

CS 240: Design Principles - Good Naming Transcript

[00:00:00] **INSTRUCTOR:** The next principle of good software design is good naming. In programming, we have to give names to lots of different kinds of things. We have to create names for our classes, our methods and functions, our variables.

[00:00:16] We have to create names for various files that are in our project. We have to create a name for the project itself. We have to name the folders, the packages, just everything that we create in a program.

[00:00:27] We have to come up with a name for it. And so it turns out that as a designer, your naming skills are going to be really important. And your children will also appreciate good naming skills because you don't want to give them names that they're going to regret.

[00:00:45] And so it is important to take good naming seriously and to become good at it. And when I'm programming, one of the things I use sometimes is a thesaurus. As I'm trying to think of a word that describes a particular concept that I have in my mind, sometimes I'll turn to a thesaurus so I can get different options for the concept that I'm trying to express.

[00:01:06] And so that's how seriously I take good naming. So let's talk about the class and method names specifically. A class should have a name that describes what the class represents. So a class should represent some concept that's important to your program.

Start visual description. Slide titled Naming. Text reads:

- *A central part of abstraction is giving things names (or identifiers)*
- *Selecting good names for things is critical*
- *Class, method, and variable names should clearly convey their function or purpose*

- *Class and variable names are usually nouns*
- *Method names are usually verbs*

End visual description.

[00:01:26] Like family history, we talked about a person class. Or in banking, we talked about an account class. So every class should represent some well-defined concept or abstraction. And we simply name a class after the concept that it represents.

[00:01:47] And that's usually fairly obvious. Now one thing about class names is that classes should typically have nouns for their names. That's because classes and objects represent the things that are in the software, and so things would be named with nouns.

[00:02:05] And so if you find yourself naming a class with a verb or a verb phrase, then you're probably off in the weeds a little bit and not necessarily doing it quite right. Now, method names are oftentimes verbs or verb phrases, because typically a method when you call it, it does something.

[00:02:26] And the reason you call it is because it does something useful. And so because methods do things, their names are oftentimes verbs. Now, that's not universal. Sometimes it is appropriate to name methods with nouns.

[00:02:41] For example, sometimes the properties of an object or the attributes of an object are named with nouns, depending on what programming language you're in. So for example, in Java, if a person has a name, that person class would probably have a get name and a set name.

[00:02:59] And so in Java, we wouldn't, even in that case, name our methods with verbs or nouns, we would use the getter setter paradigm. But another language is the get

set pattern is not followed. And so in other languages, you might see that they would name the method on a class that returns the name of the person.

[00:03:21] They might actually name the method name. And so you would call `person.name` and it would return their name. Or you could even name the method that sets a person's name as well. So you could say `person.name` and then pass in the new name for the person as a parameter.

[00:03:40] And so in some languages and environments, they will use nouns to name their methods if those methods are of the setter getter variety. And there are a few other places where methods might be named with nouns.

[00:03:56] But for the most part, the name of a method should be a verb. Same for variables. So if I have local variables or if I have variables inside my class, then those would be named with nouns typically as well because each variable represents some piece of data, which is a thing.

[00:04:18] And so oftentimes your variables would be named with nouns as well.