

CODEMOTION MILAN - SPECIAL EDITION
10 - 11 NOVEMBER 2017

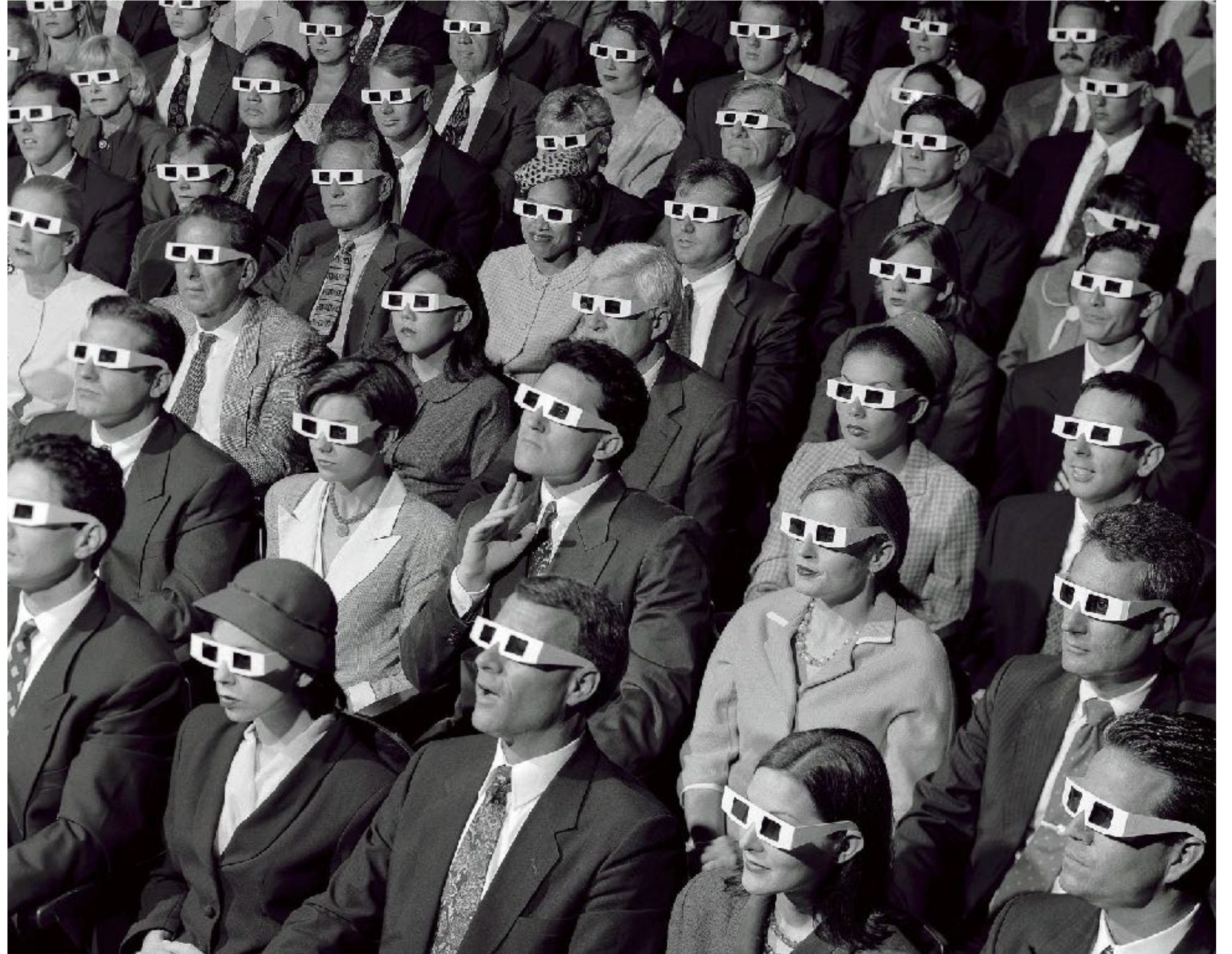
{CODEMOTION}

{ Running Redis for 8 years

Salvatore Sanfilippo



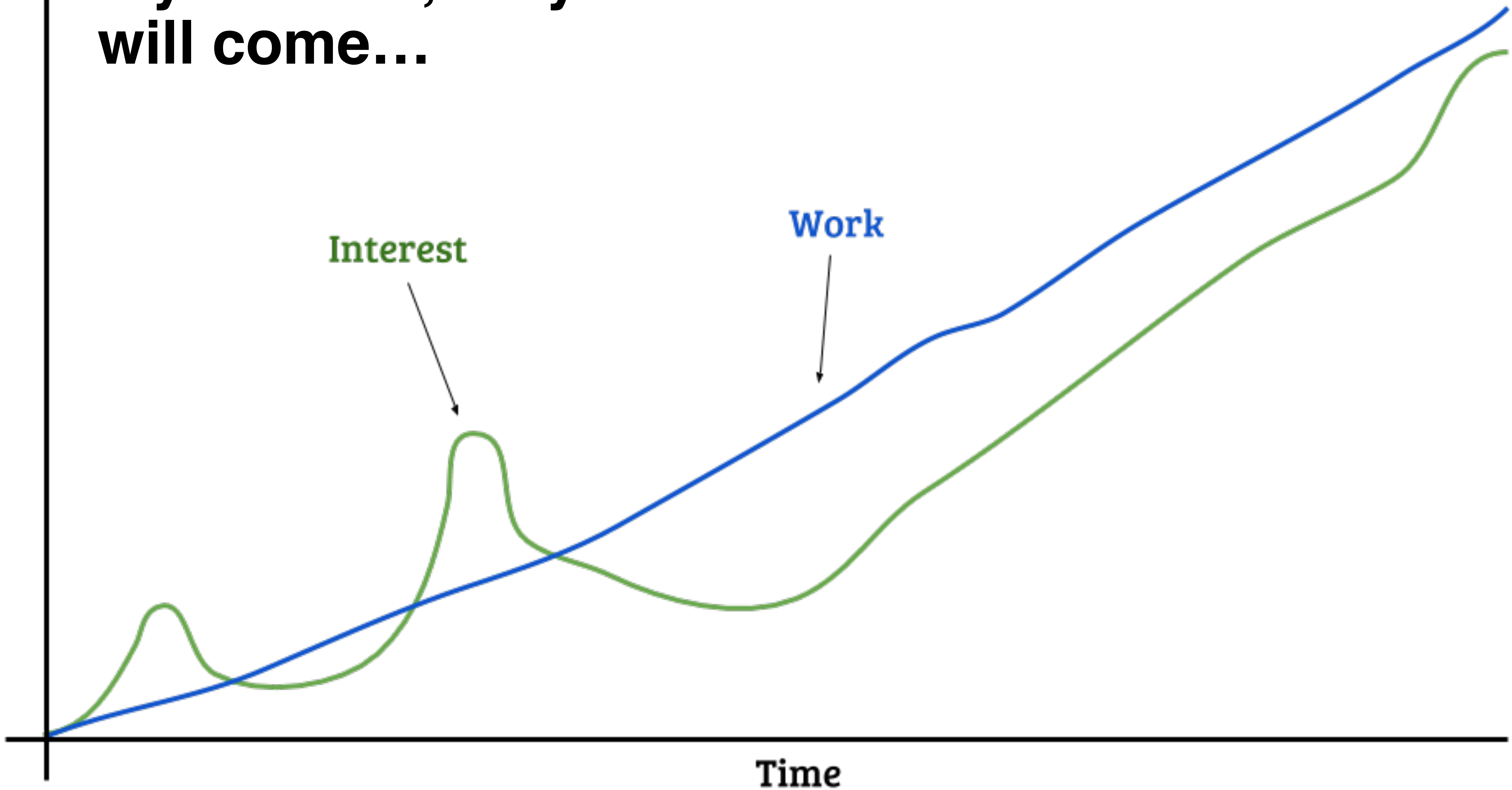
