

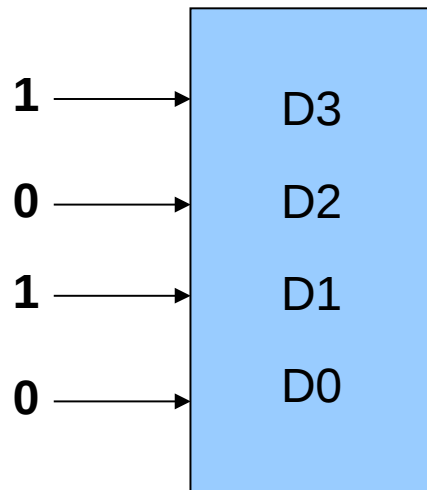


# Registrador de Deslocamento

# Teoria Básica

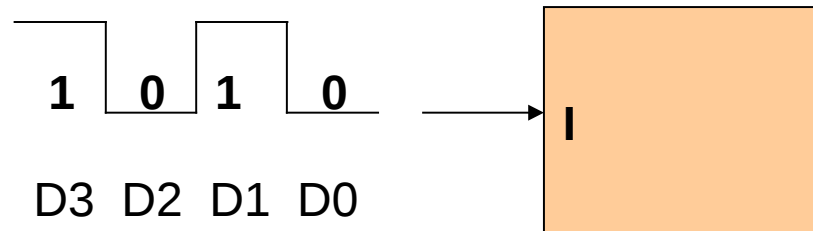
## ■ Informação Paralela

D3	D2	D1	D0
1	0	1	0



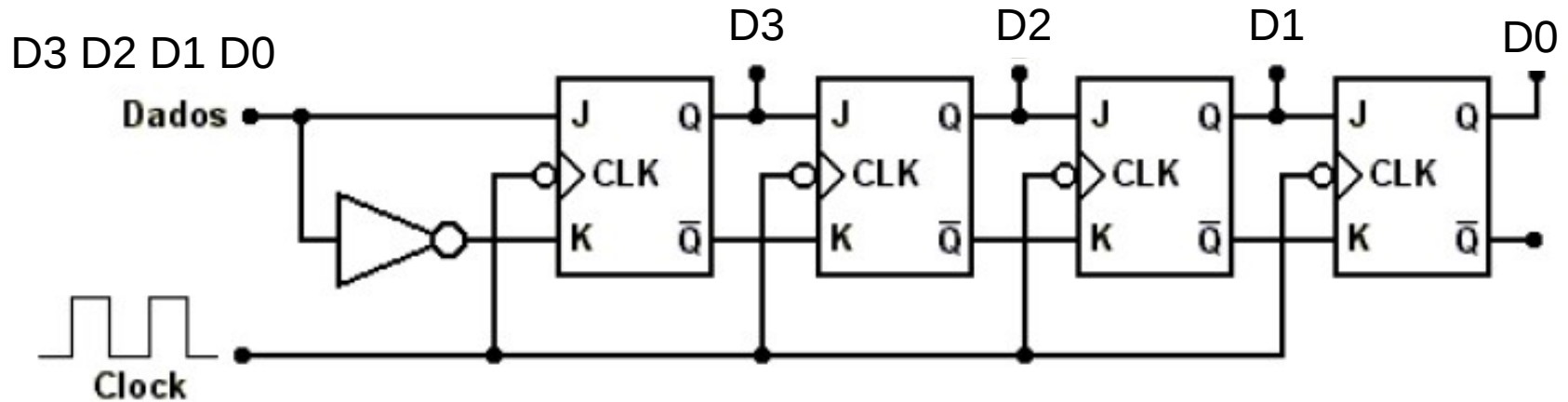
## ■ Informação Serial

D3	D2	D1	D0
1	0	1	0



# Conversor Série-Paralelo

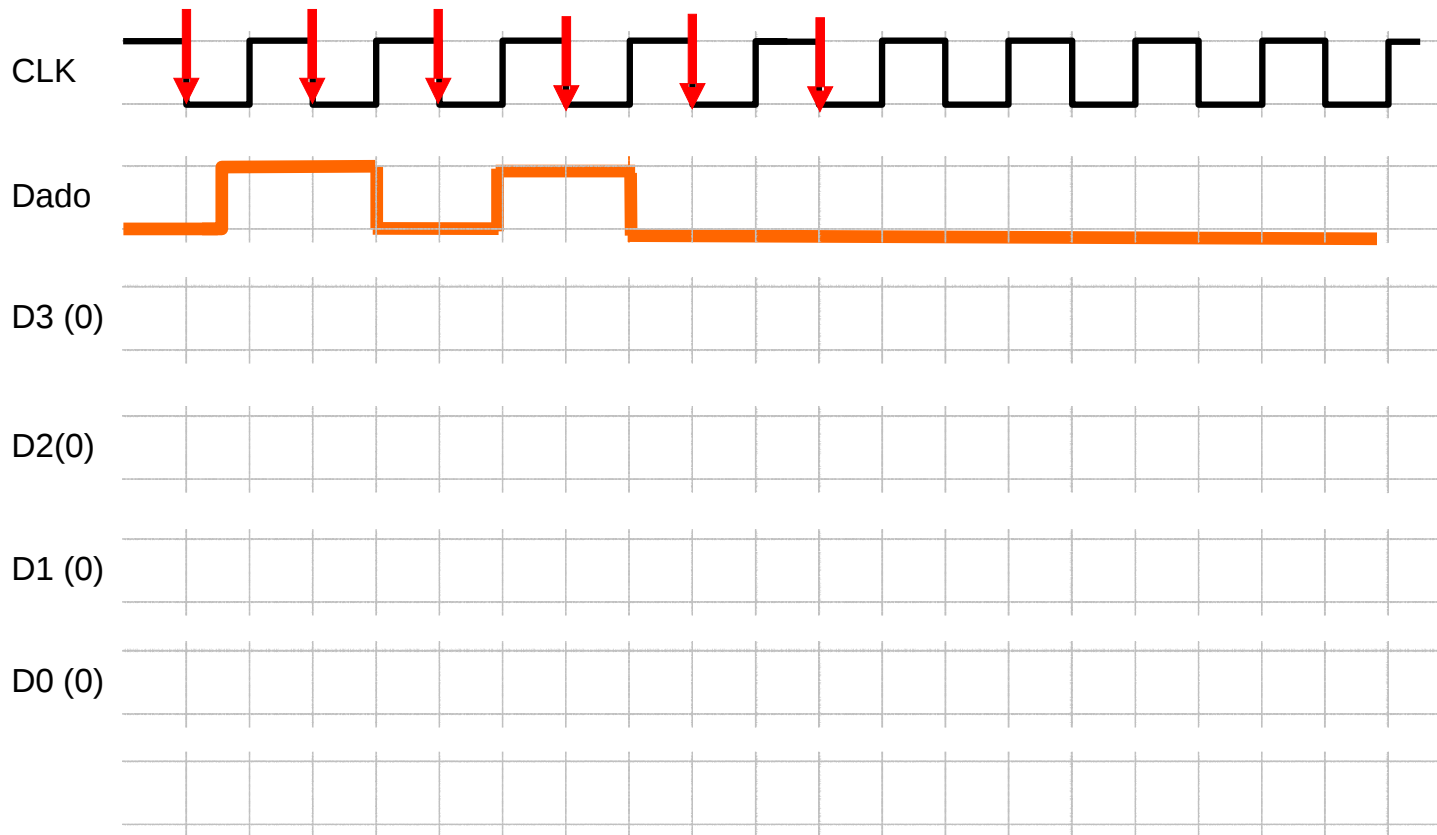
Fazer o diagrama de tempo do circuito abaixo



