Modern Compiler Design - Section 6.2

Source language data representation and handling - focus on Sections 6.2.9 and 6.2.10.

Presentation abstract

Every source language data types, like a record, array, pointer or object, are mapped to target language types (single bytes, integers of different size, address representations). Mapping from source to target language type is a task for the compiler. Our presentation focuses on the object types mapping.

Object type connects data and operations, therefor objects are based on records, routine calls and some auxiliary data called compile-time (dispatch, offset) tables and operations for pointer supertyping or subtyping. We clarify how method invocations are made. Object-oriented language features like simple and multiple inheritance, polymorphism and method overriding introduce complexity for source to target language mapping. We mention how dispatch tables are affected by some object-oriented features. We discuss overhead in multiple inheritance and show interface type, as a different solution for multiple inheritance.