**If you build, they
will come...**



Two months later



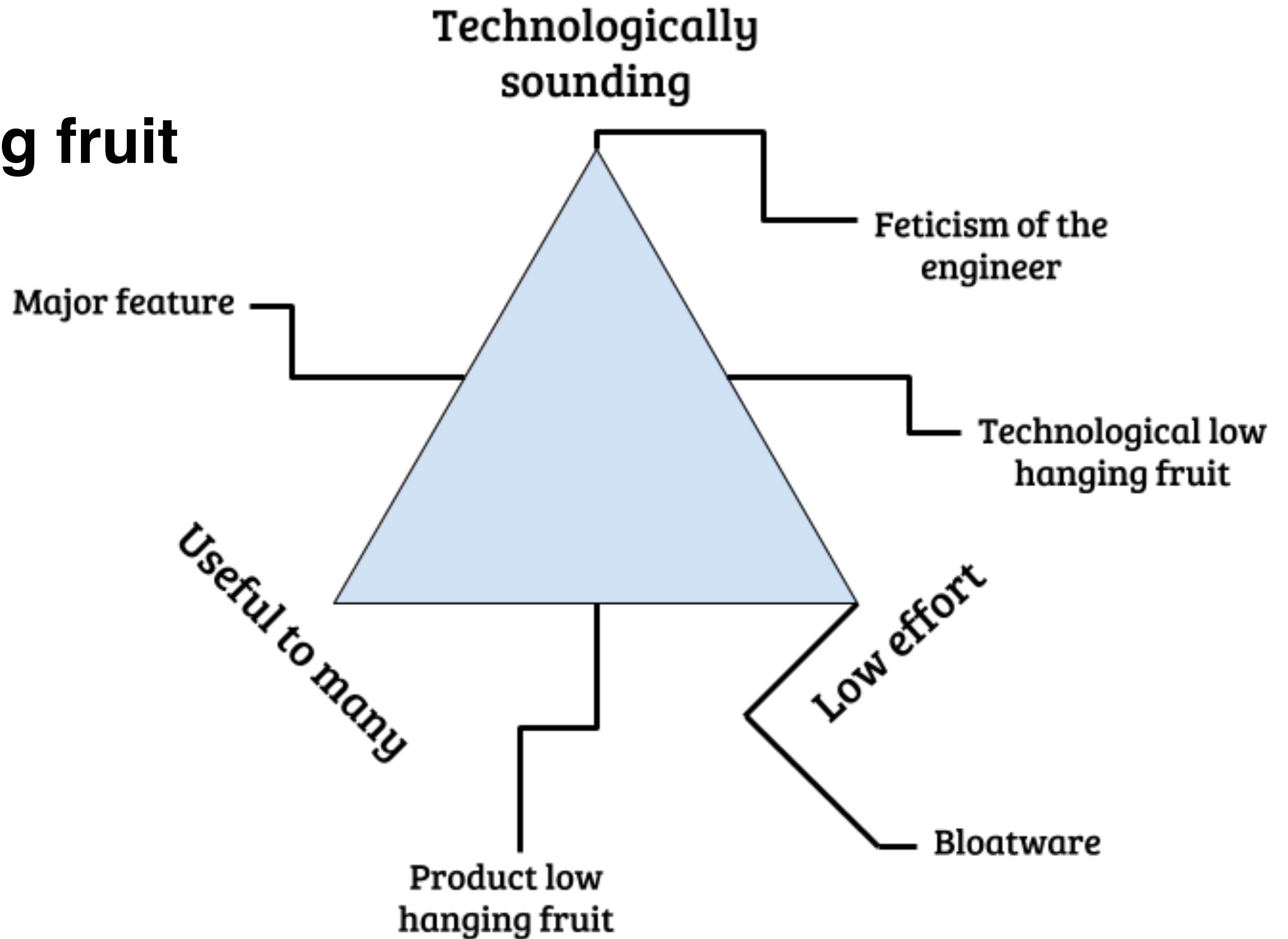
**If you build, they
will come...**



Opportunistic programming



Low hanging fruit triangle



RDB replication metadata

- Technological LHF
- Slaves upgrades without a full resynchronization
- Quite simple to implement (because of PSYNC2)
- Hint: certain other features are “enablers” for LHF