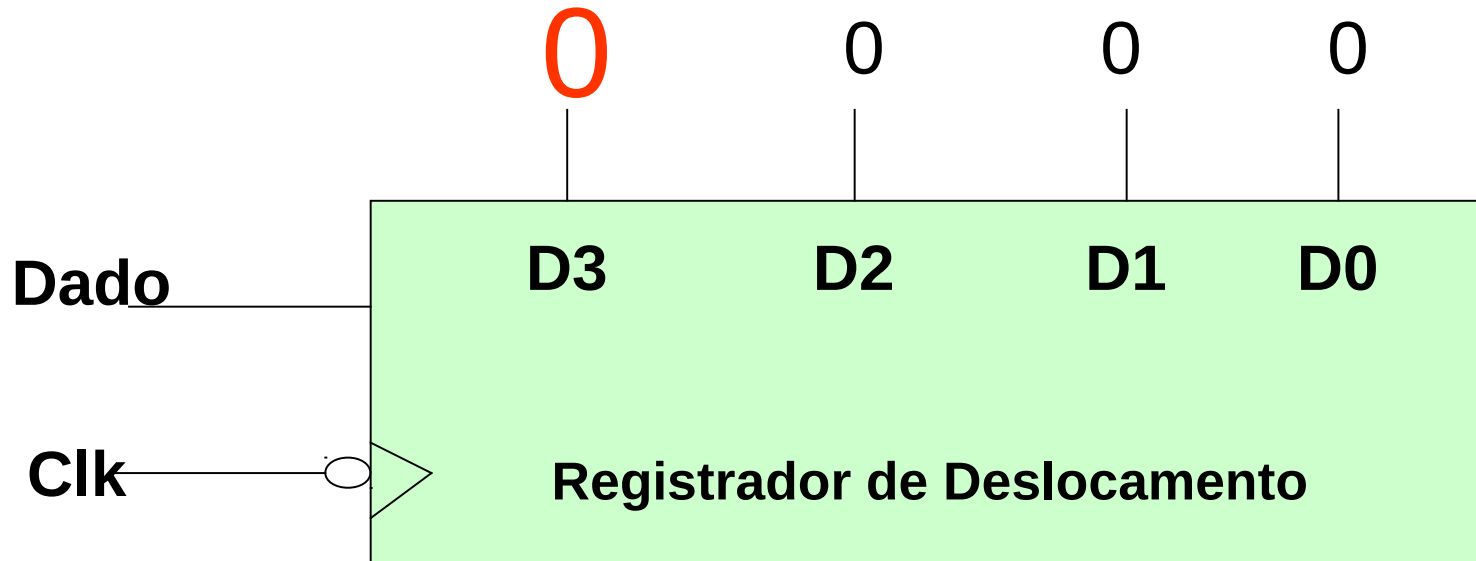
# Diagrama de Tempo

## Série- Paralelo

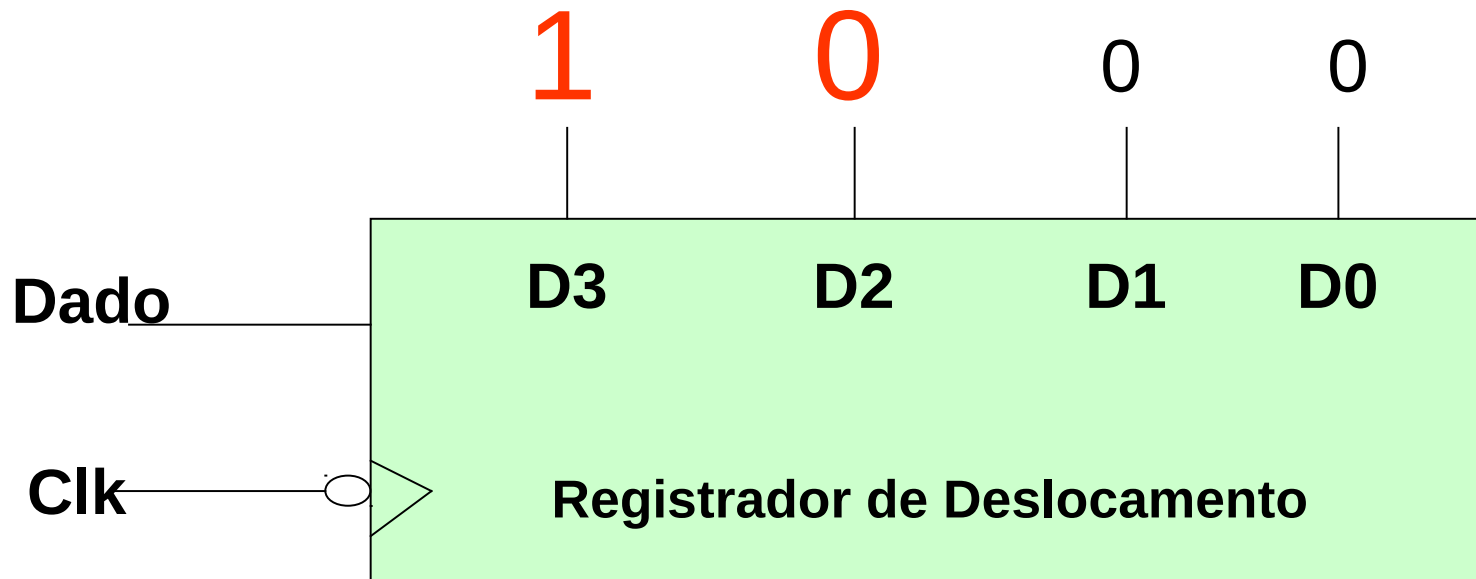
# Conversor



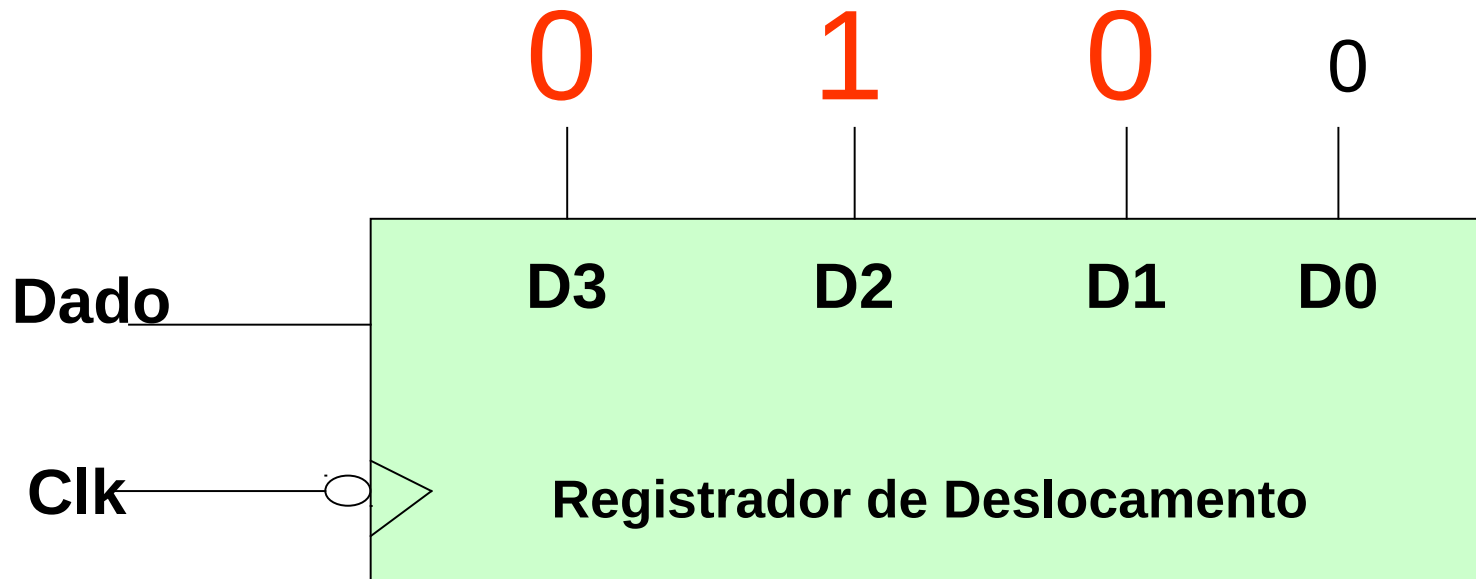
