

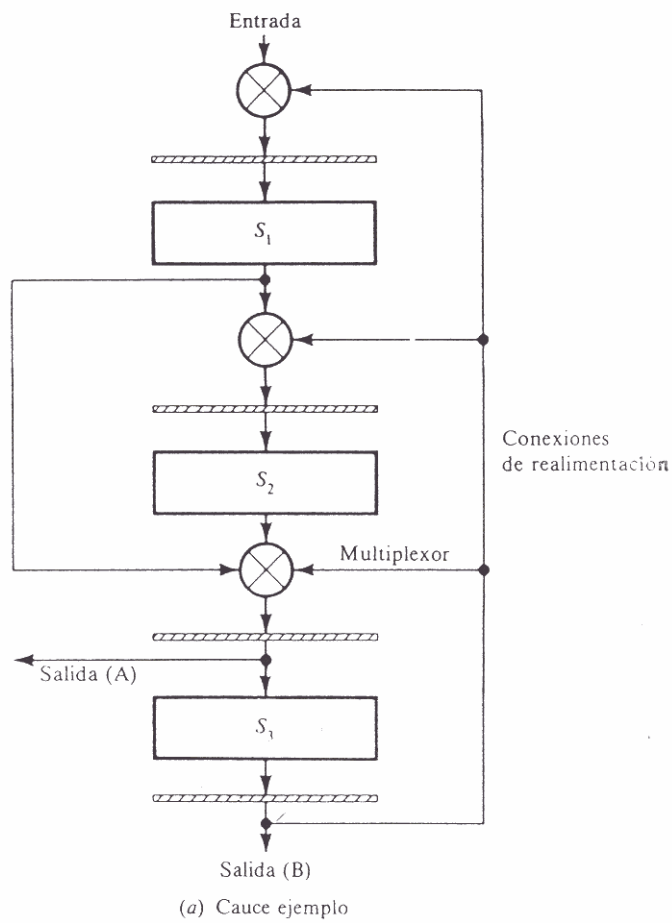


Tabla de reservas para la función F

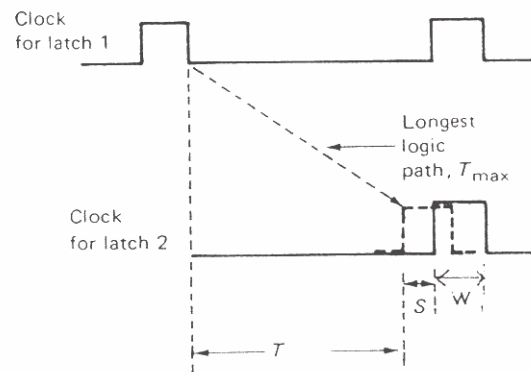
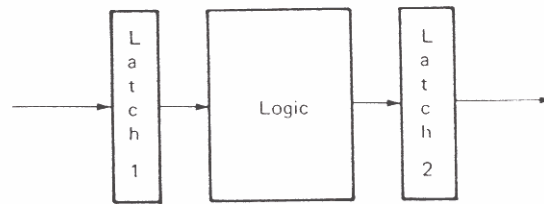
S1	X			X
S2		X		
S3			X	

