

FUNDAMENTOS TEÓRICOS DA COMPUTAÇÃO

--- EXPRESSÕES REGULARES ---

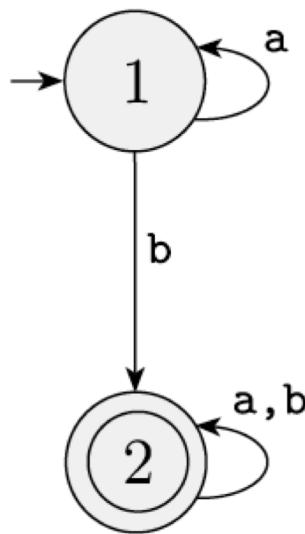
Transformação de AFD para ER (3)

Transformando AFD em ER (3)

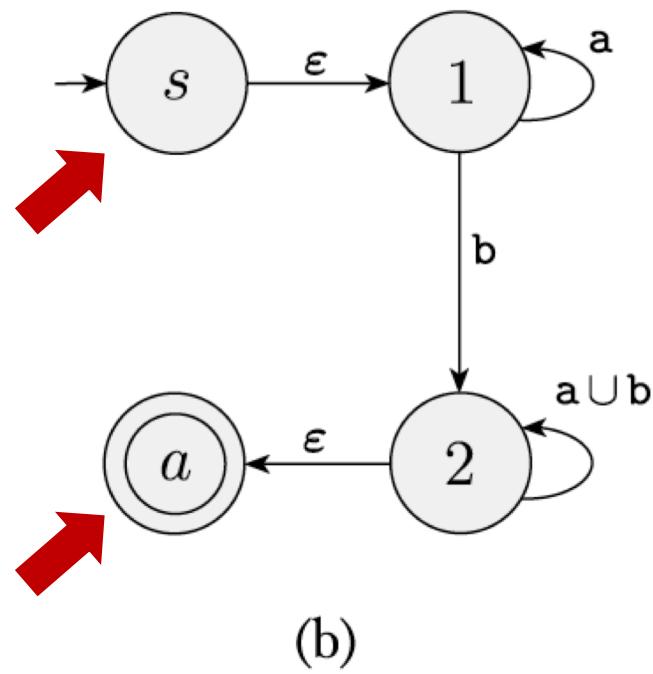
Nesta abordagem, independente de ter um ou vários estados iniciais e de aceitação, vamos **sempre** criar um **novo** estado **inicial** e um **novo** estado de **aceitação**

Transformando AFD em ER (3)

Exemplo 1



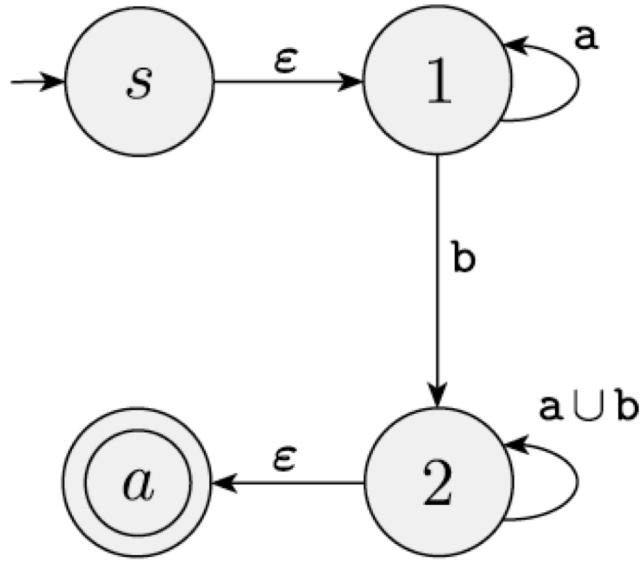
(a)



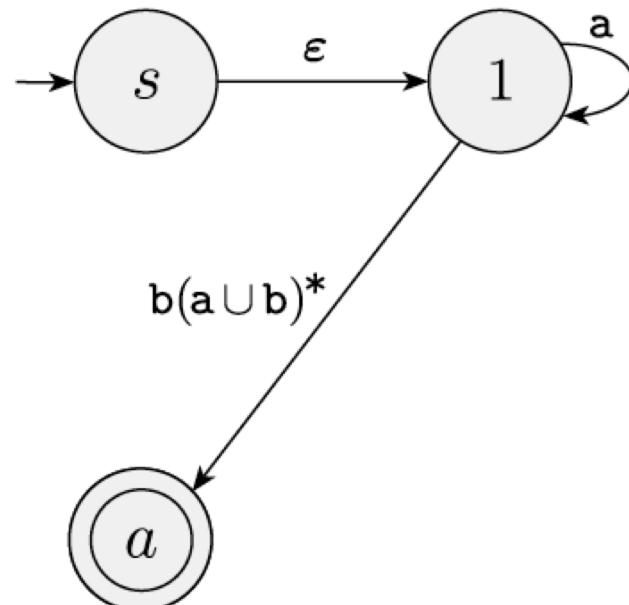
(b)

Transformando AFD em ER (3)

Exemplo 1



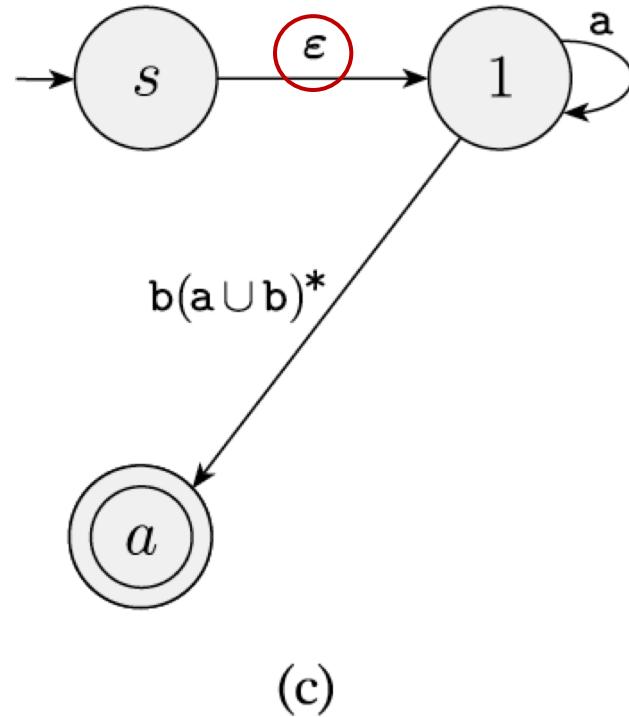
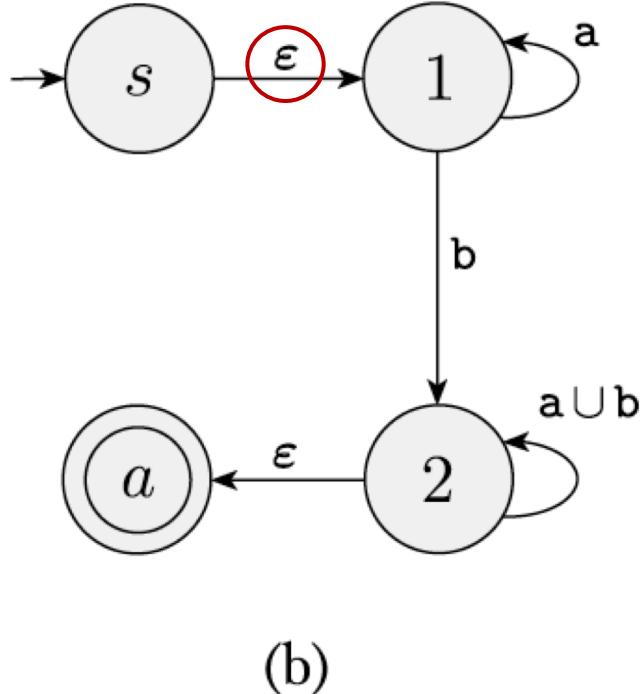
(b)



(c)

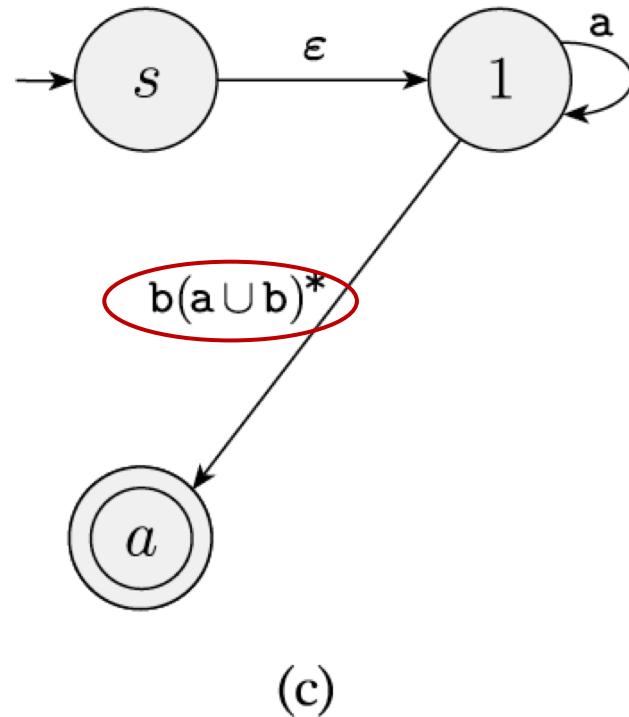
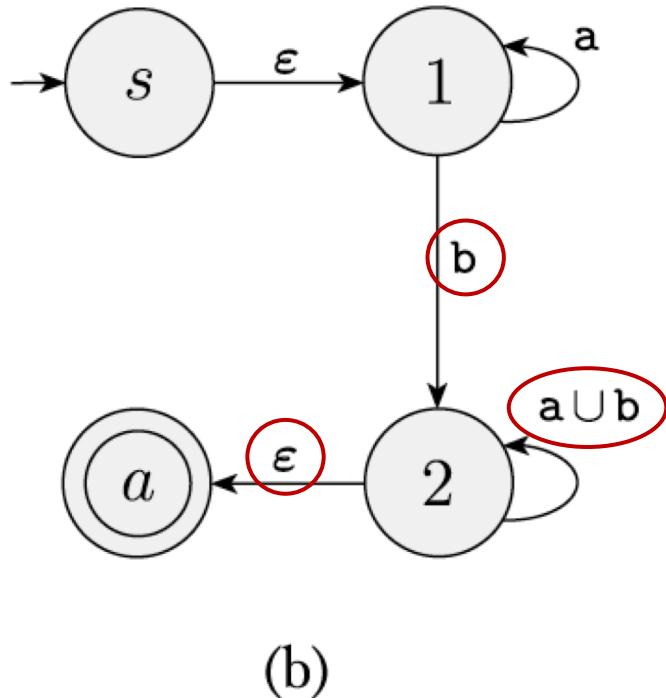
Transformando AFD em ER (3)

