VYPe – Project Lecture Notes (abstract)

Topic 25:   Compiler Design – Sections 5.1 – 5.3 (Object-oriented Languages)

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The goal of this presentation is to describe concepts of object-oriented languages, the compilation of methods and schemes for compilation of inheritance.

In the first part, we will focus on concepts of object-oriented languages. We will talk about objects that are the fundamental concepts of object-oriented languages. We will describe object classes, that can encapsulate data and also functions operating on this data. Last part of this section will focus on concept of inheritance, abstract classes and genericity.

Next part will focus on compilation of methods. Methods are essentially compiled like functions in imperative languages. The difference is that methods can access the features of their object directly.

Finally, we will talk about schemes for compilation of inheritance. Inheritance is the most important of the concepts introduced by object-oriented languages. This part will focus on inheritance in detail. Compilation schemes for simple and multiple inheritance will be explained.