Tabla de reservas para la función G

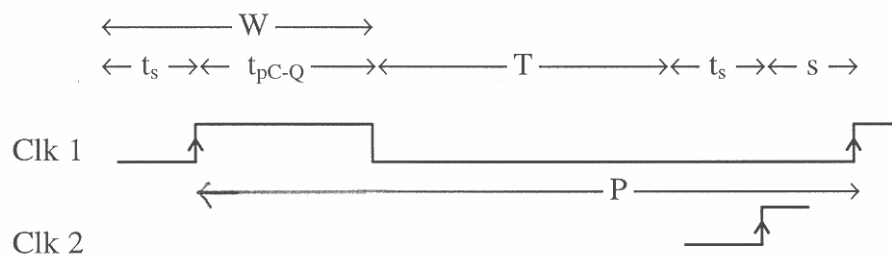
S1	X		
S2		X	
S3			X

Ejecución solapada de un cálculo de F seguido de dos cálculos de G

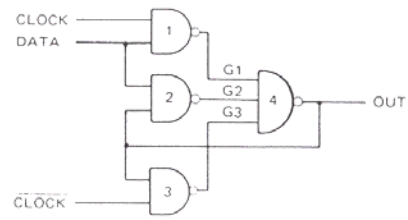
S1	F	G	G	F	
S2		F	G	G	
S3			F	G	G



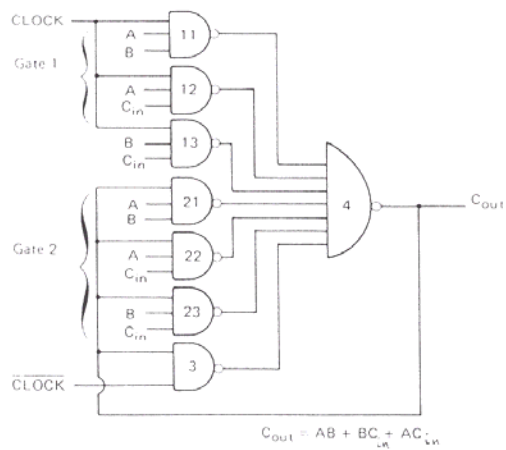
Effects of clock skew on longest logic path.



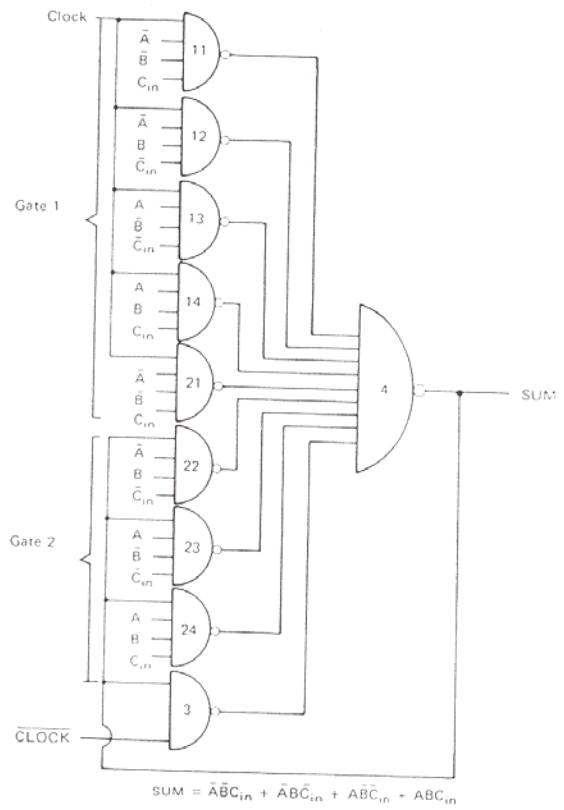
Pipeline-2



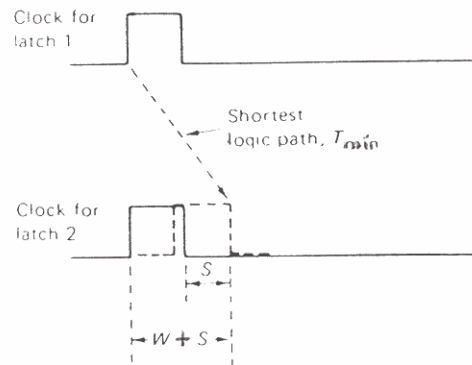
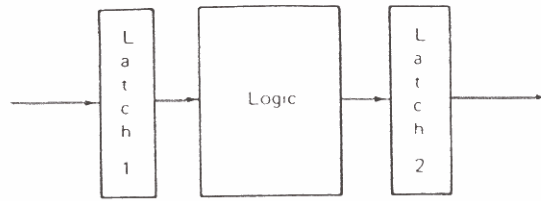
Earle latch



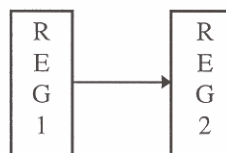
Earle latch with carry logic.



