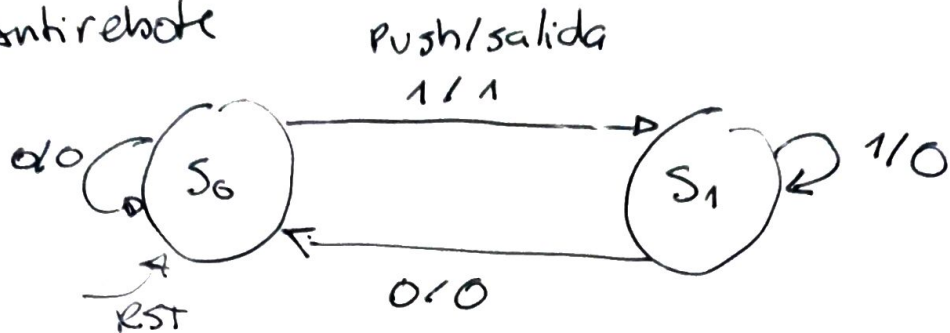


Carlos Gnil 19443

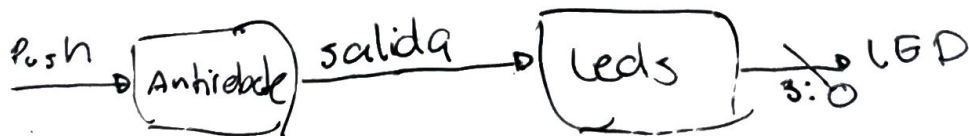
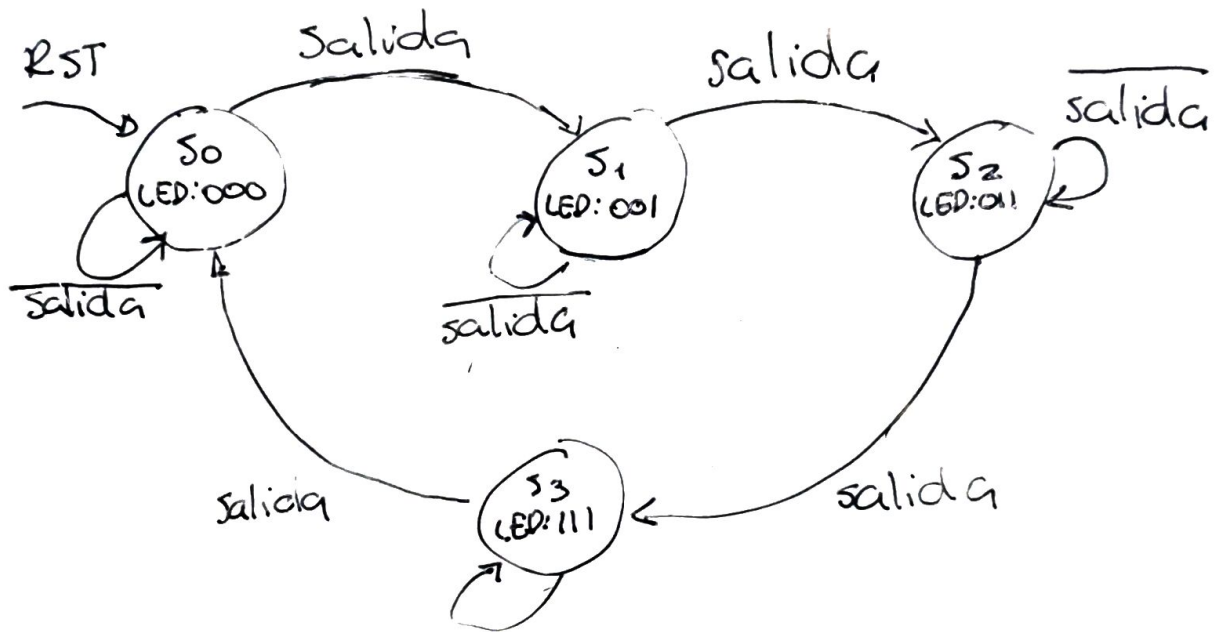
Lab # 07

