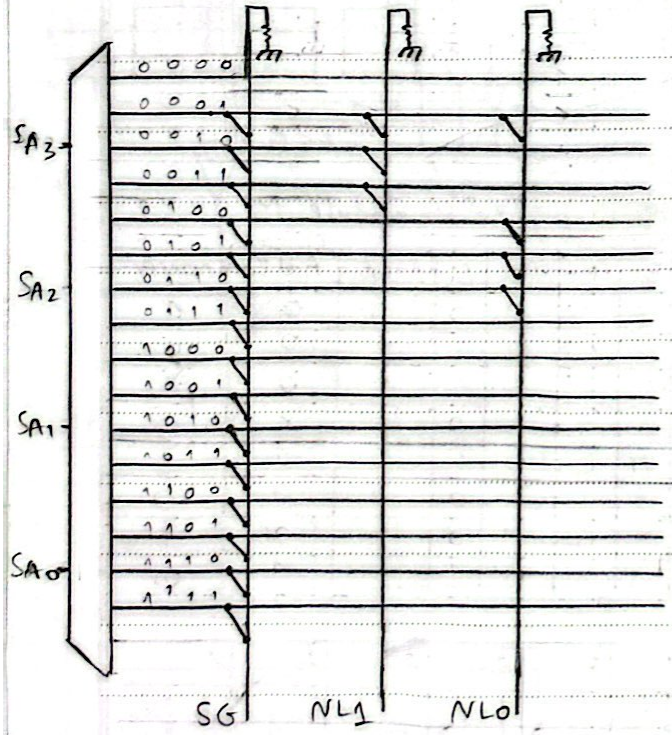
Série TD Archi 2 : n°2 : Les ROM :

Exo 1 :

1/ La TV :

SA_0	SA_1	SA_2	SA_3	SG	NL1	NL0
0	0	0	0	0	0	0
0	0	0	1	1	1	1
0	0	1	0	1	1	0
0	0	1	1	1	1	0
0	1	0	0	1	0	1
0	1	0	1	1	0	1
0	1	1	0	1	0	1
0	1	1	1	1	0	1
1	0	0	0	1	0	0
1	0	0	1	1	0	0
1	0	1	0	1	0	0
1	0	1	1	1	0	0
1	1	0	0	1	0	0
1	1	0	1	1	0	0
1	1	1	0	1	0	0
1	1	1	1	1	0	0

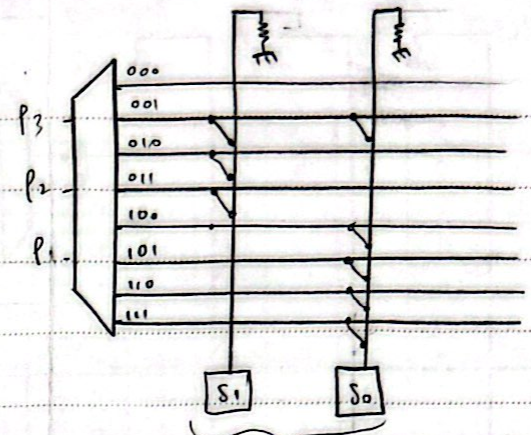
2/ Réaliser le système d'alarmes avec 1 seule ROM :



Exo 2 : Arbitre de priorité :

1/ Réaliser la TV :

