

编译原理 - 作业(3) : 语法分析 LR

截至时间 : 2021.4.28/周四 上课前 (14:20)

提交方式 : 超算习堂 (<https://easyhpc.net/course/144>)

Q1: (p258, Exercises 4.6.2) Construct the SLR sets of items for the (augmented) grammar:

$$S \rightarrow S S + \mid S S * \mid a$$

Compute the GOTO function for these sets of items. Show the parsing table for this grammar. Is the grammar SLR?

Q2: (p278, Exercises 4.7.4) Show that the following grammar:

$$S \rightarrow A a \mid b A c \mid d c \mid b d a$$

$$A \rightarrow d$$

is LALR(1) but not SLR(1).

Q3: For the grammar:

$$F \rightarrow a F d \mid a F b \mid \varepsilon$$

Determine whether the grammar is SLR(1); if so, construct the corresponding parse table, and then give the parsing process for the input string *ab*.

Q4: For the grammar:

$$S \rightarrow F a \mid b F c \mid G c \mid b G a$$

$$F \rightarrow d$$

$$G \rightarrow d$$

Construct the DFAs based on LR(0) and LR(1) items.

Is it an SLR(1) grammar? Is it LALR(1)? Is it LR(1) ? (Please give reasons)