

CSCI 211

UNIX Lab

sed: stream editor

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What is sed?



Each line is processed separately
for once

Basic Usage: Substitution

- Read from standard input and substitute

```
sed "s/old/new/"
```

(Press Ctrl-d to quit)

Only works on
the first match!

- Replace a string in command line

```
echo "old str" | sed "s/old/new/"
```

- Read from 'file1' and substitute

```
sed "s/old/new/" file1
```

- Read from 'file1' and substitute and save to 'file2'

```
sed "s/old/new/" file1 > file2
```

Delimiter

- OK but confusing

```
sed 's/\\/usr\\/local\\/bin\\/\\/opt\\/bin/' file1 file2
```

- Clean version

```
sed 's:/usr/local/bin:/opt/bin:' file1 file2
```

```
sed 's!/usr/local/bin!/opt/bin!' file1 file2
```

Case-insensitive Match

- Remove first 't'

```
sed 's/t//'
```

- Remove first 't' or 'T'

```
sed 's/[tT]//'
```

```
sed 's/t//I'
```

Reuse Match in Substitution

- For example, replace "01 ab" with "ab 01", "0123 abcd" with "abcd 0123", and so on.

```
sed "s/\([0-9]*\) \([a-z]*\)/\2 \1/" file1
```

or,

```
sed -E "s/([0-9]*) ([a-z]*)/\2 \1/" file1
```

- Write in multiple lines

```
sed \  
"s/\([0-9]*\) \([a-z]*\)/\  
\2 \1/" \  
file1
```

Specify Occurrence

- Try

```
sed "s/0/x/2"
```

```
sed "s/0/x/3"
```

Global Substitution

- By default, only the first match in every line is replaced.

- To replace all matches

```
sed "s/old/new/g" file1
```

- To replace all matches starting with the second occurrence

```
sed "s/old/new/2g" file1
```

- To replace all matches starting with the second occurrence, case insensitive

```
sed "s/old/new/2gI" file1
```


Multiple Substitutions in One Line

- Use -e

```
sed -e 's/a/A/' -e 's/b/B/'
```

- Use braces

```
sed '{  
    s/a/A/  
    s/b/B/  
}'
```

Specify Lines

- First two lines

```
sed '1,2 s/a/A/ '
```

- From the 2nd line to the last

```
sed '2,$ s/a/A/ '
```

- All the lines with 'a'

```
sed '/a/ s/b/B/ '
```

- All the lines starting with 'a'

```
sed '/^a/ s/b/B/ '
```

- All the lines ending with 'a'

```
sed '/a$/ s/b/B/ '
```

Delete Lines

- Delete the 11th line and afterwards

```
sed '11,$ d' file
```

- Delete all the lines with 'a'

```
sed '/a/ d' file
```

Append/Insert/Replace Lines

- Add a line after every line with "WORD"

```
sed '/WORD/ a\
```

```
Add this line after every line with WORD
```

```
'
```

- Insert a line before every line with "WORD"

```
sed '/WORD/ i\
```

```
Add this line before every line with WORD
```

```
'
```

- Replace every line with "WORD"

```
sed '/WORD/ c\
```

```
Replace the current line with the line
```

```
'
```

Reference

- **Sed - An Introduction and Tutorial by Bruce Barnett**
 - <http://www.grymoire.com/Unix/Sed.html>