S_0	0	↓	0	0	↓	↓	↓	↓
S_1	0	↓	↓	↓	0	0	0	0
P_3	0	↓	0	↓	0	↓	0	↓
P_2	0	0	↓	↓	0	0	↓	↓
P_1	0	0	0	0	↓	↓	↓	↓



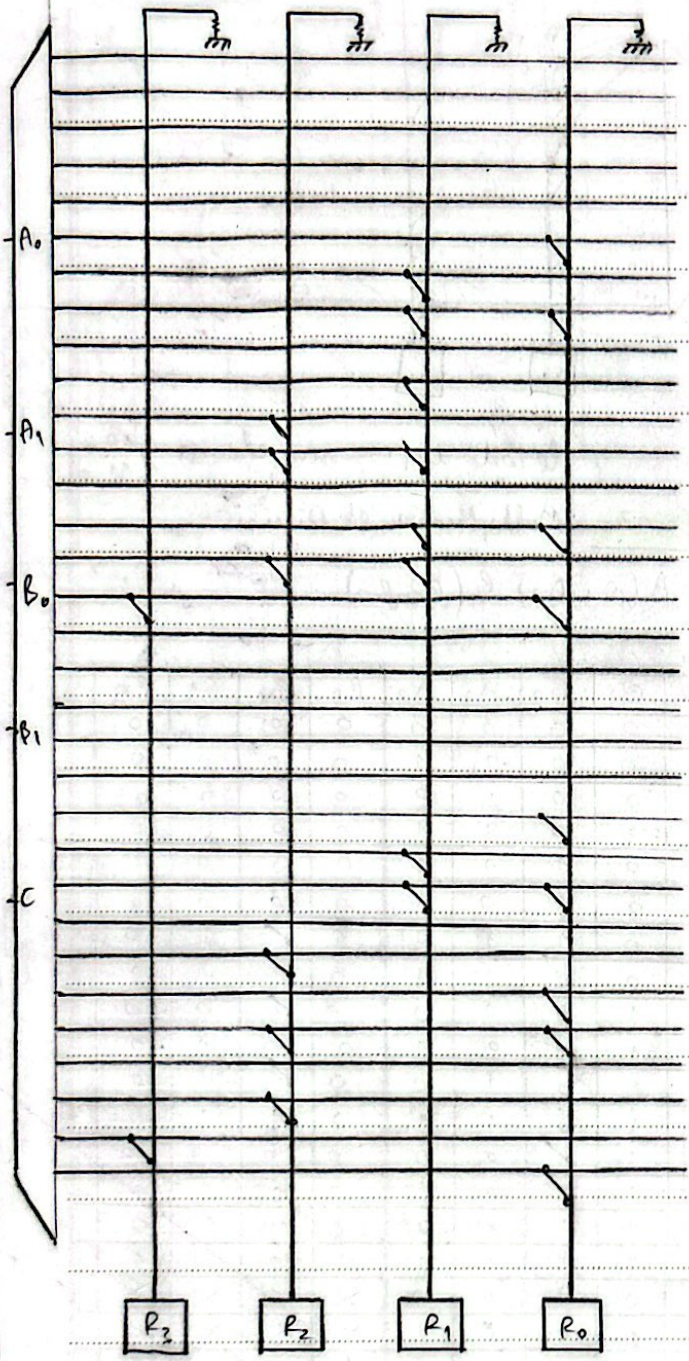
le code du processeur choisi { 01 = 1, 10 = 2, 11 = 3

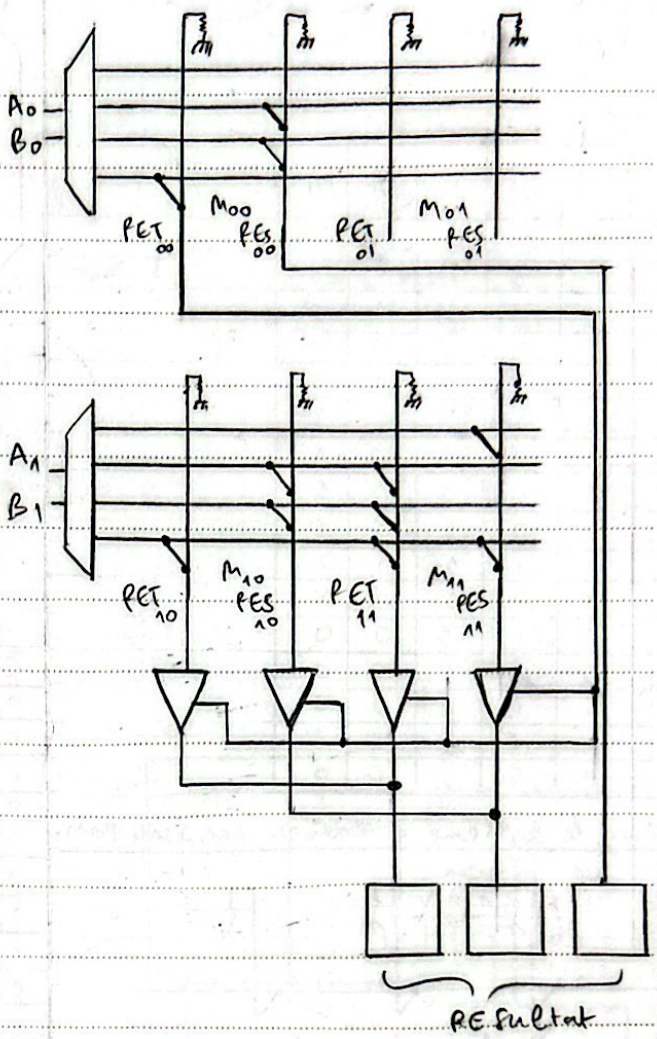
Exo 3 : Multiplication et Division :