Exemplo 1



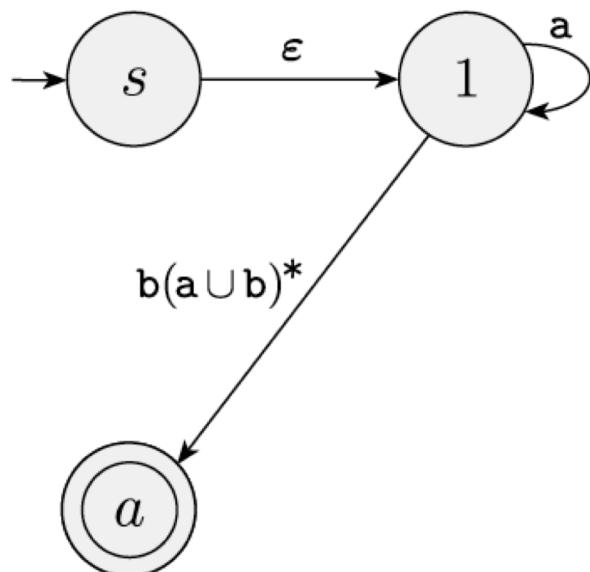
Transformando AFD em ER (3)

Exemplo 1

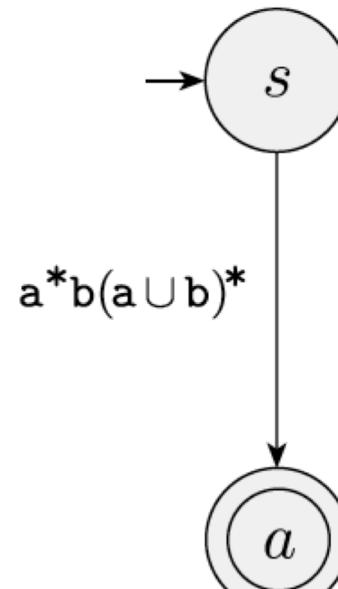


Transformando AFD em ER (3)

Exemplo 1



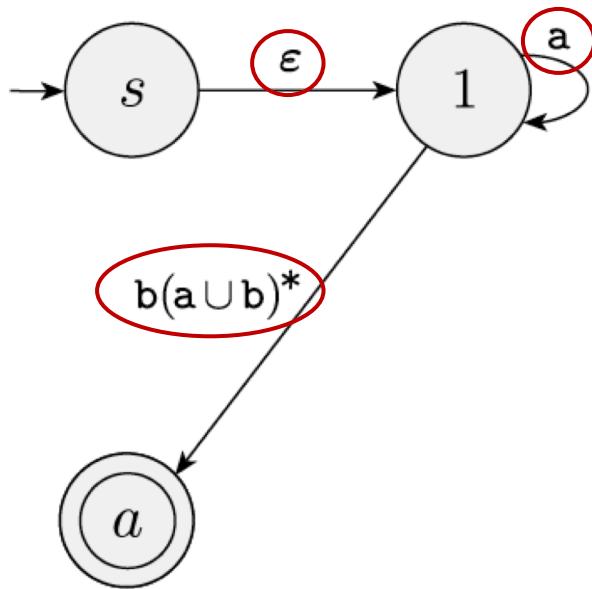
(c)



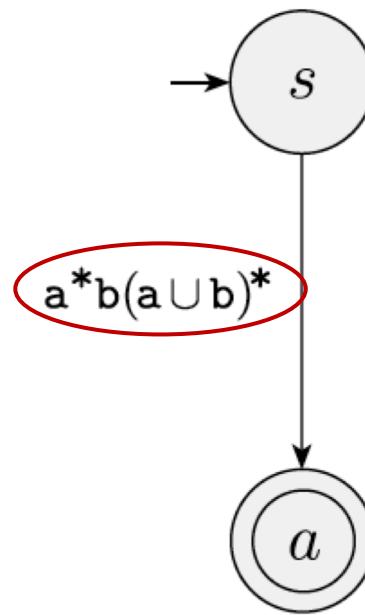
(d)

Transformando AFD em ER (3)

Exemplo 1



(c)

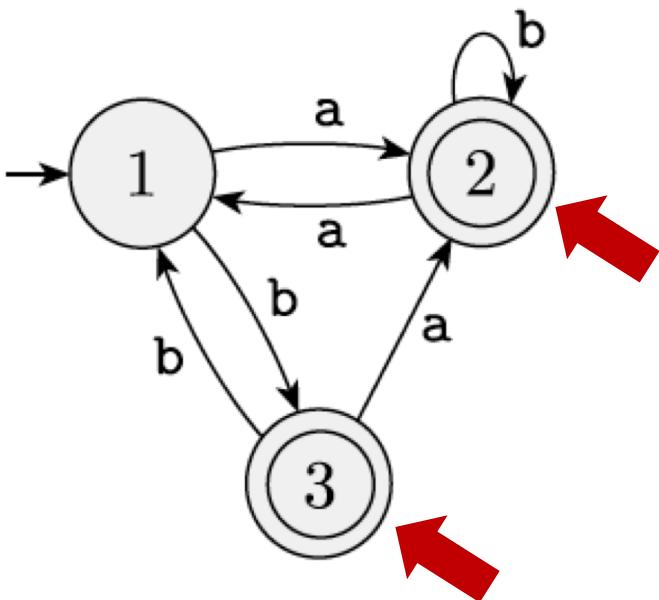


(d)

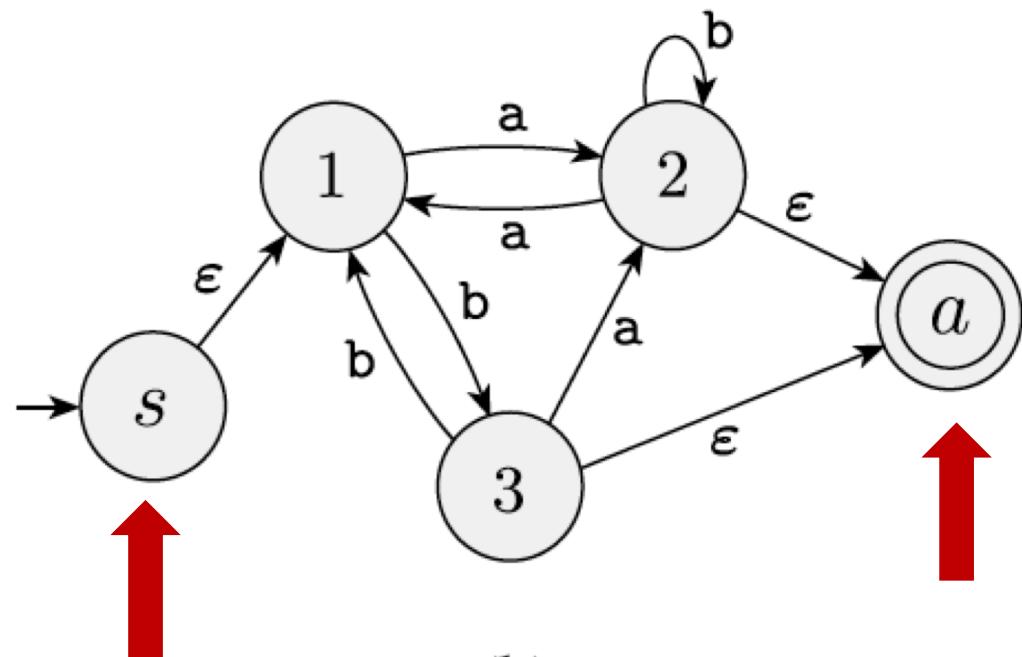
Transformando AFD em ER (3)

Exemplo 2

Neste AFD, note que temos dois estados de aceitação



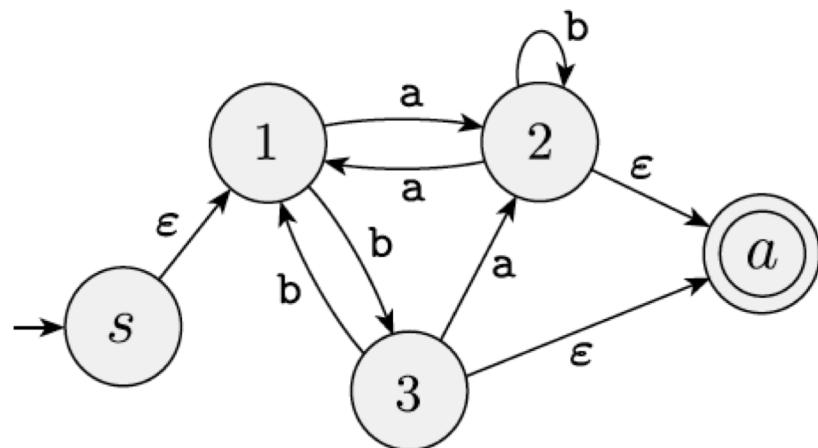
(a)



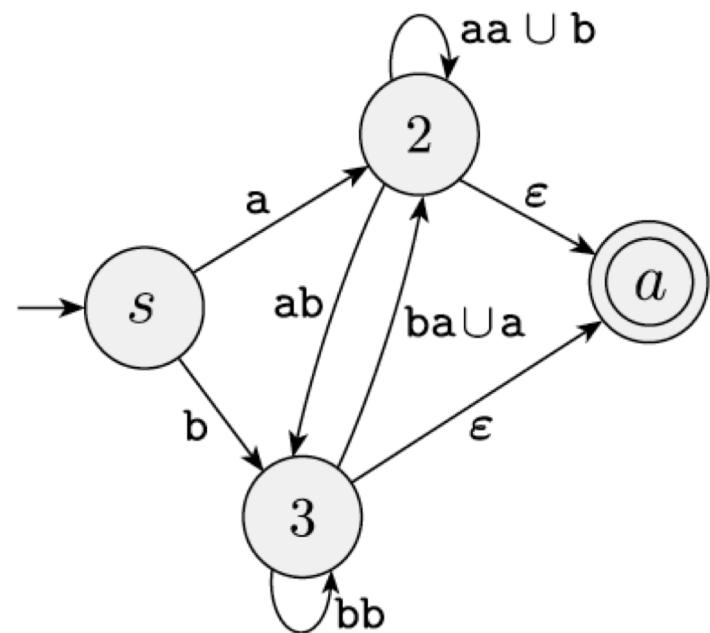
(b)

