

TRABALHO 5

Daniel Salvini e Letícia da Rosa

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

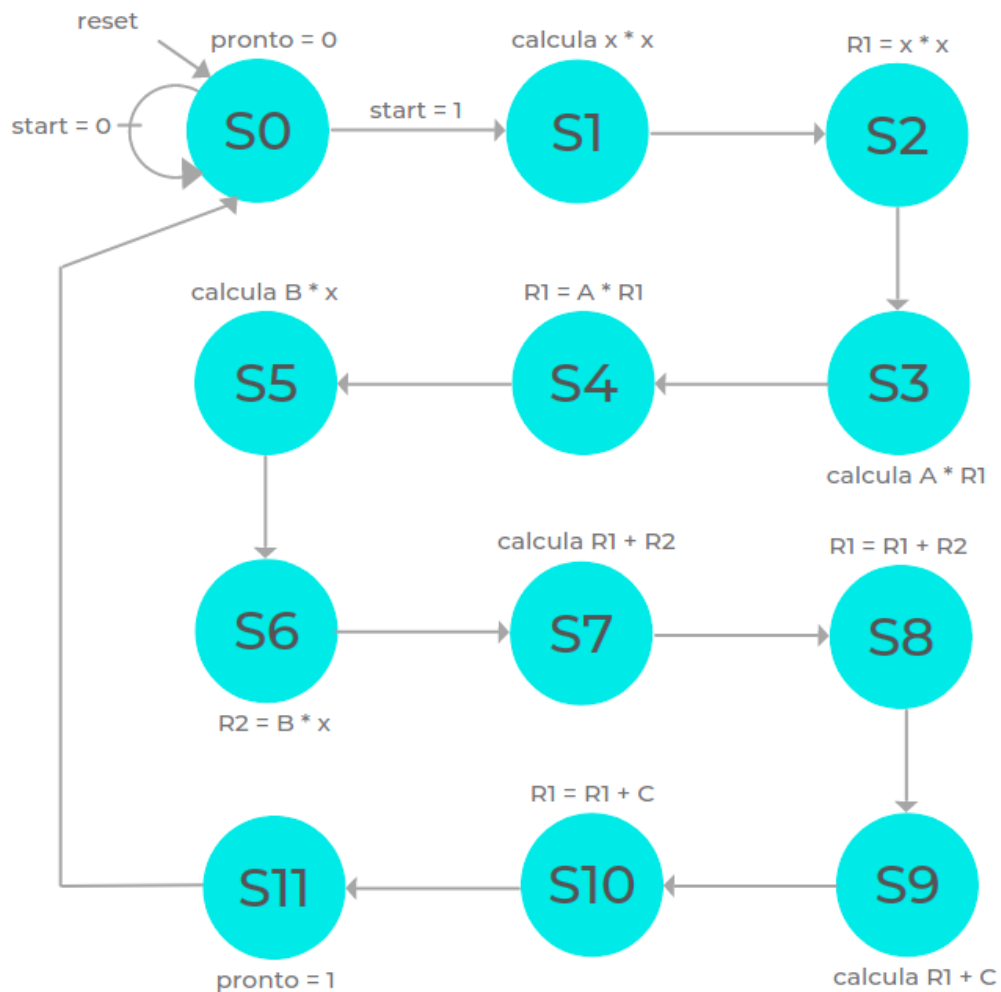


TABELA DE TRANSIÇÃO DOS ESTADOS

	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

START = A

Q3 = B

Q2 = C

Q1 = D

Q0 = E

Q0

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

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

Q1

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

$$y = D'E + DE'$$

Q2

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

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

Q3

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

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

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

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

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

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

$$y = ACD$$

$$Q3 = A$$

$$Q2 = B$$

$$Q1 = C$$

$$Q0 = D$$

M00

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

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

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

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

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

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

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