A(A_1,A_0) B(B_1,B_0)

C	B_1	B_0	A_1	A_0	R_3	R_2	R_1	R_0
0	0	0	0	0	0	0	0	0
0	0	0	0	1	0	0	0	0
0	0	0	1	0	0	0	0	0
0	0	0	1	1	0	0	0	0
0	0	1	0	0	0	0	0	0
0	0	1	0	1	0	0	0	1
0	0	1	1	0	0	0	1	0
0	0	1	1	1	0	0	1	1
0	1	0	0	0	0	0	0	0
0	1	0	0	1	0	0	1	0
0	1	0	1	0	0	1	0	0
0	1	0	1	1	0	1	1	0
0	1	1	0	0	0	0	0	0
0	1	1	0	1	0	0	1	1
0	1	1	1	0	0	1	1	0
0	1	1	1	1	1	0	0	1
1	0	0	0	0	X	X	X	X
1	0	0	0	1	X	X	X	X
1	0	0	1	0	X	X	X	X
1	0	0	1	1	X	X	X	X
1	0	1	0	0	0	0	0	0
1	0	1	0	1	0	0	0	1
1	0	1	1	0	0	0	1	0
1	0	1	1	1	0	0	1	1
1	1	0	0	0	0	0	0	0
1	1	0	0	1	0	1	0	0
1	1	0	1	0	0	0	0	1
1	1	0	1	1	0	1	0	1
1	1	1	0	0	0	0	0	0
1	1	1	0	1	0	1	0	0
1	1	1	1	0	1	0	0	0
1	1	1	1	1	0	0	0	1

Réalisation du circuit :





Exo 4 :

- on va utiliser 2 ROM 4×4, un min de circuits !
- On a la TV :

B_0	A_0	PET_{00}	PES_{00}	PET_{01}	PES_{01}
0	0	0	0	X	X
0	1	0	1	X	X
1	0	0	1	X	X
1	1	1	0	X	X

M_{00} M_{01} (On ne va pas utiliser celui là car $PET_0 = 0$)

ROM 1

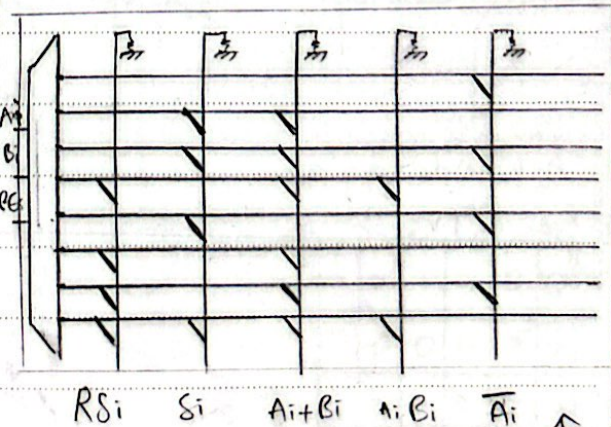
B_1	A_1	PET_{10}	PES_{10}	PET_{11}	PET_{11}
0	0	0	0	0	1
0	1	0	1	1	0
1	0	0	1	1	0
1	1	1	0	1	1