Transformando AFD em ER (3)

Exemplo 2



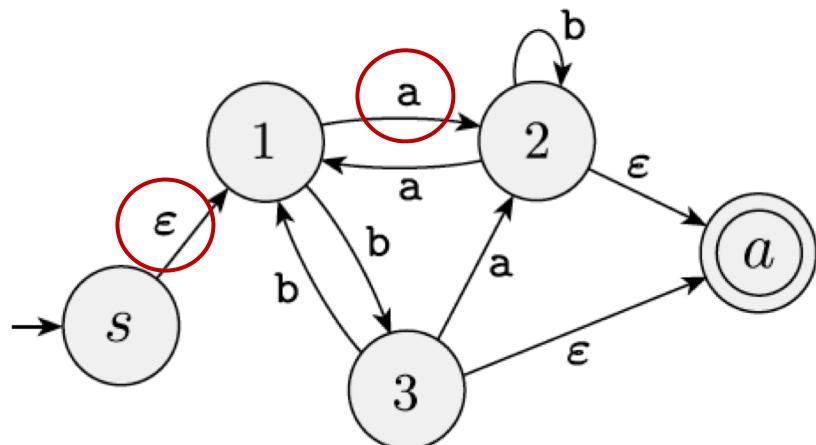
(b)



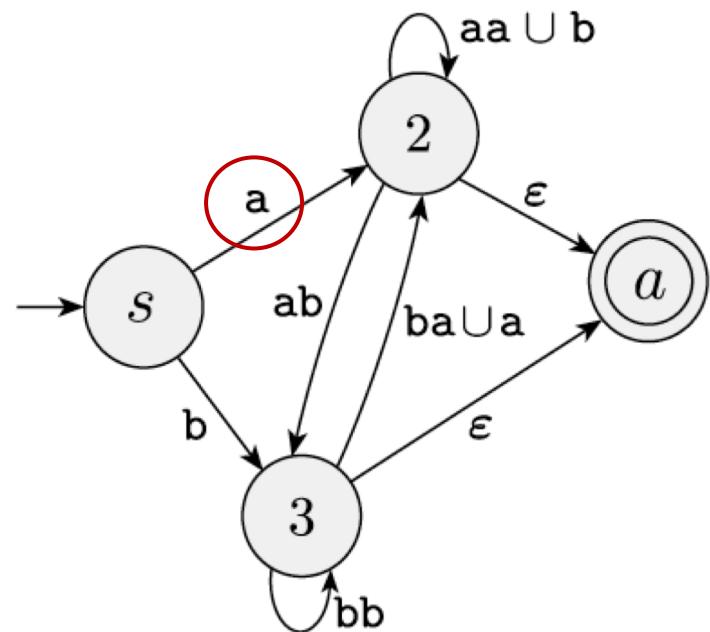
(c)

Transformando AFD em ER (3)

Exemplo 2



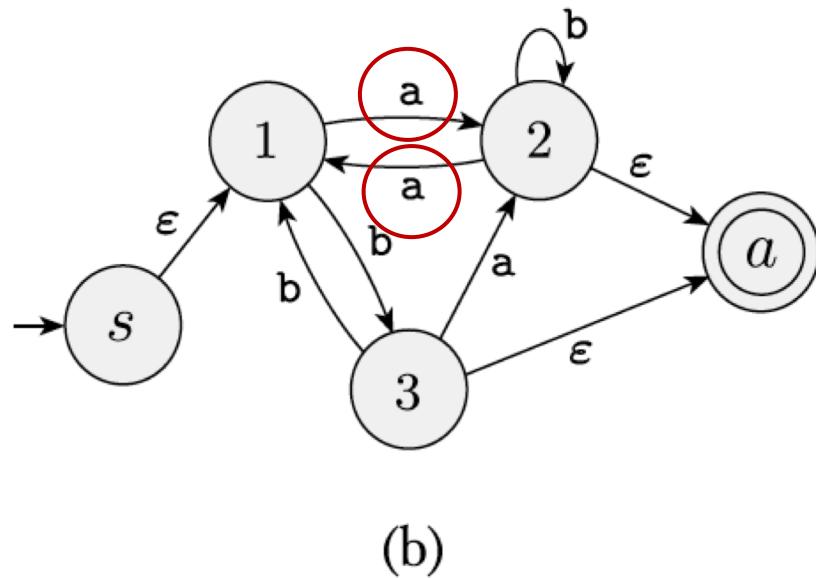
(b)



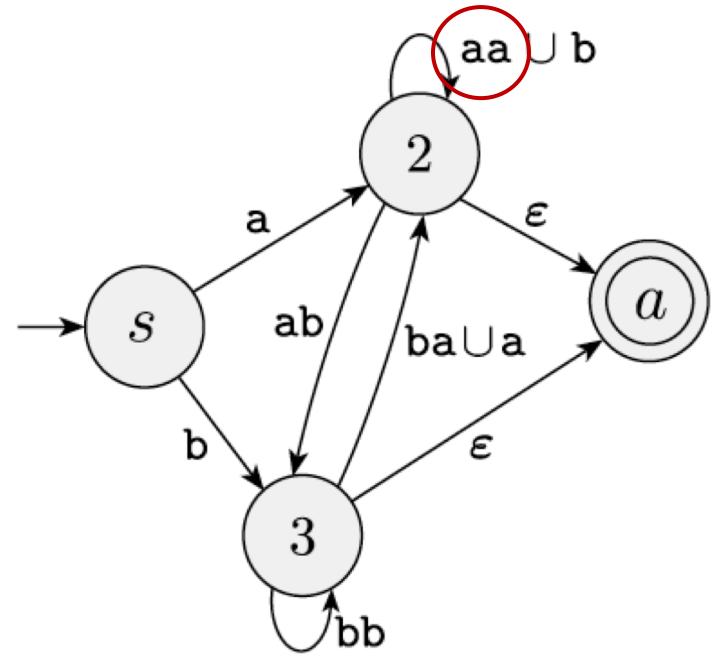
(c)

Transformando AFD em ER (3)

Exemplo 2



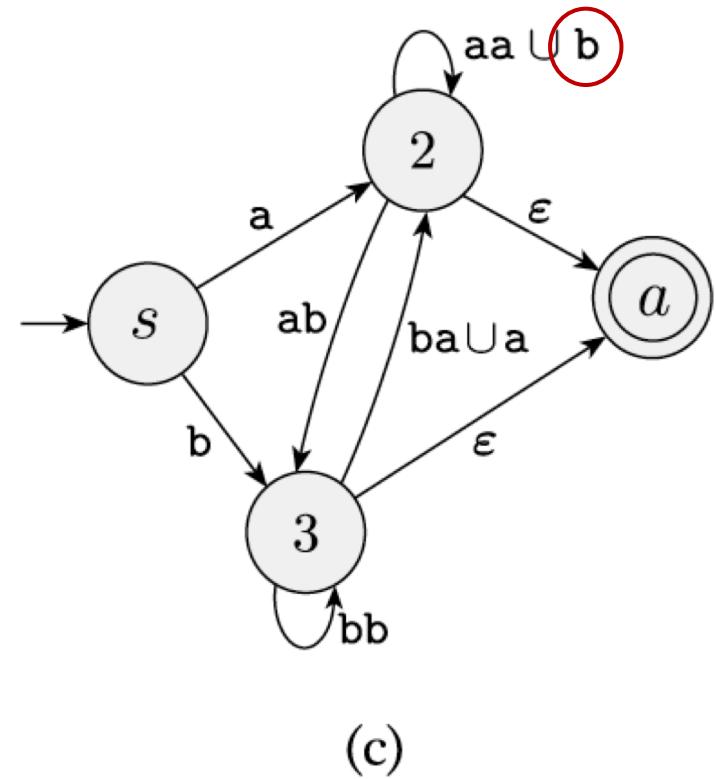
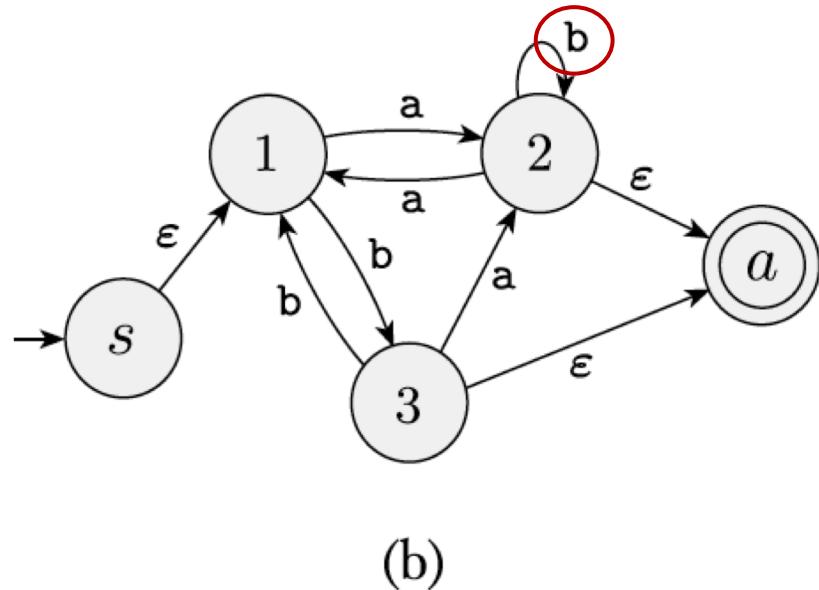
(b)



(c)

