TRABALHO 5

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ALGORITMO

começa
calcula x * x
R1 = x * x
calcula A * R1
R1 = A * R1
calcula B * x
R2 = B * x
calcula R1 + R2
R1 = R1 + R2
calcula R1 + C
R1 = R1 + C
finaliza

DIAGRAMA DE ESTADOS

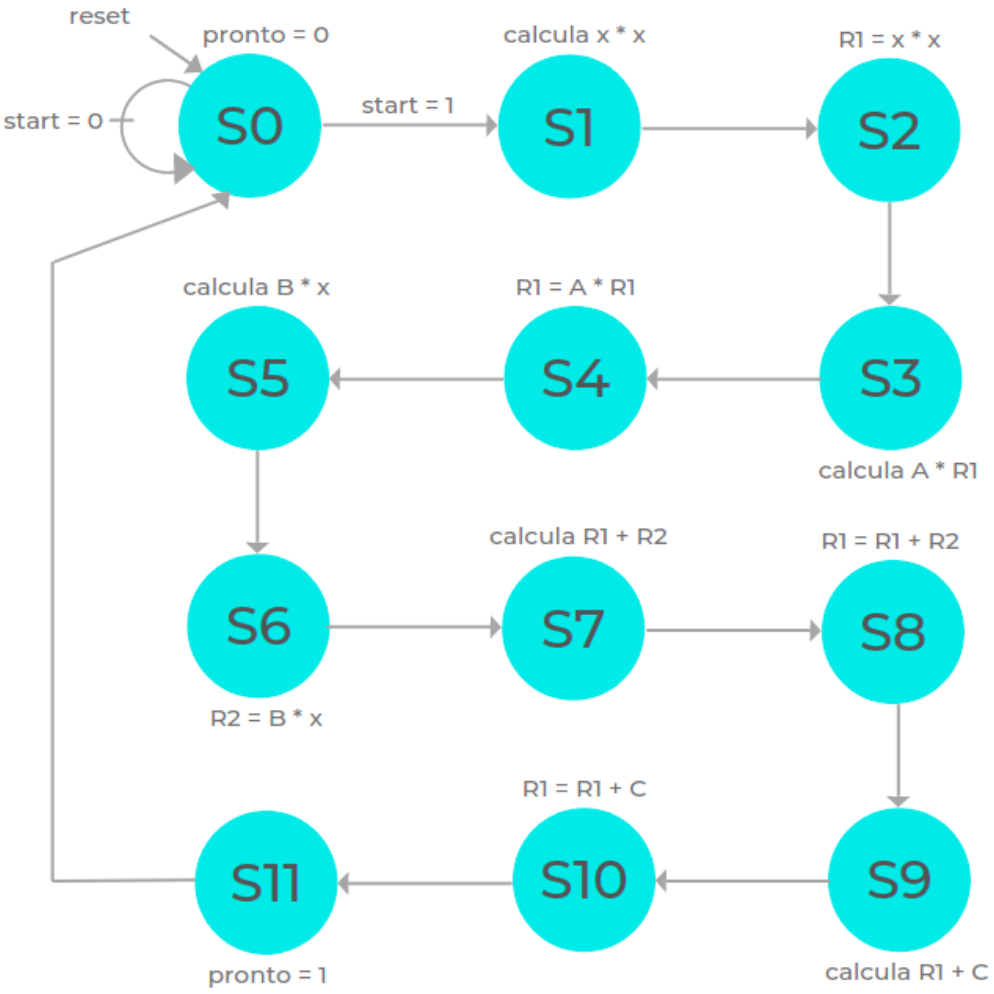

TABELA DE TRANSIÇÃO DOS ESTADOS

	ENTRADA	ESTADO ATUAL				PRÓXIMO ESTADO				
	START	$Q3_t$	$Q2_t$	$Q1_t$	$Q0_t$	$Q3_{t+1}$	$Q2_{t+1}$	$Q1_{t+1}$	$Q0_{t+1}$	
S0	0	0	0	0	0	0	0	0	0	S0
S0	1	0	0	0	0	0	0	0	1	S1
S1	X	0	0	0	1	0	0	1	0	S2
S2	X	0	0	1	0	0	0	1	1	S3
S3	X	0	0	1	1	0	1	0	0	S4
S4	X	0	1	0	0	0	1	0	1	S5
S5	X	0	1	0	1	0	1	1	0	S6
S6	X	0	1	1	0	0	1	1	1	S7
S7	X	0	1	1	1	1	0	0	0	S8
S8	X	1	0	0	0	1	0	0	1	S9
S9	X	1	0	0	1	1	0	1	0	S10
S10	X	1	0	1	0	1	0	1	1	S11
S11	X	1	0	1	1	0	0	0	0	S0

MAPAS DE KARNAUGH DA TRANSIÇÃO DE ESTADOS

Q0

	$\overline{D}.\overline{E}$	$\overline{D}.E$	$D.E$	$D.\overline{E}$
$\overline{A}.\overline{B}.\overline{C}$	0	0	0	1
$\overline{A}.\overline{B}.C$	1	0	0	1
$\overline{A}.B.C$	x	x	x	x
$\overline{A}.B.\overline{C}$	1	0	0	1
$A.B.C$	1	0	0	1
$A.\overline{B}.C$	1	0	0	1
$A.B.C$	x	x	x	x
$A.B.\overline{C}$	1	0	0	1

y = DE' + CE' + BE' + AE'

Q1

	$\overline{D}.\overline{E}$	$\overline{D}.E$	$D.E$	$D.\overline{E}$
$\overline{A}.\overline{B}.\overline{C}$	0	1	0	1
