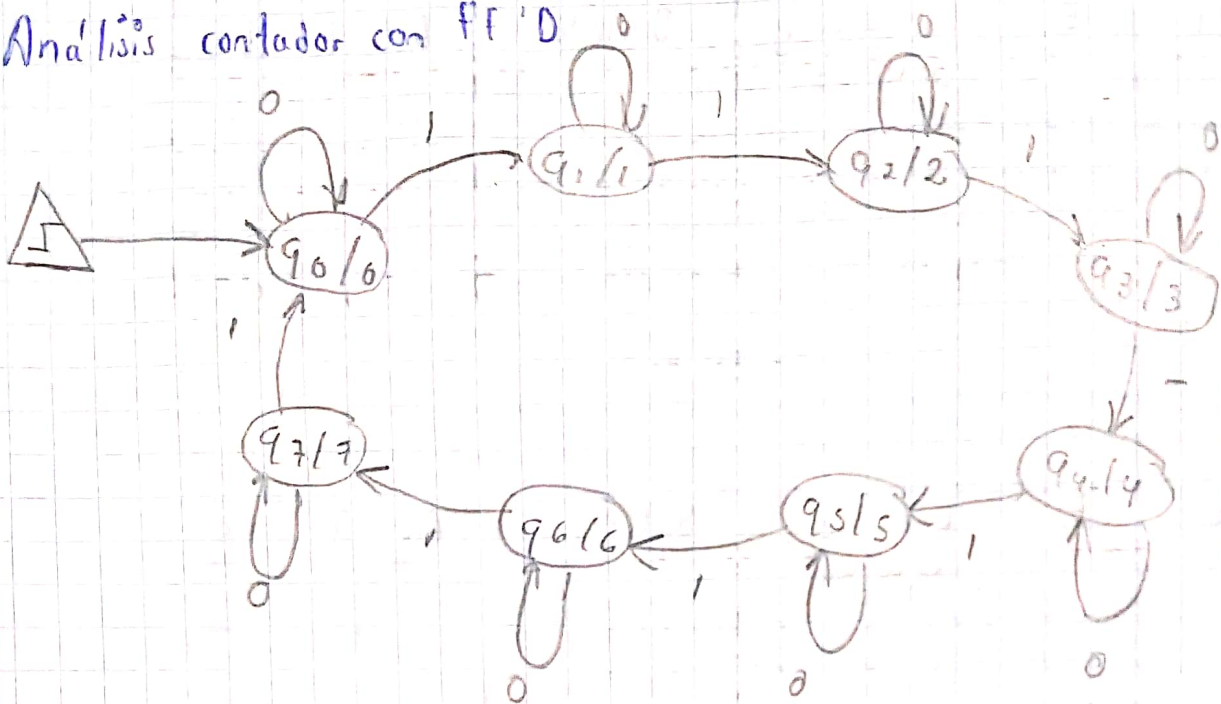


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Análisis contador con FF D



Edo-act	E	Edo-sig	Salida
q0	1	q1	0
q1	1	q2	1
q2	1	q3	2
q3	1	q4	3
q4	1	q5	4
q5	1	q6	5
q6	1	q7	6
q7	1	q0	7
q0	0	q0	0
q1	0	q1	1
q2	0	q2	2
q3	0	q3	3
q4	0	q4	4
q5	0	q5	5
q6	0	q6	6
q7	0	q7	7

Edo_Aet	E	Edo_Sig	Salida	D2	D1	D0
Q2 Q1 Q0		Q2 Q1 Q0				
0 0 0	1	0 0 1	0 0 0	0	0	1
0 0 1	1	0 1 0	0 0 1	0	1	0
0 1 0	1	0 1 1	0 1 0	0	1	1
0 1 1	1	1 0 0	0 1 1	1	0	0
1 0 0	1	1 0 1	1 0 0	1	0	1
1 0 1	1	1 1 0	1 0 1	1	1	0
1 1 0	1	1 1 1	1 1 0	1	1	1
1 1 1	1	0 0 0	1 1 1	0	0	0

Edo_Aet	E	Edo_Sig	Salida	D2	D1	D0
Q2 Q1 Q0		Q2 Q1 Q0				
0 0 0	0	0 0 0	0 0 0	0	0	0
0 0 1	0	0 0 1	0 0 1	0	0	1
0 1 0	0	0 1 0	0 1 0	0	1	0
0 1 1	0	0 1 1	0 1 1	0	1	1
1 0 0	0	1 0 0	1 0 0	1	0	0
1 0 1	0	1 0 1	1 0 1	1	0	1
1 1 0	0	1 1 0	1 1 0	1	1	0
1 1 1	0	1 1 1	1 1 1	1	1	1

