

Plan for Today

LR parsing as pushdown automata

Intro to PA4: Parsing and AST generation

- restricted grammar in example code
- parse trees versus ASTs
- using dot to visualize ASTs

Abstract syntax tree construction

- building them with nonterminal attributes
- examples: Figures 2.39, 5.10, 5.11
- variable declarations included?
- sequences of statements

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Example LR Parse Table

(1) $S \rightarrow S (S)$
 (2) $S \rightarrow \text{epsilon}$

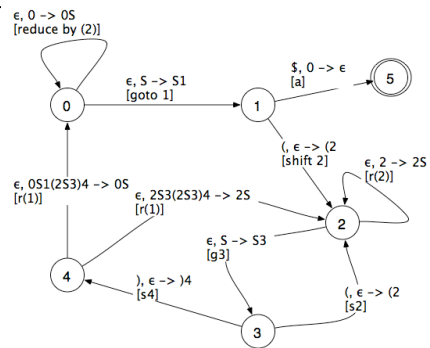
State	Action			Goto
	()	\$	S
0	r2	r2	r2	1
1	s2		accept	
2	r2	r2	r2	3
3	s2	s4		
4	r1	r1	r1	

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Pushdown Automata for Grammar

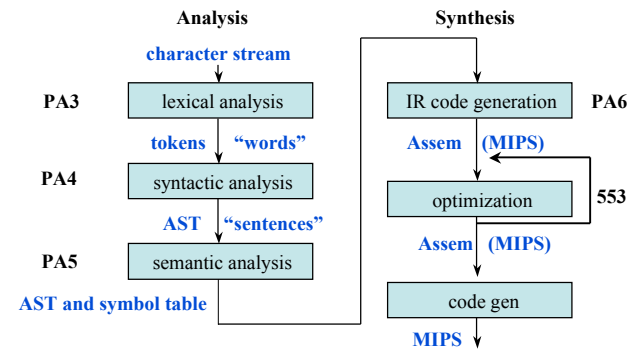


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Structure of the MiniJava Compiler

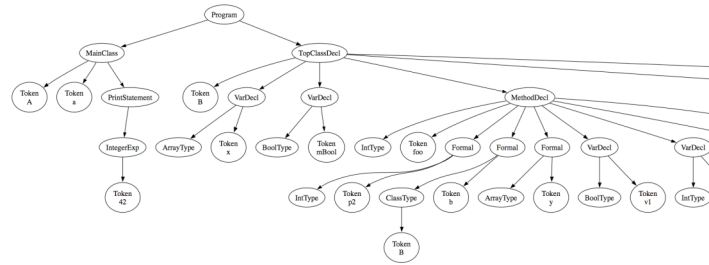


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Abstract Syntax Tree for Memory Layout Example



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