	Matches a single character in the listed set
[^XYZ]	Matches a single character not in the listed set
[a-z0-9]	The set of characters can include a range
(	Indicates where string extraction is to start (Start group)
)	Indicates where string extraction is to end (End group)
?	Repeats a character zero or one time

^ : Beginning of a line $: End of a line
* : Repeats zero or more   + : Repeats one or more
. : Any character

```
X-Sieve: CMU Sieve 2.3
X-DSPAM-Result: Innocent
Y-DSPAM-Confidence: 0.8475
X-Content Type Message Body: text/plain
```

➔ ^X.*:

➔ t$:

➔ ^Y.*:

? : zero or one time
[aouie] : a single character in set
[^ab]: a single character not in set

- Escape With \

→ `^[io]a+.$`

→ `[^a-zA-Z0-9]`

```
{m,n}     Repeats between m and n times
{m,}      Repeats more than or euqal to m times
{m}       Repeats exactly m times
```

```
→ ^[0-9]{1,2}$
```

```
→ ^[a-zA-Z]{8,}tion$
```

Email

```
^[a-zA-Z][a-zA-Z0-9]+@[a-z]+\.com
```

Scientific Notation (5.23e-12)

```
[+-]?[1-9]\.[0-9]+[Ee][+-]?[0-9]+
```

Html Tags

```
<[a-zA-Z]+
```