Two Hard Things

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API DESIGN

> *There are only two hard things in Computer Science: cache invalidation and naming things.*
>
> *-- Phil Karlton*

Long a favorite saying of mine, one for which I couldn't find a satisfactory URL.

Like many good phrases, it's had a host of riffs on it. A few of them I feel are worth adding to the page

> *There are 2 hard problems in computer science: cache invalidation, naming things, and off-by-1 errors.*
>
> *-- Leon Bambrick*

> *There are only two hard problems in distributed systems: 2. Exactly-once delivery 1. Guaranteed order of messages 2. Exactly-once delivery*
>
> *-- Mathias Verraes*

> *there's two hard problems in computer science: we only have one joke and it's not funny.*
>
> *-- Phillip Scott Bowden*

> *There are so many variations on the "there are only two hard problems in computer programming..." joke that I'm starting to suspect that programming isn't actually very easy.*
>
> *-- Nat Pryce*

The first place anyone found it on the internet was in Tim Bray's blog. Tim said that he first heard it around 1996-7

Revisions

2009-07-14: original post

2010-12-21: added off-by-one variation (unattributed)

2015-08-14: added distributed tweet

2017-03-30: added proper tweet for off-by-one and mention of Tim Bray's source

2017-12-22: added the Phillip Scott Bowden tweet

2021-05-24: added Nat Pryce tweet

Acknowledgements

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