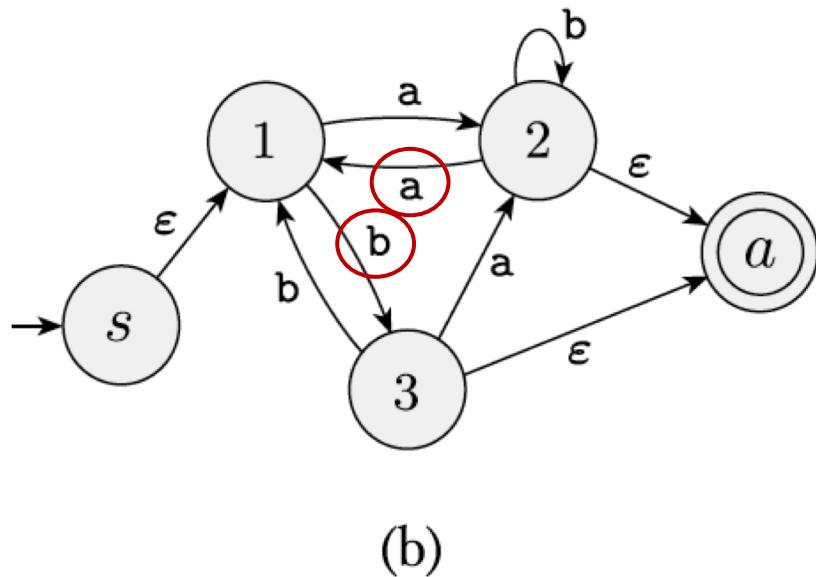
Transformando AFD em ER (3)

Exemplo 2

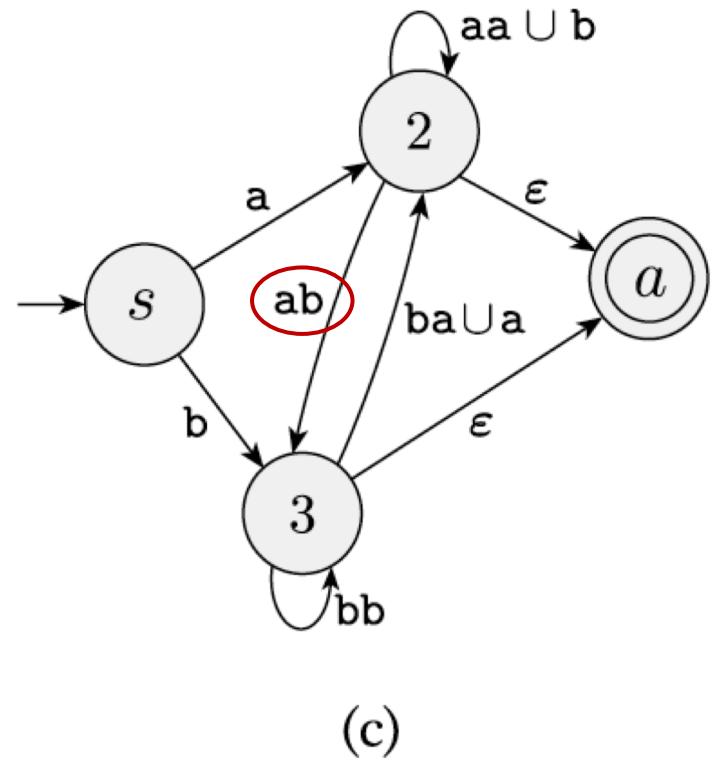


Transformando AFD em ER (3)

Exemplo 2



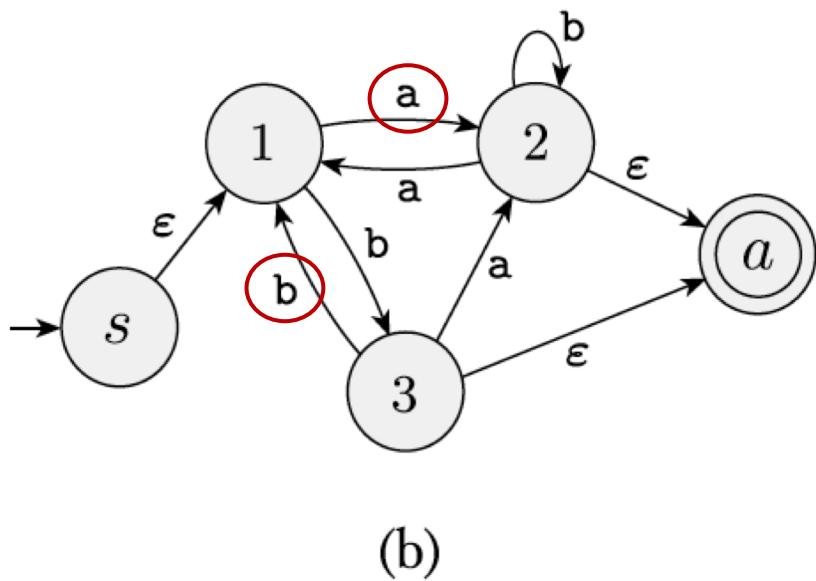
(b)



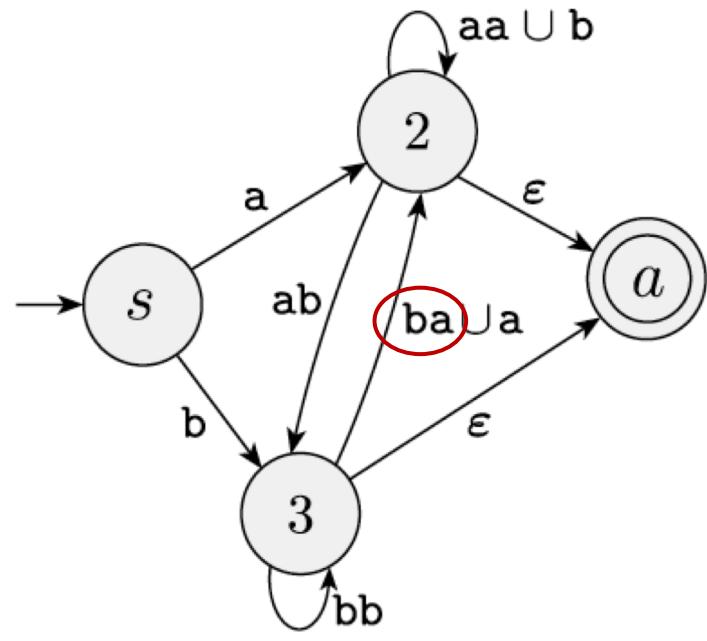
(c)

Transformando AFD em ER (3)

Exemplo 2



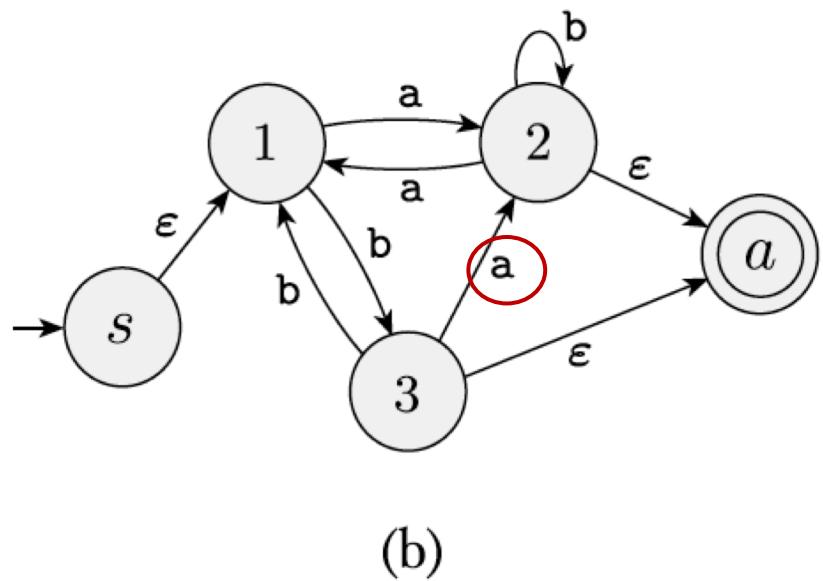
(b)



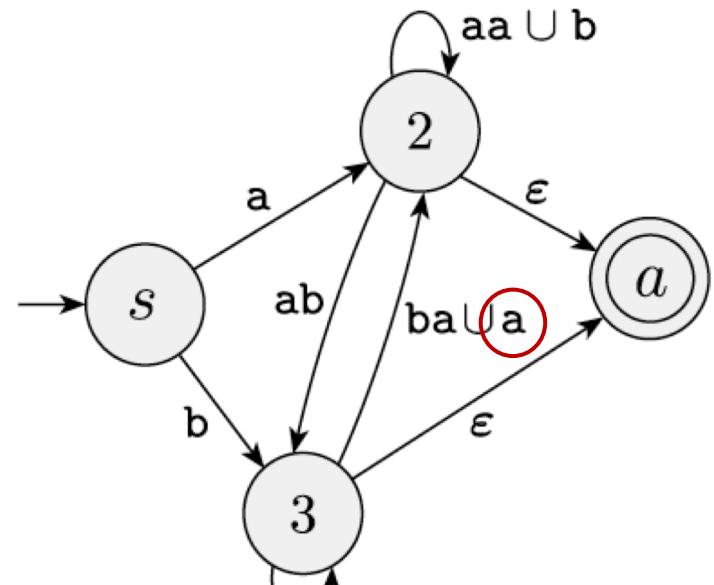
(c)

Transformando AFD em ER (3)

Exemplo 2



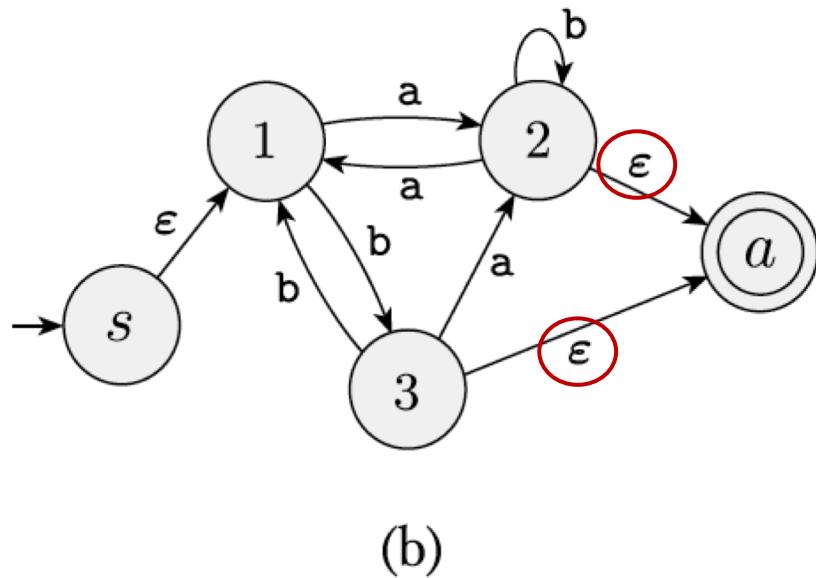
(b)



