Homework 9: 分析输出路径

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1. 给定下面文法及语义动作，输入 bac 时对应的输出是什么？输入是 adc 时对应的输出是什么？请分别写出语义动作执行过程。

$$S \to bA\{\texttt{print('b');}\}B \mid AB$$
$$A \to aA\{\texttt{print('a');}\} \mid \epsilon\{\texttt{print('e');}\}$$
$$B \to c\{\texttt{print('c');}\} \mid dA\{\texttt{print('d');}\}B$$

解答

(1) 输入 bac

$S \to bA\{\texttt{print('b');}\}B$

$\quad \to baA\{\texttt{print('a');}\}\{\texttt{print('b');}\}B$

$\quad \to ba\{\texttt{print('e');}\}\{\texttt{print('a');}\}\{\texttt{print('b');}\}B$

$\quad \to ba\{\texttt{print('e');}\}\{\texttt{print('a');}\}\{\texttt{print('b');}\}c\{\texttt{print('c');}\}$

输出为：eabc

(2) 输入 adc

$S \to AB$

$\quad \to aA\{\texttt{print('a');}\}B$

$\quad \to a\{\texttt{print('e');}\}\{\texttt{print('a');}\}B$

$\quad \to a\{\texttt{print('e');}\}\{\texttt{print('a');}\}dA\{\texttt{print('d');}\}B$

$\quad \to a\{\texttt{print('e');}\}\{\texttt{print('a');}\}d\{\texttt{print('e');}\}\{\texttt{print('d');}\}B$

$\quad \to a\{\texttt{print('e');}\}\{\texttt{print('a');}\}d\{\texttt{print('e');}\}\{\texttt{print('d');}\}c\{\texttt{print('c')}\}$

输出为：eaedc