Earle latch with sum logic.



Effects of clock skew on critical race



Clk 1,



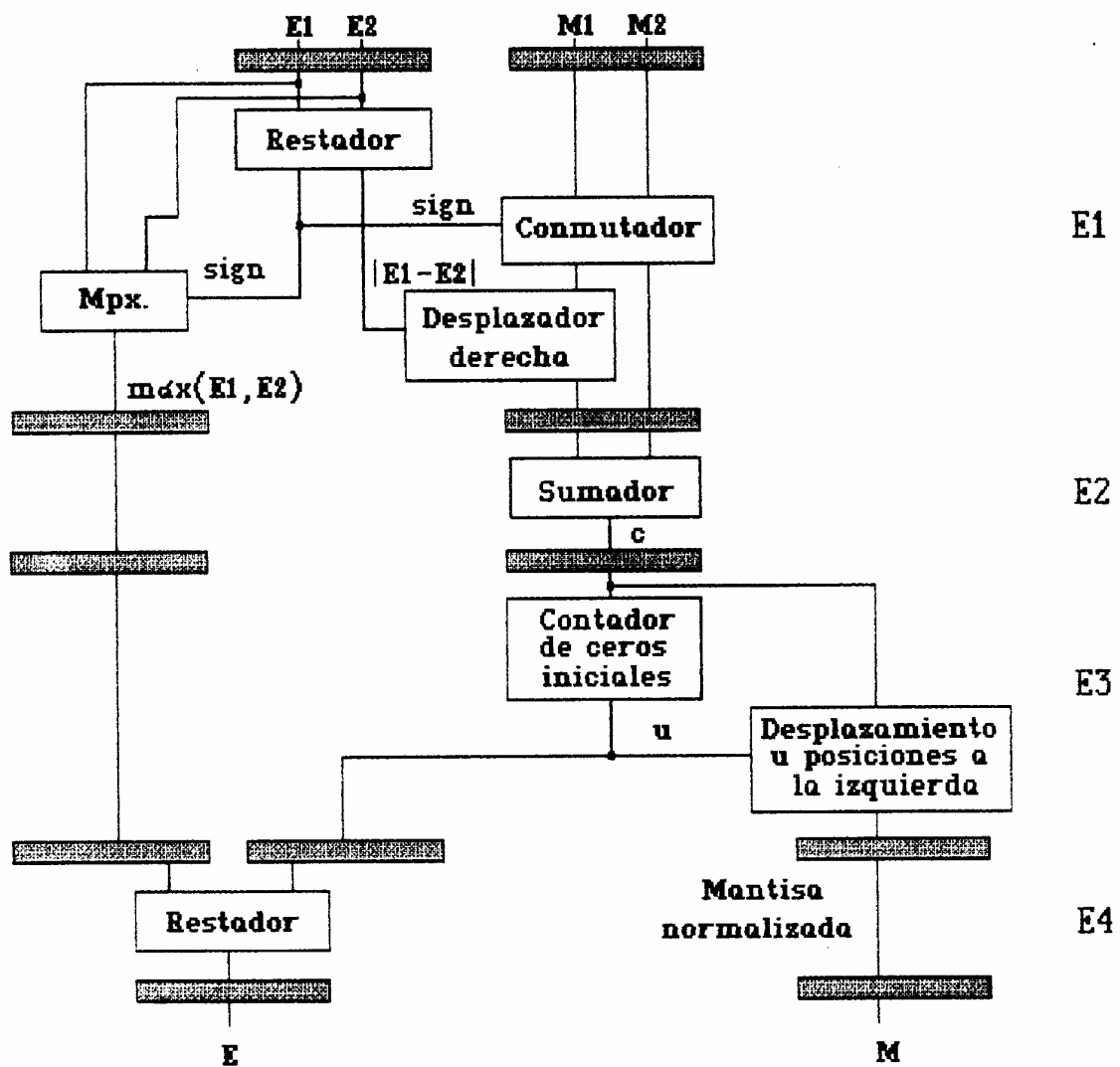
$\longleftrightarrow t_{cc-Q} \longrightarrow$