The issue of issues

antirez / redis

<> Code **Issues 958** Pull requests 539

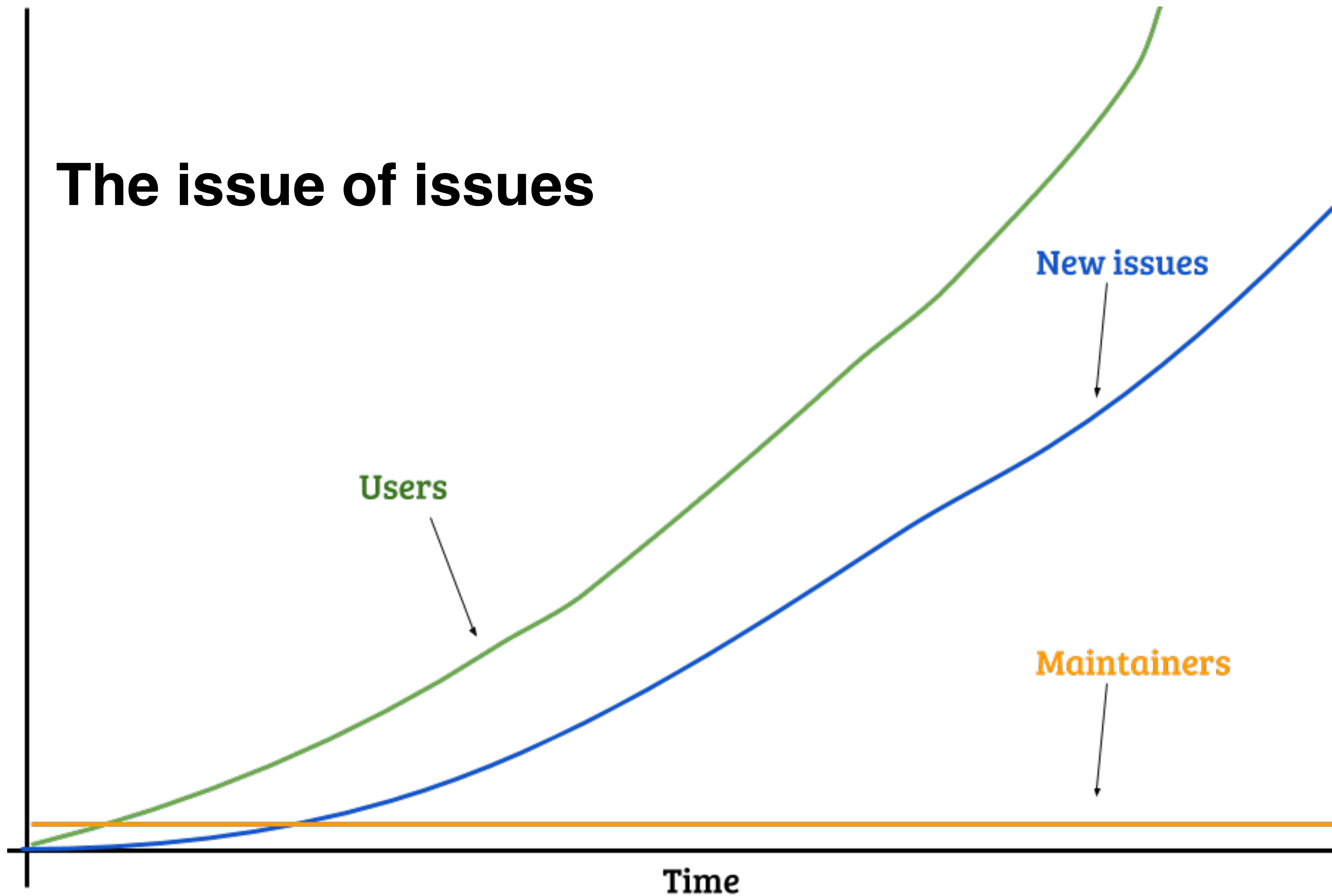
Filters

Clear current search query, filters, and sorts

958 Open ✓ 1,773 Closed

instantaneous_ops_per_sec question?
#4257 opened on 26 Aug by rfyiamcool updated a

The issue of issues



Users

New issues

Maintainers

Time

GitHub issues

- Big projects are a small % of the user base
- Better **discovery** is needed
- Issues **voting** is needed
- Users should be able to **add labels**

Slow code

Slow code



Streams: fix XREAD test broken after previous tests improvements.

antirez committed 4 days ago



Streams: move ID ms/seq separator from '.' to '-' ...

antirez committed on 3 Oct



Streams: fix XADD + MAXLEN propagation due to var shadowing. ...

antirez committed on 29 Sep



Streams: fix memory leak in streamTrimByLength().

antirez committed on 29 Sep



Streams: add XADD + MAXLEN test.

antirez committed on 29 Sep



Streams: fix streamTrimByLength() standalone items skipping.

antirez committed on 29 Sep



Streams: XADD MAXLEN implementation. ...

antirez committed on 29 Sep



Streams: reduce listpack max size to 2k to speedup range queries.

