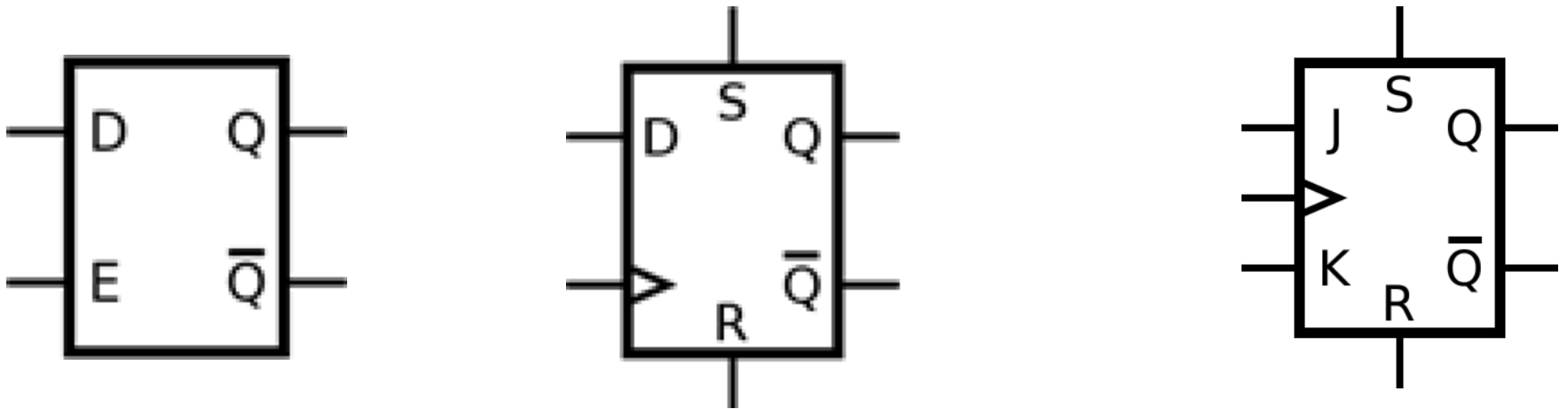




Circuite Basculante Bistabile

Laborator virtual (2h) folosind
aplicatia **Simu1DE**

Referatul in varianta fata in fata

Structura Jurnal pentru acest tip de lucrare

1. Titlu sectiune
2. Simbol Bistabil +Tabel functiuni (referat)+pinout integrat(catalog).
3. Schema de lucru (cea efectuata in SimulIDE)
4. Tabel pentru verificare functionare cu observatii

Aceasta structura se repeta pentru cele 3 studii:

- LATCH,
- Flip-Flop D si
- Flip-Flop JK

Obiectivele lucrării

1. **Studiul a 3 tipuri de bistabili:** LATCH, Flip-Flop D si Flip-Flop JK;

Bistabilii se gasesc in interiorul a 3 circuite integrate:
[75HC259](#) (si [aici](#)), [75HC74](#) si [74HC112](#).

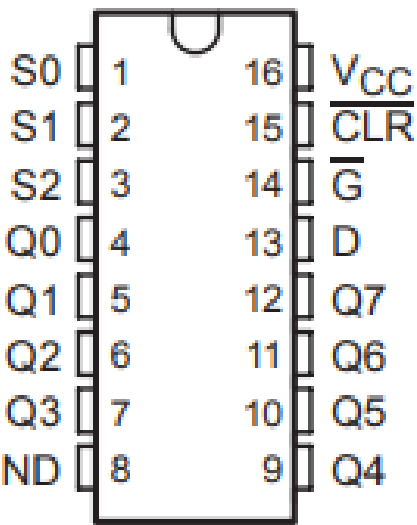
2. **Utilizarea integratelor** in care se gasesc Bistabilii;
3. Modalitati de **testare a unui integrat digital;**
4. Inregistrarea functionarii unui sistem digital intr-un ***Jurnal de laborator***.
5. Invatarea diferentelor intre testarea asincrona si sincrona a unui Bistabil.

