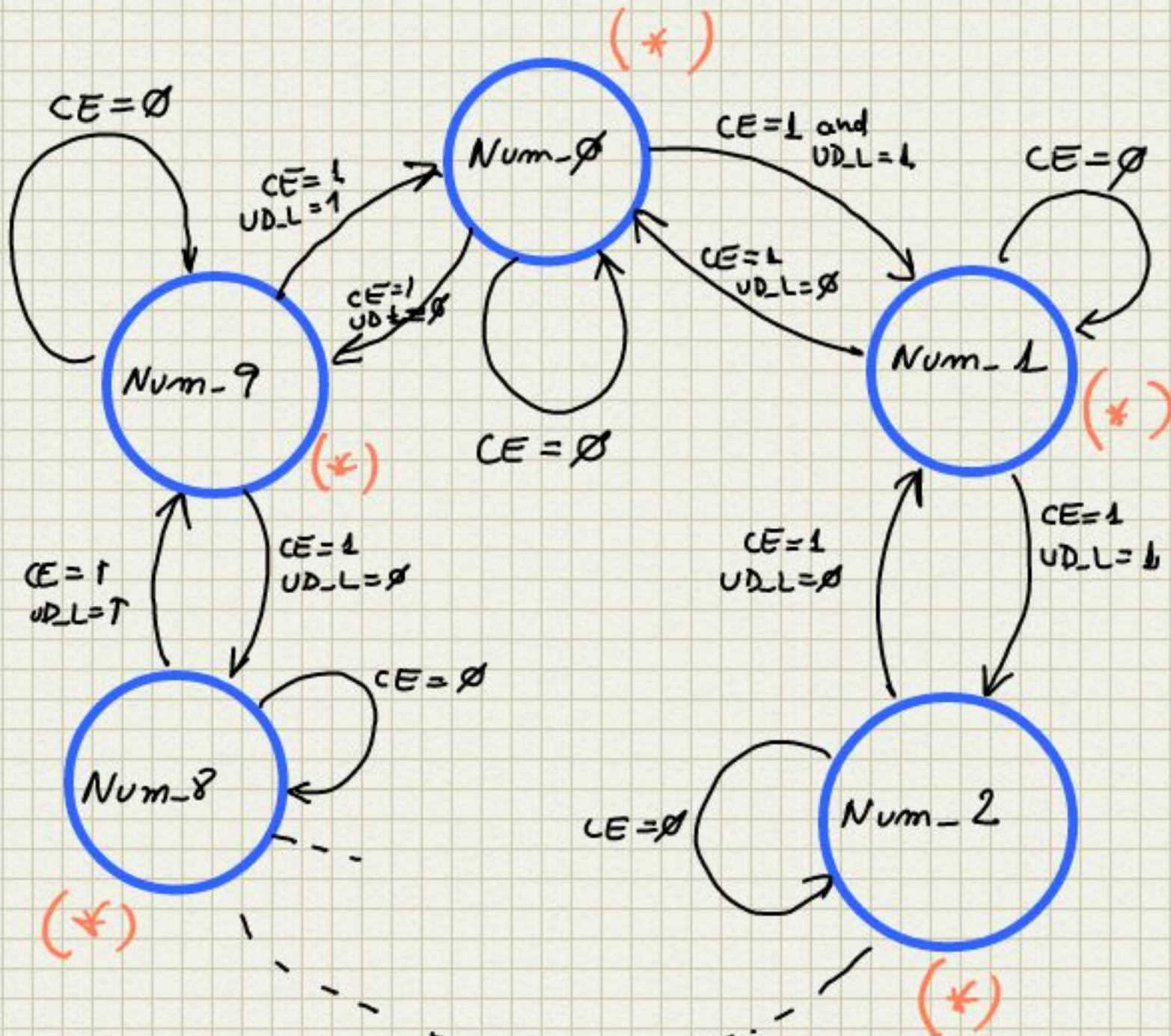


# Notes on the state diagram of the Chip-74HC4017

Let's consider all the operational modes in a single table

CODE	CE	UD_L	$Q^+$
x	$\emptyset$	x	Q do nothing
$\emptyset$	1	1	$(Q+1)$ 10-bit one-hot
$\emptyset$	L	$\emptyset$	$(Q-1)$ 10-bit one-hot
1	L	1	$(Q+1)$ [ Johnson 5-bit ( $Q(4..0)$ ) Johnson inverted ( $Q(9..5)$ ) ]
1	1	$\emptyset$	$(Q-1)$ [ Johnson 5-bit ( $Q(4..0)$ ) Johnson 5-bit inverted ( $Q(9..5)$ ) ]

$TC1\emptyset SQ_L = 1$  the first five Johnson codes;  $\emptyset$  other codes



\* See the output table in the next page

# Truth Table of outputs at each state

CODE	Present-state	Q(9..5)	Q(4..0)	TC1854 L
0	Num-0	00000	00001	L
0	Num-1	00000	00010	L
0	Num-2	00000	00100	L
0	Num-3	00000	01000	L
0	Num-4	00000	10000	L
0	Num-5	00001	00000	0
0	Num-6	00010	00000	0
0	Num-7	00100	00000	0
0	Num-8	01000	00000	0
0	Num-9	10000	00000	0
- - - - -				
1	Num-0	11111	00000	L
1	Num-1	11110	00001	L
1	Num-2	11100	00011	L
1	Num-3	11000	00111	L
1	Num-4	10000	01111	L
1	Num-5	00000	11111	0
1	Num-6	00001	11110	0
1	Num-7	00011	11100	0
1	Num-8	00111	11000	0
1	Num-9	01111	10000	0