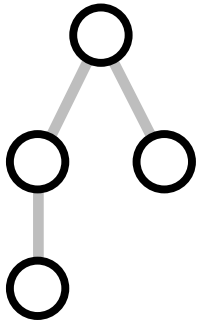
Rash - *adj* - Hurrying into action or assertion without due caution and regardless of prudence, hasty, reckless, precipitate.

I ♥ Unix Shells

Many issues



modules

```
variable=foo
# silently reference undefined!
echo $varable
```

```
if [ $foo -eq $bar ]; then
    cowsay "$foo equals $bar"
fi
```

 empty string!

```
if [ $foo -eq $bar ]; then
    cowsay "$foo equals $bar"
fi
```

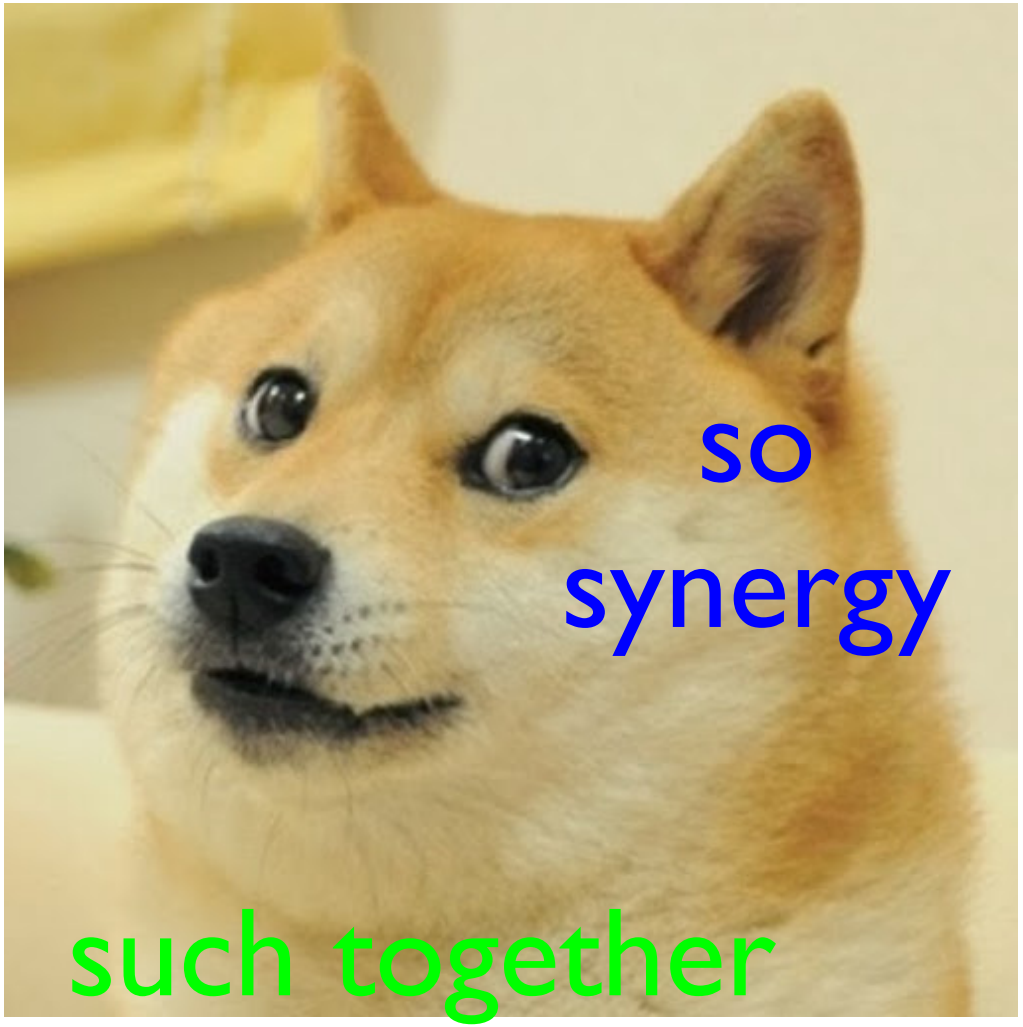
empty string!

```
if [ $foo -eq $bar ]; then
    cowsay "$foo equals $bar"
fi
```

