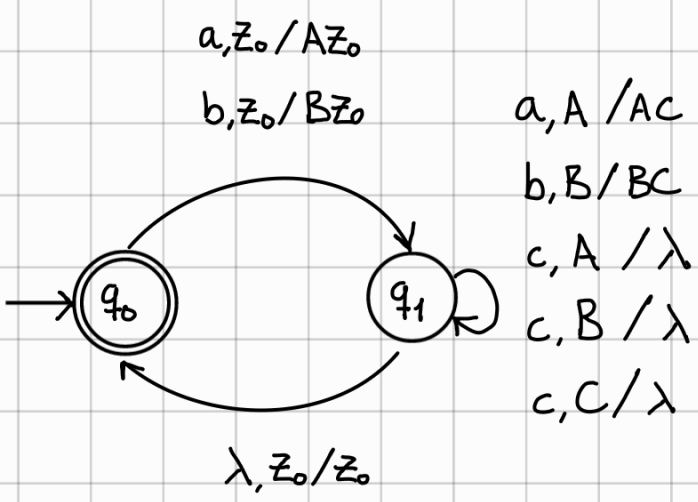
Ejercicio 2. Sea el autómata de pila $M = \langle Q, \Sigma, \Gamma, \delta, q_0, Z_0, F \rangle$, donde:

$$Q = \{q_0, q_1\}, \quad \Sigma = \{a, b, c\}, \quad \Gamma = \{Z_0, A, B, C\}, \quad F = \{q_0\}$$

$$\delta: \begin{array}{ll} \delta(q_0, a, Z_0) = (q_1, AZ_0) & \delta(q_0, b, Z_0) = (q_1, BZ_0) \\ \delta(q_1, a, A) = (q_1, AC) & \delta(q_0, b, B) = (q_1, BC) \\ \delta(q_1, c, A) = (q_1, \lambda) & \delta(q_1, c, B) = (q_1, \lambda) \\ \delta(q_1, c, C) = (q_1, \lambda) & \delta(q_1, \lambda, Z_0) = (q_0, Z_0) \end{array}$$

$\delta(q_1, b, B) = (q_1, BC)$

Definir por comprensión el lenguaje aceptado por M.



$$\mathcal{L} = \{\alpha : (\alpha = a^n c^n \vee \alpha = b^n c^n) \wedge n \geq 0\}$$

$$L(M) = \mathcal{L}^k \quad \text{con } k \geq 0$$

Otra forma:

$$L(M) = \{\alpha = \alpha_1 \cdots \alpha_n : n \geq 0 \wedge (\alpha_i \in \mathcal{L}_a \vee \alpha_i \in \mathcal{L}_b)\}$$

$$\mathcal{L}_a = \{a^n c^n : n \geq 0\}$$
$$\mathcal{L}_b = \{b^n c^n : n \geq 0\}$$