

## DEFINICIONES DE LAS MÁQUINAS

### MULTIPLICADOR:

#### DEFINICIÓN FORMAL

$$MT_1 = \{Q, \Sigma, T, f, q_0, b, F\}$$

$$Q = \{q_0, q_1, \dots, q_{12}, q_{13}\}$$

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

$$T = \{a, b, c, U, D, b\}$$

$$F = \{q_{13}\}$$

#### DIAGRAMA:

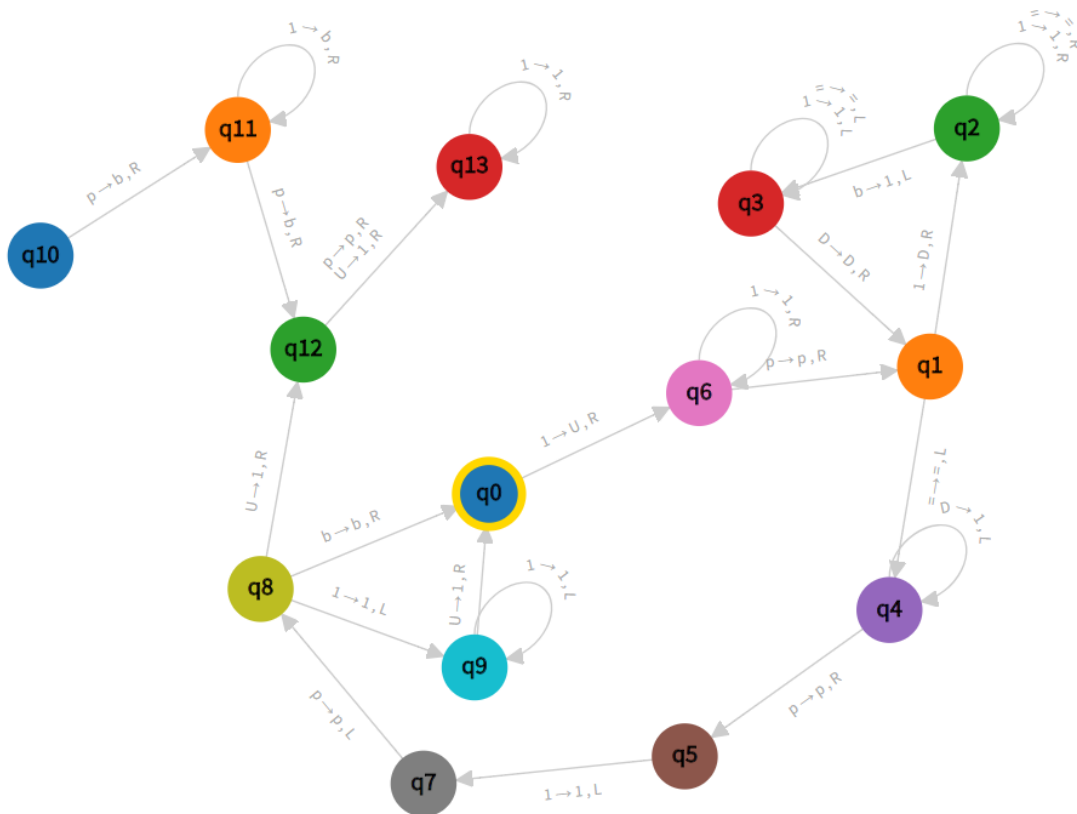


TABLA DE TRANSICIONES:

	b	1	0	*	=	U	D
► q0	---	(U,q6,R)	---	(*q13,R)	---	---	---
q1	---	(D,q2,R)	---	---	(=,q4,L)	---	---
q2	(1,q3,L)	(1,q2,R)	---	---	(=,q2,R)	---	---
q3	---	(1,q3,L)	---	---	(=,q3,L)	---	(D,q1,R)
q4	---	---	---	(*q5,R)	---	---	(1,q4,L)
q5	---	(1,q7,L)	---	---	---	---	---
q6	---	(1,q6,R)	---	(*q1,R)	---	---	---
q7	---	---	---	(*q8,L)	---	---	---
q8	(b,q0,R)	(1,q9,L)	---	---	---	(1,q12,R)	---
q9	---	(1,q9,L)	---	---	---	(1,q0,R)	---
q10	---	---	---	(b,q11,R)	---	---	---
q11	---	(b,q11,R)	---	(b,q12,R)	---	---	---
q12	---	---	---	(*q13,R)	---	(1,q13,R)	---
q13	---	(1,q13,R)	---	---	---	---	---

SUMADOR:

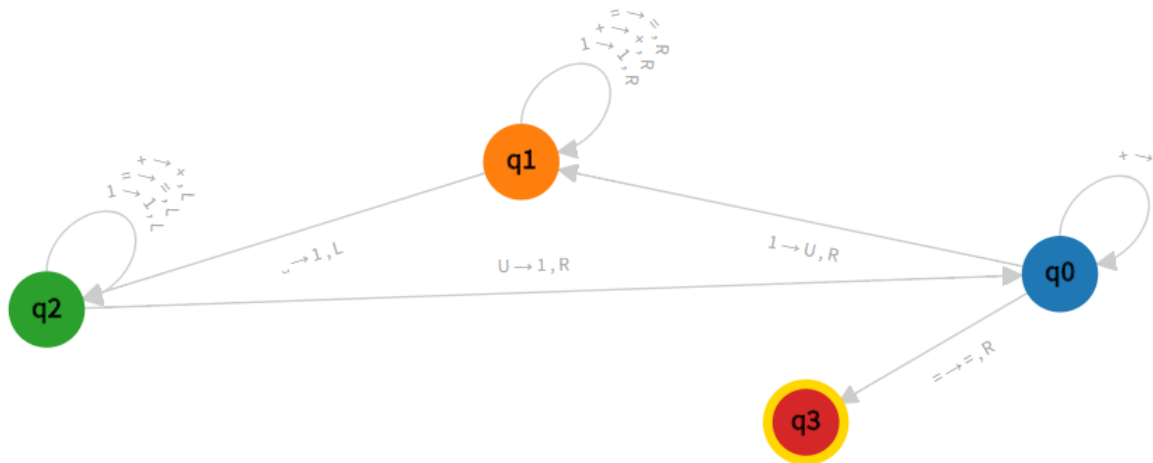
$$MT_2 = \{Q, \Sigma, T, f, q_0, \text{b}, F\}$$

$$Q = \{q_0, q_1, q_2, q_3\}$$

$$\Sigma = \{1, +, =\}$$

$$T = \{1, +, =, U, \mathsf{b}\}$$

$$F = \{q_3\}$$



	b	1	0	+	=	U
q0	---	(U,q1,R)	---	(+,q0,R)	(=,q3,R)	---
q1	(1,q2,L)	(1,q1,R)	---	(+,q1,R)	(=,q1,R)	---
q2	---	(1,q2,L)	---	(+,q2,L)	(=,q2,L)	(1,q0,R)
q3	(b,q3,L)	(1,q3,R)	---	---	---	---

