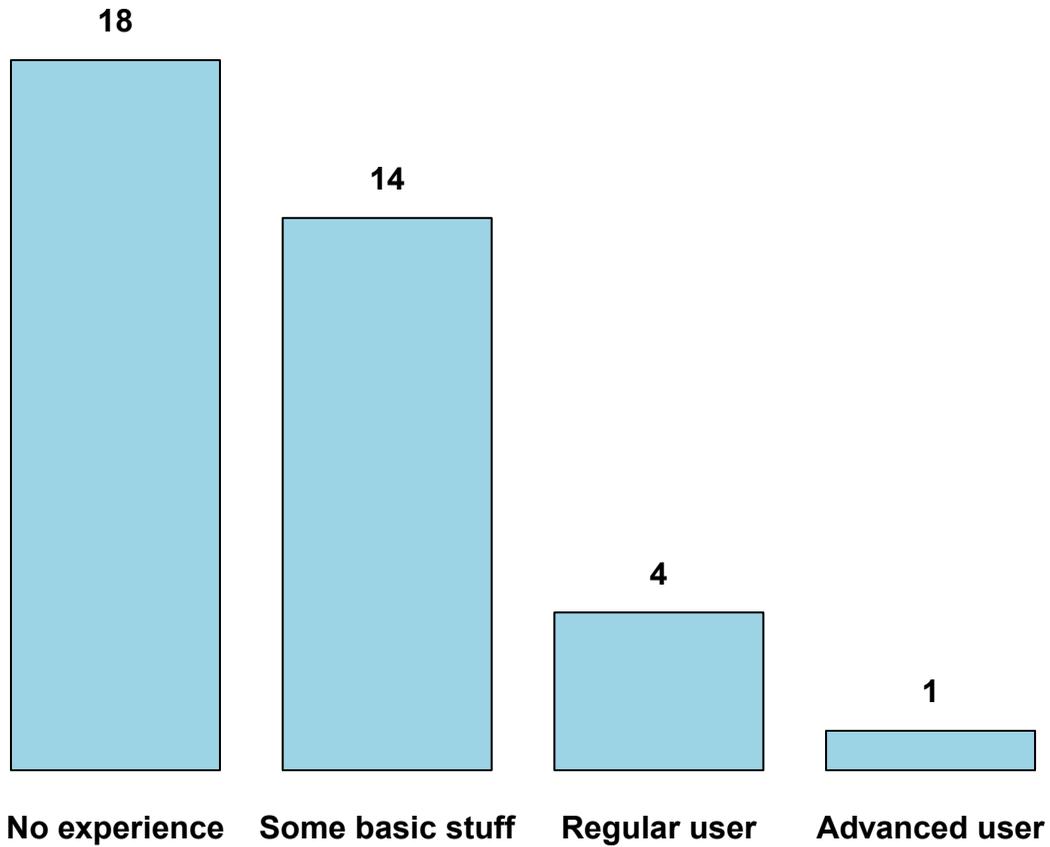


UNIX and NGS

“Introductory advanced course”

Libor Mořkovský, Václav Janoušek



Unix

“Those who don’t understand Unix are condemned to reinvent it, poorly.”

Henry Spencer

“Unix never says ‘please’.”

