sed Stream editor

CONCEPTS

sed reads input one line at a time, runs your script on it, and prints the result. Without -i the file itself is never changed.

Read line into pattern space
↓ run script
Commands address? command
↓ auto-print
Output stdout, or -i file
Repeated for every input line

The hold space is a second buffer that survives between lines; h, H, g, G and x move text between it and the pattern space.

macOS ships BSD sed: -i needs an argument (-i ''), and \U, \n in replacements and 0~2 are not supported. This sheet is GNU sed.

SUBSTITUTE

sed 's/_re_**/**_new_**/' **_file_
Replace first match on each line

sed 's/_re_**/**_new_**/g' **_file_
Replace every match

sed 's/_re_**/**_new_**/**_N_**' **_file_
Replace only the Nth match

sed 's/_re_**/**_new_**/gI' **_file_
Ignore case

sed 's/_re_**/&!/' **_file_
& inserts the whole match

sed 's|_path_**|**_new_**|g' **_file_
Pick another delimiter for slashes

sed -E 's/(_a_**)(**_b_**)/\2\1/' **_file_
Swap groups with backreferences

sed -E 's/_re_**/\U&/' **_file_
Uppercase the match (\L lower, \u first)

sed 's/_re_**/**_new_**/w **_out_**' **_file_
Write changed lines to a file

sed 's/_re_**/**_new_**/;t;s/^/NO: /' **_file_
Branch if a substitution happened

OPTIONS

sed -n
Print only when told to (p)

sed -i[_suffix_**]**
Edit in place, optional backup

sed -E
Extended regex: (), +, ?, |

sed -e '_cmd_**' -e '**_cmd_**'**
Combine several commands

sed -f **_script.sed_ **_file_
Read commands from a file

sed -z
Split input on NUL, not newline

ADDRESSES

sed '_N_**cmd'**
Act on line N

sed '$cmd'
Act on the last line

sed '_N_**,**_M_**cmd'**
Act on lines N to M

sed '/_re_**/cmd'**
Act on lines matching a regex

sed '/_re_**/!cmd'**
Act on lines not matching

sed '/_a_**/,/**_b_**/cmd'**
From the first match to the next

sed '_N_**,+**_K_**cmd'**
Line N and the K lines after

sed '_N_**~**_K_**cmd'**
Every Kth line, starting at N

sed '0,/_re_**/cmd'**
Up to and including the first match

COMMANDS

p
Print the pattern space

d
Delete line, start next cycle

q / Q
Quit (Q without printing)

**a\ **_text_
Append text after the line

**i\ **_text_
Insert text before the line

**c\ **_text_
Replace the line with text

COMMANDS (cont.)

y/_abc_**/**_xyz_**/**
Transliterate characters

=
Print the line number

**r **_file_
Append a file's content

n / N
Next line (replace / append)

{ cmd; cmd }
Group commands under one address

h / H / g / G / x
Hold space: copy / append / get / get-append / swap

REGEX NOTES

^ $. *
Start, end, any char, repeat

[abc] [^abc] [a-z]
Character classes

\+ \? \| \(\)
BRE needs backslashes (GNU)

+ ? | () {n,m}
Plain in -E mode

\b \w \s \n
Word edge, word char, space, newline (GNU)

[[:digit:]] [[:space:]]
POSIX classes

\. * \/ \[
Escape a special character

RECIPES

Delete blank lines and trailing spaces

```
sed -e '/^$/d' -e 's/
[[:space:]]*$//' <file>
```

Replace across many files (GNU)

```
grep -rlZ '<old>' <dir> \
  | xargs -0 sed -i 's/<old>/
<new>/g'
```

Print a block between two markers

```
sed -n '/<start>/,/<end>/p'
<file>
```

Join every two lines / number lines

```
sed '$!N;s/\n/ /' <file>
sed = <file> | sed 'N;s/\n/\t/'
```