$\longleftarrow s \longrightarrow \longleftarrow t_h \longrightarrow$

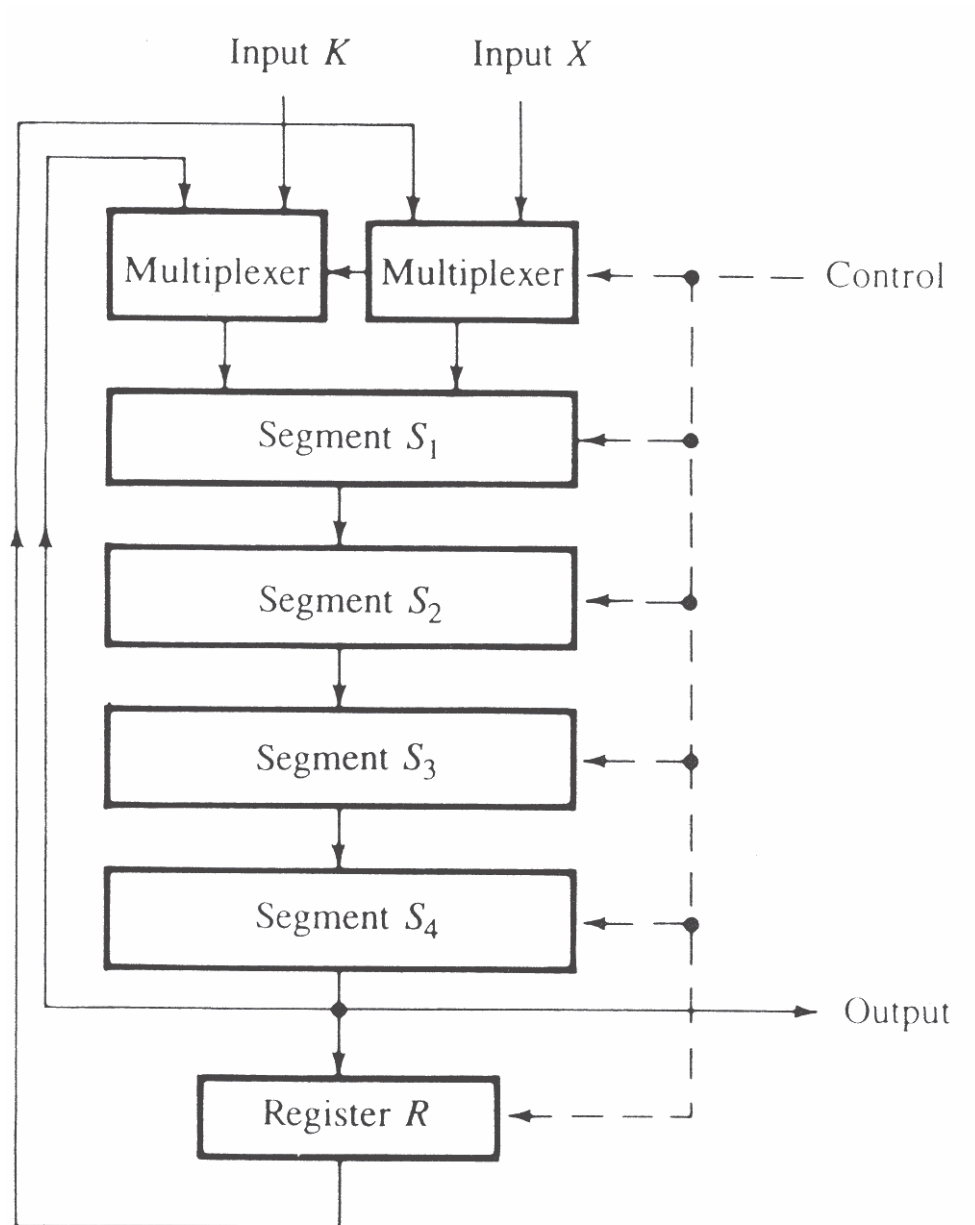