# Deslocamento dos Bits – 1º Pulso



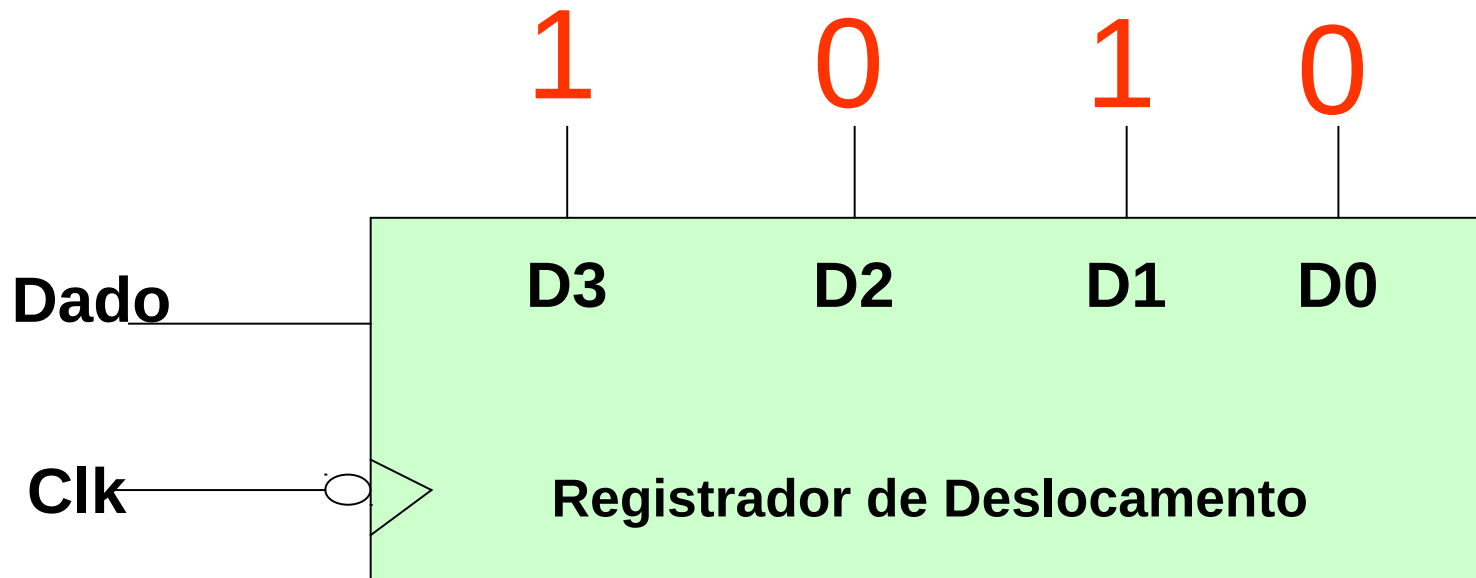
# Deslocamento dos Bits – 2º Pulso



# Deslocamento dos Bits – 