$\overline{A}.\overline{B}.C$	0	1	0	1
$\overline{A}.B.C$	x	x	x	x
$\overline{A}.B.\overline{C}$	0	1	0	1
$A.B.C$	0	1	0	1
$A.\overline{B}.C$	0	1	0	1
$A.B.C$	x	x	x	x
$A.B.\overline{C}$	0	1	0	1

y = D'E + DE'

Q2

	$\overline{D}.\overline{E}$	$\overline{D}.E$	$D.E$	$D.\overline{E}$
$\overline{A}.\overline{B}.\overline{C}$	0	0	1	0
$\overline{A}.\overline{B}.C$	1	1	0	1
$\overline{A}.B.C$	x	x	x	x
$\overline{A}.B.\overline{C}$	0	0	0	0
$A.B.C$	0	0	1	0
$A.\overline{B}.C$	1	1	0	1
$A.B.C$	x	x	x	x
$A.B.\overline{C}$	0	0	0	0

y = CD' + CE' + B'C'DE

Q3

	$\overline{D}.\overline{E}$	$\overline{D}.E$	$D.E$	$D.\overline{E}$
$\overline{A}.\overline{B}.\overline{C}$	0	0	0	0
$\overline{A}.\overline{B}.C$	0	0	1	0
$\overline{A}.B.C$	x	x	x	x
$\overline{A}.B.\overline{C}$	1	1	0	1
$A.B.C$	0	0	0	0
$A.\overline{B}.C$	0	0	1	0
$A.B.C$	x	x	x	x
$A.B.\overline{C}$	1	1	0	1

y = BD' + BE' + CDE

TABELA DE SAÍDA

ESTADO				ENTRADAS BO							
$Q3_t$	$Q2_t$	$Q1_t$	$Q0_t$	LX	LH	LL	M0	M1	M2	H	PRONTO
0	0	0	0	1	0	0	00	00	00	0	0
0	0	0	1	0	0	0	00	00	01	1	0
0	0	1	0	0	0	1	00	00	01	1	0
0	0	1	1	0	0	0	01	10	00	1	0
0	1	0	0	0	0	1	01	10	00	1	0
0	1	0	1	0	0	0	10	00	00	1	0
0	1	1	0	0	1	0	10	00	00	1	0
0	1	1	1	0	0	0	00	10	11	0	0
1	0	0	0	0	0	1	00	10	11	0	0
1	0	0	1	0	0	0	11	10	00	0	0
1	0	1	0	0	0	1	11	10	00	0	0
1	0	1	1	0	0	0	00	00	00	0	1

