



A curated list of falsehoods programmers believe in.



The logic of the world is prior to all truth and falsehood.

— Ludwig Wittgenstein^[1]

Falsehood articles are a form of commentary on a particular subject, and are appreciated by the developer community at large for their effectiveness and terseness. They're a convenient written form to approach an unfamiliar domain by dispelling myths, point out common pitfalls, show inconsistencies and subtleties.

In a sense, *Falsehood* articles are a suite of wordy unit-tests covering extensive edge-cases provided by real-world usage.

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Meta

- [Falsehoods Programmers Believe](#) - A brief list of common falsehoods. A great overview and quick introduction into the world of falsehoods.
- [Falsehoods About Programming](#) - A humbling and fun list on programming and programmers themselves.
- [Falsehoods About Falsehoods Lists](#) - Meta commentary on how these falsehoods shouldn't be handled.

Arts

- [Falsehoods About Music](#) - False assumption that might be made in codifying music.
- [Falsehoods About Art](#) - Common misconceptions about art.

Business

- [Falsehoods About Online Shopping](#) - Covers prices, currencies and inventory.
- [Falsehoods About Prices](#) - Covers currencies, amounts and localization.
- [Falsehoods About IBANs](#) - International Bank Account Numbers are not international.
- [Falsehoods About Economics](#) - Economics are not simple or rational.
- [Falsehoods About Cars](#) - Even something as common as defining a car is full of pitfalls.
- [Decimal Point Error in Etsy's Accounting System](#) - The importance of types in accounting software: missing the decimal point ends up with 100x over-charges.
- [Characters < and > in company names lead to XSS attacks](#) - Because [UK allows companies to be registered with special characters](#), a hacker leveraged them to register `\">><SCRIPT SRC=MJT.XSS.HT></SCRIPT> LTD` , but also `; DROP TABLE "COMPANIES";-- LTD , BETTS & TWINE LTD` and `SAFDASD & SFSAF \' SFDAASF\' LTD` .
- [CLDR currency definitions](#) - Currency validity date ranges overlap due to revolts, invasions, new constitutions, and slow planned adoption.

- [tax](#) - A PHP 5.4+ tax management library.

Dates and Time

- [Falsehoods About Time](#) - Seminal article on dates and time.
- [More Falsehoods About Time](#) - Part. 2 of the article above.
- [Falsehoods About Time and Time Zones](#) - Another takes on time-related falsehoods, with an emphasis on time zones.
- [Critique of Falsehoods About Time](#) - Takes on the first article above and provides an explanation of each falsehood, with more context and external resources.
- [Your Calendrical Fallacy Is Thinking...](#) - List covering intercalation and cultural influence, made by a community of iOS and macOS developers.
- [Time Zone Database](#) - Code and data that represent the history of local time for many representative locations around the globe.
- [The Long, Painful History of Time](#) - Most of the idiosyncrasies in time keeping can find an explanation in history.
- [You Advocate a Calendar Reform](#) - Your idea will not work. This article tells you why.
- [Falsehoods programmers believe about time zones](#) - Has some nice points regarding the edge-cases of DST transitions.
- [So You Want to Abolish Time Zones](#) - Abolishing timezones may sound like a good idea, but there are quite a few complications that make it not quite so.
- [The Problem with Time & Timezones](#) - A video about why you should never, ever deal with timezones if you can help it.
- [\\$26,000 Overcollection by Labor Department](#) - The consequence of wrong calendar accounting.
- [ISO-8601, yyyy , yyyy , and why your year may be wrong](#) - String formatting of date is hard.
- [UTC is Enough for everyone, right?](#) - There are edge cases about dates and time (specifically UTC) that you probably haven't thought of.
- [Storing UTC is not a silver bullet](#) - "Just store dates in UTC" is not always the right approach.
- [Falsehoods about Unix Time](#) - Mind the leap second!
- [Why is subtracting these two times \(in 1927\) giving a strange result?](#) - Infamous Stack Overflow answer about both complicated historical timezones, and how historical dates can be re-interpreted by newer versions of software.
- [Critical and Significant Dates](#) - From Y2K to the overflow of 32-bit seconds from unix epoch, a list of special date to watch for depending on the system.

