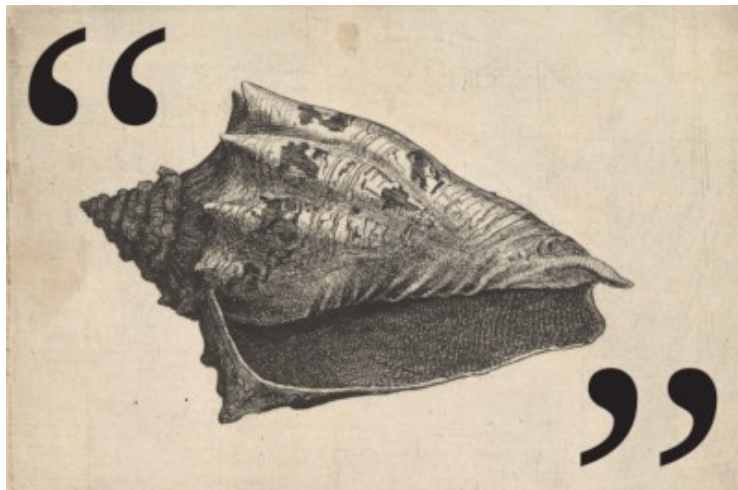# Shell quoting

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Special characters

- Many characters in shells have a meaning besides their literal one:

  - **Globs:** *, ?…

  - **Metacharacters:** space, tab, <, >…

  - **Control operators:** ; , *, |, &…

  - **Parameter expansion:** $

- To use the *literal* meaning instead, the characters must be **escaped** or **quoted**.

Weird output—1/3

$ cat file<final>
bash: syntax error near unexpected token
`newline'

Weird output—2/3

```
$ cat fish&chips
[1] 622167
bash: chips: command not found
cat: fish: No such file or directory
[1]+  Exit 1                       cat fish
```

Weird output—3/3

$ echo * a star is born *
.~lock.shell-quoting.odp# Shell-_Hebrew_Volute_(_Voluta_ebraea_L)_MET_DP823899.jpg quoted-shell-small.jpg quoted-shell.jpg quoted-shell.xcf shell-quoting.odp a star is born .~lock.shell-quoting.odp# Shell-_Hebrew_Volute_(_Voluta_ebraea_L)_MET_DP823899.jpg quoted-shell-small.jpg quoted-shell.jpg quoted-shell.xcf shell-quoting.odp

Backslashes

- Precede one character with a **backslash** \ to have it use its literal meaning.
  - But\ strings\ end\ up\ looking\ hard\ to\ read...
    - "Dancing toothpicks"

Double quotes

- Still evaluates some characters:
  - $ (variable expansion)
  - ` (old command substitution)
  - ! (sometimes; Bash **history expansion**)

```
$ echo "its about $10"
its about 0
```

Single quotes

- All characters are literal
  - Even newlines
- Fewer caveats than double-quotes
- One caveat: escaping apostrophes looks weird:

```
$ echo 'you'\''ve got to do this'
```

- Use tab completion!

How to deal?

- Avoid backslash escaping entirely

- Use double quotes only when you actually do want to expand a variable

    - Don't just use them because there's an apostrophe in the string… that's just asking for trouble!

    - Don't use backticks; so, not `` `command` ``, but `$(command)`

- Prefer single quotes in all other situations

- Lean on tab completion

Questions?

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