om: Foll

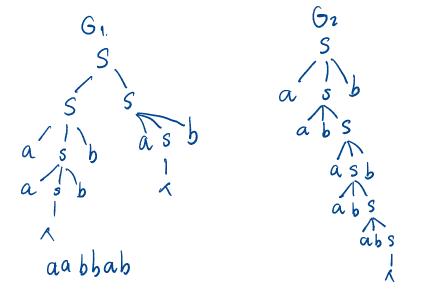
Theory of Computation

Exercise 9: (Context-free grammar part 2)

1. Show that $L(G1) \neq L(G2)$.

$$\lim_{\lambda \to a^{-}(,b^{-})} \begin{cases} G1 = (\{S\}, \{a, b\}, S, P1) \\ P1: S \to aSb \mid SS \mid \lambda \end{cases}$$

G2 = ({S}, {a, b}, S, P2)
P2:
$$S \rightarrow aSb \mid abS \mid \lambda$$



2. Find CFG for the language L.

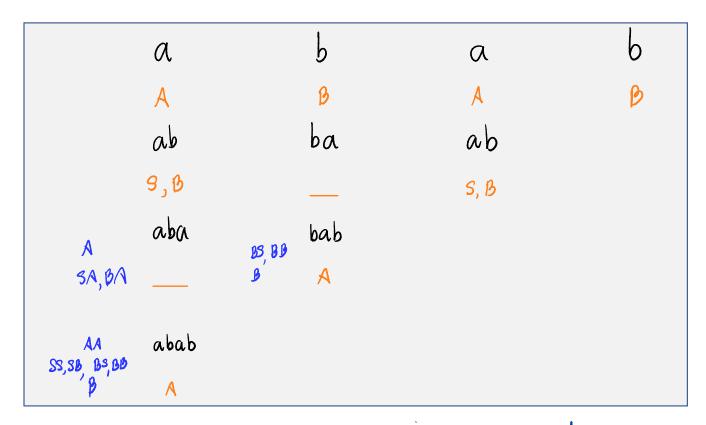
$$L = \left\{ \begin{array}{l} a^{i}b^{j}c^{k} : j = i + k \end{array} \right\}$$

$$\begin{array}{l} s \rightarrow A \subset I \land \\ A \rightarrow abA \mid \land \\ C \rightarrow b \subset I \land \end{array}$$

$$\begin{array}{l} s \rightarrow A C \\ A \rightarrow aAb \mid \land \\ C \rightarrow b C \subset I \land \end{array}$$

*3. Use CYK algorithm to find whether **abab** \in L(G). (Homework 7)

$$G: S \rightarrow AB$$
 $A \rightarrow BB$
 $A \rightarrow a$
 $B \rightarrow AB$
 $B \rightarrow b$



Ans สรุปได้อ่า abab & L(G) เมื่องาก ใหมาวาทัดที 4 (บางกัดสุดกัน) ใม่มี start variable