Circuitul SN74HC259

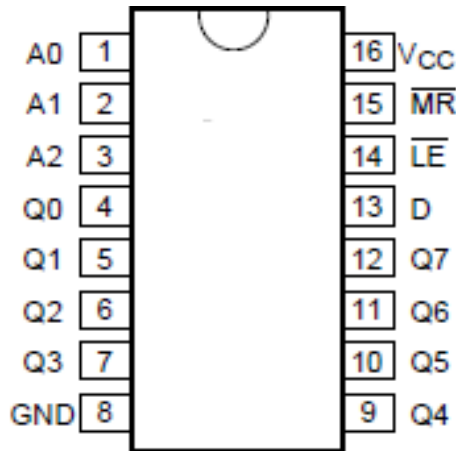
8 bit addressable **LATCH**

Este un circuit din familia TTL cu 14 pini. 6 pini de intrare 8 de iesire + 2 alimentare.

Pinout top-view

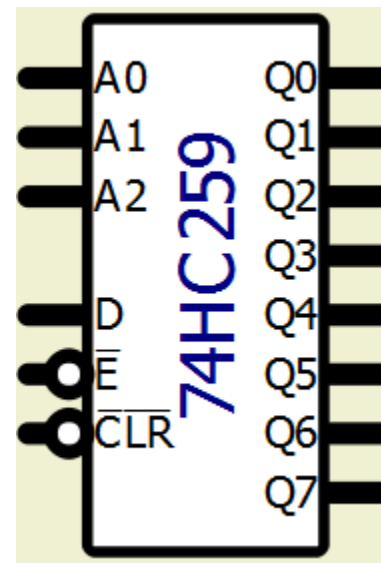


catalog
Texas
Instruments
[aici](#)



catalog
Nexperia
[aici](#)

		FUNCTION		
INPUTS		OUTPUT OF ADDRESSED LATCH	EACH OTHER OUTPUT	FUNCTION
CLR	G			
H	L	D	Q _{iO}	Addressable latch
H	H	Q _{iO}	Q _{iO}	Memory
L	L	D	L	8-line demultiplexer
L	H	L	L	Clear