Ejercicio 1

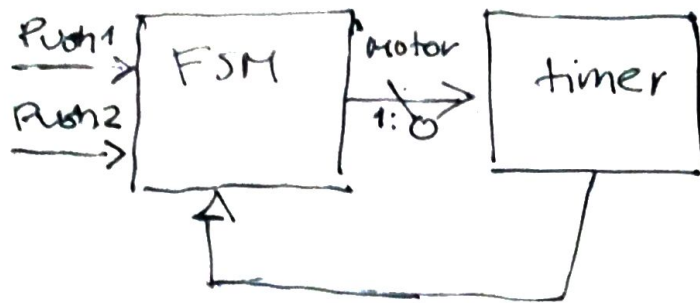
FSM Antirebote



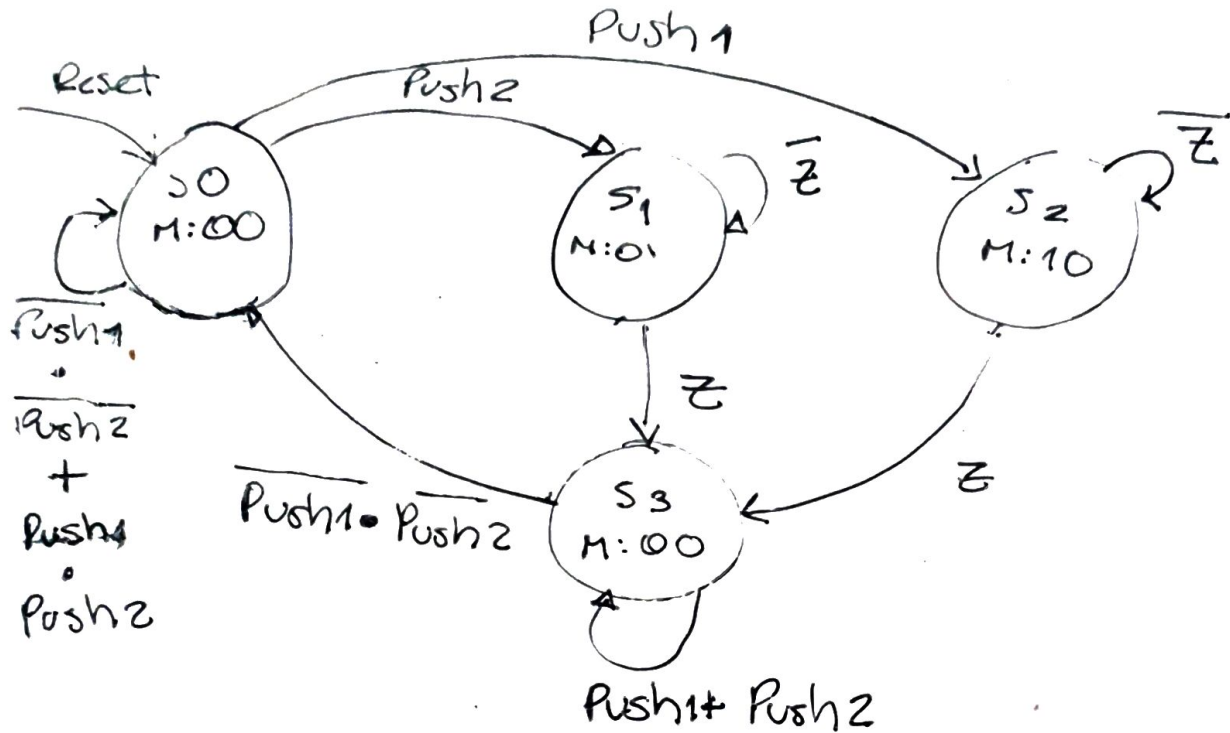
FSM LGD



Ejercicio #2

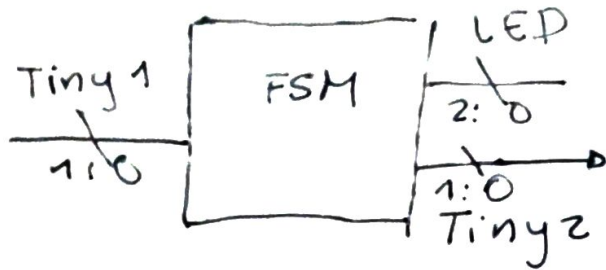


\bar{Z} : bit que indica el fin del timer



Ejercicio 2.