Education

- [Falsehoods CS Students \(Still\) Believe Upon Graduating](#) - A list of things (not only) computer science students tend to erroneously and at times surprisingly believe even though they (probably) should know better.
- [Postdoc myths](#) - Lots of things are said, written and believed about postdoctoral researchers that are simply not true. .

Emails

- [I Knew How to Validate an Email Address Until I Read the RFC](#) - Provides intricate examples that are unsuspected valid email addresses according the RFC-822.
- [So you think you can validate email addresses \(FOSDEM 2018\)](#) - Presentation of edge-case email addresses and why you should not use regex to parse them.

Geography

- [Falsehoods About Geography](#) - Takes on places, their names and locations.
- [Falsehoods About Maps](#) - Covers coordinates, projection and GIS.
- [I Hate Coordinate Systems](#) - A guide for geospatial practitioners oin diagnosing and fixing common issues with coordinate systems.
- [Top 5 most insane kanji place names in Japan](#) - "There's one special group of kanji that's hard even for Japanese people to read: place names."

Human Identity

- [Falsehoods About Names](#) - The article that started it all.
- [Falsehoods About Names – With Examples](#) - A revisited version of the article above, this time with detailed explanations.
- [Falsehoods About Biometrics](#) - Fingerprints are not unique.
- [Falsehoods About Gender: #1 & #2](#) - Gender is part of human identity and has its own subtleties.
- [Gay Marriage: The Database Engineering Perspective](#) - How to store a marriage in a database while addressing most of the falsehoods about gender, naming and relationships.
- [Falsehoods Programmers Believe About Families](#) - You can't really define a family with strict rules.
- [Personal Names Around the World](#) - How do people's names differ around the world, and what are the implications for the Web?
- [XKCD #327: Exploits of a Mom](#) - Funny take on how implementation of a falsehood might lead to security holes.

- [Hello, I'm Mr. Null. My Name Makes Me Invisible to Computers](#) - Real-life example on how implemented falsehood has negative impact on someone's life.
- [My name causes an issue with any booking!](#) - Old airline reservation systems considers the MR suffix as Mister and drops it.
- [HL7 v3 RIM](#) - A flexible data model for representing human names.
- [Apple iOS NSPersonNameComponentsFormatter](#) - Localized representations of the components of a person's name.
- [Falsehoods About Me](#) - Issues at the intersection of names and gender and internationalization.

Internationalization

On character encoding, string formatting, unicode and internationalization.

- [Falsehoods About Language](#) - Translating a software from English is not as straightforward as it seems to be.
- [Internationalis\(z\)ing Code](#) - A video about things you need to keep in mind when internationalizing your code.
- [Minimum to Know About Unicode and Character Sets](#) - A good introduction to unicode, its historical context and origins, followed by an overview of its inner working.
- [Awesome Unicode](#) - A curated list of delightful Unicode tidbits, packages and resources.
- [Dark corners of Unicode](#) - Unicode is extensive, here be dragons.
- [Let's Stop Ascribing Meaning to Code Points](#) - Dives deeper in Unicode and dispels myths about code points.
- [Breaking Our Latin-1 Assumptions](#) - Most programmers spend so much time with Latin-1 they forgets about other's scripts quirks.
- [Ode to a shipping label](#) - Character encoding is hard, more so when each broken layer of data input adds its own spice.
- [i18n Testing Data](#) - Compilation of real-word international and diverse name data for unit testing and QA.
- [Big List of Naughty Strings](#) - A huge corpus of strings which have a high probability of causing issues when used as user-input data. A must have set of practical edge-cases to test your software against.

Management

- [Falsehoods About Job Applicants](#) - Assumptions about job applicants and their job histories aren't necessarily true.

Multimedia

- [Falsehoods About Video](#) - Cover it all: video decoding and playback, files, image scaling, color spaces and conversion, displays and subtitles.

Networks

- [Falsehoods About Networks](#) - Covers TCP, DHCP, DNS, VLANs and IPv4/v6.
- [Fallacies of Distributed Computing](#) - Assumptions that programmers new to distributed applications invariably make.
- [There's more than one way to write an IP address](#) - Some parts of the address are optional, mind the decimal and octal notations, and [don't forget IPv6](#) either.
- [hostname-validate](#) - An attempt to validate hostnames in Python.