Clk 2



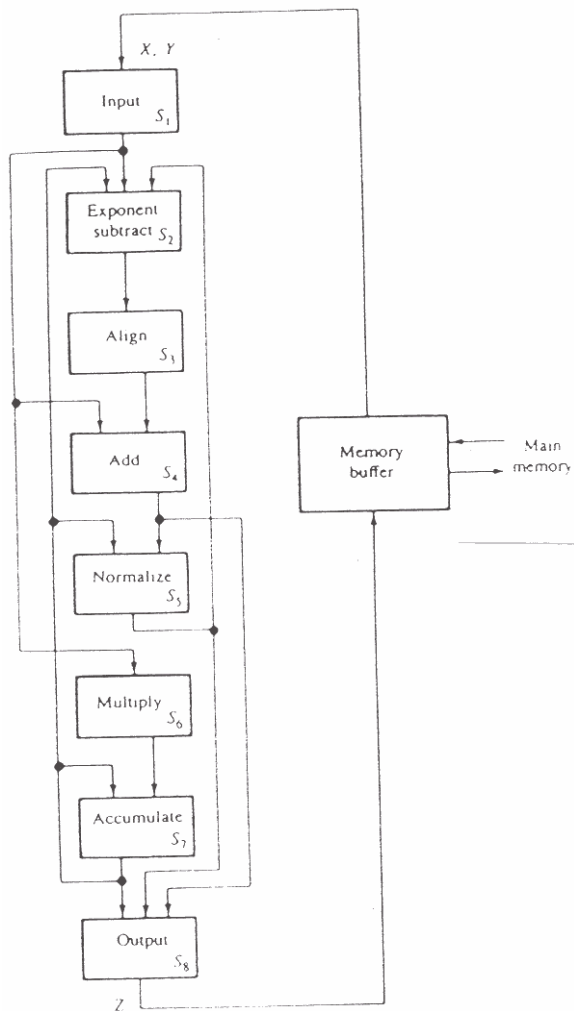
Suma en punto flotante encauzada en cuatro etapas