3º Pulso



# Deslocamento dos Bits – 4<sup>o</sup> Pulso

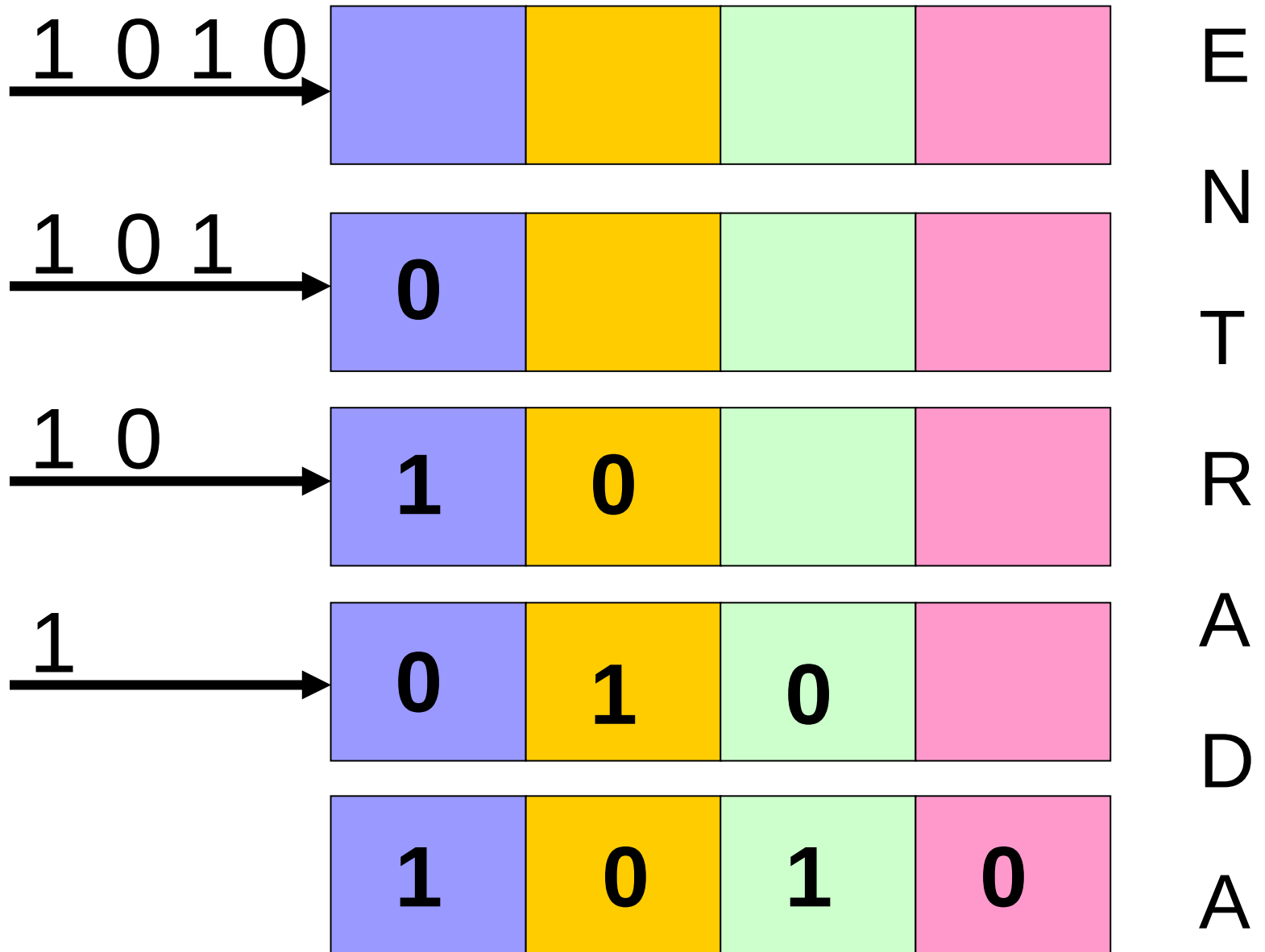




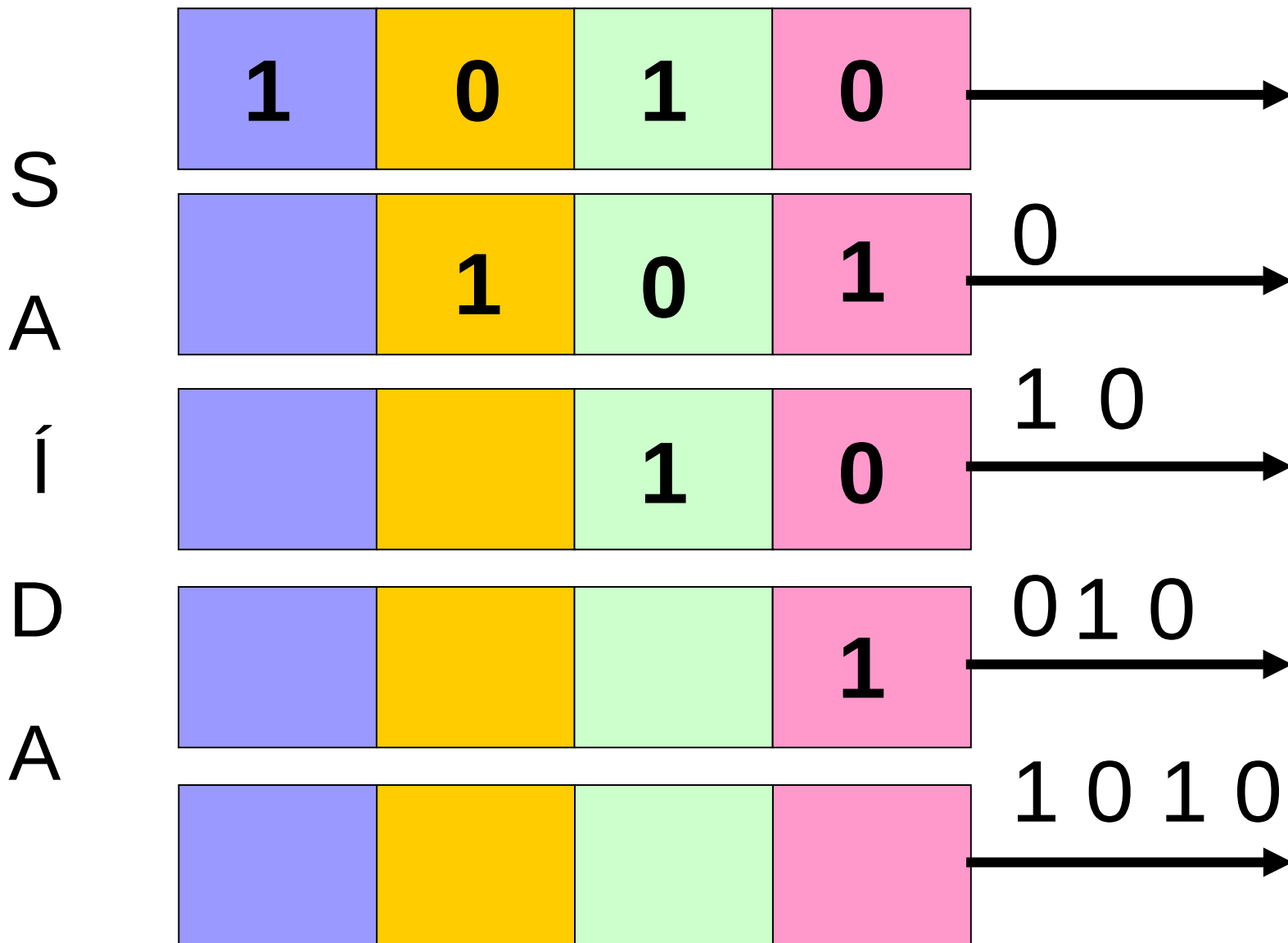
# Tipos de registradores

- Entrada #série # Saída # série #
- Entrada #série # Saída # paralelo #
- Entrada #paralelo # Saída #série #
- Entrada #paralelo # Saída #paralelo#

