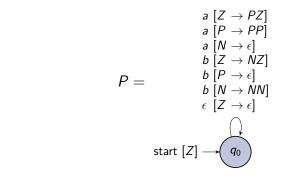
$$L_E(P) = \{ w \in \{a,b\}^* \mid N_a(w) = N_b(w) \}$$
 Word $w =$ a a b b b b a a b b Stack $\alpha =$

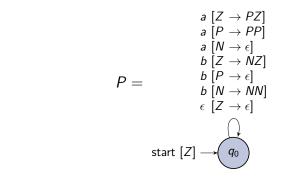
$$P = \begin{cases} a & [Z \to PZ] \\ a & [P \to PP] \\ a & [N \to \epsilon] \\ b & [Z \to NZ] \\ b & [P \to \epsilon] \\ b & [N \to NN] \\ \epsilon & [Z \to \epsilon] \end{cases}$$
start $[Z] \longrightarrow q_0$

$$A = \begin{bmatrix} Z o PZ \end{bmatrix}$$
 $A = \begin{bmatrix} P o PP \end{bmatrix}$
 $A = \begin{bmatrix} N o \epsilon \end{bmatrix}$

$$P = \begin{cases} a & [Z \to PZ] \\ a & [P \to PP] \\ a & [N \to \epsilon] \\ b & [Z \to NZ] \\ b & [P \to \epsilon] \\ b & [N \to NN] \\ \epsilon & [Z \to \epsilon] \end{cases}$$



$$L_E(P) = \{w \in \{\mathtt{a},\mathtt{b}\}^* \mid N_\mathtt{a}(w) = N_\mathtt{b}(w)\}$$
 Word $w = \begin{bmatrix} \mathtt{a} & \mathtt{a} & \mathtt{b} \\ \end{bmatrix} b b b a a a a b$ Stack $\alpha = \begin{bmatrix} & P & Z \\ \end{bmatrix}$

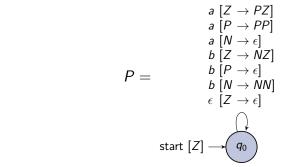


$$P = \begin{cases} a \ [Z \to PZ] \\ a \ [P \to PP] \\ a \ [N \to \epsilon] \\ b \ [Z \to NZ] \\ b \ [P \to \epsilon] \\ b \ [N \to NN] \\ \epsilon \ [Z \to \epsilon] \end{cases}$$

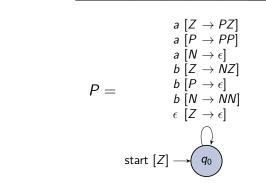
$$P = \begin{cases} a & [Z \to PZ] \\ a & [P \to PP] \\ a & [N \to \epsilon] \\ b & [Z \to NZ] \\ b & [P \to \epsilon] \\ b & [N \to NN] \\ \epsilon & [Z \to \epsilon] \end{cases}$$

$$P = \begin{cases} a & [Z \to PZ] \\ a & [P \to PP] \\ a & [N \to \epsilon] \\ b & [Z \to NZ] \\ b & [P \to \epsilon] \\ b & [N \to NN] \\ \epsilon & [Z \to \epsilon] \end{cases}$$

$$L_E(P) = \{w \in \{a,b\}^* \mid N_a(w) = N_b(w)\}$$
 Word $w =$ a a b b b b a a a Stack $\alpha =$



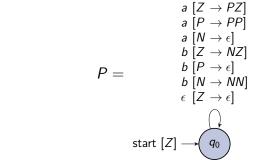
$$L_E(P) = \{w \in \{a,b\}^* \mid N_a(w) = N_b(w)\}$$
 Word $w = a$ a b b b b a a a Stack $\alpha = A$



$$L_E(P) = \{w \in \{a,b\}^* \mid N_a(w) = N_b(w)\}$$
Word $w =$ a a b b b b a a b b
Stack $\alpha =$

$$P \mid Z$$

$$a \mid Z \rightarrow PZ \mid$$



$$L_E(P) = \{w \in \{a,b\}^* \mid N_a(w) = N_b(w)\}$$
 Word $w = a$ a b b b b a a a a Stack $\alpha = | Z |$

$$P = \begin{cases} a \ [Z \to PZ] \\ a \ [P \to PP] \\ a \ [N \to \epsilon] \\ b \ [Z \to NZ] \\ b \ [P \to \epsilon] \\ b \ [N \to NN] \\ \epsilon \ [Z \to \epsilon] \end{cases}$$

aabbbbaaab $\in L_E(P)!$