Right Linear Grammar

Definition $G = \{V, \Sigma, S, P\}$

V: a finite set of variable

Σ: a finite set of letters $\Sigma \cap V = \emptyset$

$S \in V$ the start symbol

P: finite set of productions of the function

$A \to xB$ and $A \to x$ where $A, B \in V$ and $x \in \Sigma^*$

$\mathcal{L}(G) = \{ w \in \Sigma^* \mid s \Rightarrow w \} =$

Example $V = \{S\}, \Sigma = \{a, b\}, P = \{S \to abS, S \to a\}$

Start with $S \Rightarrow abS \Rightarrow ababS \Rightarrow \cdots$

$\mathcal{L}(G) = \mathcal{L}\big((ab)^*a\big)$

Theorem $\forall G, \mathcal{L}(G) \in \mathcal{R}$

Given G, contruct a GFG with state $V \cup \{f\}, \Sigma, q_0 = S, F = \{f\}$

δ: for each production, $A \to xB$ add an edge from A to B labelled by x

for each production, $A \to x$ add an edge from A to f labelled by x