Q2 Q1	00	01	11	10
00	0	0	0	0
01	0	0	1	0
11	1	1	0	1
10	1	1	1	1

$$D_2 = Q_2 \bar{Q}_1 + Q_2 \bar{Q}_0 + Q_2 \bar{E} + \bar{Q}_2 Q_1 Q_0 E$$

$$D_2 = Q_2 \oplus (Q_0 Q_1 E)$$

$\oplus \rightarrow \text{XOR}$

Q2 Q1	00	01	11	10
00	0	0	1	0
01	1	1	0	1
11	1	1	0	1
10	0	0	1	0

$$D_1 = Q_1 \bar{Q}_0 + Q_1 \bar{E} + \bar{Q}_1 Q_0 E$$

$$D_1 = Q_1 \oplus (Q_0 E)$$

Q2 Q1	00	01	11	10
00	0	1	0	1
01	0	1	0	1
11	0	1	0	1
10	0	1	0	1

$$D_0 = \bar{Q}_0 E + Q_0 \bar{E}$$

$$D_0 = Q_0 \oplus E$$



$$D_i = Q_i \oplus \prod_{j=0}^{i-1} Q_j \quad \dots \text{Formula generalizada para el contador con FF'D.}$$

Se hace el análisis con FF'JK

Edo_Act	E	Edo_sig	Salida	J <sub>2</sub>	k <sub>2</sub>	J <sub>1</sub>	k <sub>1</sub>	J <sub>0</sub>	k <sub>0</sub>
Q <sub>2</sub> Q <sub>1</sub> Q <sub>0</sub>		Q <sub>2</sub> <sup>+</sup> Q <sub>1</sub> <sup>+</sup> Q <sub>0</sub> <sup>+</sup>							
0 0 0	1	0 0 1	0 0 0	0	X	0	X	1	X
0 0 1	1	0 1 0	0 0 1	0	X	1	X	X	1
0 1 0	1	0 1 1	0 1 0	0	X	X	0	1	X
0 1 1	1	1 0 0	0 1 1	1	X	X	1	X	1
1 0 0	1	1 0 1	1 0 0	X	0	0	X	1	X
1 0 1	1	1 1 0	1 0 1	X	0	1	X	X	1
1 1 0	1	1 1 1	1 1 0	X	0	X	0	1	X
1 1 1	1	0 0 0	1 1 1	X	1	X	1	X	1

Edo_Act	E	Edo_sig	Salida	J <sub>2</sub>	k <sub>2</sub>	J <sub>1</sub>	k <sub>1</sub>	J <sub>0</sub>	k <sub>0</sub>
Q <sub>2</sub> Q <sub>1</sub> Q <sub>0</sub>		Q <sub>2</sub> <sup>+</sup> Q <sub>1</sub> <sup>+</sup> Q <sub>0</sub> <sup>+</sup>							
0 0 0	0	0 0 0	0 0 0	0	X	0	X	0	X
0 0 1	0	0 0 1	0 0 1	0	X	0	X	X	0
0 1 0	0	0 1 0	0 1 0	0	X	X	0	0	X
0 1 1	0	0 1 1	0 1 1	0	X	X	0	X	0
1 0 0	0	1 0 0	1 0 0	X	0	0	X	0	X
1 0 1	0	1 0 1	1 0 1	X	0	0	X	X	0
1 1 0	0	1 1 0	1 1 0	X	0	X	0	0	X
1 1 1	0	1 1 1	1 1 1	X	0	X	0	X	0

Q <sub>2</sub> Q <sub>1</sub> E	00	01	11	10
00	0	0	0	0
01	0	0	1	0
11	X	X	X	X
10	X	X	X	X

Q <sub>2</sub> Q <sub>1</sub> E	00	01	11	10
00	X	X	X	X
01	X	X	X	X
11	0	0	1	0
10	0	0	0	0

Q <sub>2</sub> Q <sub>1</sub> E	00	01	11	10
00	0	0	1	0
01	X	X	X	X
11	X	X	X	X
10	0	0	1	0

$$J_2 = Q_1 Q_0 E$$

$$k_2 = Q_1 Q_0 E$$

$$J_1 = Q_0 E$$

$$Q_2 \begin{matrix} Q_1 \\ Q_0 \end{matrix}$$

	00	01	11	10
00	X	X	X	X
01	0	0	1	0
11	0	0	1	0
10	X	X	X	X

$$k_1 = Q_0 k$$

$$J_i = Q_i \cdot E \cdot \prod_{j=0}^{i-1} Q_j$$

$$k_i = Q_i \cdot E \cdot \prod_{j=0}^{i-1} Q_j$$

$$Q_2 \begin{matrix} Q_1 \\ Q_0 \end{matrix}$$

	00	01	11	10
00	0	1	X	X
01	0	1	X	X
11	0	1	X	X
10	0	1	X	X

$$J_0 = E$$

$$Q_2 \begin{matrix} Q_1 \\ Q_0 \end{matrix}$$

	00	01	11	10
00	X	X	1	0
01	X	X	1	0
11	X	X	1	0
10	X	X	1	0

$$k_0 = E$$