Homework
Module 12 & 13

Sec 7.1 : 6g, 10, 12, 14

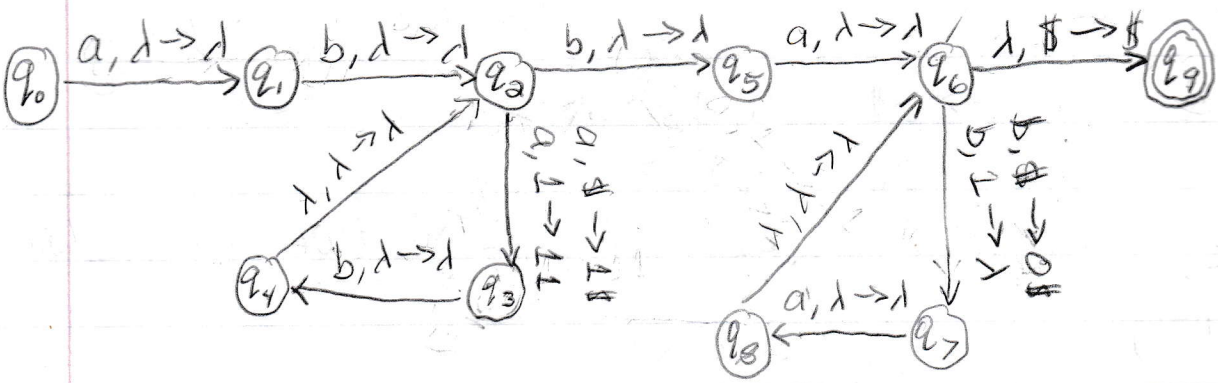
* for #12 the 2nd transition should be changed.
$\delta(q_1, b, 1) = \{(q_1, 11)\}$ changed into
$\delta(q_1, b, 1) = \{(q_2, 11)\}$

6. construct NPDA's that accept the following languages on $\Sigma = \{a, b, c\}$

g) $L = \{w : n_a(w) = n_b(w) + 1\}$

$a, \$ \to 1\$$
$a, 1 \to 11$
$a, 0 \to \lambda$
$b, \$ \to 0\$$
$b, 0 \to 00$
$b, 1 \to \lambda$
$c, \lambda \to \lambda$

10. Find an NPDA for the language
$L = \{ab(ab)^n ba(ba)^n : n \geq 0\}$



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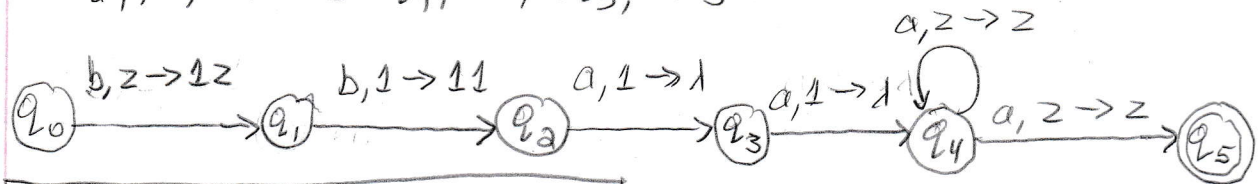
12. What language is accepted by the PDA $M = (\{q_0, q_1, q_2, q_3, q_4, q_5\}, \{a,b\}, \{0,1,z\}, \delta, q_0, z, \{q_5\})$, with $\delta(q_0, b, z) = \{(q_1, 1z)\}$, $\delta(q_1, b, 1) = \{(q_2, 11)\}$, $\delta(q_2, a, 1) = \{(q_3, \lambda)\}$, $\delta(q_3, a, 1) = \{(q_4, \lambda)\}$, $\delta(q_4, a, z) = \{(q_4, z), (q_5, z)\}$?

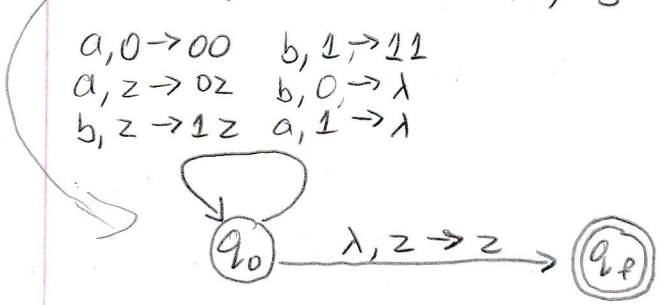


$L(M) = \{bba^n : n > 2\}$

* bbaa ✓
bbaaa ✓
bbaaaa ✓

14. What language is accepted by the NPDA in Example 7.4 if we use $F = \{q_0, q_f\}$?

Ex 7.4) $L = \{w \in \{a,b\}^* : n_a(w) = n_b(w)\}$



- If $F = \{q_0, q_f\}$ than that means any string is accepted with no restrictions. ie) a, b, aba, bbb, aa, ...

$L = \{w \in \{a,b\}^*\}$