## RESTADOR:

### DEFINICIÓN FORMAL

$$MT_3 = \{Q, \Sigma, T, f, q_8, b, F\}$$

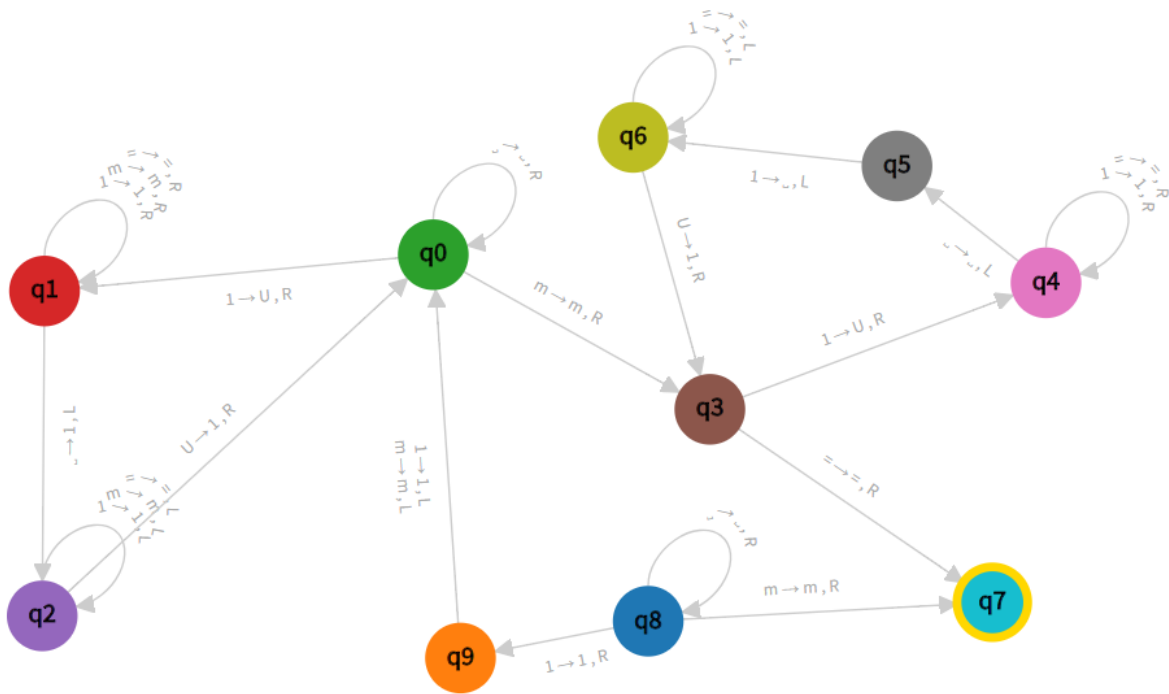
$$Q = \{q_0, q_1, \dots, q_8, q_9\}$$

$$\Sigma = \{1, -, =\}$$

$$T = \{1, -, =, U, b\}$$

$$F = \{q_9\}$$

### DIAGRAMA



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TABLA DE TRANSICIONES

	b	1	0	-	=	U
► q0	(b,q0,R)	(U,q1,R)	---	(-,q3,R)	---	---
q1	(1,q2,L)	(1,q1,R)	---	(-,q1,R)	(=,q1,R)	---
q2	---	(1,q2,L)	---	(-,q2,L)	(=,q2,L)	(1,q0,R)
q3	---	(U,q4,R)	---	---	(=,q7,R)	---
q4	(b,q5,L)	(1,q4,R)	---	---	(=,q4,R)	---
q5	---	(b,q6,L)	---	---	---	---
q6	---	(1,q6,L)	---	---	(=,q6,L)	(1,q3,R)
q7	---	(1,q7,R)	---	---	---	---

## VALIDADOR DE PALÍNDROMOS

DEFINICIÓN FORMAL:

$$MT_4 = \{Q, \Sigma, T, f, q_0, \text{b}, F\}$$

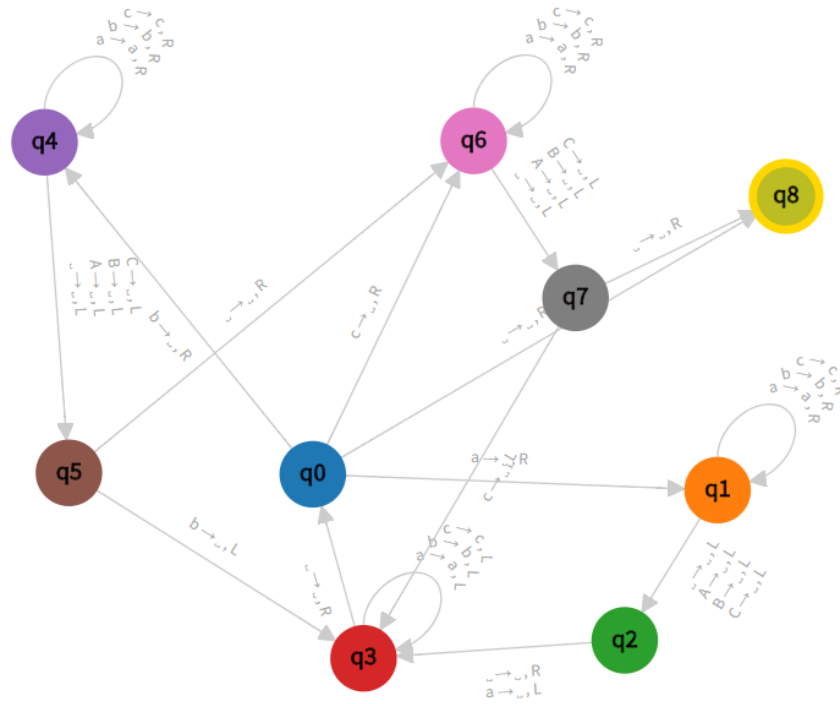
$$Q = \{q_0, q_1, \dots, q_7, q_8\}$$

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

$$T = \{a, b, c, \text{b}\}$$

$$F = \{q_8\}$$

DIAGRAMA:



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## TABLA DE TRANSICIONES

	b	a	b	c
► q0	(b,q8,R)	(b,q1,R)	(b,q4,R)	(b,q6,R)
q1	(b,q2,L)	(a,q1,R)	(b,q1,R)	(c,q1,R)
q2	(b,q3,R)	(b,q3,L)	---	---
q3	(b,q0,R)	(a,q3,L)	(b,q3,L)	(c,q3,L)
q4	(b,q5,L)	(a,q4,R)	(b,q4,R)	(c,q4,R)
q5	(b,q6,R)	---	(b,q3,L)	---
q6	(b,q7,L)	(a,q6,R)	(b,q6,R)	(c,q6,R)
q7	(b,q8,R)	---	---	(b,q3,L)
q8	(b,q7,L)	---	---	---