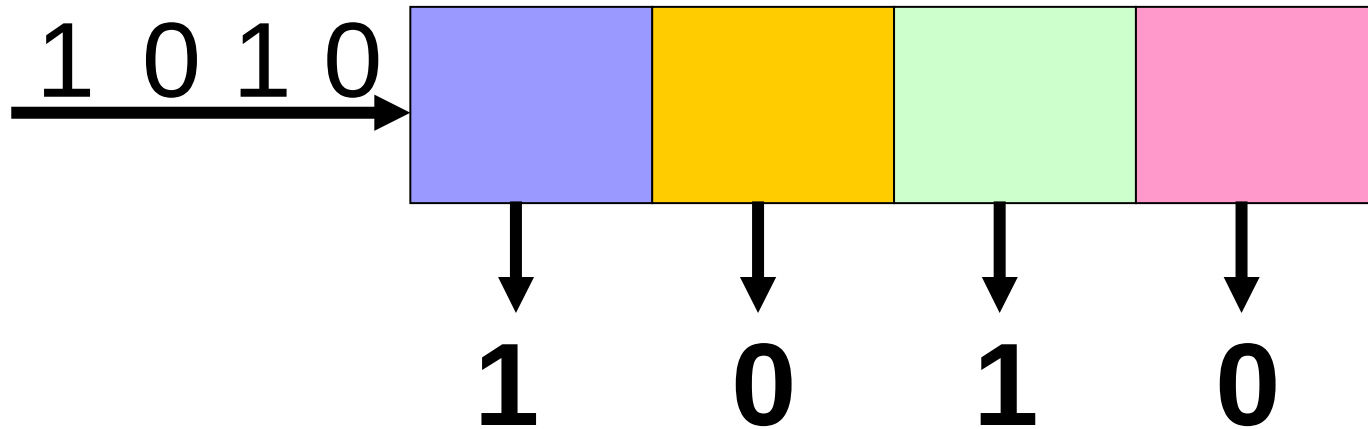
# Registrador – Série/Série



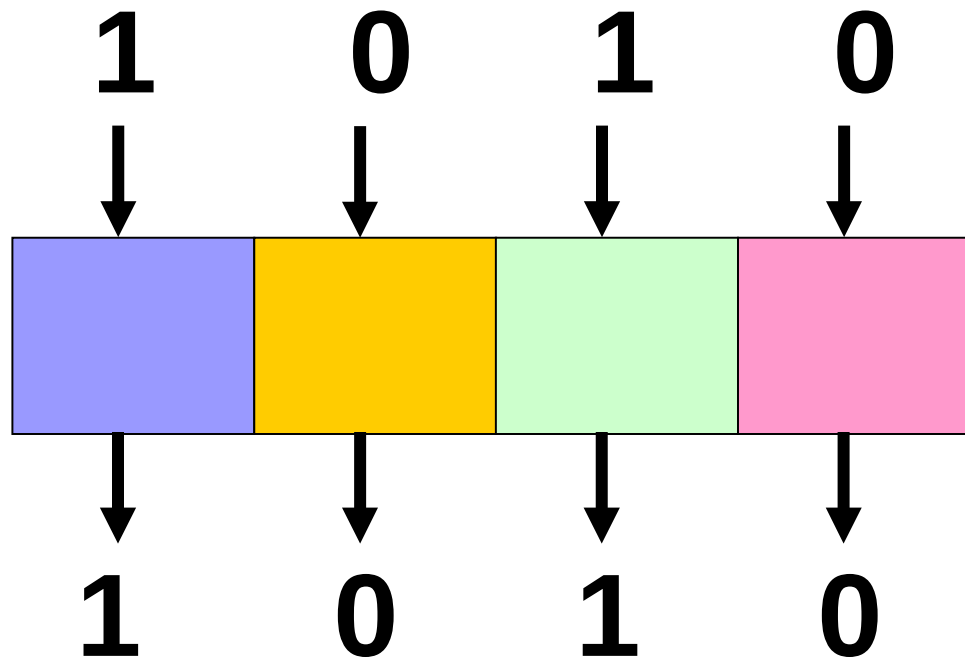
# Registrador – Série/Série



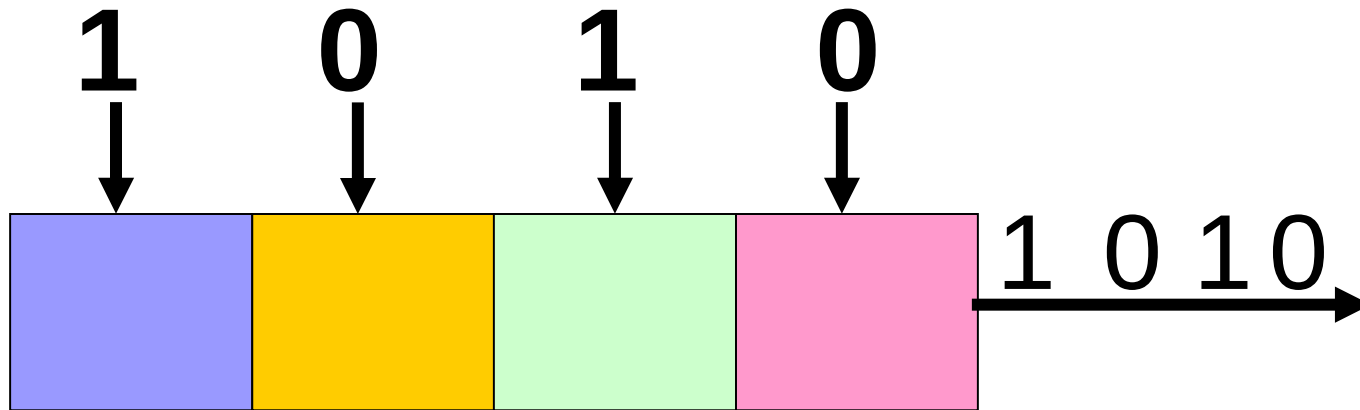
# Registrador Série-Paralelo



# Registrador Paralelo- Paralelo

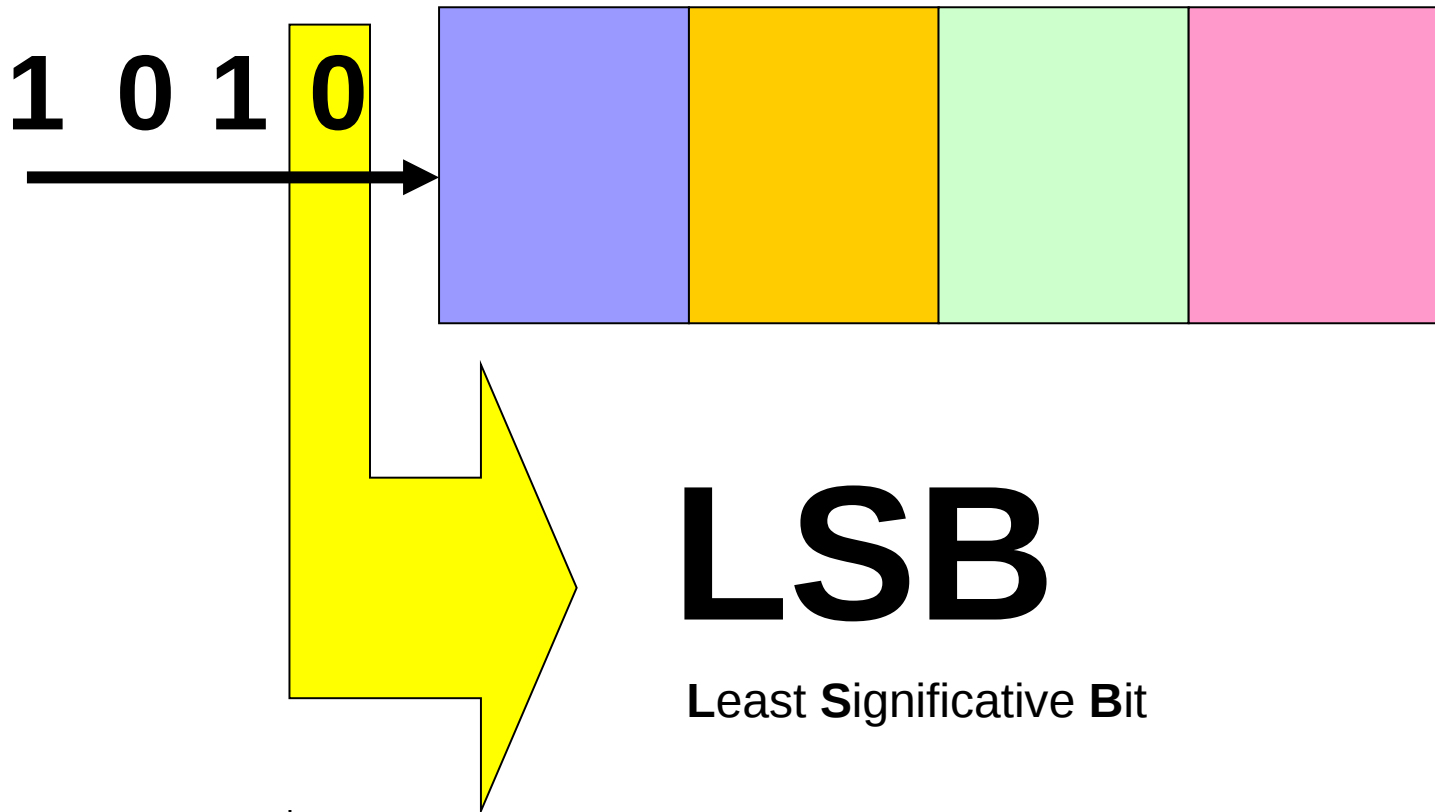


# Registrador Paralelo - Série



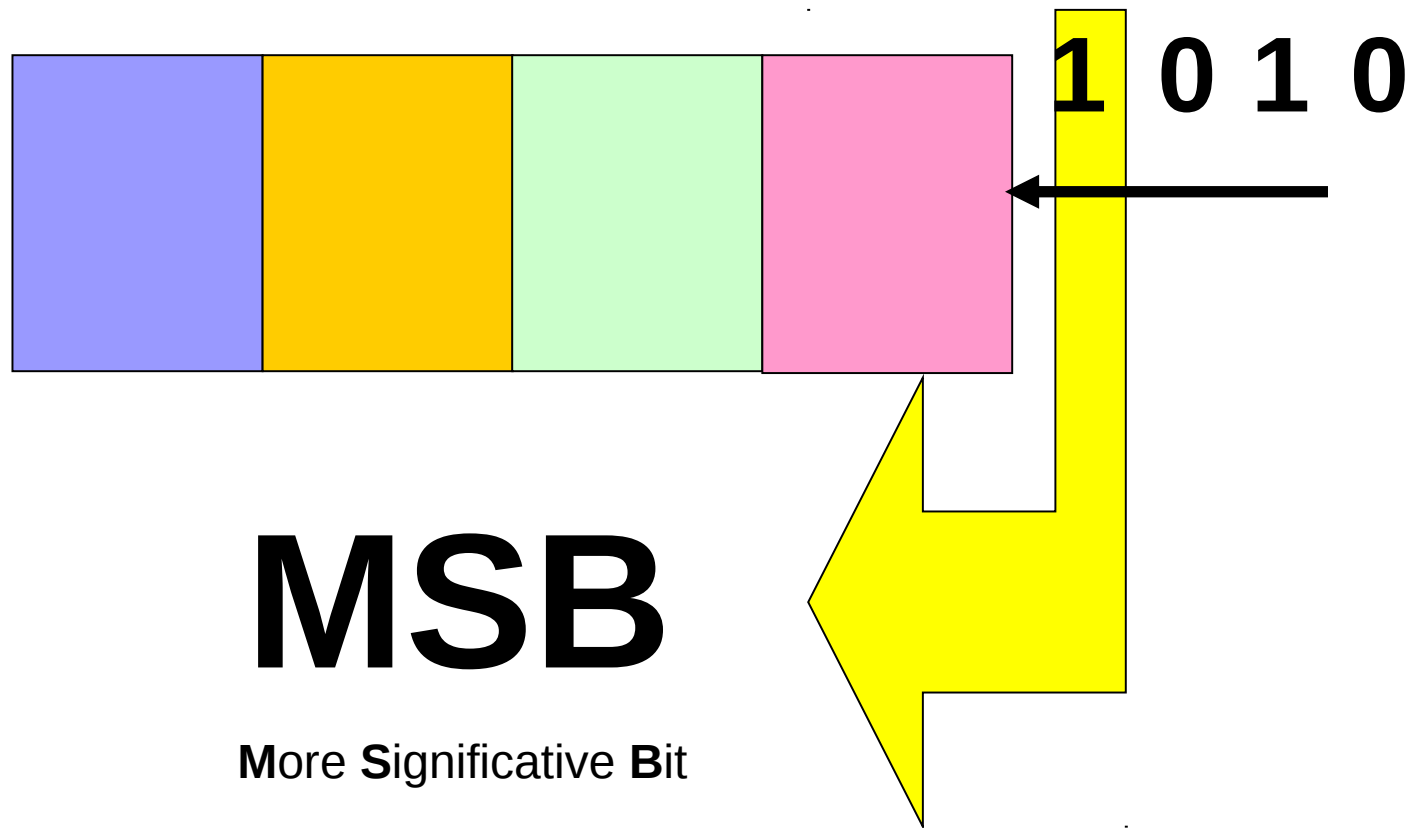


# Série – Para a direita





# Série – Para a esquerda





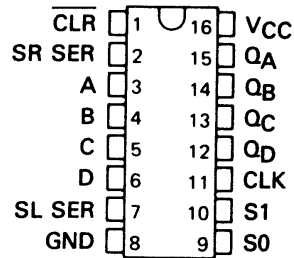
# Registrador Comercial -74194

SN54194, SN54LS194A, SN54S194 . . . J OR W PACKAGE

SN74194 . . . N PACKAGE

SN74LS194A, SN74S194 . . . D OR N PACKAGE

(TOP VIEW)



FUNCTION TABLE

INPUTS										OUTPUTS			
CLEAR	MODE		CLOCK	SERIAL		PARALLEL				Q <sub>A</sub>	Q <sub>B</sub>	Q <sub>C</sub>	Q <sub>D</sub>
	S1	S0		LEFT	RIGHT	A	B	C	D				
L	X	X	X	X	X	X	X	X	X	L	L	L	L
H	X	X	L	X	X	X	X	X	X	Q <sub>A0</sub>	Q <sub>B0</sub>	Q <sub>C0</sub>	Q <sub>D0</sub>