Error!

```
ls | grep rkt | xargs wc | cowsay
```

Racket and Shell



```
#lang rash/demo/rc17

ls /dev | grep tty | wc -l
```

Overview

`shell/pipeline`

- Byte streams

`shell/mixed-pipeline`

- Objects (and byte streams mixed)

`shell/pipeline-macro`

- Macro DSL wrapper for pipelines

`rash line syntax`

- Reader and macro support for line-based syntax

`scsh comparison`

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```
(require shell/pipeline)
```

```
(run-pipeline '(ls /dev)
              '(grep tty)
              '(wc -l))
```

```
(require shell/pipeline)
```

```
(run-pipeline '(ls /dev)
              '(grep tty)
              '(wc -l)
              #:out "myfile.txt")
```

```
(require shell/pipeline)

(define (my-grep regex)
  ...)

(run-pipeline '(ls /dev)
              `(,my-grep "tty")
              '(wc -l)
              #:out "myfile.txt")
```

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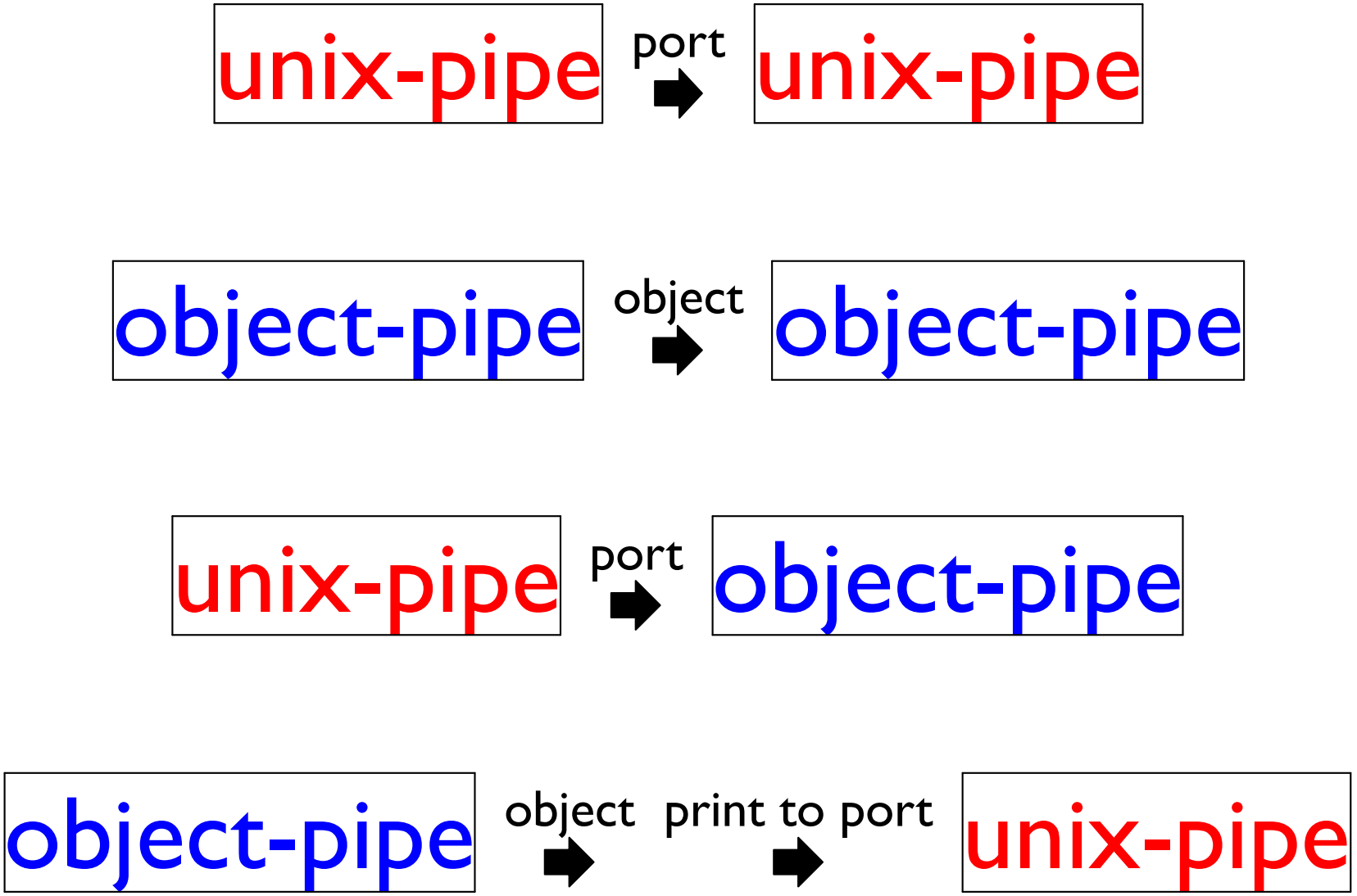
unix-pipe
port
unix-pipe
object-pipe
object
object-pipe
unix-pipe
port
object-pipe
object-pipe
object
print to port
unix-pipe

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```
(require shell/pipeline-macro)
```

```
(run-pipeline
 =unix-pipe= ls /dev
 =object-pipe= string-split _ "\n"
 =filter= regexp-match "tty"
 =object-pipe= length)
```

```
(require shell/pipeline-macro)

;; The | symbol is special to the default reader,
;; so let's use % instead for now.

(run-pipeline
 % ls /dev
 %> string-split _ "\n"
 =filter= regexp-match "tty"
 %> length)
```

```
(require shell/pipeline-macro)

;; The | symbol is special to the default reader,
;; so let's use % instead for now.

(run-pipeline
 ls /dev
 %> string-split _ "\n"
 =filter= regexp-match "tty"
 %> length)
```

```
;; I want this:
(run-pipeline
 =non-auto-globbing-unix-pipe= rm (glob "*.pdf"))

;; You maybe want this:
(run-pipeline
 =auto-globbing-unix-pipe= rm *.pdf)
```