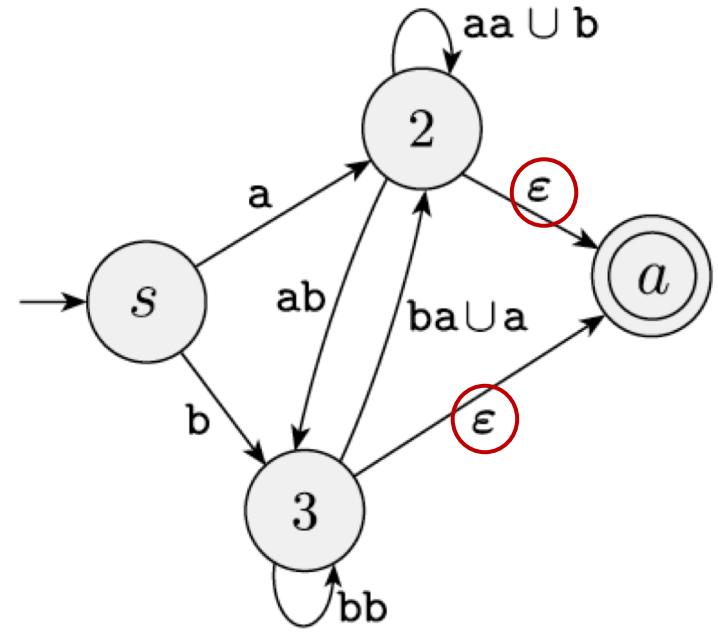
(c)

Transformando AFD em ER (3)

Exemplo 2



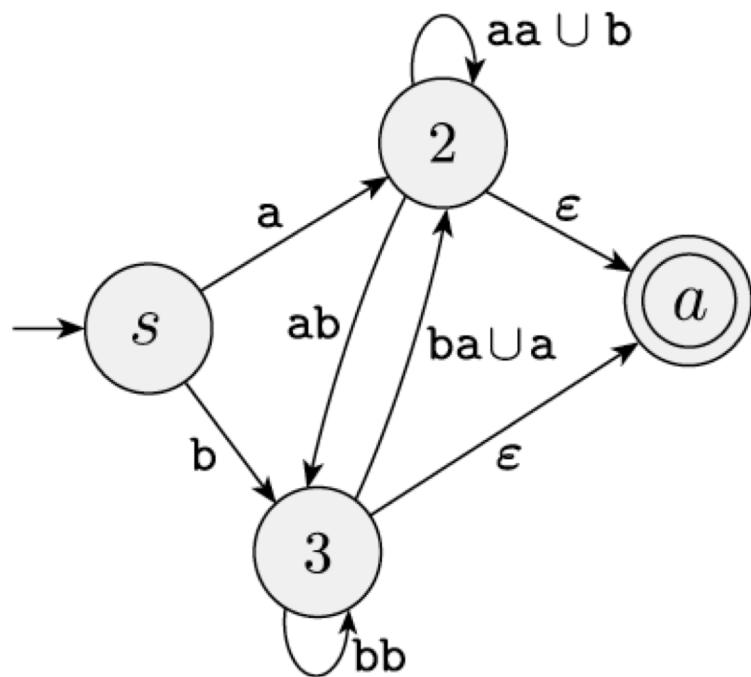
(b)



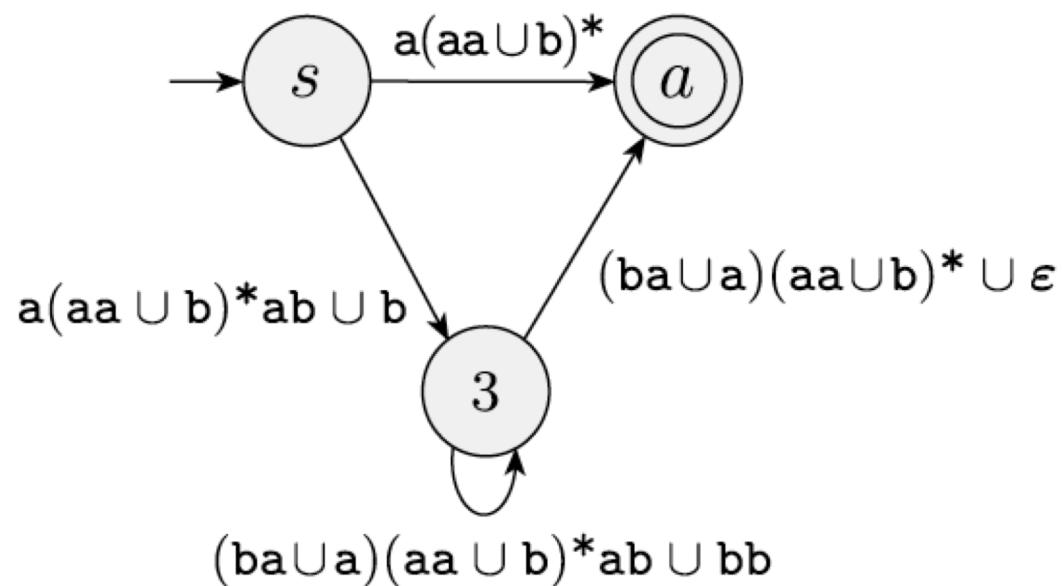
(c)

Transformando AFD em ER (3)

Exemplo 2



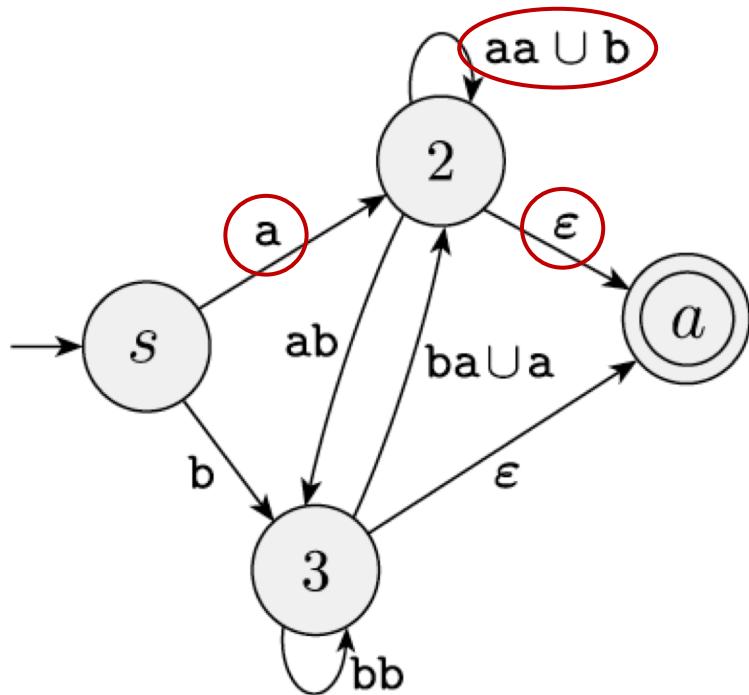
(c)



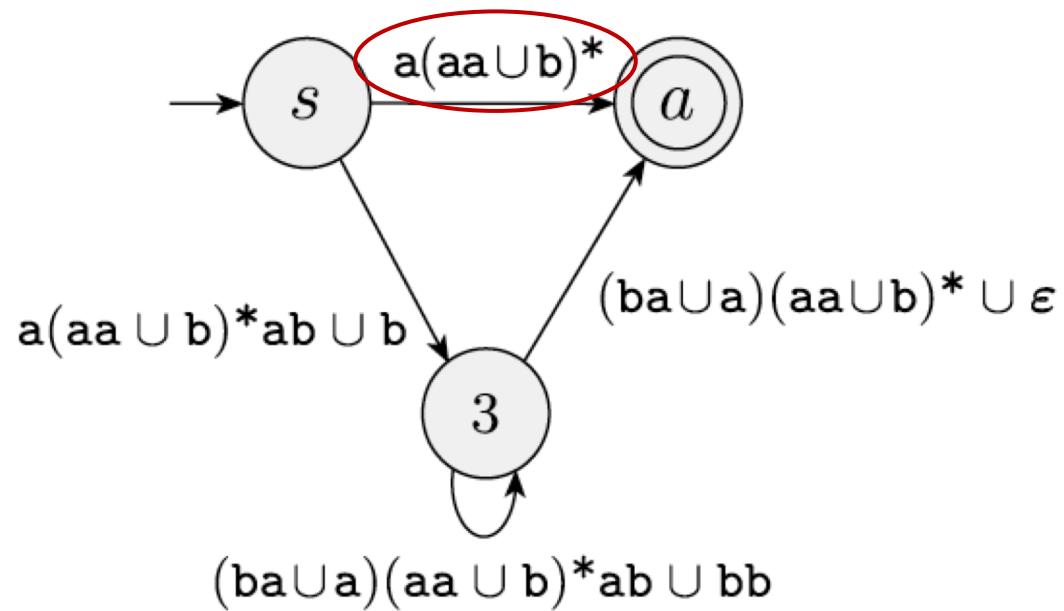
(d)

Transformando AFD em ER (3)

Exemplo 2



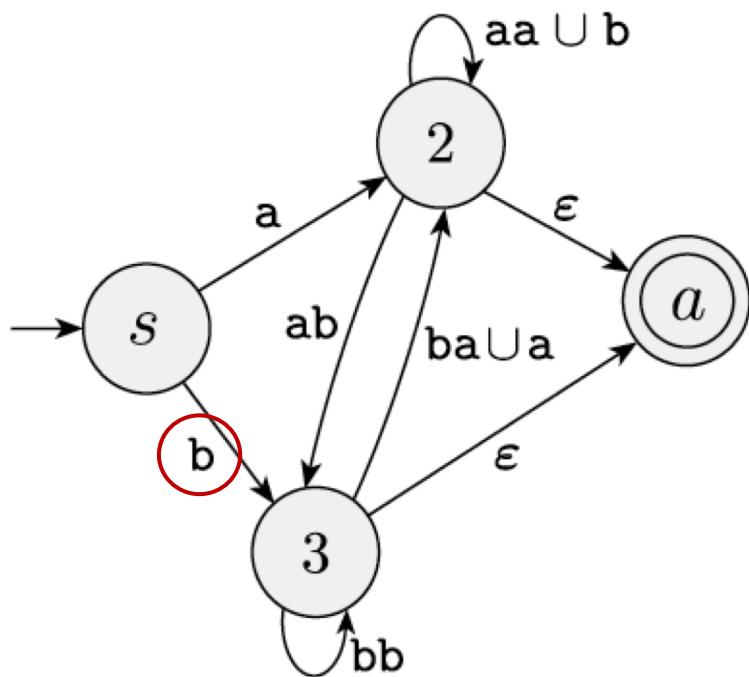
(c)