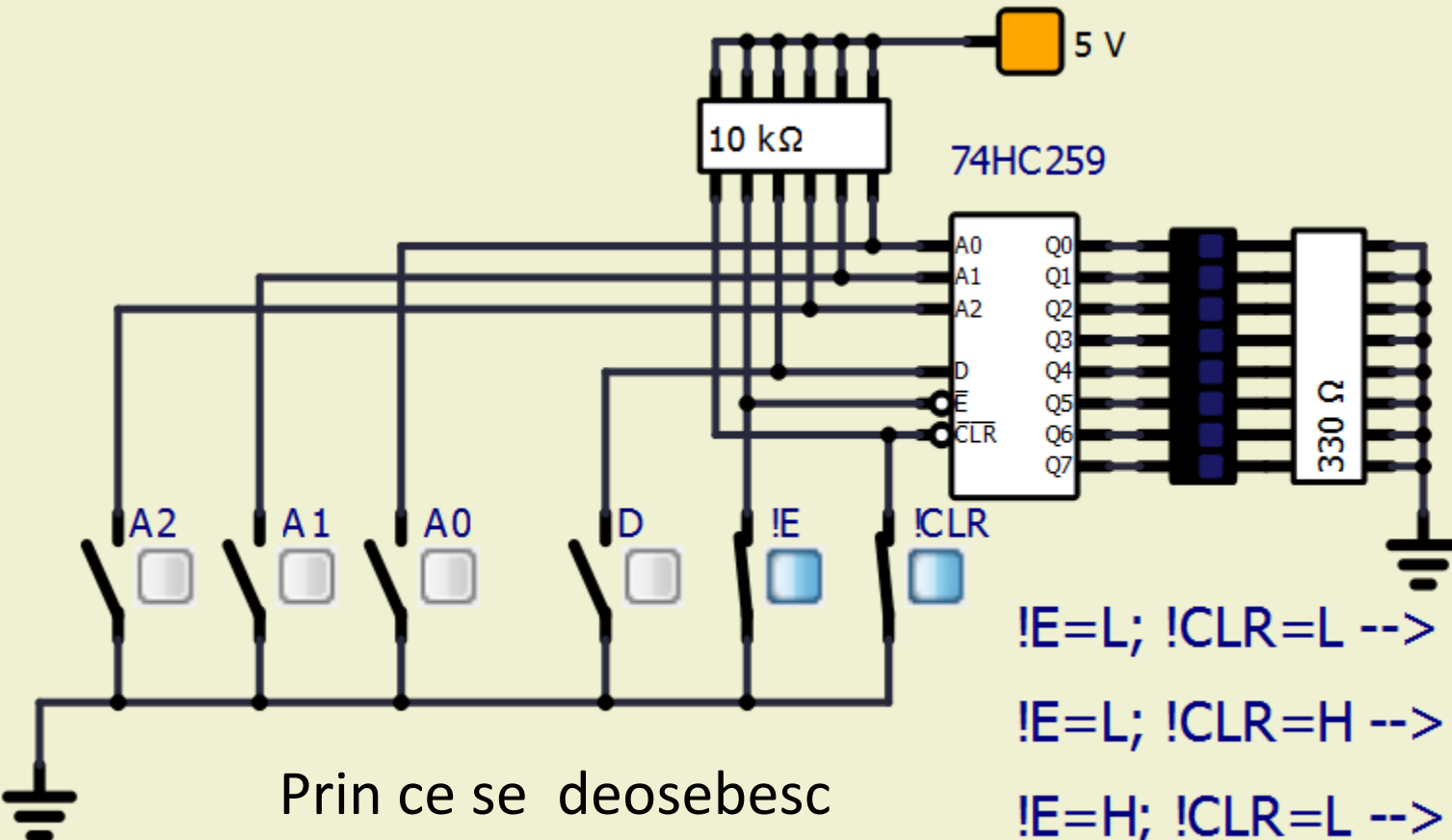


Simbol in
SimulIDE

Circuitul SN74HC259

8 bit addressable latch

8-bit addressable latch 74HC259



!IE=L; !CLR=L --> DEMUX 1-8

!IE=L; !CLR=H --> LATCH adresabil

!IE=H; !CLR=L --> CLEAR

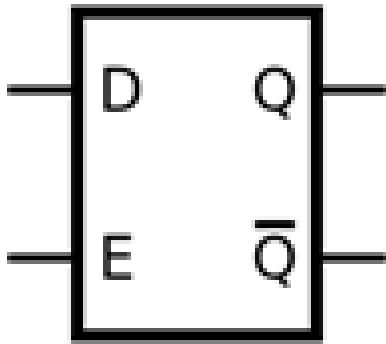
!IE=H; !CLR=H --> Memorare

Prin ce se deosebesc
primele doua stari?

Unde este catodul LED-urilor?

Un latch transparent de tip D

Simbolul si Tabela de functionare a unui LATCH transparent sunt date mai jos (vezi referat la pagina 1)