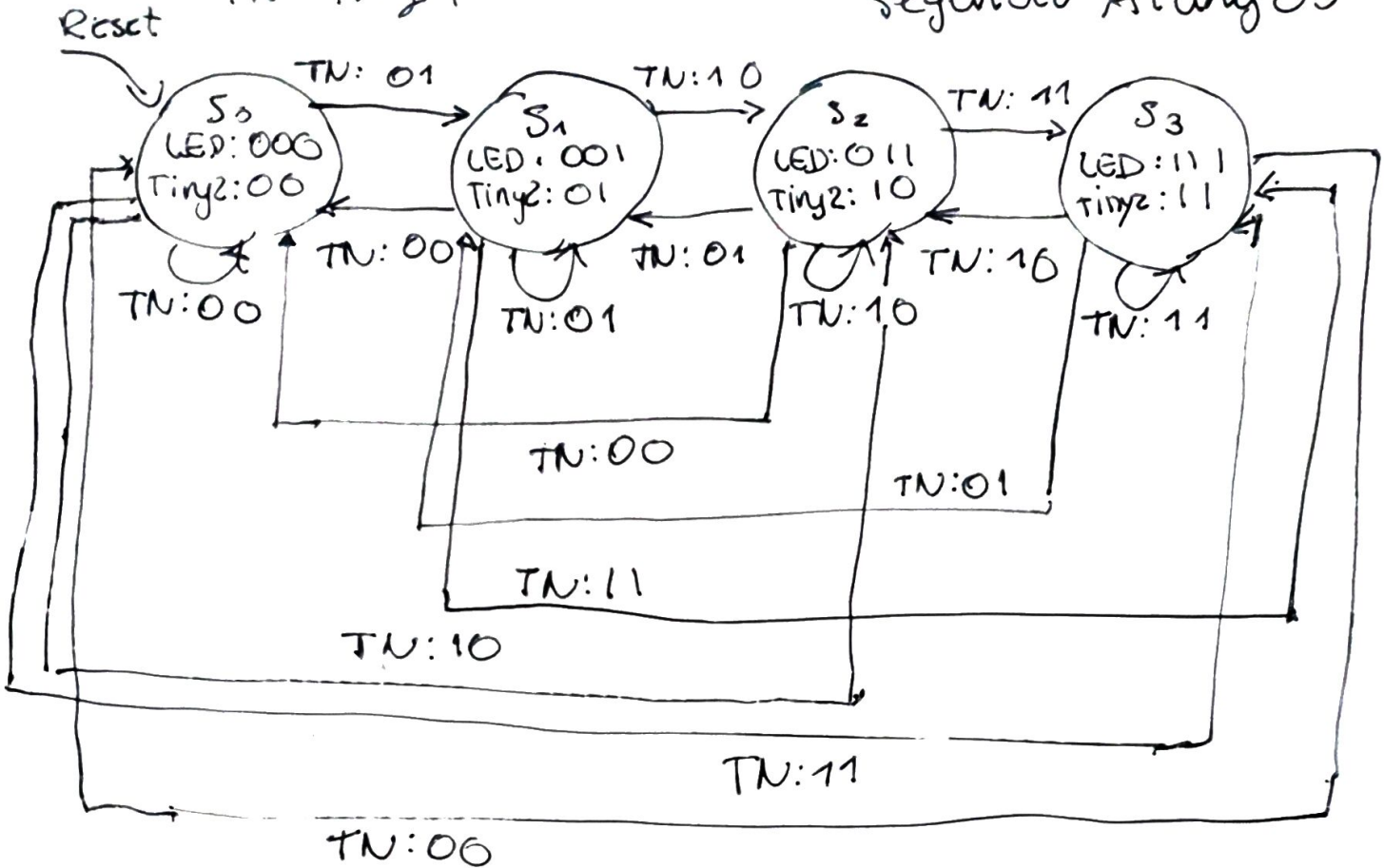
Tiny1: salida digital primer del ATtiny85



