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Int 201: Decision Computation and Language
Tutorial 8

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Question 1. Show that all languages recognized by a regular PDA (standard nondeterministic PDA) can be recognized by a PDA that has only one accepting state.

Question 2. Show that all languages recognized by a regular PDA (standard nondeterministic PDA) can be recognized by a PDA that accepts when both its' stack is empty and its' in an accepting state.

Question 3. Show that all languages recognized by a regular PDA (standard nondeterministic PDA) can be recognized by a PDA where all transitions either push or pop the stack but not do both.

Question 4. Show that the language $\{ww|w \in \{0,1\}^*\}$ is not context-free by using the pumping lemma.

Question 5 (*Optional)**.** A deterministic PDA have deterministic transition function instead of relations. Can the palindrome language $\{ww^R|w \in \{0,1\}^*\}$ be recognized by a deterministic PDA? (no need for a proof)

Question 6 (*Optional)**.** Convert this PDA to CFG.

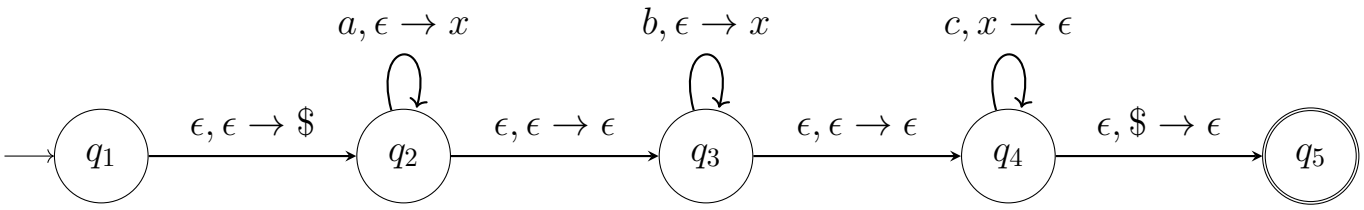

Figure 1: PDA for Q6