M_{10} M_{11}

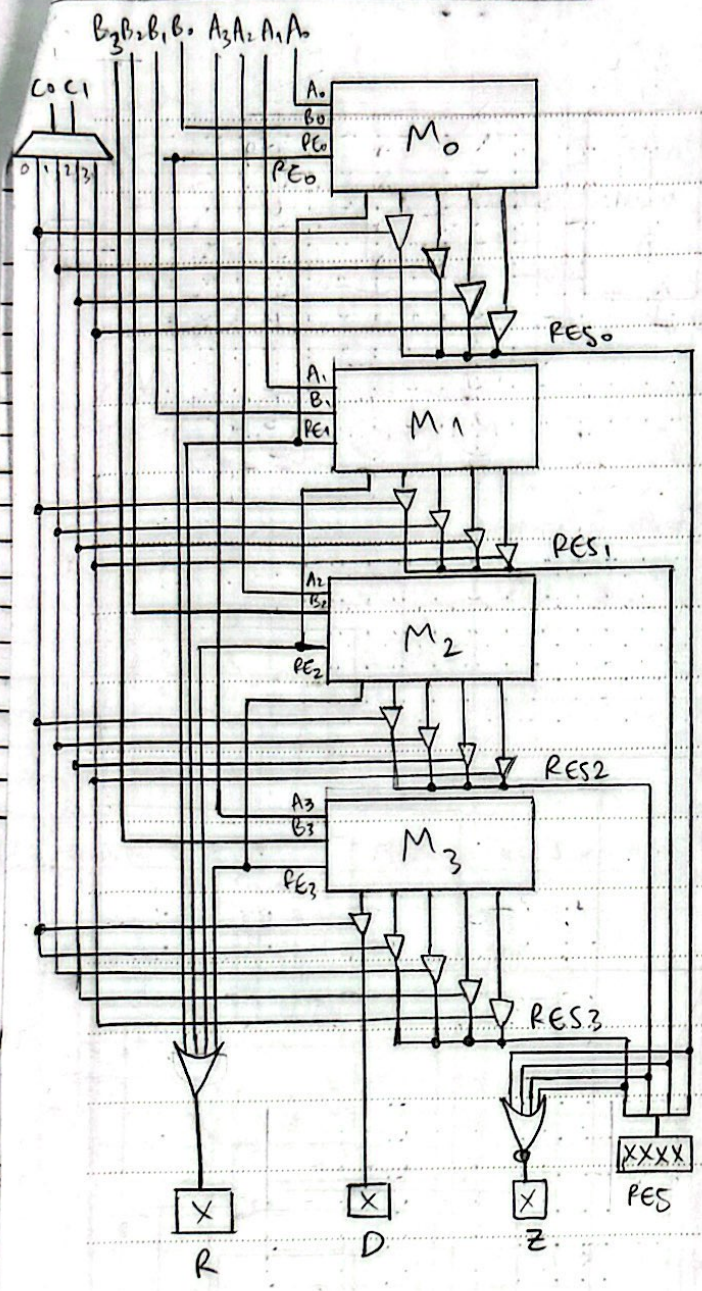
ROM 2

Exo 5 : La TV d'un module M_i :

RE_i	B_i	A_i	RS_i	S_i	A_i OU B_i	A_i et B_i	NON A_i
0	0	0	0	0	0	0	1
0	0	1	0	1	1	0	0
0	1	0	0	1	1	0	1
0	1	1	1	0	1	1	0
1	0	0	0	1	0	0	1
1	0	1	1	0	1	0	0
1	1	0	1	0	1	0	1
1	1	1	1	1	1	1	0



1/ Établir les liaisons entre les 4 modules :

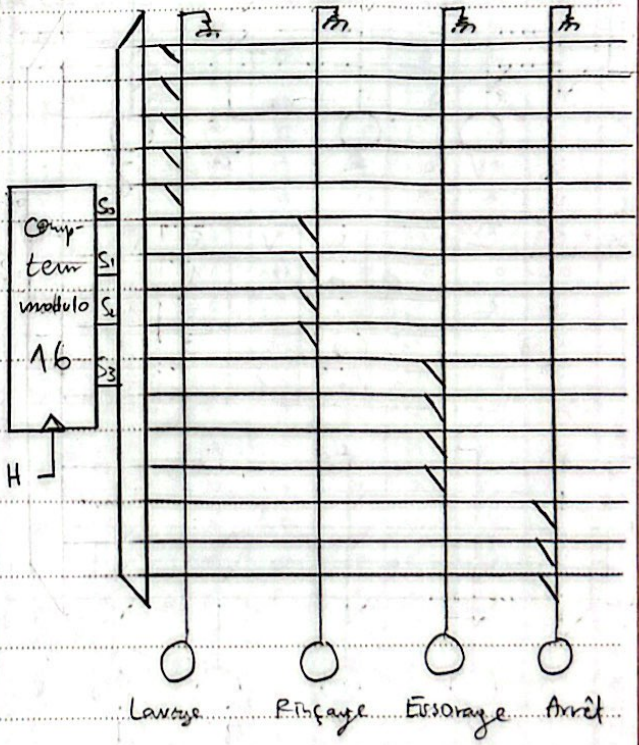


Exo6 :