## DUPLICADOR

### DEFINICI3N FORMAL:

$$MT_5 = \{Q, \Sigma, T, f, q_{13}, b, F\}$$

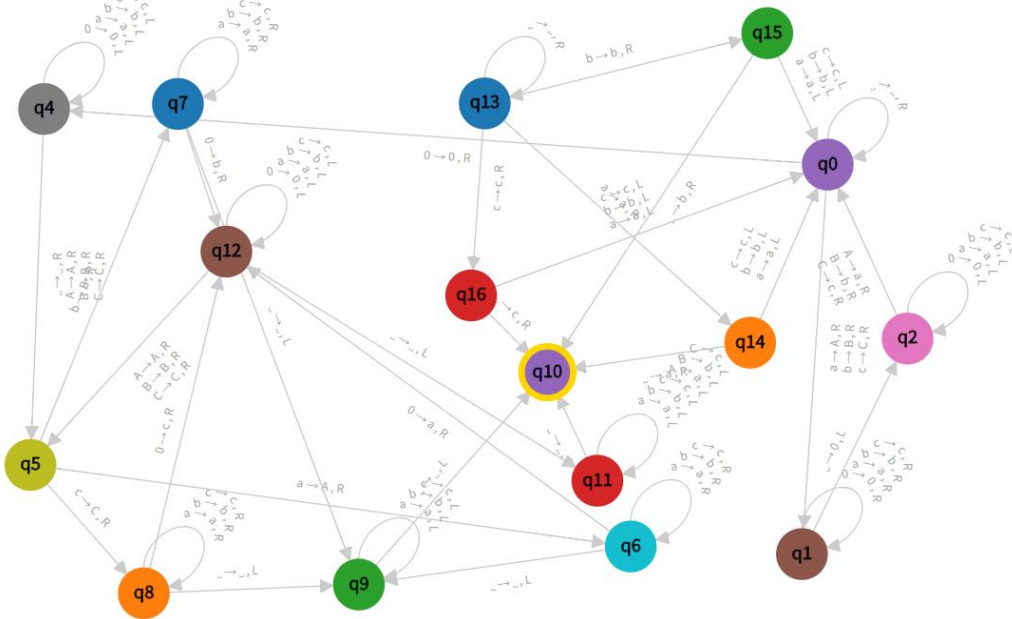
$$Q = \{q_0, q_1, \dots, q_{15}, q_{16}\}$$

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

$$T = \{a, b, c, A, B, C, 0, b\}$$

$$F = \{q_{16}\}$$

### DIAGRAMA





## TABLA DE TRANSICIONES

	b	1	0	a	b	c	A	B	C
► q0	(b,q0,R)	---	(0,q4,R)	(A,q1,R)	(B,q1,R)	(C,q1,R)	---	---	---
q1	(0,q2,L)	---	(0,q1,R)	(a,q1,R)	(b,q1,R)	(c,q1,R)	---	---	---
q2	---	---	(0,q2,L)	(a,q2,L)	(b,q2,L)	(c,q2,L)	(a,q0,R)	(b,q0,R)	(c,q0,R)
q3	---	---	(0,q4,L)	---	---	---	---	---	---
q4	(b,q5,R)	---	(0,q4,L)	(a,q4,L)	(b,q4,L)	(c,q4,L)	(A,q5,R)	(B,q5,R)	(C,q5,R)
q5	---	---	---	(A,q6,R)	(B,q7,R)	(C,q8,R)	---	---	---
q6	(b,q9,L)	---	(a,q12,R)	(a,q6,R)	(b,q6,R)	(c,q6,R)	---	---	---
q7	(b,q9,L)	---	(b,q12,R)	(a,q7,R)	(b,q7,R)	(c,q7,R)	---	---	---
q8	(b,q9,L)	---	(c,q12,R)	(a,q8,R)	(b,q8,R)	(c,q8,R)	---	---	---
q9	(b,q10,L)	---	---	(a,q9,L)	(b,q9,L)	(c,q9,L)	---	---	---
q10	---	---	---	(a,q10,L)	(b,q10,L)	(c,q10,L)	---	---	---
q11	(b,q10,R)	---	---	(a,q11,L)	(b,q11,L)	(c,q11,L)	(a,q11,L)	(b,q11,L)	(c,q11,L)
q12	(b,q11,L)	---	(0,q12,L)	(a,q12,L)	(b,q12,L)	(c,q12,L)	(A,q5,R)	(B,q5,R)	(C,q5,R)
q13	(b,q13,R)	---	---	(a,q14,R)	(b,q15,R)	(c,q16,R)	---	---	---
q14	(a,q10,R)	---	---	(a,q0,L)	(b,q0,L)	(c,q0,L)	---	---	---
q15	(b,q10,R)	---	---	(a,q0,L)	(b,q0,L)	(c,q0,L)	---	---	---
q16	(c,q10,R)	---	---	(a,q0,L)	(b,q0,L)	(c,q0,L)	---	---	---