LED: leds de salida que incrementan con el contador

Tiny2: Entrada para el segundo ATtiny85

TN = Tiny1



Ejercicio 1:

Estados futuros:

Logic Friday

File Operation Truthtable Equation Gates View Help

Funci...	Inputs	Outputs	True	False	DC	PI	Gates
SN0-SN1	3	2	4, 4	4, 4	0, 0	Unmini...	Not mapped
SN1-SN0	3	2	4, 4	4, 4	0, 0	5	Not mapped

S1	S0	SALIDA	=>	SN1	SN0
1	0	X		1	
1	X	0		1	
0	1	1		1	
X	0	1			1
X	1	0			1

Entered by truthtable:
 $SN1 = S1' S0 SALIDA + S1 S0' SALIDA' + S1 S0' SALIDA + S1 S0 SALIDA'$
 $SN0 = S1' S0' SALIDA + S1' S0 SALIDA' + S1 S0' SALIDA + S1 S0 SALIDA'$

Minimized:
 $SN1 = S1 S0' + S1 SALIDA' + S1' S0 SALIDA$
 $SN0 = S0' SALIDA + S0 SALIDA'$

Salidas:

Logic Friday

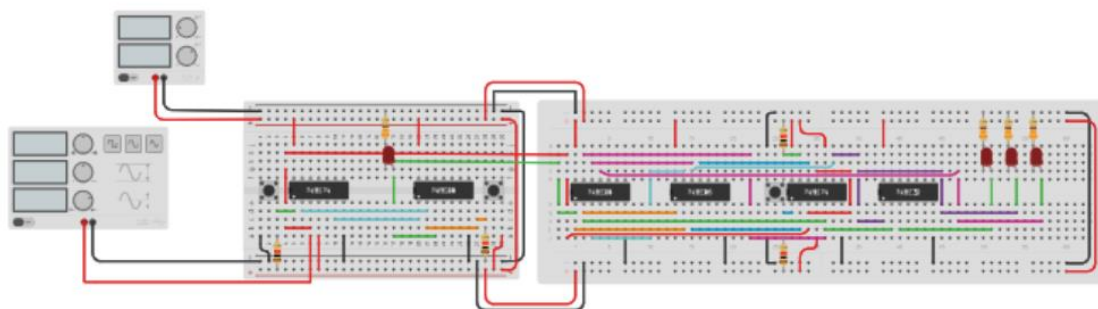
File Operation Truthtable Equation Gates View Help

Funci...	Inputs	Outputs	True	False	DC	PI	Gates
LED2-L...	2	3	1, 2, 3	3, 2, 1	0, 0, 0	3	Not mapped

S1	S0	=>	LED2	LED1	LED0
1	1		1		
X	1			1	
1	X			1	1

Entered by truthtable:
 $LED2 = S1 S0$
 $LED1 = S1 S0' + S1' S0$
 $LED0 = S1' S0 + S1 S0' + S1 S0$

Minimized:
 $LED2 = S1 S0$
 $LED1 = S1$
 $LED0 = S0 + S1$

Circuito en tinkercad: <https://www.tinkercad.com/things/4x5A2bdkXku>

Ejercicio 2:

Estados:

ApowerREC .py									
File Operation Truthtable Equation Gates View Help									
Funci...	Inputs	Outputs	True	False	DC	PI	Gates		
SIN-SO...	5	2	16,24	16,8	0,0	8	17		
SIN-SO...	5	2	20,20	12,12	0,0	8	19		
S1	S0	PUSH1	PUSH2	Z	=>	SIN	SON		
X	0	0	1	X		1			
0	X	1	0	X			1		
0	1	X	X	1		1			
1	0	X	X	1			1		
1	0	X	X	X		1			
0	1	X	X	X			1		
1	1	X	1	X		1			
1	1	X	1	X			1		

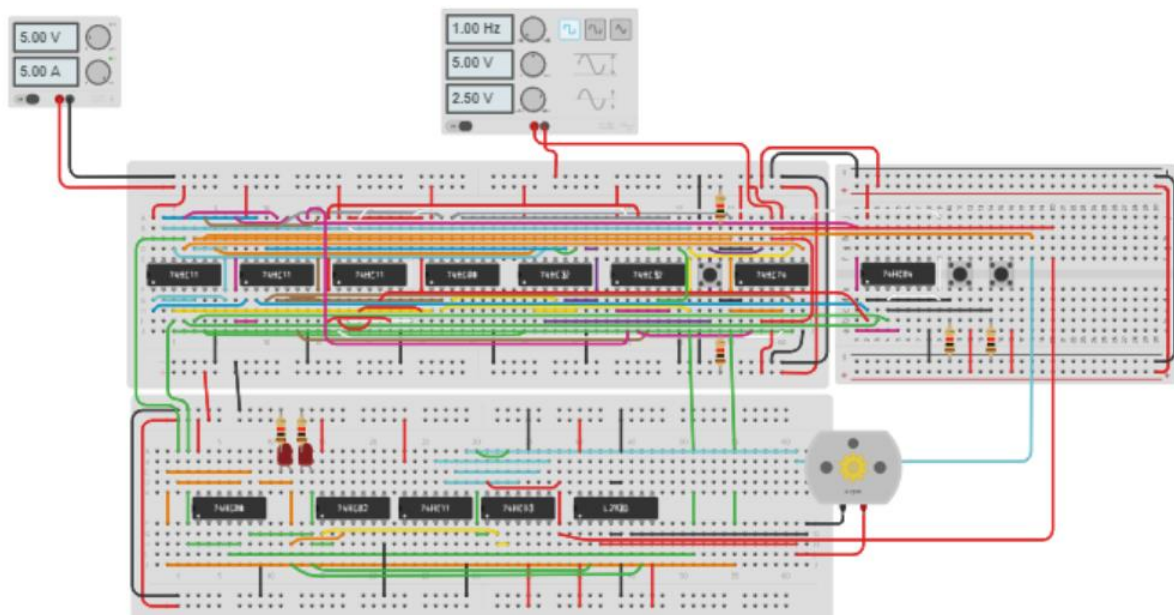
$S0N = S1' \cdot S0' \cdot PUSH1 \cdot PUSH2' \cdot Z' + S1' \cdot S0' \cdot PUSH1 \cdot PUSH2' \cdot Z + S1' \cdot S0 \cdot PUSH1' \cdot PUSH2$
 $+ S1' \cdot S0 \cdot PUSH1 \cdot PUSH2' \cdot Z' + S1' \cdot S0 \cdot PUSH1 \cdot PUSH2' \cdot Z + S1' \cdot S0 \cdot PUSH1 \cdot PUSH2 \cdot Z' + S1' \cdot S0 \cdot PUSH1 \cdot PUSH2 \cdot Z$
 $+ S1' \cdot S0 \cdot PUSH1 \cdot PUSH2 \cdot Z' + S1' \cdot S0 \cdot PUSH1 \cdot PUSH2 \cdot Z + S1 \cdot S0' \cdot PUSH1' \cdot PUSH2 \cdot Z' + S1 \cdot S0' \cdot PUSH1' \cdot PUSH2 \cdot Z$
 $+ S1 \cdot S0' \cdot PUSH1 \cdot PUSH2 \cdot Z'$
 Minimized:
 $SIN = S0' \cdot PUSH1' \cdot PUSH2 + S1' \cdot S0 \cdot Z + S1 \cdot S0' + S1 \cdot S0 \cdot PUSH2 + S1 \cdot S0 \cdot PUSH1 ;$
 $SON = S1' \cdot PUSH1 \cdot PUSH2' + S1 \cdot S0' \cdot Z + S1' \cdot S0 + S1 \cdot S0 \cdot PUSH2 + S1 \cdot S0 \cdot PUSH1 ;$