Rob Pike

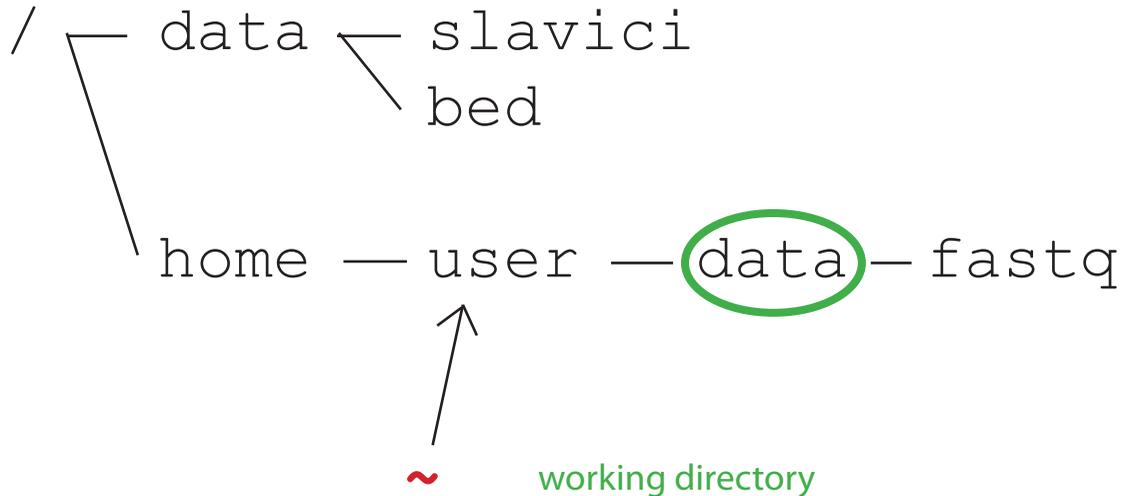


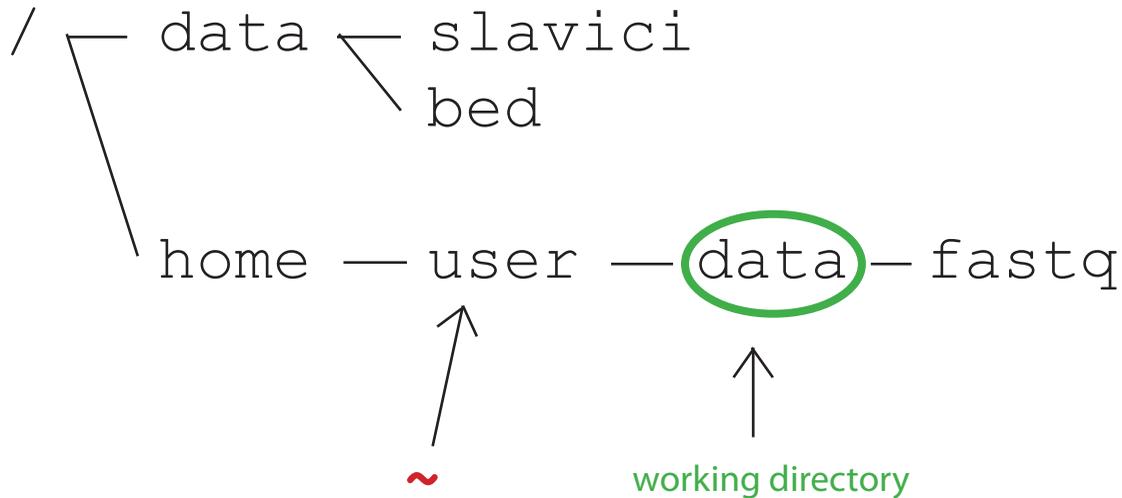
Ken Thompson and Dennis Ritchie

Dates back to 1969.

Written as a fun project, later purposed as a patent application processing system.

Hierarchical file system was in
since the beginnging.





`/home/user/data/fastq` - absolute path

`~/data/fastq` - absolute path, `~` is substituted

`/home/user/data/fastq`

`fastq` - relative path, working directory is prepended:

`/home/user/data/fastq`

`../..` - relative path, two directories up from the **working directory**

`/home`

Pipes invented a bit later by Doug McIlroy.

Summary--what's most important.

To put my strongest concerns
into a nutshell:

1. We should have some ways of
coupling programs like garden
hose--screw in another segment when
it becomes when it becomes necessary
to massage data in another way.
This is the way of IO also.

...