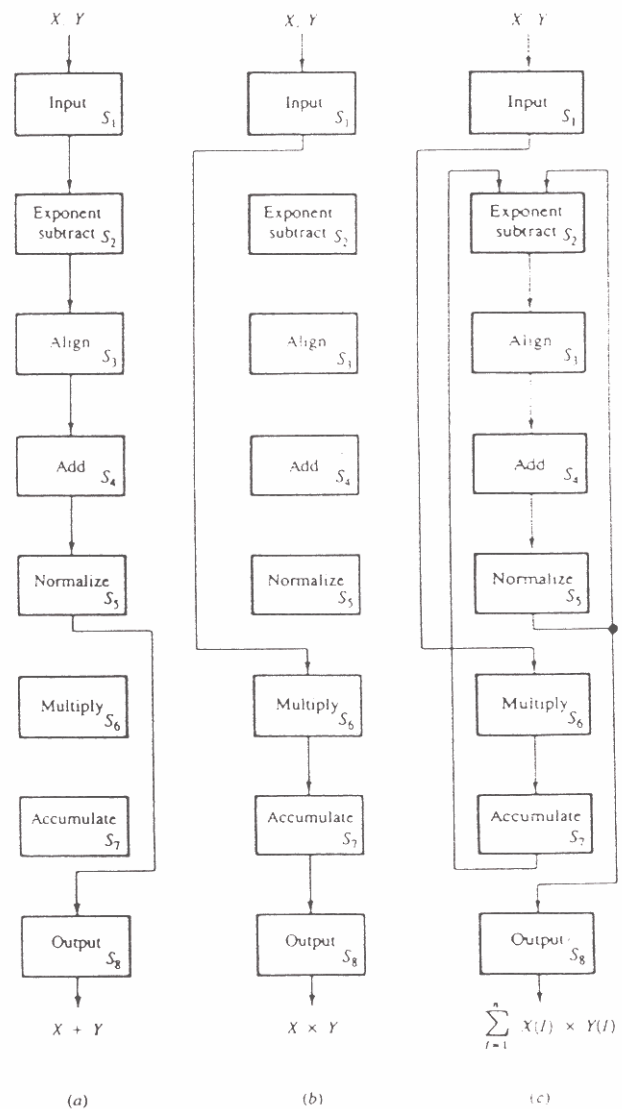
**Sumador encauzado de punto flotante
mejorado con caminos hacia atrás**



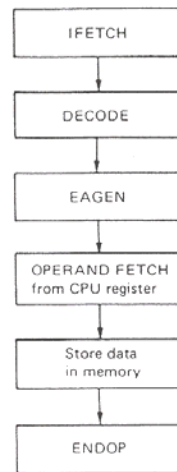
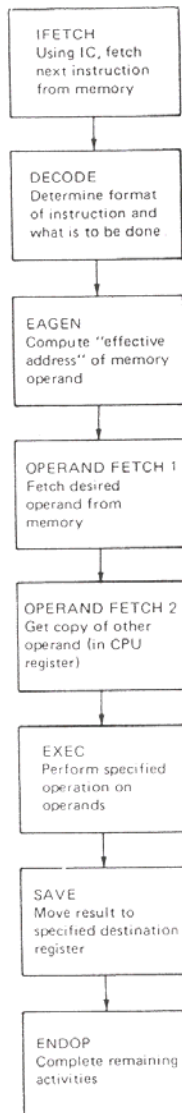
Segmento	Nombre	Acciones realizadas
S ₁	Input	Lee operandos de entrada del buffer de memoria
S ₂	Exponent subtract	Compara exponentes para la suma y resta en punto flotante
S ₃	Align	Desplazamiento en instrucciones de desplazamiento o para alinear mantisas
S ₄	Add	Suma de 64 bits en punto fijo
S ₅	Normalize	Normaliza resultados de operaciones de punto flotante
S ₆	Multiply	Multiplicación de 32 bits de punto fijo o punto flotante (resultado en forma de vectores de suma y acarreo)
S ₇	Accumulate	Acumula resultados de operaciones repetidas o suma el vector de suma con el de acarreo
S ₈	Output	Ejecuta instrucciones lógicas y escribe los resultados al buffer de memoria



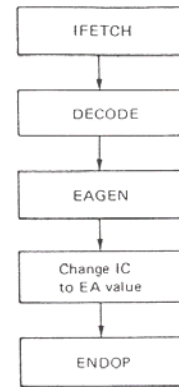
The arithmetic pipeline of the TI ASC



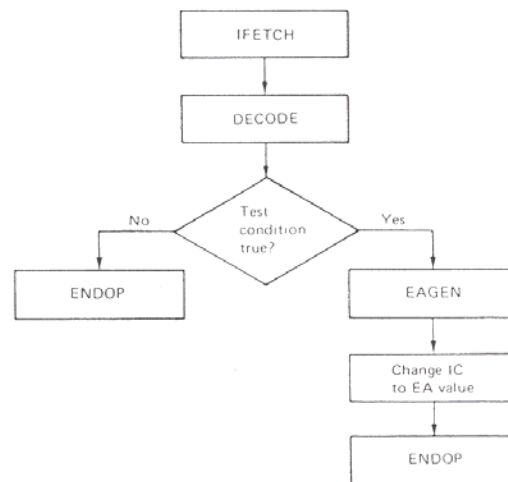
ASC pipeline configuration for (a) floating-point addition; (b) fixed-point multiplication; (c) point vector dot product.