=filter=

=monad-bind=

=for/stream=

=place=

=object-or-unix-by-binding=

=xargs=

=object-send=

=infix-math=

... use your imagination for more!

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```
#lang rash/demo/rc17


app + 1 2 3
;; returns 6
```

```
#lang rash/demo/rc17

;; The current default line-macro is inserted.
+ 1 2 3
;; returns 6
```

```
#lang rash/demo/rc17

cd ../projects/racket-pkgs
```

```
#lang rash/demo/rc17

run-pipeline ls | grep foobar
```

```
#lang rash/demo/rc17

;; pipeline is a good default line-macro
ls | grep foobar
```

```
#lang rash/demo/rc17

ls (list
    widget-dir old-widget-dir etc) | grep widget
```

```
#lang rash/demo/rc17

(require racket/string)
(define main-dir "/home/userguy/project")

ls (string-append
    main-dir "/widget-dir") | grep widget
```

```
#lang racket/base

(define a (list 1 2 3))
(define b (map square a))

;; Look at the value of b
b
```

```
#lang rash/demo/rc17

(define a (list 1 2 3))
(define b (map square a))

;; Error!! This will now have a line-macro inserted!
b
```

```
#lang rash/demo/rc17

(define a (list 1 2 3))
(define b (map square a))

;; Wrap it in parens instead
(values b)
```

```
#lang rash/demo/rc17

(define a (list 1 2 3))
(define b (map square a))

;; or use an identity line macro
id b
```

Control Flow

```
(for ([str cow-phrases])
  (rash «|> display str | cowsay»))
```

```
(for ([str cow-phrases])
  @rash|{|> display str | cowsay|})
```

```
;; ◸foo bar◹ reads as (#%upper-triangles «foo bar»)
;; #%upper-triangles can be bound to the rash macro

(for ([script (list "delete-temp-files.sh"
                    "clean-up.zsh"
                    "rmstuff.rkt")        ])
  ◸grep "rm -rf" ◸which (id script)◹◹)
```

```
;; {foo bar} reads as (#%braces «foo bar»)
;; #%braces can be bound to the rash macro

(for ([script (list "delete-temp-files.sh"
                    "clean-up.zsh"
                    "rmstuff.rkt")          ])
  {grep "rm -rf" {which (id script)}})
```

Disclaimer:

The library is not stable yet.

Interactive REPL demo

Conclusion

Shell

+

Racket

+

Easy mixing of both

=

Awesome

Question?

william@hatch.uno