H	H	H	↑	X	X	a	b	c	d	a	b	c	d
H	L	H	↑	X	H	X	X	X	X	H	Q <sub>An</sub>	Q <sub>Bn</sub>	Q <sub>Cn</sub>
H	L	H	↑	X	L	X	X	X	X	L	Q <sub>An</sub>	Q <sub>Bn</sub>	Q <sub>Cn</sub>
H	H	L	↑	H	X	X	X	X	X	Q <sub>Bn</sub>	Q <sub>Cn</sub>	Q <sub>Dn</sub>	H
H	H	L	↑	L	X	X	X	X	X	Q <sub>Bn</sub>	Q <sub>Cn</sub>	Q <sub>Dn</sub>	L
H	L	L	X	X	X	X	X	X	X	Q <sub>A0</sub>	Q <sub>B0</sub>	Q <sub>C0</sub>	Q <sub>D0</sub>

Paralelo ←

Serial direita →

Serial Esquerda ←

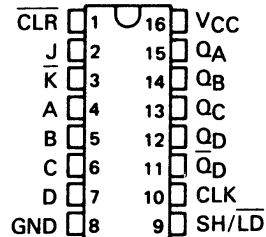
# Registrador Comercial -74195

SN54195, SN54LS195A, SN54S195 . . . J OR W PACKAGE

SN74195 . . . N PACKAGE

SN74LS195A, SN74S195 . . . D OR N PACKAGE

(TOP VIEW)



FUNCTION TABLE

INPUTS								OUTPUTS					
CLEAR	SHIFT/ LOAD	CLOCK	SERIAL		PARALLEL				QA	QB	QC	QD	QD-bar
			J	K-bar	A	B	C	D					
L	X	X	X	X	X	X	X	X	L	L	L	L	H
H	L	↑	X	X	a	b	c	d	a	b	c	d	d-bar
H	H	L	X	X	X	X	X	X	QA0	QB0	QC0	QD0	QD0-bar