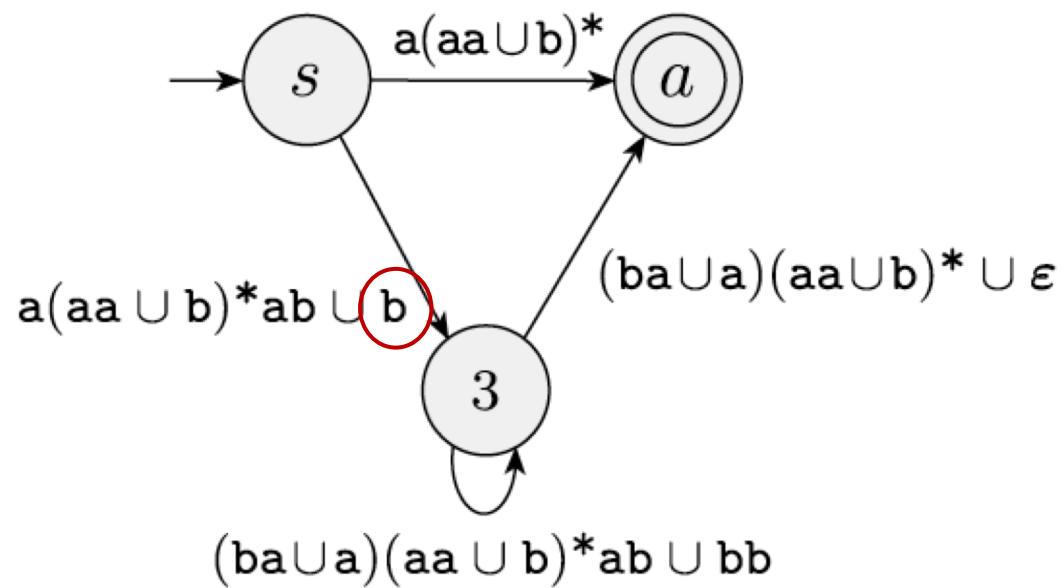
(d)

Transformando AFD em ER (3)

Exemplo 2



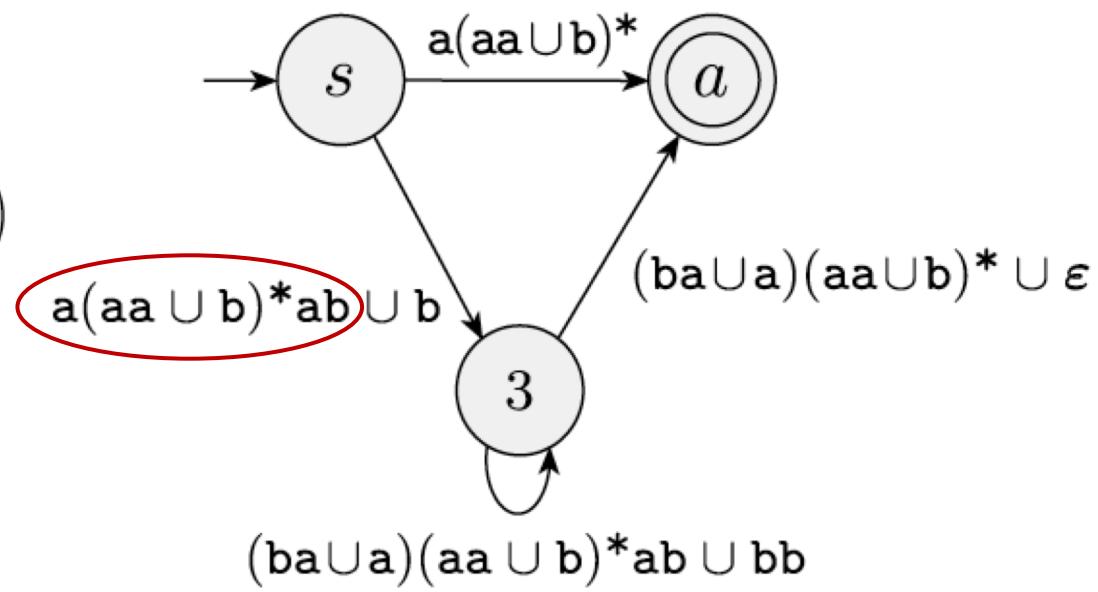
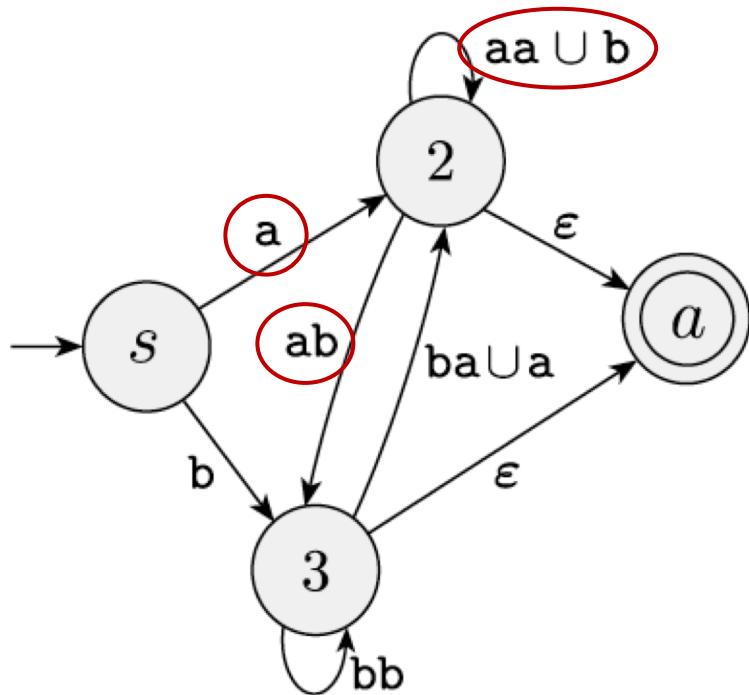
(c)



(d)

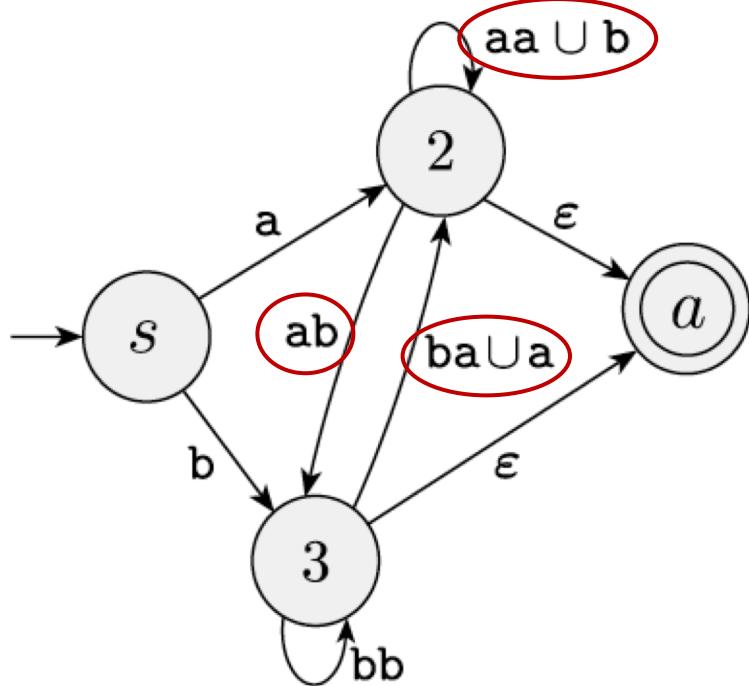
Transformando AFD em ER (3)

Exemplo 2

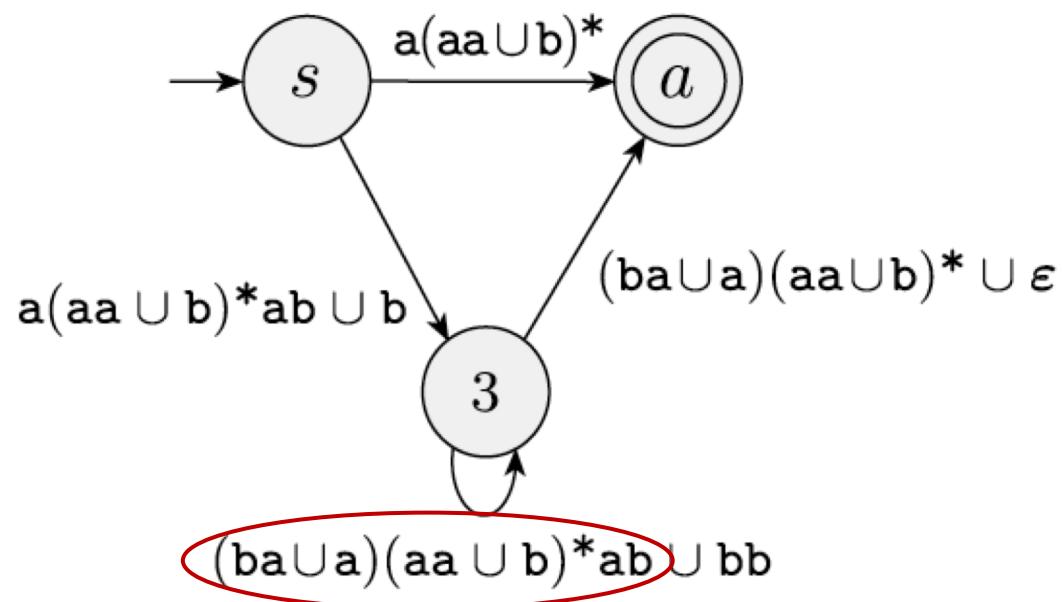


Transformando AFD em ER (3)