Phone Numbers

- [Falsehoods About Phone Numbers](#) - Covers phone numbers, their representation and meaning.
- [libphonenumber](#) - Google's common Java, C++ and JavaScript library for parsing, formatting, and validating international phone numbers. Also available for [C#](#), [Objective-C](#), [Python](#), [Ruby](#) and [PHP](#).

Postal Addresses

- [Falsehoods About Addresses](#) - Covers streets, postal codes, buildings, cities and countries.
- [Falsehoods About Residence](#) - It's not only about the address itself, but the relationship between a person and its residence.
- [Letter Delivered Despite No Name, No Address](#) - Ultimate falsehood about postal addresses: you do not need one.
- [The Bear with Its Own ZIP Code](#) - Smokey Bear has his own ZIP Code (20252) because he gets so much mail.
- [Regex and Postal Addresses](#) - Why regular expressions and street addresses do not mix.
- [Parsing the Infamous Japanese Postal CSV](#) - "I saw many horrors, but I've never seen this particular formatting choice anywhere else."
- [libaddressinput](#) - Google's common C++ and Java library for parsing, formatting, and validating international postal addresses.
- [addressing](#) - A PHP 5.4+ addressing library, powered by Google's dataset.
- [postal-address](#) - Python module to parse, normalize and render postal addresses.
- [address](#) - Go library to validate and format addresses using Google's dataset.

Science

- [Falsehoods About Systems of Measurement](#) - On working with systems of measurement and converting between them.

Society

- [Falsehoods About Political Appointments](#) - Designing election systems has its own tricks.
- [Falsehoods About Women In Tech](#) - Myth about women in STEM (Science, Technology, Engineering, Math) industries.

Software Engineering

- [Falsehoods About Versions](#) - Attributing an identity to a software release might be harder than thought.
- [Falsehoods About Build Systems](#) - Building software is hard. Building software that builds software is harder.
- [Myths About File Paths](#) - Diversity of file-systems and OSes makes file paths a little harder than we might think of.
- [Falsehoods About REST APIs](#) - Pitfalls to be mindful of when creating and documenting APIs.
- [Falsehoods About CSVs](#) - While RFC4180 to exists, it is far from definitive and goes largely ignored.
- [Falsehoods About Package Managers](#) - Covers package and their managers.
- [Falsehoods About Testing](#) - An attempt to establish a list of falsehoods about testing.
- [Popular misconceptions about `mtime`](#) - Part of a post on why file's `mtime` comparison could be considered harmful.
- [Falsehoods About Pagination](#) - Why your pagination algorithm is giving someone (possibly you) a headache.
- [Rules for Autocomplete](#) - Not falsehoods *per-se*, but still a great list of good practices to implement autocompletion.
- [Floating Point Math](#) - "Your language isn't broken, it's doing floating point math. (...) This is why, more often than not, $0.1 + 0.2 \neq 0.3$."
- [Falsehoods About Search](#) - Why search (including analysis, tokenization, highlighting) is deceptively complex.
- [Hi! My name is...](#) - This talk could have been named "falsehoods about usernames (and other identifiers)".
- [Myths about `/dev/urandom`](#) - There are a few things about `/dev/urandom` and `/dev/random` that are repeated again and again. Still they are false.

- [Myths about CPU Caches](#) - Misconceptions about caches often lead to false assertions, especially when it comes to concurrency and race conditions.
- [The Hidden Complexity of Downloading Favicons, Told in 15+ Edge Cases](#) - Downloading that little icon you see in you browser tabs should be a simple exercise. It turned out to be a lot more complicated than you think. Be vigilant that you are not shaving a Yak.
- [Norway is not False](#) - Norway's ISO country code is also valid YAML for False.

Typography

- [Falsehoods About Fonts](#) - Assumptions about typography on the web and in desktop applications.
- [Truths programmers should know about case](#) - A complete reverse of the falsehoods format, on the topic of case (as in uppercase and lowercase text).

Contributing

Your contributions are always welcome! Please take a look at the [contribution guidelines](#) first.

Footnotes

The [header image](#) is based on a modified [photo taken in February 2010 by Iza Bella](#), distributed under a [Creative Commons BY-SA 2.0 UK license](#).

[1]: [Notebooks, 1914-1916, page 14e](#) (Harper & Brothers, New York, 1961). [\[1\]](#)