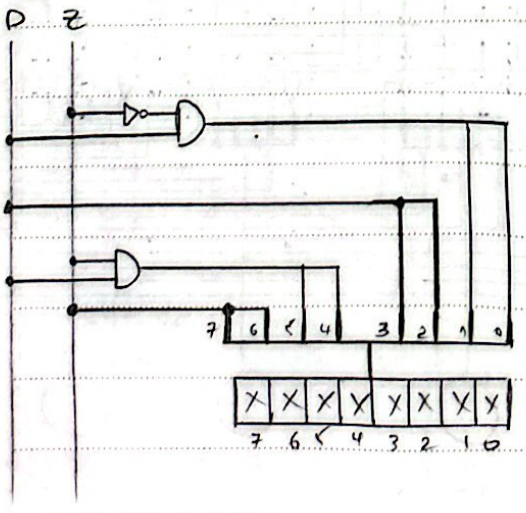
1/ L.T.V : $pt + H\uparrow$ obligatoire

S_3	S_2	S_1	S_0	L	R	E	A
0	0	0	0	1	0	0	0
0	0	0	1	1	0	0	0
0	0	1	0	1	0	0	0
0	0	1	1	1	0	0	0
0	1	0	0	1	0	0	0
0	1	0	1	0	1	0	0
0	1	1	0	0	1	0	0
0	1	1	1	0	1	0	0
1	0	0	0	0	1	0	0
1	0	0	1	0	0	1	0
1	0	1	0	0	0	1	0
1	0	1	1	0	0	1	0
1	1	0	0	0	0	1	0
1	1	0	1	0	0	0	1
1	1	1	0	0	0	0	1
1	1	1	1	0	0	0	1

2/ Réalisation :



3/ Faire le schéma qui génère ADR :



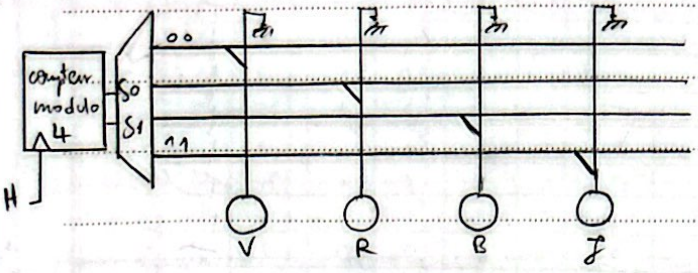
(on doit utiliser une ROM)

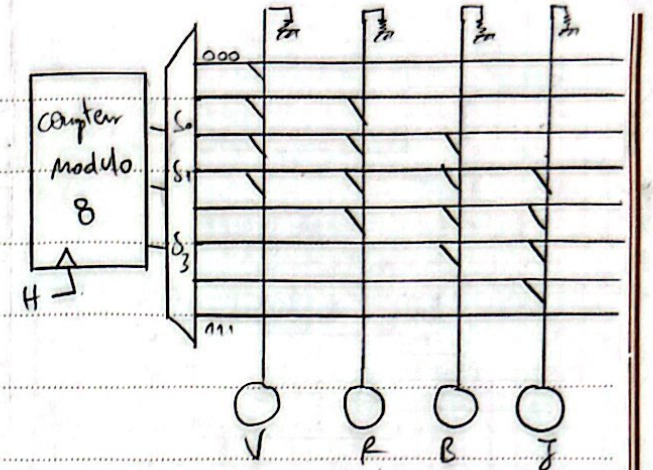
Exo7 :

TV :

Séquence 1 :

S_1	S_0	V	R	B	J
0	0	1	0	0	0
0	1	0	1	0	0
1	0	0	0	1	0
1	1	0	0	0	1



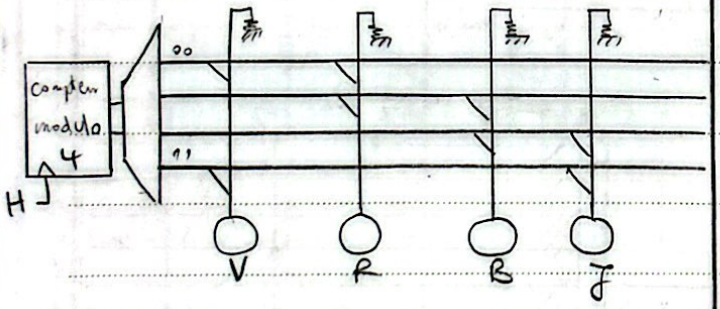


Établir la liaison :

Séquence 2 :

TV :