MAPAS DE KARNAUGH DA LÓGICA DE SAÍDA

LX

	$\overline{C}.\overline{D}$	$\overline{C}.D$	C.D	C.$\overline{D}$
$\overline{A}.\overline{B}$	1	0	0	0
$\overline{A}$.B	0	0	0	0
A.B	x	x	x	x
A.$\overline{B}$	0	0	0	0

y = A'B'C'D'

LH

	$\overline{C}.\overline{D}$	$\overline{C}.D$	C.D	C.$\overline{D}$
$\overline{A}.\overline{B}$	0	0	0	0
$\overline{A}$.B	0	0	0	1
A.B	x	x	x	x
A.$\overline{B}$	0	0	0	0

y = BCD'

LL

	$\overline{C}.\overline{D}$	$\overline{C}.D$	C.D	C.$\overline{D}$
$\overline{A}.\overline{B}$	0	0	0	1
$\overline{A}$.B	1	0	0	0
A.B	x	x	x	x
A.$\overline{B}$	1	0	0	1

y = AD' + B'CD' + BC'D'

H

	$\overline{C}.\overline{D}$	$\overline{C}.D$	C.D	C.$\overline{D}$
$\overline{A}.\overline{B}$	0	1	1	1
$\overline{A}$.B	1	1	0	1
A.B	x	x	x	x
A.$\overline{B}$	0	0	0	0

y = BD' + A'B'C + A'C'D

PRONTO

	$\overline{C}.\overline{D}$	$\overline{C}.D$	C.D	C.$\overline{D}$
$\overline{A}.\overline{B}$	0	0	0	0
$\overline{A}$.B	0	0	0	0
A.B	x	x	x	x
A.$\overline{B}$	0	0	1	0

y = ACD

M00

	$\overline{C}.\overline{D}$	$\overline{C}.D$	$C.D$	$C.\overline{D}$
$\overline{A}.\overline{B}$	0	0	0	0
$\overline{A}.B$	0	1	0	1
$A.B$	x	x	x	x
$A.\overline{B}$	0	1	0	1

y = BC'D + BCD' + AC'D + ACD'

M01

	$\overline{C}.\overline{D}$	$\overline{C}.D$	$C.D$	$C.\overline{D}$
$\overline{A}.\overline{B}$	0	0	1	0
$\overline{A}.B$	1	0	0	0
$A.B$	x	x	x	x
$A.\overline{B}$	0	1	0	1

y = BC'D' + AC'D + ACD' + A'B'CD

M10

	$\overline{C}.\overline{D}$	$\overline{C}.D$	$C.D$	$C.\overline{D}$
$\overline{A}.\overline{B}$	0	0	1	0
$\overline{A}.B$	1	0	1	0
$A.B$	x	x	x	x
$A.\overline{B}$	1	1	0	1

y = AC' + AD' + A'CD + BC'D'

M11

	$\overline{C}.\overline{D}$	$\overline{C}.D$	$C.D$	$C.\overline{D}$
$\overline{A}.\overline{B}$	0	0	0	0
$\overline{A}.B$	0	0	0	0
$A.B$	x	x	x	x
$A.\overline{B}$	0	0	0	0

y = 0

M20

	$\overline{C}.\overline{D}$	$\overline{C}.D$	$C.D$	$C.\overline{D}$
$\overline{A}.\overline{B}$	0	0	0	0
$\overline{A}.B$	0	0	1	0
$A.B$	x	x	x	x
$A.\overline{B}$	1	0	0	0

y = BCD + AC'D'

M21

	$\overline{C}.\overline{D}$	$\overline{C}.D$	$C.D$	$C.\overline{D}$
$\overline{A}.\overline{B}$	0	1	0	1
$\overline{A}.B$	0	0	1	0
$A.B$	x	x	x	x
$A.\overline{B}$	1	0	0	0

y = BCD + AC'D' + A'B'C'D + A'B'CD'