Gated D latch truth table

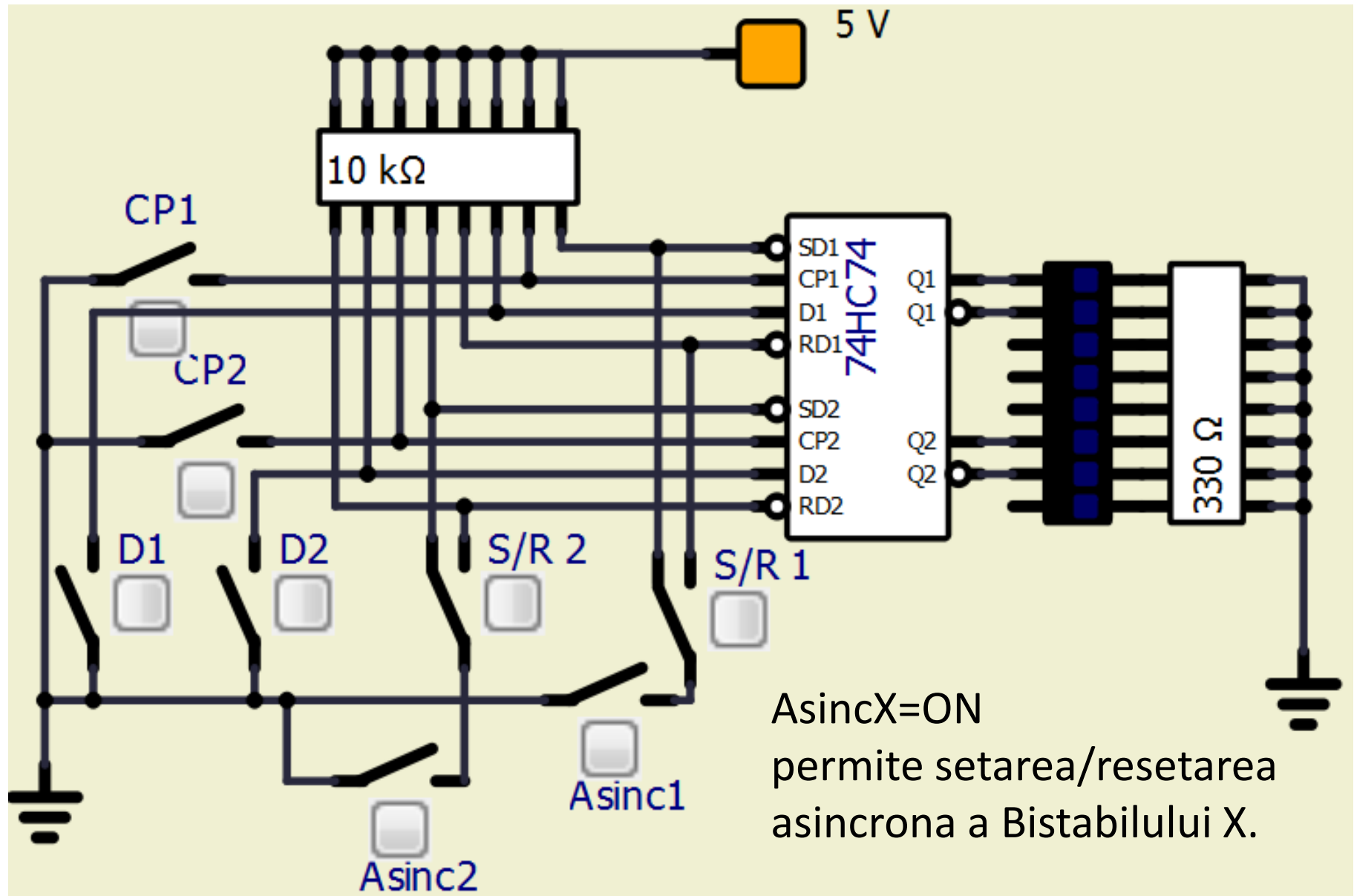
E/C	D	Q	$\bar{Q}$	Comment
0	X	Q_{prev}	$\bar{Q}_{prev}$	No change
1	0	0	1	Reset
1	1	1	0	Set

Cum verificam faptul ca cei 8 bistabili
in starea **[!E=L si !CLR]** sunt de tip
LATCH transparent?

Transparenta

Lab Circuite Basculante Bistabile

Dual D-type positive edge-triggered Flip-Flop 75HC74



Lab Circuite Basculante Bistabile

Dual J-K Negative-Edge-Triggered Flip-Flops [74HC112](#)