Exemplo 2



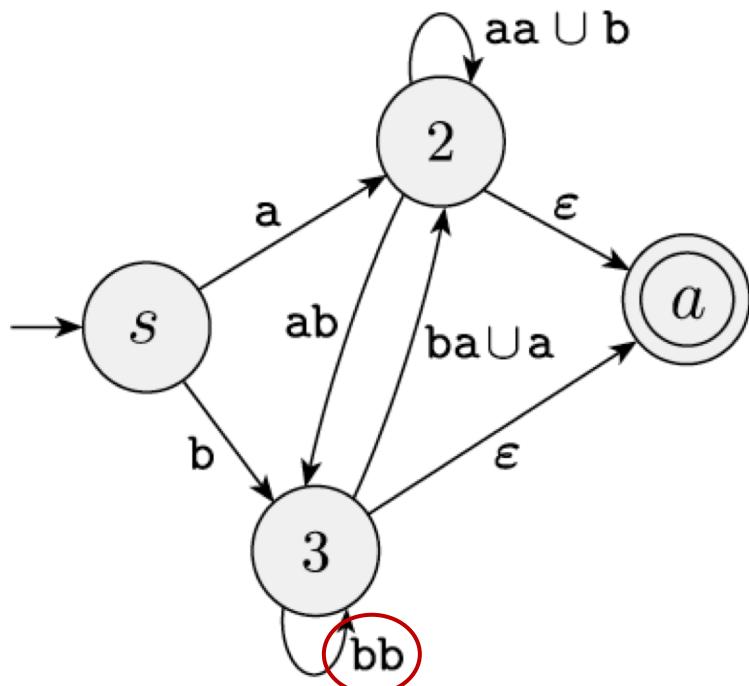
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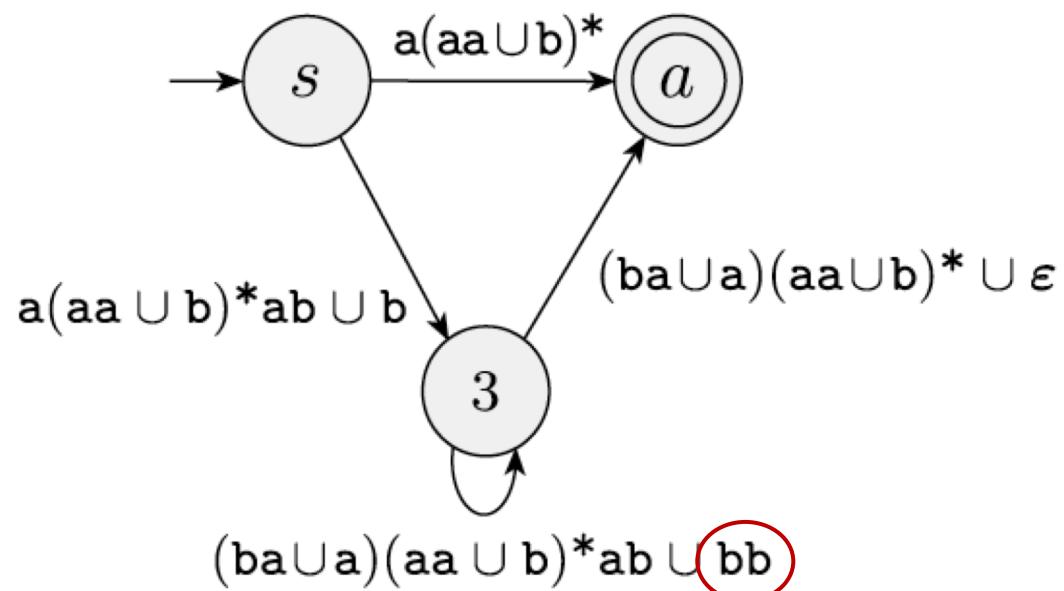
(d)

Transformando AFD em ER (3)

Exemplo 2



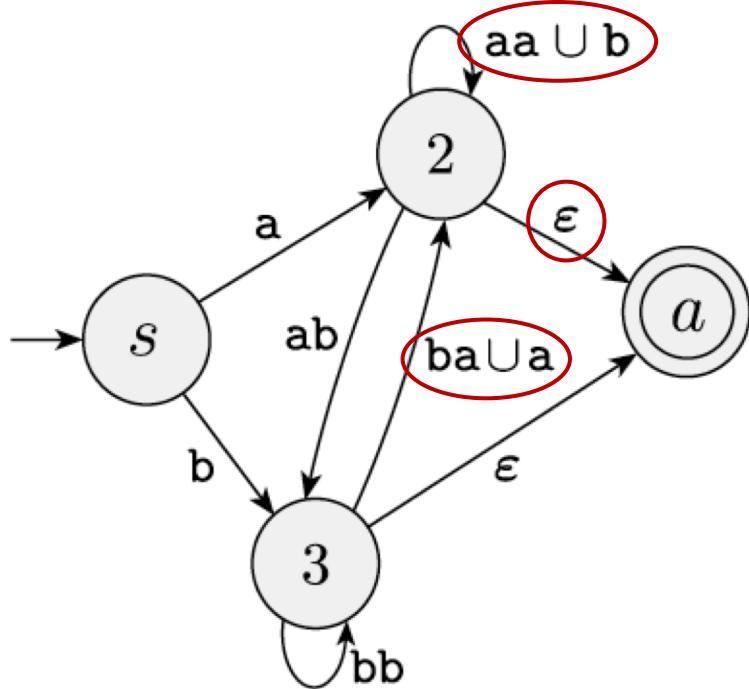
(c)



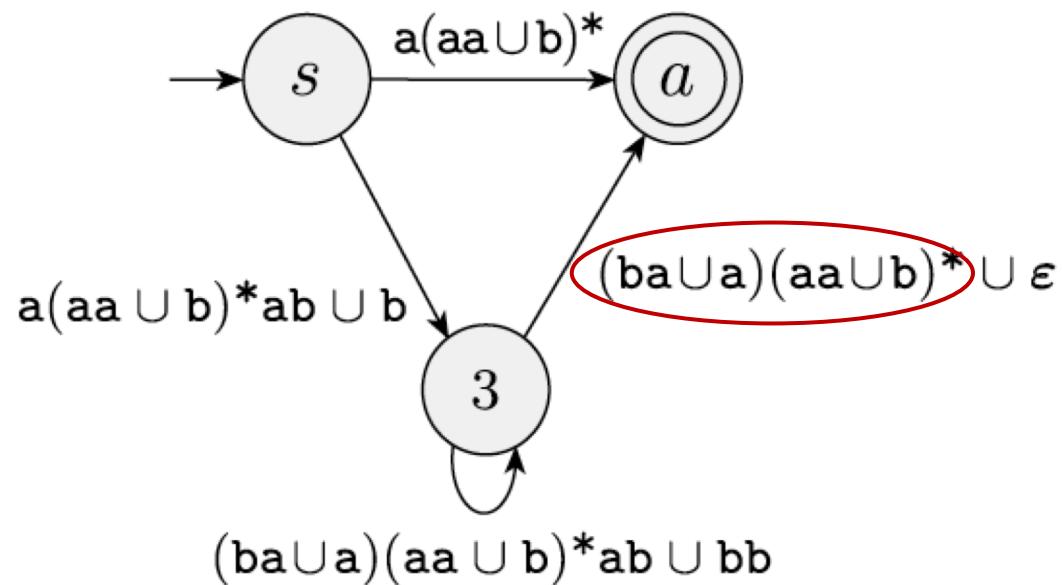
(d)

Transformando AFD em ER (3)

Exemplo 2



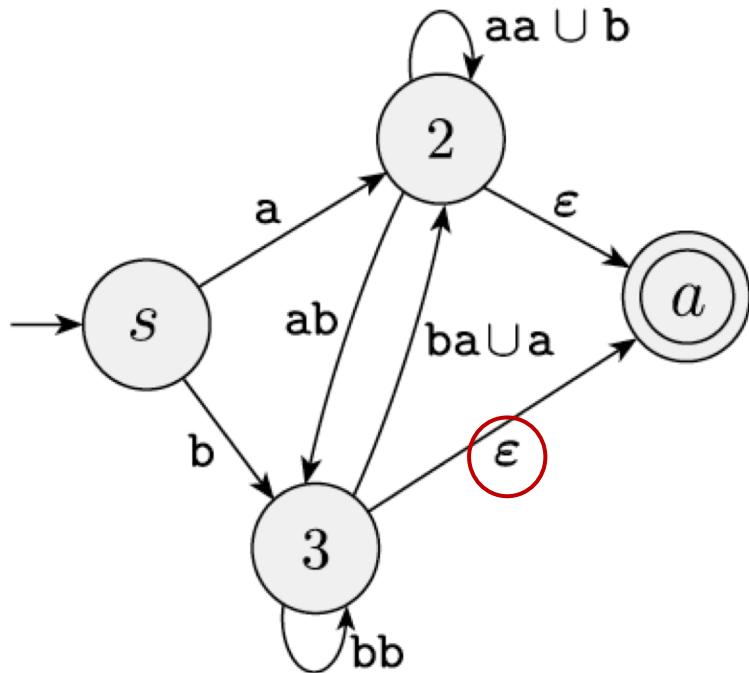
(c)



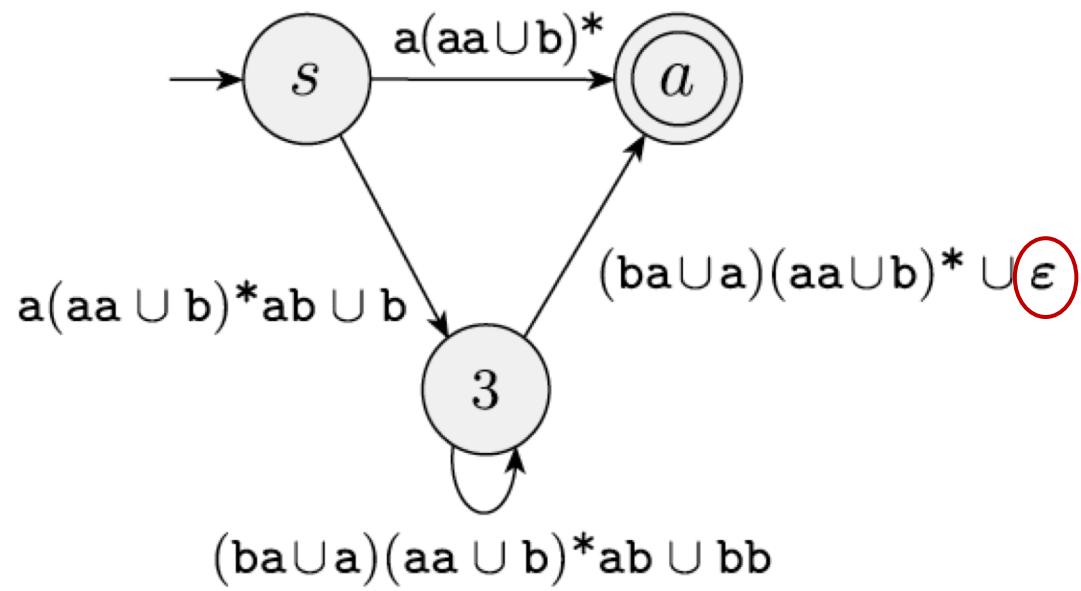
(d)