Salidas:

ApowerREC .py									
File Operation Truthtable Equation Gates View Help									
Funci...	Inputs	Outputs	True	False	DC	PI	Gat		
SIN-SO...	5	2	2,10	22,14	8,8	4	11		
M1-M0...	2	2	1,1	3,3	0,0	2	4		
S1	S0	=>	M1	M0					
0	1			1					
1	0		1						

Entered by truthtable:
 $M1 = S1 \cdot S0' ;$
 $M0 = S1' \cdot S0 ;$
 Minimized:
 $M1 = S1 \cdot S0' ;$
 $M0 = S1' \cdot S0 ;$

Circuito en tinkercad: <https://www.tinkercad.com/things/241czAdGxxa>



Ejercicio 3:

Estados:

Logic Friday

Funci...	Inputs	Outputs	True	False	DC	PI	Gates
SN1-SN0	4	2	8, 8	8, 8	0, 0	2	Not mapped

S1	S0	TN1	TN0	=>	SN1	SN0
X	X	X	1			1
X	X	1	X		1	

Entered by truthtable:
 $SN1 = S1' S0' TN1 TN0' + S1' S0'$
 $SN0 = S1' S0' TN1' TN0 + S1' S0'$

Minimized:
 $SN1 = TN1$;
 $SN0 = TN0$;

Salidas:

Logic Friday

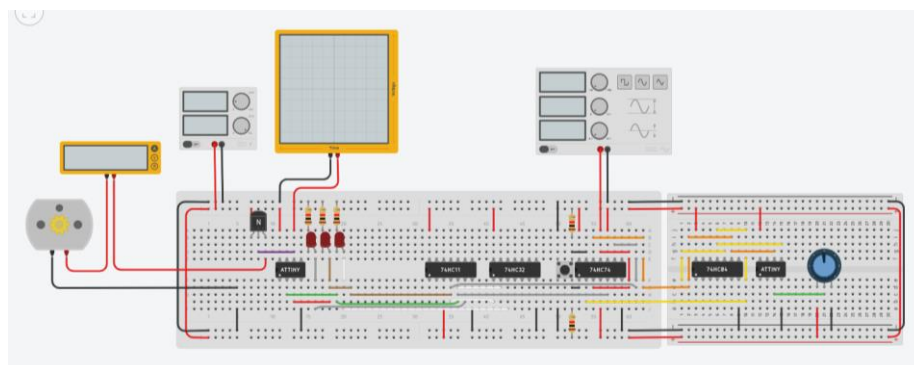
Funci...	Inputs	Outputs	True	False	DC	PI	Gates
SN1-SN0	4	2	5, 5	11, 11	0, 0	5	9
LED2-TI...	2	5	1, 2, ...	3, 2, ...	0, 0, ...	3	Not mapped

S1	S0	=>	LED2	LED1	LED0	TINY2_1	TINY2_0
1	1		1				
X	1				1		1
1	X			1	1	1	

Entered by truthtable:
 $LED2 = S1 S0$;
 $LED1 = S1 S0' + S1 S0$;
 $LED0 = S1' S0 + S1 S0' + S1 S0$;
 $TINY2_1 = S1 S0' + S1 S0$;
 $TINY2_0 = S1' S0 + S1 S0$;

Minimized:
 $LED2 = S1 S0$;
 $LED1 = S1$;
 $LED0 = S0 + S1$;
 $TINY2_1 = S1$;
 $TINY2_0 = S0$;

Circuito en tinkercad: <https://www.tinkercad.com/things/e109C50cCfY>



Link del repositorio: https://github.com/gil19443/Digital_1.git

