

Sanlos Méndez Ulises Jesús

Considerar el siguiente autómata $M = (Q, \Sigma, S, F, \delta)$:

$$Q = \{q_0, q_1, q_2\}$$

$$\Sigma = \{a, b\}$$

$$S = q_0$$

$$F = \{q_0\}$$

$$\delta(q_0, a) = q_0$$

$$\delta(q_0, b) = q_1$$

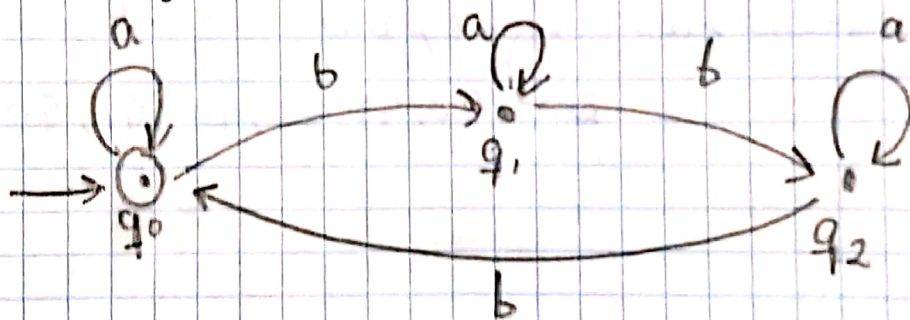
$$\delta(q_1, a) = q_1$$

$$\delta(q_1, b) = q_2$$

$$\delta(q_2, a) = q_2$$

$$\delta(q_2, b) = q_0$$

Construir el diagrama de transiciones



¿Qué lenguaje acepta este autómata?

$$L(M) = \{\epsilon, a^n, b^k b a, b a b a b a, \dots\}$$

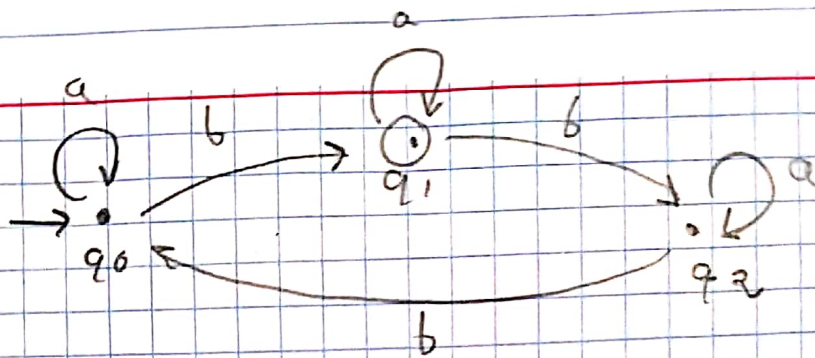
$$\Sigma^* - L(M) = \{b a^n, b b a^n, b b b b a^n, \dots\}$$

¿Qué lenguaje acepta el autómata M si $F = \{q_1\}$?

$$Q = \{q_0, q_1, q_2\}$$

$$\Sigma = \{a, b\}$$

$$F = \{q_1\}$$



$$L(M) = \{\epsilon, ba^n, a^nba^n, bbbba^n, ba^nb a^nba^n, \dots\}$$

$$\Sigma^* - L(M) = \{a^n, abba^n, a^nbb a^n, a^nbb a^nba^n, \dots\}$$

Diseñar un AFD $M_1 = (Q_1, \Sigma_1, s_1, f_1, \delta_1)$ de manera que

$$L(M_1) = L(M) - \{\epsilon\}$$

$$Q_1 = \{q_0, q_1, q_2\}$$

$$\Sigma_1 = \{a, b\}$$

$$s_1 = q_0$$

$$f_1 = \{q_0\}$$

$$L(M_1) = \{a^n, a^n, a^n b^n\}$$