Transformando AFD em ER (3)

Exemplo 2



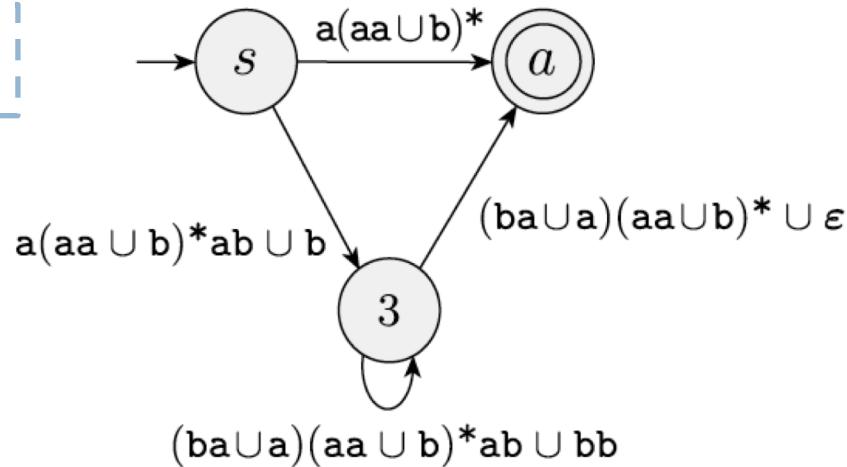
(c)



(d)

Transformando AFD em ER (3)

Exemplo 2

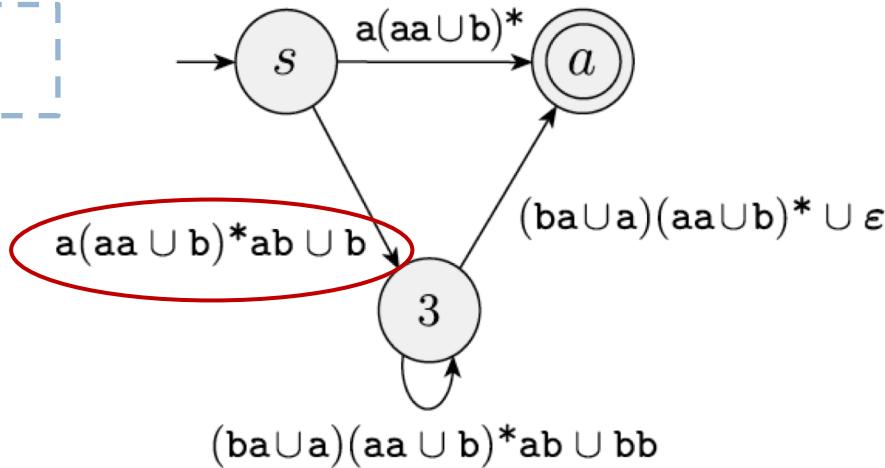


$(a(aa \cup b)^*ab \cup b)((ba \cup a)(aa \cup b)^*ab \cup bb)^*((ba \cup a)(aa \cup b)^* \cup \epsilon) \cup a(aa \cup b)^*$

(e)

Transformando AFD em ER (3)

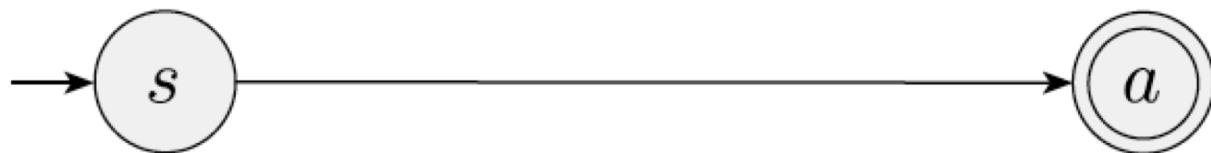
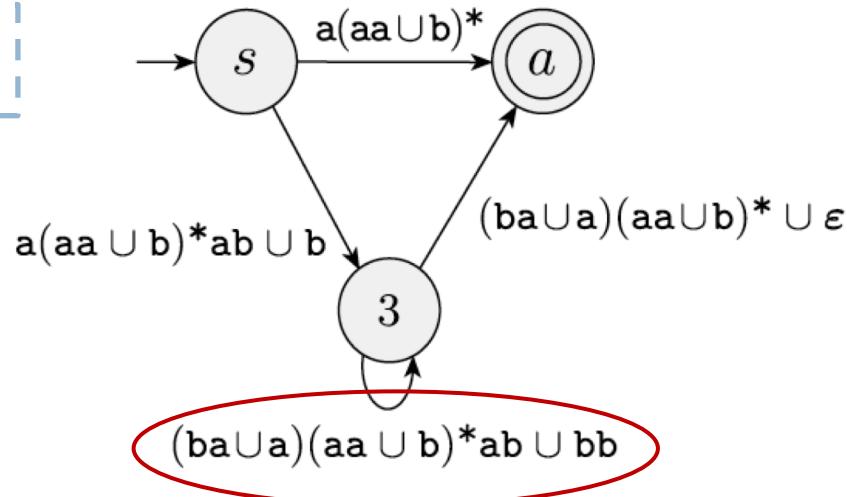
Exemplo 2



(e)

Transformando AFD em ER (3)

Exemplo 2

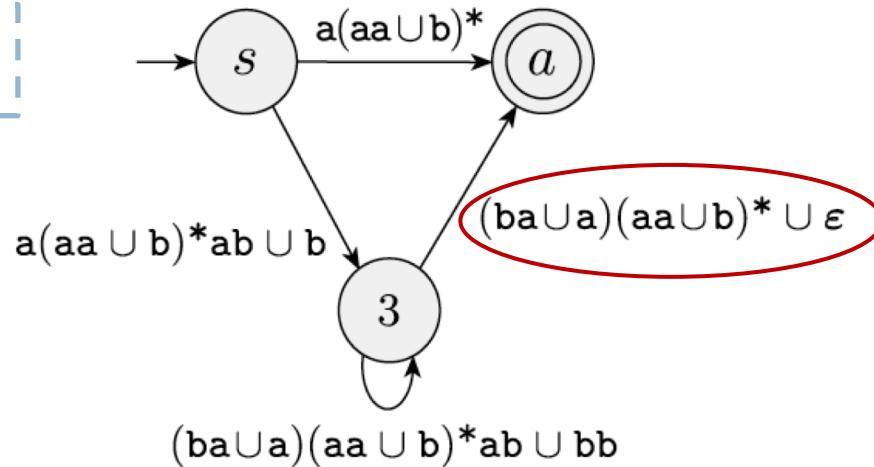


$(a(aa \cup b)^*ab \cup b)((ba \cup a)(aa \cup b)^*ab \cup bb)^*((ba \cup a)(aa \cup b)^* \cup \epsilon) \cup a(aa \cup b)^*$

(e)

Transformando AFD em ER (3)

Exemplo 2

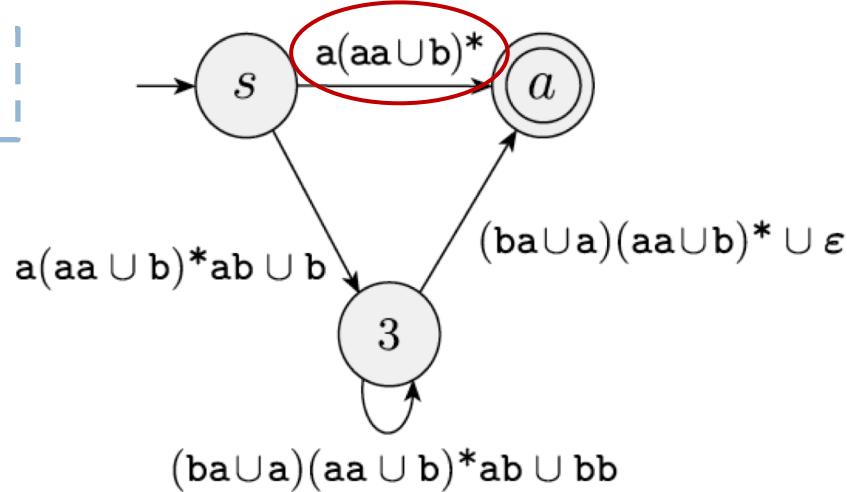


$(a(aa \cup b)^*ab \cup b)((ba \cup a)(aa \cup b)^*ab \cup bb)^*((ba \cup a)(aa \cup b)^* \cup \epsilon) \cup a(aa \cup b)^*$

(e)

Transformando AFD em ER (3)

Exemplo 2



$(a(aa \cup b)^*ab \cup b)((ba \cup a)(aa \cup b)^*ab \cup bb)^*((ba \cup a)(aa \cup b)^* \cup \epsilon) \cup a(aa \cup b)^*$

(e)

Equivalências para simplificação

$$1. \quad r + s = s + r$$

$$2. \quad r + \emptyset = r$$

$$3. \quad r + r = r$$

$$4. \quad r\lambda = \lambda r = r$$

$$5. \quad r\emptyset = \emptyset r = \emptyset$$

$$6. \quad (r + s)t = rt + st$$

$$7. \quad r(s + t) = rs + rt$$

$$8. \quad (r + s)^* = (r^*s)^*r^*$$

$$9. \quad (r + s)^* = r^*(sr^*)^*$$

$$10. \quad (rs)^* = \lambda + r(sr)^*s$$

$$11. \quad r^{**} = r^*$$

$$12. \quad r^* = (rr)^*(\lambda + r)$$

$$13. \quad \emptyset^* = \lambda$$

$$14. \quad \lambda^* = \lambda$$

$$15. \quad r^*r^* = r^*$$

$$16. \quad rr^* = r^*r$$

$$17. \quad (r^* + s)^* = (r + s)^*$$

$$18. \quad (r^*s^*)^* = (r + s)^*$$

$$19. \quad r^*(r + s)^* = (r + s)^*$$

$$20. \quad (r + s)^*r^* = (r + s)^*$$

**Naquele tempo...
existiam os lados A e B
...e eles nos rebobinavam
com uma caneta!**

