

Proyecto 1 - Máquina de Estados Finitos

- Interfaz principal, selección de menús.

Tabla de transiciones de estado:

ESTADO		INPUTS				ESTADO
ACTUAL	On	Continuar	Time	Seleccionar 1	Seleccionar 2	FUTURO
SR	0	X	X	X	X	SR'
SR	1	X	X	X	X	S0'
S0	X	0	0	X	X	S0'
S0	X	0	1	X	X	SR'
S0	X	1	X	X	X	S1'
S1	X	X	X	0	0	S1'
S1	X	X	X	0	1	S2'
S1	X	X	X	1	0	S3'
S1	X	X	X	1	1	S4'
S2	X	X	X	X	X	S0'
S3	X	X	X	X	X	S0'
S4	X	X	X	X	X	S0'

Tabla de transiciones de estado codificada:

A1	A2	A3	ON	CONT	TIME	SELE1	SELE2	F1	F2	F3
0	0	0	0	X	X	X	X	0	0	0
0	0	0	1	X	X	X	X	0	0	1
0	0	1	X	0	0	X	X	0	0	1
0	0	1	X	0	1	X	X	0	0	0
0	0	1	X	1	X	X	X	0	1	0
0	1	0	X	X	X	0	0	0	1	0
0	1	0	X	X	X	0	1	1	0	0
0	1	0	X	X	X	1	0	1	0	1
0	1	0	X	X	X	1	1	1	1	0
1	0	0	X	X	X	X	X	1	0	0
1	0	1	X	X	X	X	X	1	0	1
1	1	0	X	X	X	X	X	1	1	0

Tabla de salidas:

AC	TU	AL	OUTPUTS							
A1	A2	A3	MENU_1	MENU_2	MENU_3	DISP1	DIPS2	DISP3	ENABLE	
0	0	0	X	X	X	0	0	0	0	
0	0	0	X	X	X	0	0	0	0	
0	0	1	X	X	X	0	0	0	1	
0	0	1	X	X	X	0	0	0	1	
0	0	1	X	X	X	0	0	0	1	
0	1	0	X	X	X	0	0	0	0	
0	1	0	X	X	X	0	0	0	0	
0	1	0	X	X	X	0	0	0	0	
0	1	0	X	X	X	0	0	0	0	
1	0	0	1	0	0	1	0	0	0	
1	0	1	0	1	0	1	0	1	0	
1	1	0	0	0	1	1	1	0	0	

Tabla de transiciones de estado:

Ecuaciones Booleanas:

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Minimized:
F1 = A1' A2 A3' SELE1' SELE2 + A1' A2 A3' SELE1 SELE2' SELE3';
F2 = A1' A2' A3 CONT + A1' A2 A3' SELE2' + A1' A2 A3' SELE1 SELE3';
F3 = A1' A2' A3' ON + A1' A2' A3 CONT' TIME' + A1' A2 A3' SELE1' SELE3 +
A1' A2 A3' SELE2 SELE3;
OP1 = A1' A2 A3 ;
OP2 = A1 A2' A3' ;
OP3 = A1 A2' A3 ;
OP4 = A1 A2 A3' ;
DISP1 = A1' A2 A3 ;
DISP2 = A1 A2' A3' ;
DISP3 = A1 A2' A3 ;
DISP4 = A1 A2 A3' ;
ENABLE = A1' A2' A3 ;
```

- Selección de bebidas

- Bebida 1

Tabla de transiciones de estado

ACTUAL	DISP1	DISP2	DISP3	DISP4	SELE1	SELE2	FUTURO
SR	0	0	0	0	X	X	SR
SR	0	0	0	1	X	X	SR
SR	0	0	1	0	X	X	SR
SR	0	0	1	1	X	X	SR
SR	0	1	0	0	X	X	SR
SR	0	1	0	1	X	X	SR
SR	0	1	1	0	X	X	SR
SR	0	1	1	1	X	X	SR
SR	1	0	0	1	X	X	SR
SR	1	0	1	0	X	X	SR
SR	1	0	1	1	X	X	SR
SR	1	1	0	0	X	X	SR
SR	1	1	0	1	X	X	SR
SR	1	1	1	0	X	X	SR
SR	1	1	1	1	X	X	SR
SR	1	0	0	0	X	X	S0
S0	X	X	X	X	0	0	S0
S0	X	X	X	X	1	1	S0
S0	X	X	X	X	0	1	S1
S0	X	X	X	X	1	0	S2
S1	X	X	X	X	X	X	SR
S2	X	X	X	X	X	X	SR

Tabla de transiciones de estado codificada:

A1	A2	A3	DISP1	DISP2	DISP3	DISP4	SELE1	SELE2	F1	F2	F3
0	0	0	0	0	0	0	X	X	0	0	0
0	0	0	0	0	0	1	X	X	0	0	0
0	0	0	0	0	1	0	X	X	0	0	0
0	0	0	0	0	1	1	X	X	0	0	0
0	0	0	0	1	0	0	X	X	0	0	0
0	0	0	0	1	0	1	X	X	0	0	0
0	0	0	0	1	1	0	X	X	0	0	0
0	0	0	0	1	1	1	X	X	0	0	0
0	0	0	1	0	0	1	X	X	0	0	0
0	0	0	1	0	1	0	X	X	0	0	0
0	0	0	1	0	1	1	X	X	0	0	0
0	0	0	1	1	0	0	X	X	0	0	0
0	0	0	1	1	0	1	X	X	0	0	0
0	0	0	1	1	1	0	X	X	0	0	0
0	0	0	1	1	1	1	X	X	0	0	0
0	0	0	1	0	0	0	X	X	0	0	1
0	0	1	X	X	X	X	0	0	0	0	1
0	0	1	X	X	X	X	1	1	0	0	1
0	0	1	X	X	X	X	0	1	0	1	0
0	0	1	X	X	X	X	1	0	0	1	1
0	1	0	X	X	X	X	X	X	0	0	0
0	1	1	X	X	X	X	X	X	0	0	0

Tabla de salidas:

A1	A2	A3	G	P
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	0
0	0	1	0	0
0	0	1	1	0
0	0	1	0	1
0	1	0	0	0
0	1	1	0	0

Tabla de transiciones de estado codificada:

A1	A2	A3	DISP1	DISP2	DISP3	DISP4	SELE1	SELE2	F1	F2	F3
0	0	0	0	0	0	0	X	X	0	0	0
0	0	0	0	0	0	1	X	X	0	0	0
0	0	0	0	0	1	0	X	X	0	0	1
0	0	0	0	0	1	1	X	X	0	0	0
0	0	0	0	1	0	0	X	X	0	0	0
0	0	0	0	1	0	1	X	X	0	0	0
0	0	0	0	1	1	0	X	X	0	0	0
0	0	0	0	1	1	1	X	X	0	0	0
0	0	0	1	0	0	1	X	X	0	0	0
0	0	0	1	0	1	0	X	X	0	0	0
0	0	0	1	0	1	1	X	X	0	0	0
0	0	0	1	1	0	0	X	X	0	0	0
0	0	0	1	1	0	1	X	X	0	0	0
0	0	0	1	1	1	0	X	X	0	0	0
0	0	0	1	1	1	1	X	X	0	0	0
0	0	0	1	0	0	0	X	X	0	0	0
0	0	1	X	X	X	X	0	0	0	0	1
0	0	1	X	X	X	X	1	1	0	0	1
0	0	1	X	X	X	X	0	1	0	1	0
0	0	1	X	X	X	X	1	0	0	1	1
0	1	0	X	X	X	X	X	X	0	0	0
0	1	1	X	X	X	X	X	X	0	0	0

Tabla de salidas:

A1	A2	A3	G	P
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	0
