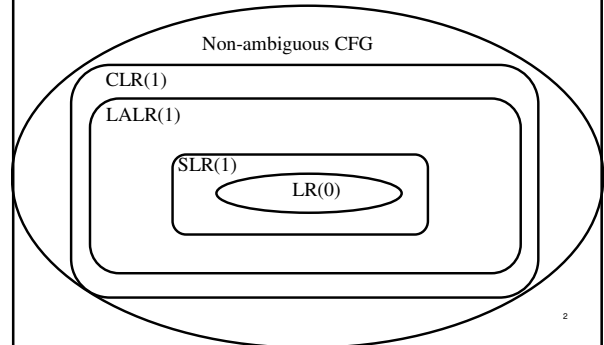


Compiler Construction

LR(1)

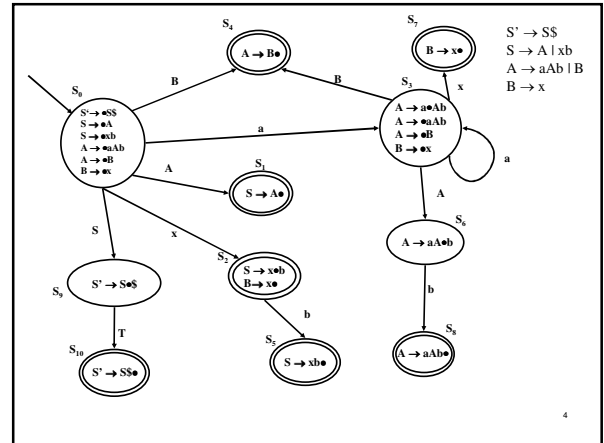
Rina Zvi-Girshin and Ohad Shacham
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LR Grammar Hierarchy



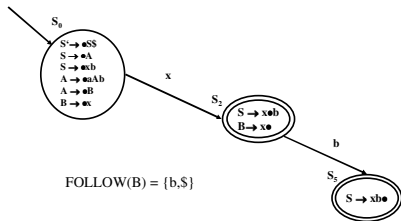
Example

$S' \rightarrow SS$
 $S \rightarrow A | xb$
 $A \rightarrow aAb | B$
 $B \rightarrow x$



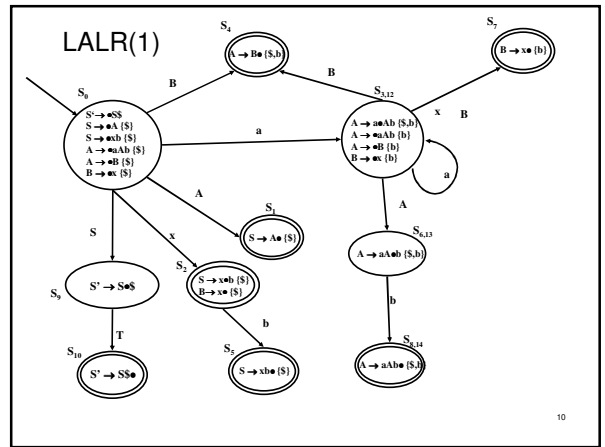
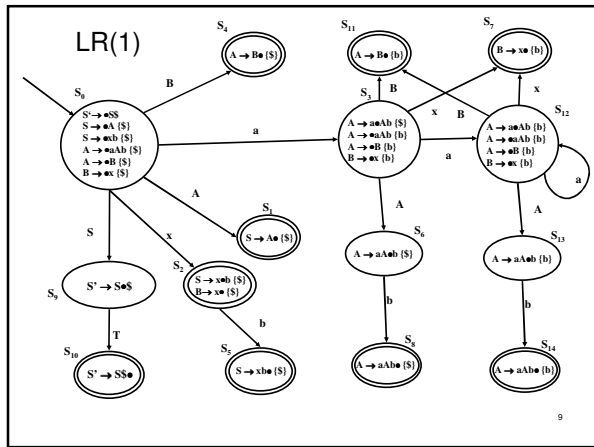
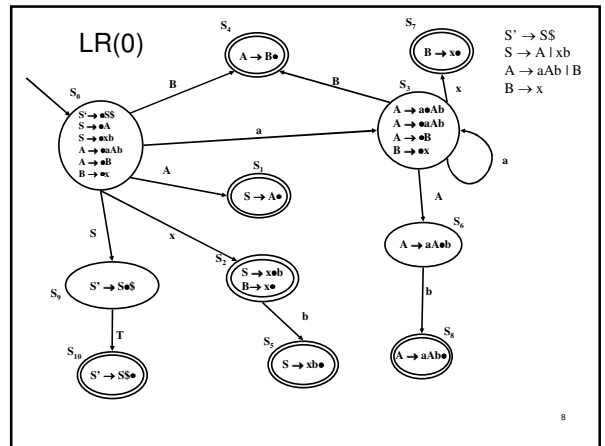
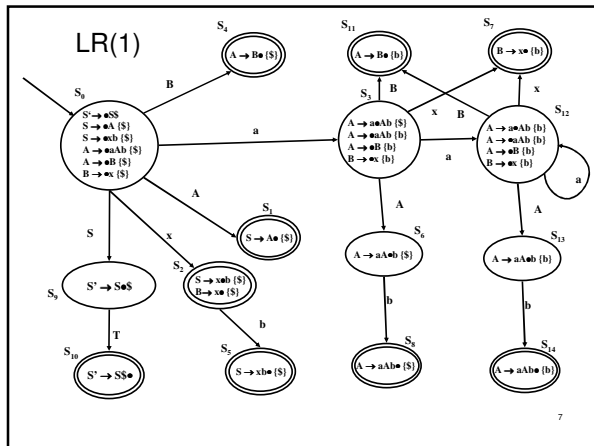
SLR(1)

- Calculate FOLLOW sets for each non terminal
- Use the FOLLOW set to break conflicts



LR(1)

- Keeps the specific look-ahead with each item
- Use the look-ahead to break conflicts
- More accurate than use the FOLLOW set



LALR(1)

- Combines states with the same items
- Much smaller parsing tables
- May introduce reduce-reduce conflicts
- Cannot introduce shift-reduce conflict

$$S \rightarrow A \bullet t B \{ \$ \}$$

$$C \rightarrow x \bullet \{ t y \}$$

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