

Interpreter



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Overview



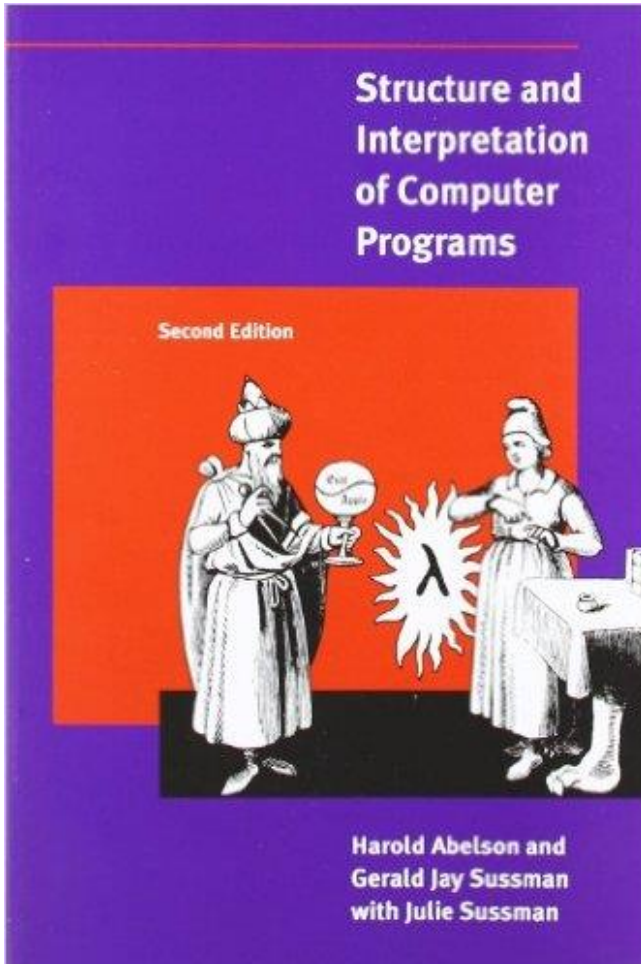
Motivation

Handmade Interpreter

Boost.Spirit



Motivation



Textual input needs to be processed

- E.g., turned into OOP structures

Some examples

- Programming language compilers, interpreters and IDEs
- HTML, XML and similar
- Numeric expressions ($2+3/4$)
- Regular expressions

Turning strings into OOP based structures is a complicated process

Interpreter

A component that processes structured text data. Does so by turning it into separate lexical tokens (lexing) and then interpreting sequences of said tokens (parsing).



Summary



Barring simple cases, an interpreter does two stages

Lexing turns text into a set of tokens, e.g.

$2*(3+4) \rightarrow$ Lit[2] Star Lparen Lit[3]
Plus Lit[4] Rparen

Parsing turns tokens into meaningful constructs

\rightarrow MultiplicationExpression{
Integer{2},
AdditionExpression {
Integer{3}, Integer{4}
}
}

Parsed data can then be traversed

