

# Laboratorio 5

## Ejercicio 1

$$\pi_0 = (\underbrace{\{q_0, q_1, q_2, q_3\}}_1, \underbrace{\{q_4\}}_2)$$

	$q_0$	$q_1$	$q_2$	$q_3$	$q_4$
a	1	1	1	1	1
b	1	1	1	2	1

$$\pi_1 = (\underbrace{\{q_0, q_1, q_2\}}_3, \underbrace{\{q_3\}}_4, \underbrace{\{q_4\}}_2)$$

	$q_0$	$q_1$	$q_2$	$q_3$	$q_4$
a	3	3	3	3	3
b	3	4	3	2	3

$$\pi_2 = (\underbrace{\{q_0, q_2\}}_5, \underbrace{\{q_1\}}_6, \underbrace{\{q_3\}}_4, \underbrace{\{q_4\}}_2)$$

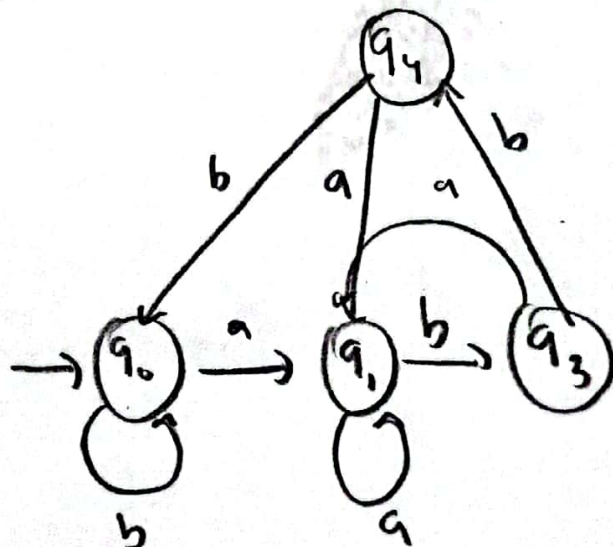
	$q_0$	$q_1$	$q_2$	$q_3$	$q_4$
a	6	6	6	6	6
b	5	4	5	2	5

$$\pi_3 = \{q_0, q_2\}, \{q_1\}, \{q_3\}, \{q_4\}$$

$$\Rightarrow \pi_2 \equiv \pi_3 \therefore \text{HALT}$$

$$\Rightarrow \pi_3 = (\underbrace{\{q_0, q_2\}}_{q_0}, \underbrace{\{q_1\}}_{q_1}, \underbrace{\{q_3\}}_{q_3}, \underbrace{\{q_4\}}_{q_4})$$

Estado	a	b
$q_0$	$q_1$	$q_0$
$q_1$	$q_1$	$q_3$
$q_3$	$q_1$	
$q_4$		



$$\pi_0 = (\{q_0, q_1\}, \{q_1\}, \{q_2\}) \quad \pi_1 = (\{q_0\}, \{q_3\}, \{q_1\}, \{q_2\})$$

	$q_0$	$q_1$	$q_2$	$q_3$
a	2	3	2	3
b	1	2	3	2

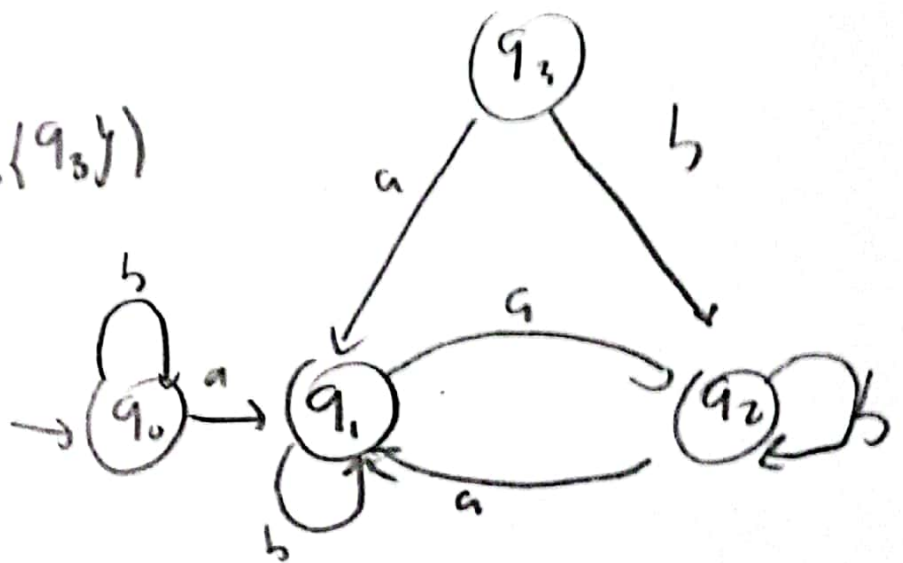
	$q_0$	$q_1$	$q_2$	$q_3$
a	2	3	2	2
b	4	2	3	3

$$\pi_2 = (\{q_0\}, \{q_3\}, \{q_1\}, \{q_2\})$$

$$\pi_1 \equiv \pi_2 \text{ por HqLT}$$

$$\Rightarrow \pi_2 = (\{q_0\}, \{q_1\}, \{q_2\}, \{q_3\})$$

Estados	a	b
$q_0$	$q_0$	$q_1$
$q_1$	$q_2$	$q_1$
$q_2$	$q_1$	$q_2$
$q_3$	$q_1$	$q_2$



No se pudo minimizar, pues está en su mínimo resultado.

## Ejercicio 2

$$S \rightarrow A|B$$

$$A \rightarrow 0A | \epsilon$$

$$B \rightarrow 0B | 1B | \epsilon$$

00101

$$S \Rightarrow A|B$$

$$A \rightarrow 0A$$

$$S \Rightarrow 0A|B$$

$$A \rightarrow 0A$$

$$S \Rightarrow 00A|B$$

$$S \xRightarrow{A \rightarrow \epsilon} 001B$$

$$S \xRightarrow{B \rightarrow 0B} 0010B$$

$$S \xRightarrow{B \rightarrow 1B} 00101B \Rightarrow$$

$$\boxed{S \xRightarrow{B \rightarrow \epsilon} 00101}$$

1001

$$S \Rightarrow A|B$$

$$S \xRightarrow{A \rightarrow \epsilon} 1B$$

$$S \xRightarrow{B \rightarrow 0B} 10B$$

$$S \xRightarrow{B \rightarrow 0B} 100B$$

$$S \xRightarrow{B \rightarrow 1B} 1001B \Rightarrow$$

$$\boxed{S \xRightarrow{B \rightarrow \epsilon} 1001}$$

00011

$$S \Rightarrow A|B$$

$$S \xRightarrow{A \rightarrow 0A} 0A|B$$

$$S \xRightarrow{A \rightarrow 0A} 00A|B$$

$$S \xRightarrow{A \rightarrow 0A} 000A|B$$

$$S \xRightarrow{A \rightarrow \epsilon} 0001B$$

$$S \xRightarrow{B \rightarrow 1B} 00011B \Rightarrow$$

$$\boxed{S \xRightarrow{B \rightarrow \epsilon} 00011}$$