H	H	↑	L	H	X	X	X	X	QA0	QA0	QBn	QCn	QCn-bar
H	H	↑	L	L	X	X	X	X	L	QAn	QBn	QCn	QCn-bar
H	H	↑	H	H	X	X	X	X	H	QAn	QBn	QCn	QCn-bar
H	H	↑	H	L	X	X	X	X	QAn-bar	QAn	QBn	QCn	QCn-bar

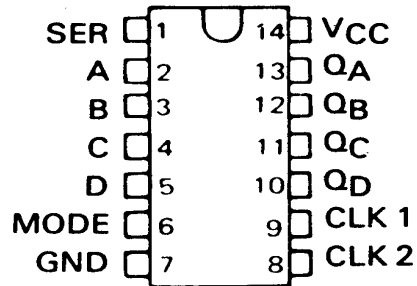
# Registrador Comercial -7495

SN5495A, SN54LS95B . . . J OR W PACKAGE

SN7495A . . . N PACKAGE

SN74LS95B . . . D OR N PACKAGE

(TOP VIEW)



FUNCTION TABLE

INPUTS				OUTPUTS							
MODE CONTROL	CLOCKS		SERIAL	PARALLEL				QA	QB	QC	QD
	2 (L)	1 (R)		A	B	C	D				
H	H	X	X	X	X	X	X	QA0	QB0	QC0	QD0
H	↓	X	X	a	b	c	d	a	b	c	d
H	↓	X	X	QB†	QC†	QD†	d	QBn	QCn	QDn	d
L	L	H	X	X	X	X	X	QA0	QB0	QC0	QD0
L	X	↓	H	X	X	X	X	H	QA0	QB0	QC0
L	X	↓	L	X	X	X	X	L	QA0	QB0	QC0
↑	L	L	X	X	X	X	X	QA0	QB0	QC0	QD0
↓	L	L	X	X	X	X	X	QA0	QB0	QC0	QD0
↓	L	H	X	X	X	X	X	QA0	QB0	QC0	QD0
↑	H	L	X	X	X	X	X	QA0	QB0	QC0	QD0
↑	H	H	X	X	X	X	X	QA0	QB0	QC0	QD0

†Shifting left requires external connection of QB to A, QC to B, and QD to C. Serial data is entered at input D.