

Construct a **PDA** that accepts the language by **empty stacks**:

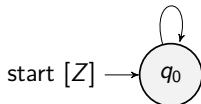
$$L_E(P) = \{w \in \{a, b\}^* \mid N_a(w) = N_b(w)\}$$

Word $w =$ a a b b b b a a a b

Stack $\alpha =$

						Z
--	--	--	--	--	--	---

$$P = \begin{array}{l} a [Z \rightarrow AZ] \\ a [A \rightarrow AA] \\ a [B \rightarrow \epsilon] \\ b [Z \rightarrow BZ] \\ b [A \rightarrow \epsilon] \\ b [B \rightarrow BB] \\ \epsilon [Z \rightarrow \epsilon] \end{array}$$



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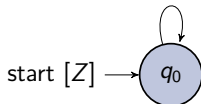
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a	a	b	b	b	b	a	a	a	b
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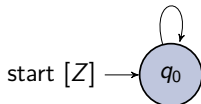
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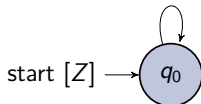
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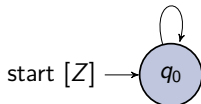
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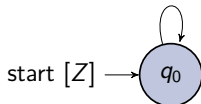
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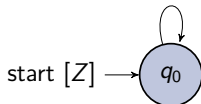
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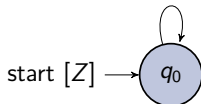
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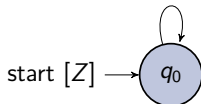
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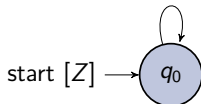
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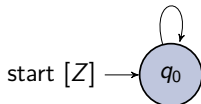
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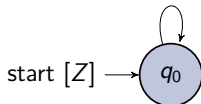
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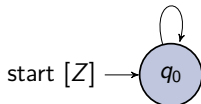
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aabbbbbaaab $\in L_E(P)$!