CS 240: Design Principles - Introduction Transcript

[00:00:00]   **INSTRUCTOR:** In this lecture, we're going to talk about principles of software design. Software design is mostly about how we organize our code into projects, and modules, and files, and packages, and folders, and things like that.

[00:00:16]   And the main goal of software design is to keep everything structured and organized so that it's as understandable as possible. So, a few goals of software design that we have is, first of all, we want to create systems that work and that satisfy customer requirements.

[00:00:38]   Of course, that's the most important property of any software system is that it actually works and it makes its users happy, meets their needs. But beyond that, we want to make the internal structure of the source code as easy to understand as possible because people, usually multiple people are going to work on a project, you work in teams, and oftentimes you'll work on code that you personally didn't write.

[00:01:04]   Now in this class, you won't do that, but in the real world, you'll oftentimes need to work on code that somebody else wrote. And so, it's really important to make that code as readable as possible and as understandable as possible.

[00:01:18]   And making it clear and simple makes the code more debuggable, so it's easier to debug. It's also easier to maintain in the sense of enhancing the features, adding new features, things like that. And so, we need to make sure we have a clean internal design in our code so that those things are not too hard to do.

[00:01:41]   The other goal we have for software design is that we want to create a design that holds up well under changes because software is constantly changing. It's not like you just create it and then it stays static and fixed forever.

[00:01:56]   We create the initial software and then after that, it evolves, changes as people request new features, and as we have to fix bugs, and things like that. And so we would like to create a design for our program that doesn't fall apart the first time we need to add a new feature to it, and we don't want to have to just start over or redo it from the beginning.

[00:02:20]   We'd like to try to create designs that are flexible enough to handle new features that need to be added as time goes on. So those are some of the overall goals of software design.