Script **generated by TTT**

Title: Petter: Compiler Construction (18.06.2020) -33: Attribute Grammars

Date: Wed Jun 17 15:17:25 CEST 2020

Duration: 12:25 min

Pages: 13

Topic:

Semantic Analysis

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⇝ a semantic analysis annotates the syntax tree with attributes

Chapter 1:

Attribute Grammars

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- many computations of the semantic analysis as well as the code generation operate on the syntax tree
- what is computed at a given node only depends on the *type* of that node (which is usually a non-terminal)
- we call this a *local* computation:
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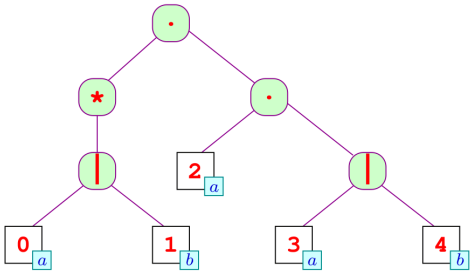
- in order to be able to evaluate the attribute equations, all attributes mentioned in that equation have to be evaluated already
  $\leadsto$ the nodes of the syntax tree need to be visited in a certain *sequence*

Example: Computation of the empty$[r]$ Attribute

Consider the syntax tree of the regular expression (a|b)*a(a|b):



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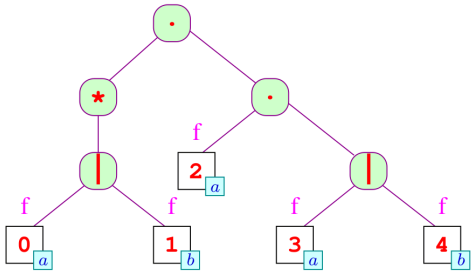

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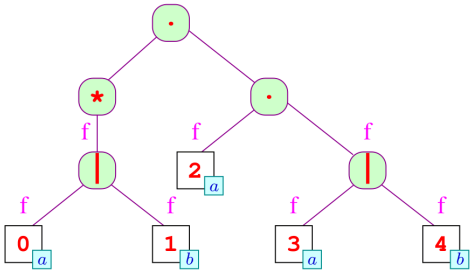

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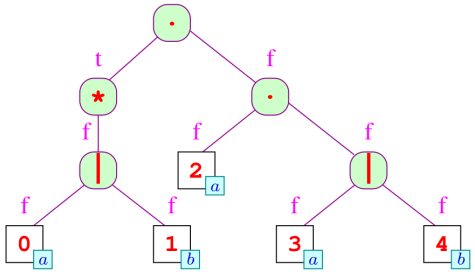

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