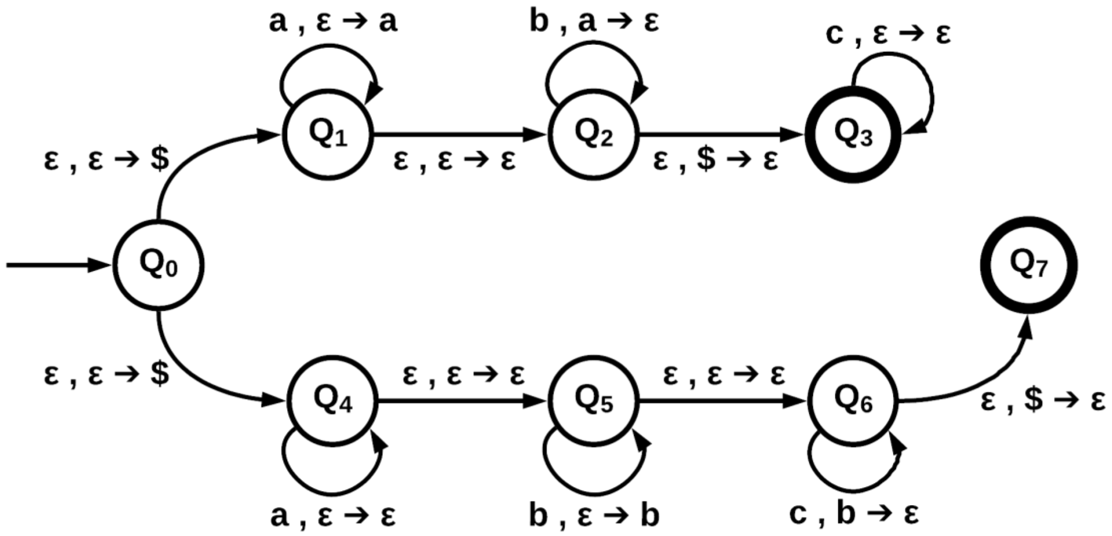
All PDA's are defined as the 6-tuple: $(Q, \Sigma, \Gamma, \delta, q_0, F)$, where:
Q: State Set
Σ: Automaton Alphabet
Γ: Stack Alphabet
$\delta: Q \times \Sigma_\epsilon \times \Gamma_\epsilon \rightarrow P(Q \times \Gamma_\epsilon)$: Transition Function
q_0: Starting State
F: Accepting State Set

Exercise 1:

Draw the PDA for the language:

$L_1 = \{a^i b^j c^k \middle| i = j \vee j = k, \forall i, j, k \geq 0\}$

$Q = \{Q_0, \dots, Q_7\}$
$\Sigma = \{a, b, c\}$
$\Gamma = \{a, b\}$
Q_0 is the starting state
$F = \{Q_3, Q_7\}$

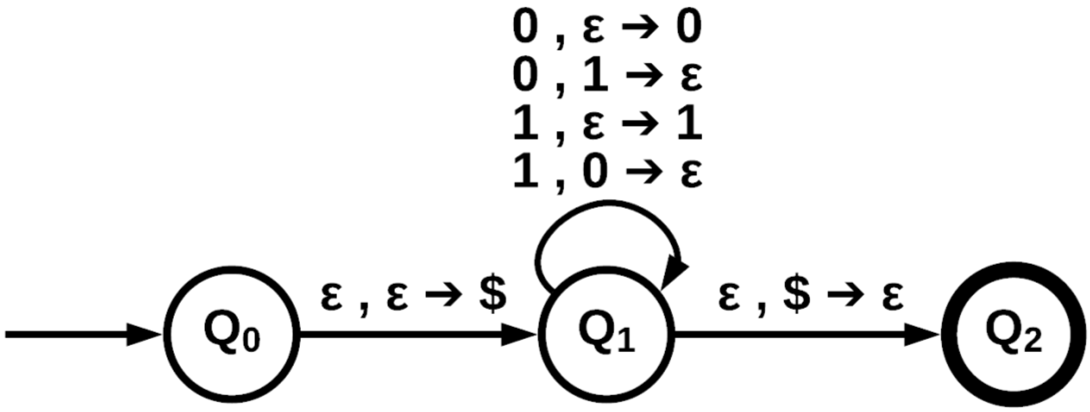


Exercise 2:

Draw the PDA for the language:

$L_2 = \{w | w \text{ has as many } 1s \text{ as } 0s\}$

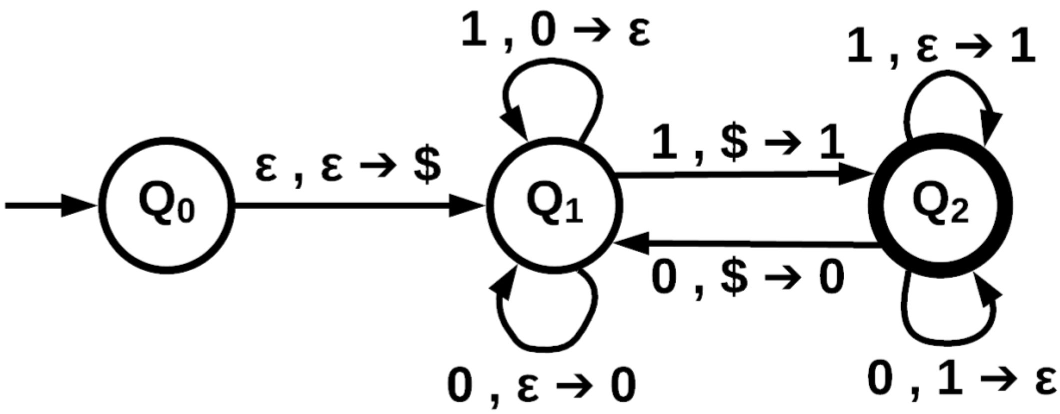
$Q = \{Q_0, Q_1, Q_2\}$
$\Sigma = \Gamma = \{0,1\}$
Q_0 is the starting state
$F = \{Q_2\}$



Exercise 3:

Draw the PDA for the language:
$L_3 = \{w|w\ has\ more\ 1s\ than\ 0s\}$

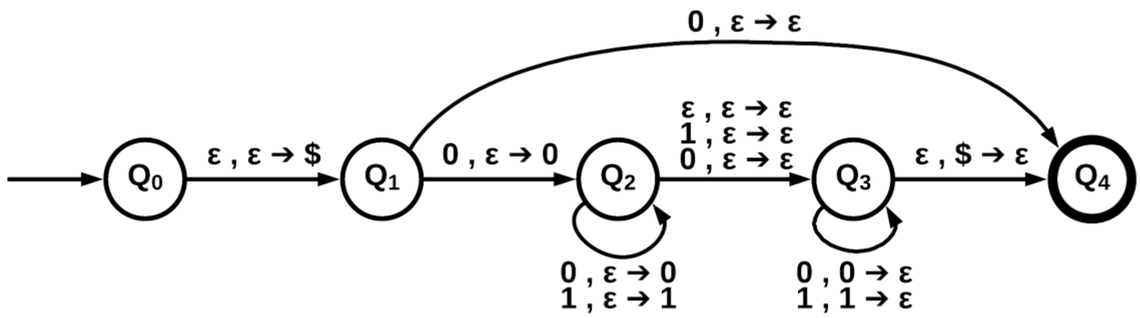
$Q = \{Q_0, Q_1, Q_2\}$
$\Sigma = \Gamma = \{0,1\}$
Q_0 is the starting state
$F = \{Q_2\}$



Exercise 4:

Draw the PDA for the language:
$L_4 = \{w | w \text{ is a palindrome and starts with } 0\}$

$Q = \{Q_0, Q_1, Q_2, Q_3, Q_4\}$
$\Sigma = \Gamma = \{0,1\}$
Q_0 is the starting state
$F = \{Q_4\}$



Exercise 5:

Draw the PDA for the language:
$L_5 = \{w | w \text{ has odd length and the middle symbol is a } 0\}$

$Q = \{Q_0, Q_1, Q_2, Q_3\}$
$\Sigma = \{0,1\}$
$\Gamma = \{1\}$
Q_0 is the starting state
$F = \{Q_3\}$