(a)



(b)



(c)

Partitioning of other instruction classes. (a) Store. (b) Unconditional jump. (c) Conditional branch.

Partitioning of typical instruction execution.

Ciclos por cada etapa y latencia instrucciones

Segmento	Tipo ADD	Tipo STORE	Tipo JUMP	BRANCH (sí/no)
IFETCH	5	5	5	5/5
DECODE	2	2	2	2/2
TEST				1/1
EAGEN	2	2	2	2/0
OP FETCH 1	5			
OP FETCH 2	1	1		
EXECUTE	3			
SAVE	1			
CHANGE IC			1	1/0
STORE		5		
ENDOP	1	1	1	1/1
TOTAL	20	16	11	12/9

TABLAS DE RESERVAS

Segment	Time t																		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
S_1	x	x	x	x	x	x	x	x		x		x				x			
S_2		x	x	x	x	x	x	x	x		x		x				x		
S_3			x	x	x	x	x	x	x	x		x		x				x	
S_4				x	x	x	x	x	x	x	x		x		x				x

Segment	Time t								
	1	2	3	4	5	6	7	8	9
S_1	x	x				x			
S_2		x	x				x		
S_3			x	x				x	
S_4				x	x				x

Segmento	Tiempo									
	1	2	3	4	5	6	7	8	9	10
S1	x	x			x					
S2		x	x			x				
S3			x	x			x			
S4				x	x			x		

Diagrama de estados correspondiente a la ultima tabla de reservas de la trp. Pipeline-9

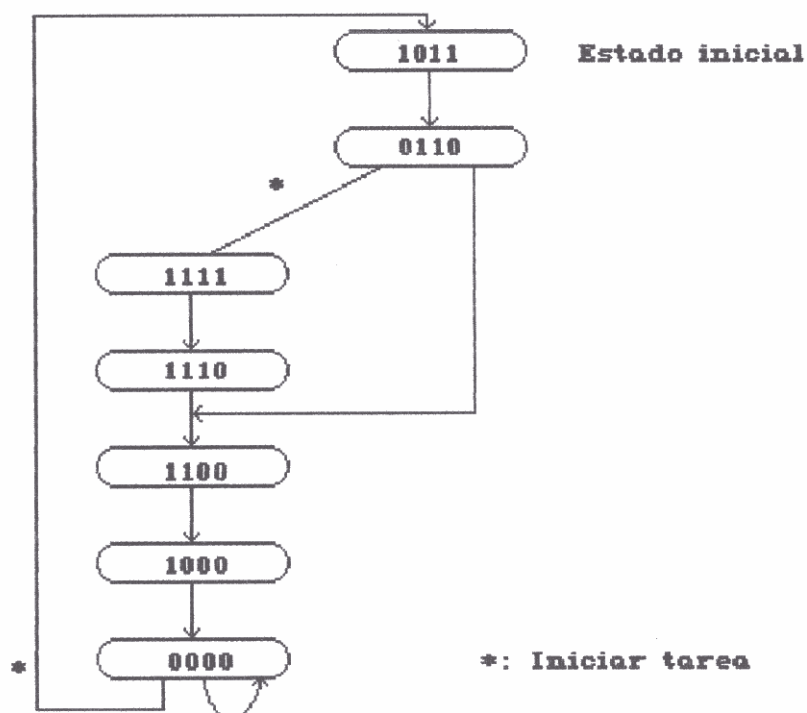


Diagrama de iniciación de tareas correspondiente al diagrama de estados anterior

