

The Naming of Things, or What Color Should We Paint That Bike Shed?

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Abstract

Choosing a name for a new entity can be a challenge. Typically authors will provide recommended names, but they are often looking for feedback. Sometimes authors may assume the committee will want to rename things anyway, and so provide only provisional names. Sometimes, even though the authors are happy with a name, the reviewing subcommittee will go through a name selection process anyway. This paper addresses some concerns with our current practices and suggests a different approach. It also considers the implications of using the term “bikeshed” to refer to name selection.

This paper is targeted at the growing collection of guidelines available to assist authors in writing papers for consideration by WG21. Guidelines help by bringing up issues that authors may not have considered, and by providing documentation of agreed-upon best practices. The goal is to help authors move their papers through the standardization process as efficiently as possible.

Naming

*The Naming of Cats is a difficult matter,
It isn't just one of your holiday games...¹*

I am convinced that good names are a key component of software design. In fact, I believe they are usually the first step in the design process. I find that having the right names makes it easier to design and write the code, especially the public API. I have also noticed that if I'm having trouble finding a good name, it's most likely the *design* that has a problem. Linguists believe that if a language does not have a word for something, native speakers may have difficulty thinking about it.² I'm not a linguist, but I know I have a much easier time thinking about elements of my code if I have the right names for them. I suspect that the same argument applies to the closely related problem of selecting symbology for new core language features.

This is not to suggest that finding good names is necessarily easy—sometimes it requires profound meditation. But I'm convinced that making naming the first stage of design and treating it with as much respect as any other major design factor will result not only in the best names but in a superior design. In a sense, the design will be built around the name.

This philosophy leads to several observations:

- Those most familiar with the design and problem space are best equipped to find good names.
- Those less familiar are less likely to come up with better names.
- Changing a name can be a major design change and risks breaking the integrity of the design.

Bikeshedding

According to Wikipedia, the term “bikeshed” was coined by Poul-Henning Kamp in 1999 to describe an observation by C. Northcote Parkinson in 1957 called the *law of triviality*. This law states, “...that people within an organization commonly give disproportionate weight to trivial issues.”³

The point is that it’s easier (and I would add, more fun) for a committee to be distracted by simple and unimportant issues than to dig into difficult but important problems which (in many cases) only a minority of those present fully understand. I imagine everyone reading this has been on the incomprehension side of this experience many times. (I certainly have.)

This term is frequently used (perhaps somewhat tongue-in-cheek) to describe the selection of names for various proposed C++ entities. I submit that name selection is *not* bikeshedding because it is a planned and clearly necessary task, and especially because it is *not* a trivial issue.

Recommendations for Naming

A major goal of WG21 is to reap the benefits of a combination of rigorous peer review of papers and thorough code review of the language and library. We are trying to enlist the wisdom of crowds⁴ to make C++ the best it can be. Issues at all levels of design and implementation are fair game, and so, clearly, are names.

I suggest that authors make naming recommendations that reflect a clear, strong design. If a name is not obvious, or there is any (known) controversy about it, the paper should include a rigorous rationale for its selection. If the authors are not certain and desire feedback on a name, or a list of suggestions from the Committee, they should certainly ask. (Although recall my caveat above about hard-to-name things—if a good name is elusive, there may be an underlying reason.) The authors should consider all the feedback and make a final recommendation.

If anyone reading the paper has an issue with a name, it should be addressed in the same way as any other major design factor: by a well-reasoned argument presented in a paper. (Or perhaps in a more casual way, as we sometimes do, but with no less care.) If a rigorous rationale for a name change cannot easily be articulated, then it’s likely the change is not an improvement.

I especially recommend that we abandon the practice of polling names (whether at meetings or on the reflector). When we do so, we probably *are* in fact bikeshedding—that is, focusing on an aspect of the proposal we think we understand and (mistakenly) believe to be easy. Names are far more important than the color of a bicycle shed: they should not be chosen by a beauty contest any more than constructor overload sets.

Notes

- 1: Eliot, T. S. “The Naming of Cats” from *Old Possum's Book of Practical Cats*. 1939.
- 2: Wikipedia contributors. “Linguistic relativity.” *Wikipedia, The Free Encyclopedia*. Web. 11 Jan. 2025.
- 3: Wikipedia contributors. “Law of triviality.” *Wikipedia, The Free Encyclopedia*. Web. 11 Jan. 2025.
- 4: Surowiecki, James. *The Wisdom of Crowds*. Anchor Books, 2005.