0	0	1	0	0
0	0	1	1	0
0	0	1	0	1
0	1	0	0	0
0	1	1	0	0

Tabla de transiciones de estado codificada:

A1	A2	A3	DISP1	DISP2	DISP3	DISP4	SELE1	SELE2	F1	F2	F3
0	0	0	0	0	0	0	X	X	0	0	0
0	0	0	0	0	0	1	X	X	0	0	0
0	0	0	0	0	1	0	X	X	0	0	0
0	0	0	0	0	1	1	X	X	0	0	0
0	0	0	0	1	0	0	X	X	0	0	0
0	0	0	0	1	0	1	X	X	0	0	0
0	0	0	0	1	1	0	X	X	0	0	0
0	0	0	0	1	1	1	X	X	0	0	0
0	0	0	1	0	0	1	X	X	0	0	0
0	0	0	1	0	1	0	X	X	0	0	0
0	0	0	1	0	1	1	X	X	0	0	0
0	0	0	1	1	0	0	X	X	0	0	0
0	0	0	1	1	0	1	X	X	0	0	0
0	0	0	1	1	1	0	X	X	0	0	0
0	0	0	1	1	1	1	X	X	0	0	0
0	0	0	1	0	0	0	X	X	0	0	1
0	0	1	X	X	X	X	0	0	0	0	1
0	0	1	X	X	X	X	1	1	0	0	1
0	0	1	X	X	X	X	0	1	0	1	0
0	0	1	X	X	X	X	1	0	0	1	1
0	1	0	X	X	X	X	X	X	0	0	0
0	1	1	X	X	X	X	X	X	0	0	0

Tabla de salidas:

A1	A2	A3	G	P
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	0
0	0	1	0	0
0	0	1	1	0
0	0	1	0	1
0	1	0	0	0
0	1	1	0	0

ACTUAL	P	G	M1	TIME1	TIME2	FUTURO
SR	0	0	X	X	X	SR
SR	1	1	X	X	X	SR
SR	0	1	X	X	X	S0
S0	X	X	0	X	X	S0
S0	X	X	1	X	X	S2
S2	X	X	X	0	X	S2
S2	X	X	X	1	X	S4
SR	1	0	X	X	X	S1
S1	X	X	0	X	X	S1
S1	X	X	1	X	X	S3
S3	X	X	X	X	0	S3
S3	X	X	X	X	1	S4
S4	X	X	X	X	X	SR

Tabla de transiciones de estado codificada:

A1	A2	A3	P	G	M1	TIME1	TIME2	F1	F2
0	0	0	0	0	X	X	X	0	0
0	0	0	1	1	X	X	X	0	0
0	0	0	0	1	X	X	X	0	0
0	0	1	X	X	0	X	X	0	0
0	0	1	X	X	1	X	X	0	1
0	1	1	X	X	X	0	X	0	1
0	1	1	X	X	X	1	X	1	0
0	0	0	1	0	X	X	X	0	1
0	1	0	X	X	0	X	X	0	1
0	1	0	X	X	1	X	X	1	0
1	0	0	X	X	X	X	0	1	0
1	0	0	X	X	X	X	1	1	0
1	0	1	X	X	X	X	X	0	0

Tabla de salidas:

A1	A2	A3	DONE	ENABLE
0	0	0	0	0
0	0	0	0	0
0	0	0	0	0
0	0	1	0	0
0	0	1	0	0
0	1	1	0	1
0	1	1	1	1
0	0	0	0	0
0	1	0	0	0
0	1	0	0	0
1	0	0	0	1
1	0	0	1	1
1	0	1	0	0

Tabla obtenida con la herramienta Logic Friday:

A1	A2	A3	T1	T2	M1	TIME1	TIME2	=>	F1	F2	DONE	ENABLE
1	0	0	X	X	X	X	X	1				
0	1	0	X	X	1	X	X	1				
0	1	1	X	X	X	1	X	1				
0	0	1	X	X	1	X	X	1				
0	1	0	X	X	0	X	X	1				
0	1	1	X	X	0	X	X	1				
0	0	0	1	0	X	X	X	1				
0	0	1	0	X	X	X	X	1				
0	1	0	X	X	X	X	X	1				
0	0	0	1	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
0	1	1	X	X	X	X	X	1				
0	1	0	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1	0	1	X	X	X	X	X	1				
1	0	0	X	X	X	X	X	1				
1</												

Ecuaciones Booleanas:

Minimized:

```
F1 = A1 A2' A3' + A1' A2 A3' M1 + A1' A2 A3 TIME1 ;
F2 = A1' A2' A3 M1 + A1' A2 A3' M1' + A1' A2 A3 TIME1' + A1' A2' A3' T1 T2' ;
F3 = A1' A3 + A1' A2' T1' T2 + A1 A2' A3' TIME2;
DONE = A1' A2 A3 TIME1 + A1 A2' A3' TIME2;
ENABLE = A1' A2 A3 + A1 A2' A3' ;
```

Diagrama de Timing 1 - Interfaz de Bienvenida y selección de Menú

