Linkers and Loaders

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Abstract: Linkers and Loaders have been a fundamental part in the software building process since its very early days. The basic job of any linker or loader is simple, as it binds abstract names to concrete data, which helps the programmer write code that is easier to read. Linkers do the part of relative address binding, assigning each name within the program, and the loader doing a relocation step to assign actual addresses.

In this talk we are going to focus on the advance techniques that modern linkers do, such as trial linking, removing duplicate code, and some special characteristics of C++.

For example, a trial linking is a pioneer approach that takes 2 steps, the first one will run a trial which will generally fail, and then provides information about it that helps the final compiling. In relation to the previous approach, comes the removal of duplicate code, which tries to generate all the possible code, and then has it removed by the linker.

There are some other topics that won't be in the presentation but deserve a mention, like the Java linking model (more semantically complex than any of the other linkers mentioned), or link time code generation and optimization.