Tecnológico de Monterrey

“Ejercicio 6- Tema 2"

Implementación de Métodos Computacionales(Gpo 3)

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Exercise 3.7.3: Convert the following regular expressions to deterministic finite automata, using algorithms 3.23 and 3.20:

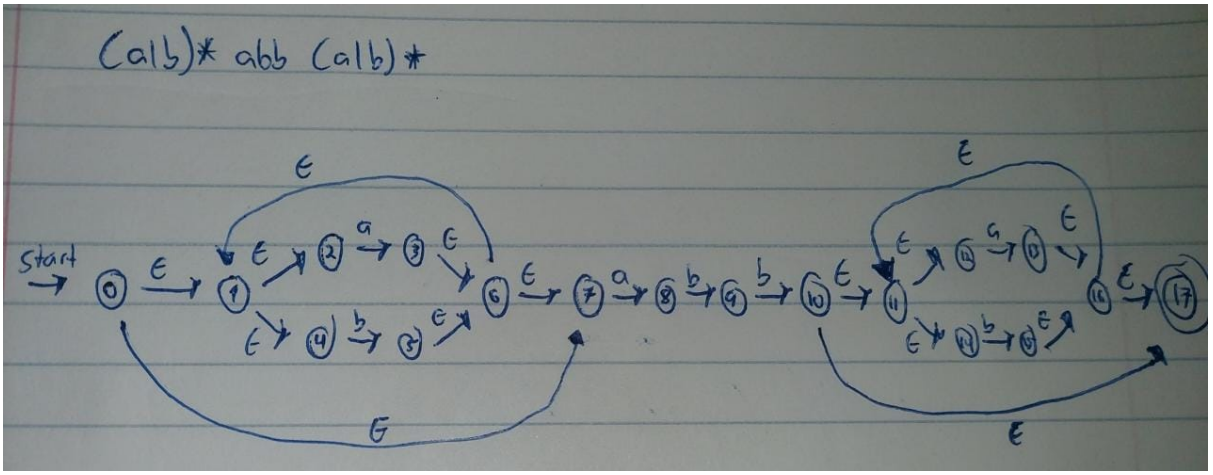
a) $(\mathbf{a}|\mathbf{b})^*$.

b) $(\mathbf{a}^*|\mathbf{b}^*)^*$.

c) $\left((\epsilon|\mathbf{a})\mathbf{b}^*\right)^*$.

d) $(\mathbf{a}|\mathbf{b})^*\mathbf{abb}(\mathbf{a}|\mathbf{b})^*$.

Inciso d



e-closure ({0})= {0,1,2,4,7} = A
move(A,a) = {3,8}
e-closure({3,8}) = (3,8,6,1,2,4) = B
move(A,b) = {5}
e-closure ({5}) = (5,6,7,1,2,4) = C
move(B,a) = {3,8}
e-closure({3,8}) = (3,8,6,7,1,2,4) = D
move(B,b) = {5,9,10}
e-closure({5,9,10}) = (5,9,10,6,7,1,2,4,11,12,14) = E
move(C,a)= {8,3} => B
move(C,b)= {5} => C
move(D,a)= {8,3} => B
move(D,b)= {5,9,10} => E
move(E,a)= {8,3,13}
e-closure({8,3,13}) = (8,3,13,16,11,12,14,17,6,1,2,4) = F (aceptación)
move(E,b) = {10,5,15}
e-closure({10,5,15}) = (10,5,15,17,11,12,14, 6,1,2,4,7,16) = G (aceptación)
move(F,a) = {13,3}
e-closure({13,3}) = (13,3,16,11,6,1,2,4,7) = H
move(F,b) ={9,10,15,5}
e-closure({9,10,15,5}) = (9,10,15,5,11,12,14,17,16,6,1,2,4,7) = I (aceptación)

move(G,a) = {13,3,8} => F
move(G,b) = {15,5}
e-closure({15,5}) = (15,5,16,11,12,14,17,6,7,1,2,4) = J (aceptación)
move(H,a) = {3,8} => B
move(H,b) = {5} => C
move(I,a) = {13,3,8} => F
move(I,b) = {10,5,15} => G
move(J,a) = {3,8,13} => F
move(J,b) = {15,5} => J

	a	b
A	B	C
B	D	E
C	B	C
D	B	E
E	F	G
F	H	I
G	F	J
H	B	C
I	F	G
J	F	J