M. D. McIlroy
October 11, 1964



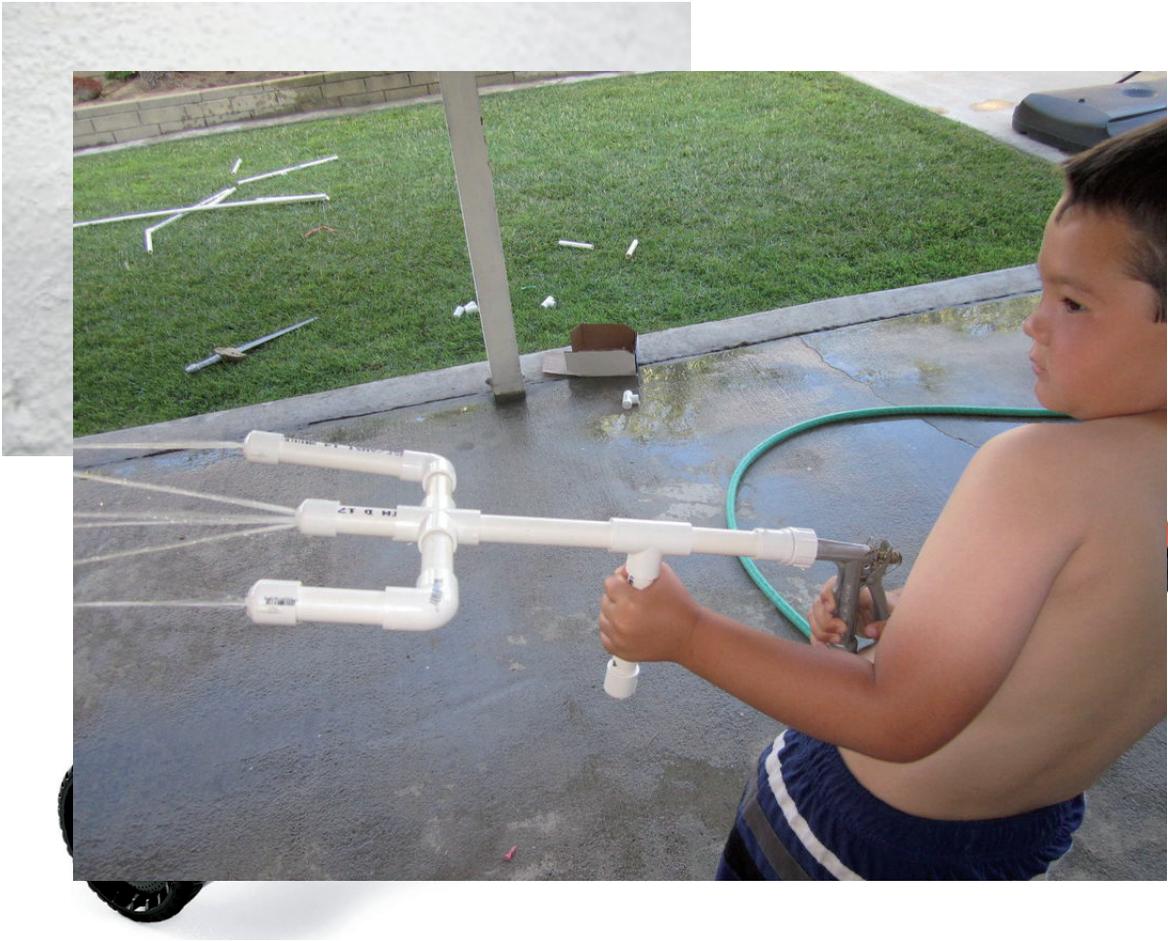










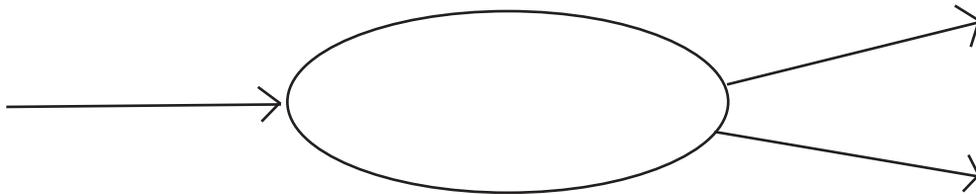


What is it all about?