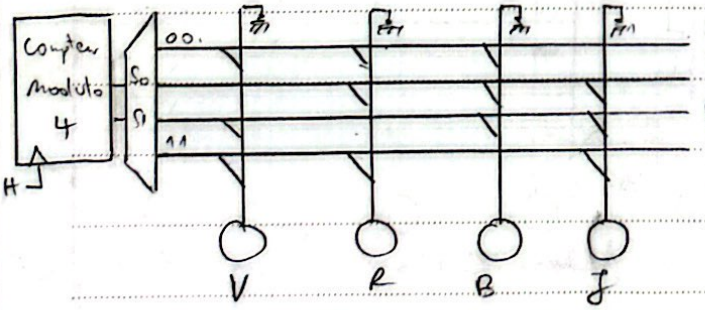
S_1	S_0	V	R	B	J
0	0	1	1	0	0
0	1	0	1	1	0
1	0	0	0	1	1
1	1	1	0	0	1



Séquence 3 :

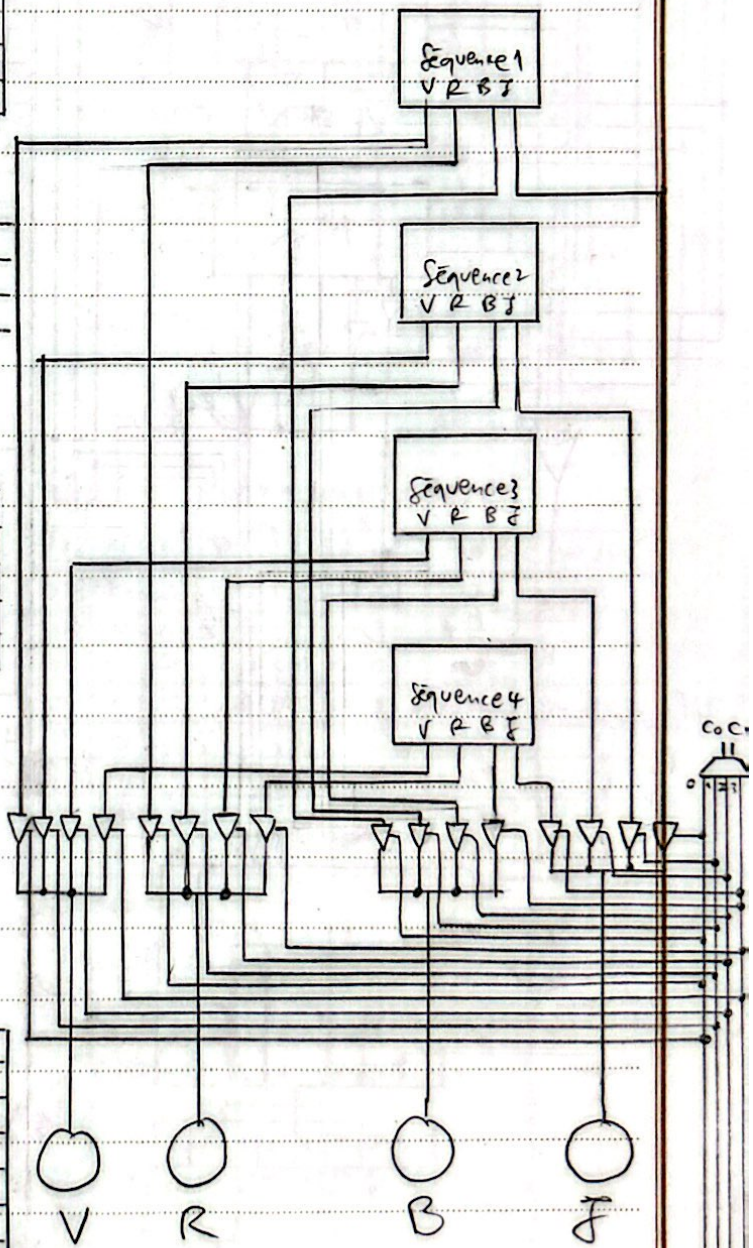
TV :

S_1	S_0	V	R	B	J
0	0	1	1	1	0
0	1	0	1	1	1
1	0	1	0	1	1
1	1	1	1	0	1



Séquence 4 :

S_2	S_1	S_0	V	R	B	J
0	0	0	1	0	0	0
0	0	1	1	1	0	0
0	1	0	1	1	1	0
0	1	1	1	1	1	1
1	0	0	0	1	1	1
1	0	1	0	0	1	1
1	1	0	0	0	0	1
1	1	1	0	0	0	0



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