

That's approximately when Lincoln Colling a lecturer in the psychology department at the University of Sussex, told me that he had asked students to pull a file out of a specific directory and was met with blank stares. It was the same semester that Nicola Guarinateo, an applied physicist and lecturer at Colombia's Universidad EAFIT, noticed that students in his classes were having trouble finding their documents. It's the same year that posts began to pop up on STEM-educator forums asking for help in explaining the concept of a file.

More broadly, directory structure connotes physical placement of the idea that a file stored on a computer is located somewhere on that computer, in a specific and discrete location. That's a concept that's always felt obvious to Garland but seems completely alien to her students. "I tend to think an item lives in a particular folder. It lives in one place, and I have to go to that folder to find it," Garland says. "They see it like one bucket, and everything's in the bucket."

As an operations research and financial engineering major, Grossman knows how to program. He's been trained to navigate the data of his life, even though out his undergraduate years, and he understands their importance in his field. But it's still not entirely natural, and, at some point, he's almost halfway through a recent nine-month research project, he'd built up so many files that he gave up on them and let the structure of the project be organized, but there's a certain point where there are so many files that it kind of just became a *hot mess*.

It's not just Grossman's files. It's ended up in one massive folder.

Professor Playvchan, an associate professor of physics and astronomy at George Mason University, has seen similar behavior before. "I've been told, 'I can't quite wrap my head around it.' 'Students have had these computers in my lab; they'll be able to find it.' And then their desktop completely unorganized," he told *The Verge*, somewhat incredulously. "I'm kind of a mess, but I have organized, but they have no problem having 1,000 files in the same directory. And I think that is fundamental about how people use it, how we access files." Aubrey Vogel, a journalism major at Texas A&M, has had similar experiences. She says she has never altered directory structure before; she shared a computer with her grandfather, who showed her how to save files. She says she was a child. But as she's grown up, she's moved away from that system — she now keeps one main directory for all her files, and one for her job. Documents she's not sure about go in a third folder called "Sort."

But as it is, the system seems to be organized and try for them to be organized, it's just a big hot mess," Vogel says of her system. "I don't know if I'm always given me a hard time when they see my computer screen, and it has like 50 thousand icons."

She says she made no changes, changed? Dressman, for his part,

It's possible that the analogy movie professors pointed to — filing cabinets — is not the best one. For many students Drossman's age spent their high school years storing documents in the likes of OneDrive and Google Drive, not in physical spaces. It could also have to do with the other software they're accustomed to doing some things in, like Instagram, TikTok, Facebook, and YouTube all involve pulling content from a [very online sea](#) of information, rather than in a nested hierarchy. “When I want to scroll over to Snapchat, they’re not in any particular order,” says Vogel, who is a devoted iPhone user, “it all boils down to muscle memory.”

But it may also be that in an age where every conceivable user interface includes a search function, young people have never needed folders or directories for the tasks they do. The first internet search engines were used around 1990, but features like Windows Search and Spotlight on macOS are both products of the early 2000s. Most of 2017's college freshmen were born in the very late '90s. They were in elementary school when the iPhone

s "it's the idea that a modern computer doesn't just save a file in an infinite expanse; it saves it in the "Downloads" folder, the "Desktop" folder, or the "Documents" folder, all of which live within "This PC," and each of which might have folders nested within them, too."