- flexibility
- conciseness
- automation

Flexibility: **every** program has

- standard input
- standard output
- standard error

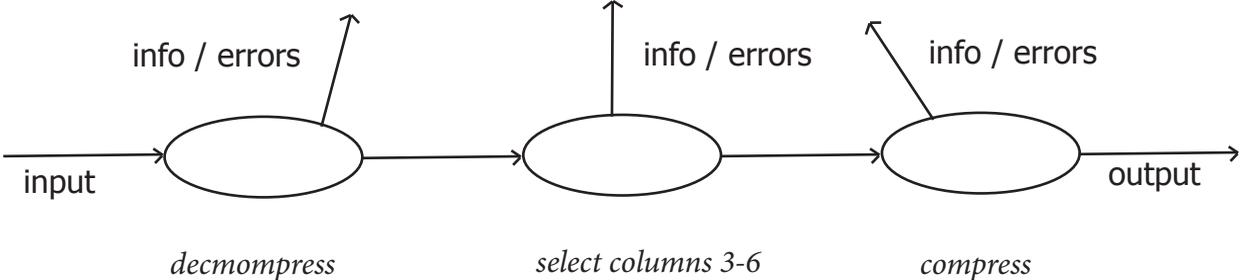


Flexibility: **every** “unix” program

- reads data line by line
- outputs data line by line
- does one simple operation

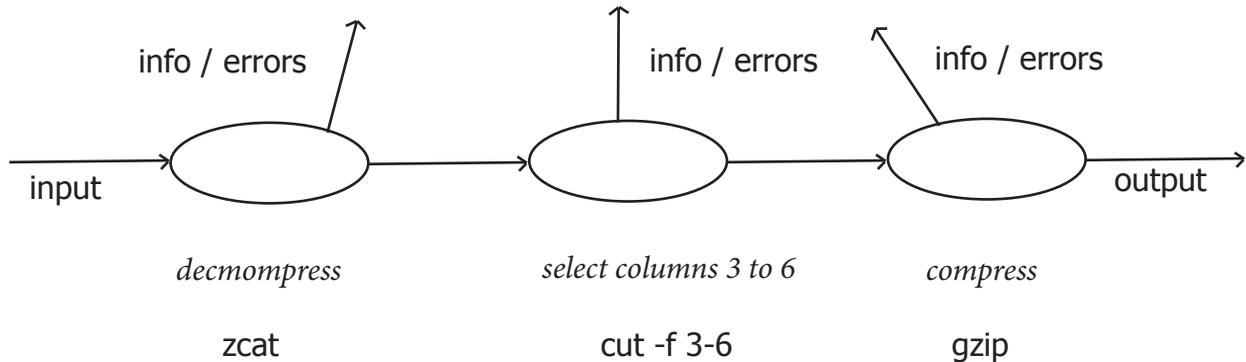
Flexibility: programs can be chained

USER



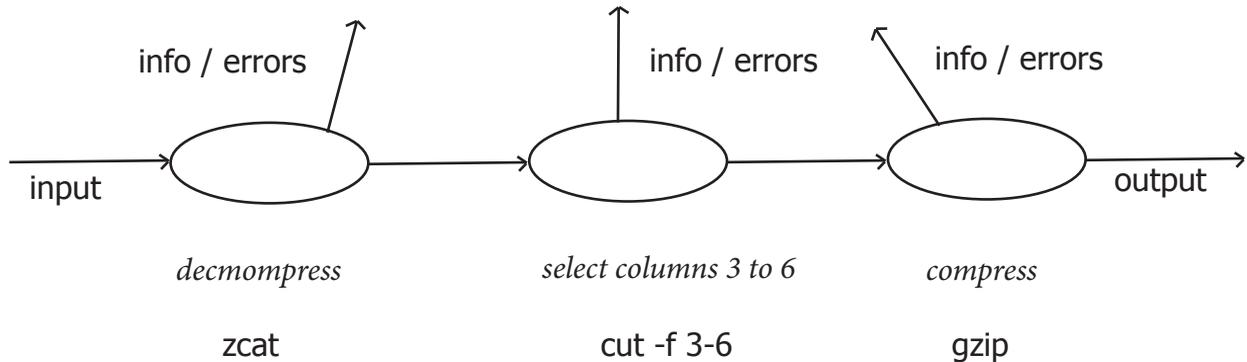
Conciseness: “with just 30 characters you can do almost anything”

USER



Automation: every operation can be stored in a text file

USER



```
<bigtable.gz zcat | cut -f 3-6 | gzip >bigtable-3-6.gz
```

And what is Linux then?