Slow code



Slow code

- Design work is silent
- The goal is writing less code, not more
- Tons of throw away experiments, users will see only the good ones
- Understanding what comes next

Haters



Haters tips

- Reply with love, or you'll feel like shit as well
- Many haters have (not so well) hidden reasons
- Develop a thick skin...

Haters are useful



5% rule

**No micro
benchmarks!
Command
calls**



5% rule

```
/* Our hash table capability is a power of two */
static unsigned long _dictNextPower(unsigned long size)
{
    unsigned long i = DICT_HT_INITIAL_SIZE;

    if (size >= LONG_MAX) return LONG_MAX + 1LU;
    while(1) {
        if (i >= size)
            return i;
        i *= 2;
    }
}
```


Fuzz testing
is **powerful**



ComputerHope.com

Possible states
VS
lines of code

Fuzz testing radix tree edition

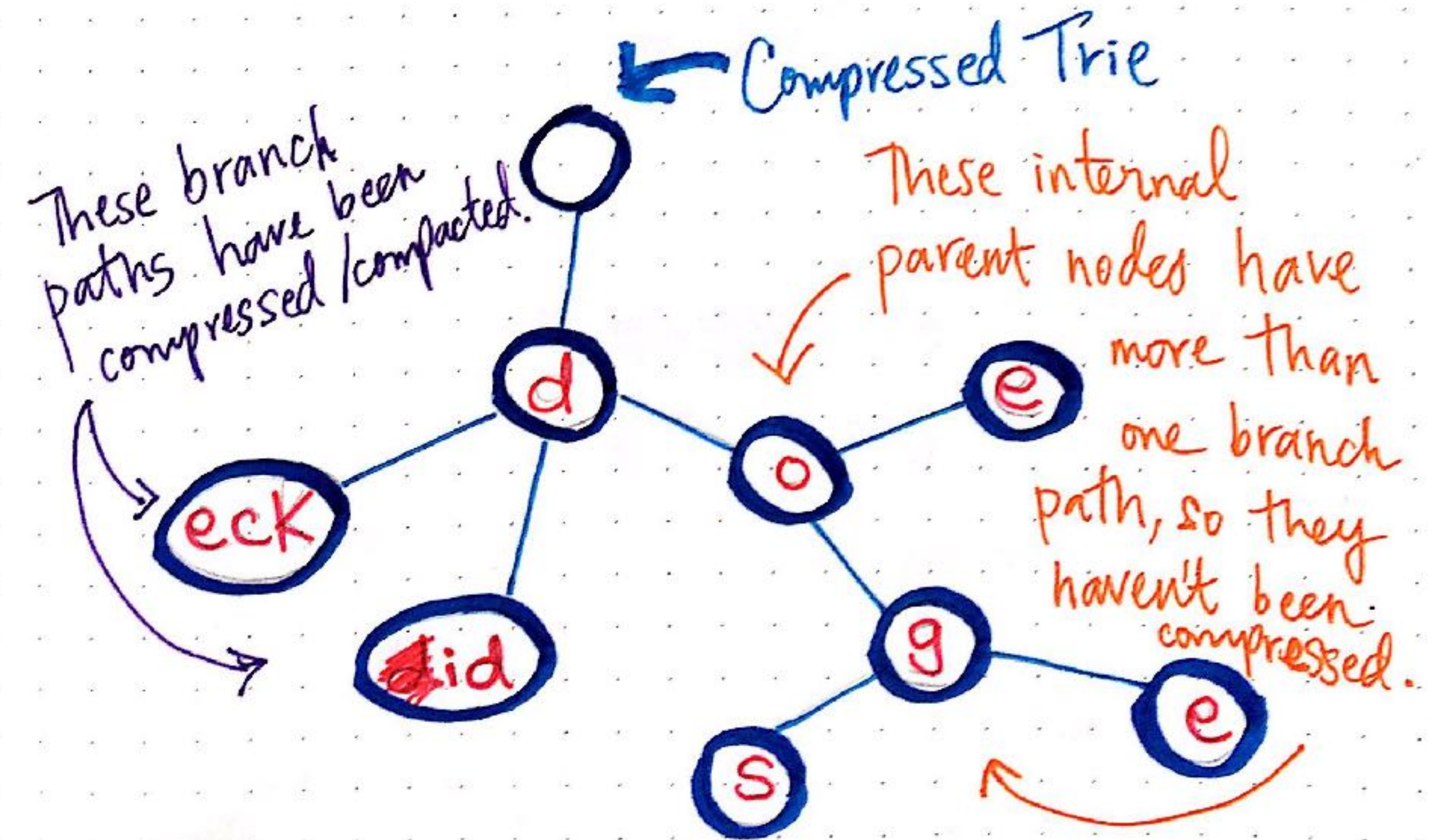
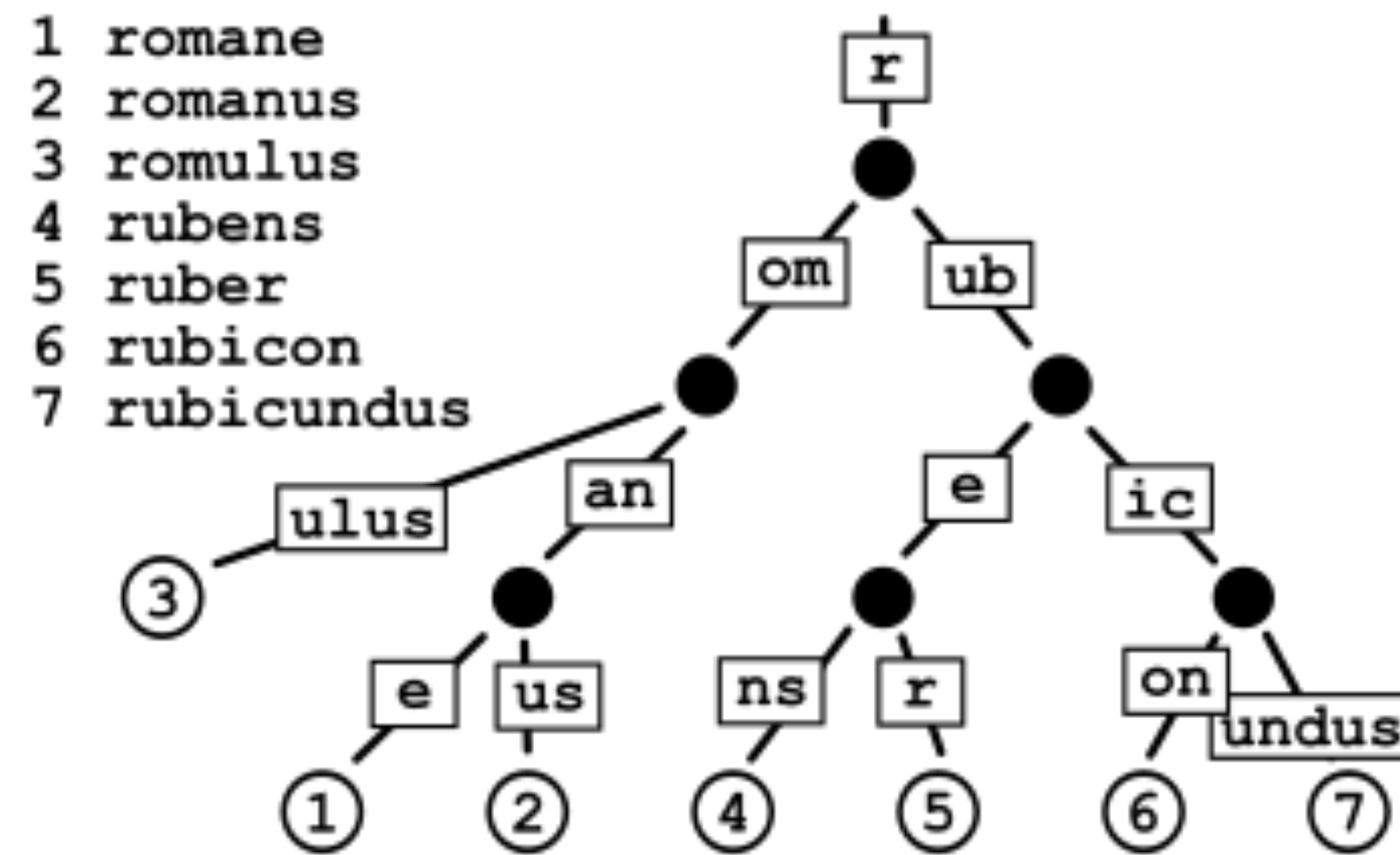
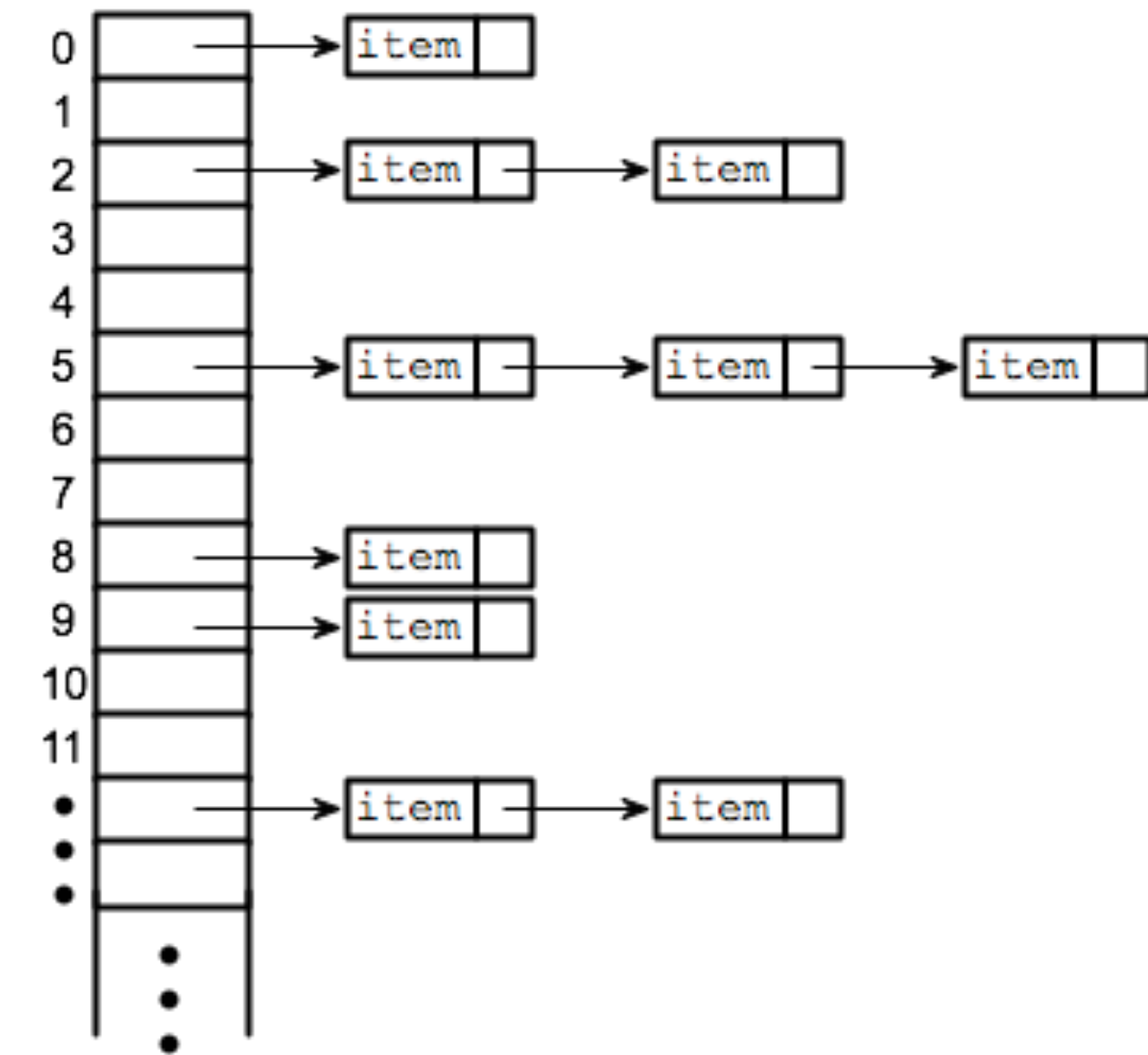


Image courtesy of Vaidehi Joshi
<http://medium.com/basecs>

Fuzz testing + comparison



Implementation



Alternative
implementation

Backward compatibility



Giving credits



Credits

- Publish a change log with names at every release
- Tweet about contributors accomplishment
- Invent symbolic prices to give to the best contribs

Failures bias





A system is the sum of the behavior
it has during **failures** and during
normal operations



Thanks

Ask me anything if you wish!

{codemotion}