

1: Electron

Electron

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2: Electron?

- ▶ Tiling
- ▶ Keyboard-driven
- ▶ Scriptable?
- ▶ Replacement for Rio
- ▶ Not terrible?

3: Rio?

- ▶ Overlapping windows
- ▶ Exclusively mouse-driven
- ▶ Not configurable
- ▶ Replacement for $8\frac{1}{2}$
- ▶ Terrible

4: Why?

- ▶ Rio is basically unuseable on laptops
- ▶ Hypothesis: more people would use plan 9 if the WM was less alien
 - ▶ And the shell
 - ▶ And the editor
- ▶ To test this: write one!

5: How?

- ▶ Lots of C, pretty much
- ▶ Plan 9 I/O multiplexing looks queasily alien to anyone not from there
- ▶ "select() is evil, use threads!"
 - ▶ Plan 9 "threads" are "coroutines"
 - ▶ Plan 9 "procs" are "threads" with optionally-shared memory
- ▶ Many good examples to look at, though

6: Plan 9 I/O

- ▶ One proc per file descriptor
- ▶ Procs communicate over synchronizing ordered channels
- ▶ `alt()` construct
- ▶ `srv()` construct
- ▶ `ioproc()` helper
- ▶ All I/O is blocking!

7: Window System Contract

- ▶ Serve a bunch of devices in `/dev` and `/mnt/wsys`
- ▶ Provide `cons`, `cursor`, `mouse`, ...
- ▶ Also consume `cons`, `mouse`, ...
- ▶ Multiplex `draw`, or not
- ▶ It should be obvious how this nests!

8: Basic Design

- ▶ Server proc: calls `srv()` on `/dev/{...}`
- ▶ I/O procs (mouse, keyboard): `read()` on `/dev/{mouse,kbd,...}`
- ▶ For each window: window I/O proc (for reads/writes to `/dev/wctl`, `/dev/win`, etc)

9: Questions?

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