[INCONTRO 2 / 17.03.2025]

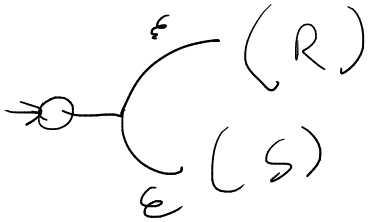
OVERVIEW:

- ESPRESSIONI REGOLARI (ER)
- EQUIVALENZA CON AUTOMI (ER / DFA DI CONTESA)

OPERAZIONI → UNIONE / INTERSEZIONE / COMPLEMENTO / STAR (KLEENE)

PRECEDENZA → STAR (KLEENE) / CON CATENAZIONE (·) UNIONE

$(R+S)$ $\vee$ R, S ER / DFA ...



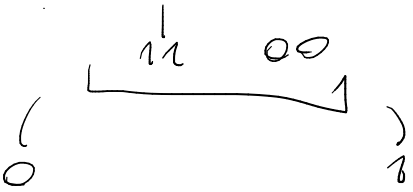
$(0|1)^*101(0|1)^*$

PREFIX SUFFIX

ER → CONTIENE "101"

NON CONTIENE "101" (SOTTOSTRINGA)

$((11)^*(00)^*)^*$



ALTERNATIVA $(0|11|10(0|11|10)^*)^*$

ER → STRINGHE DATE GG/MM/AAAA (VALIDE)

[25/10/2028] → OK

$0(1+2+3)$ /

/

$0(1\ldots9)|1(0\ldots9)|2(0\ldots9)|3(0+1)$ /

GR → TUTTE LE STRINGHE TALI CHE CONTENGANO CIASCUN SIMBOLO

|

$\{a,b,c\}^*$

$(a+b+c)^* a (a+b+c)^* b (a+b+c)^* c$

NOTA → DA CONSIDERARE ORDINE PER TUTTI I SOTTOCASI $\{a,b,c\}$

bac | cba ..... ↘

↙ DFA / GR NFA

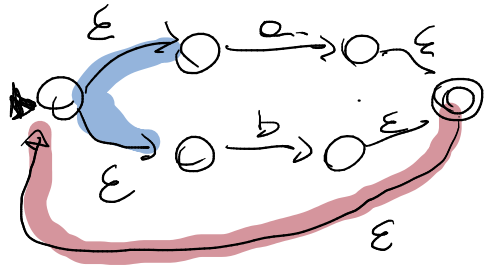
REGOLARI [- DFA, - NFA, - GR] → EQUIVALENZA (FINITA)

REGEX → $(a \cup b)^*(aba)$

a ⇒ 

aba ⇒ 

(*)

$(a \cup b)^*$ ⇒ 

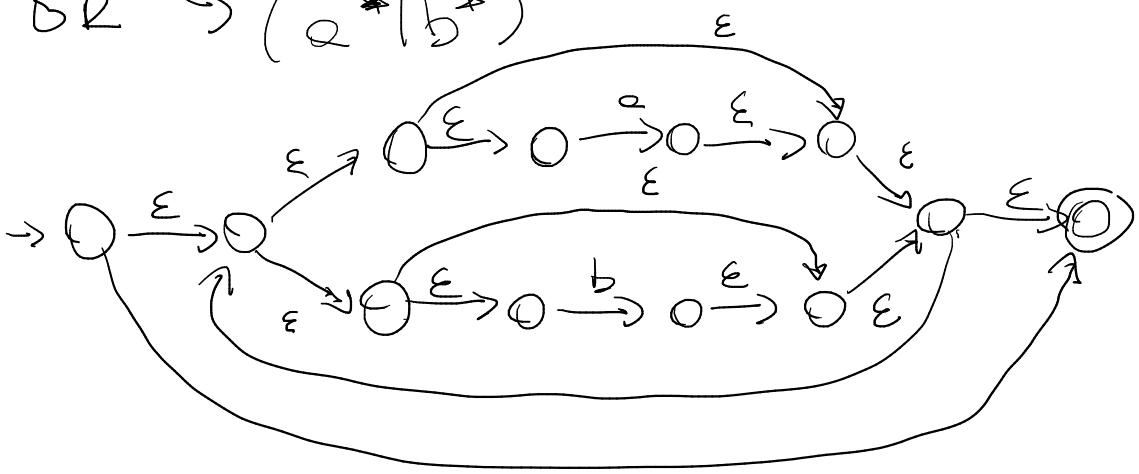
(**)

CONCATENAZIONE ⇒ AGGIUNGI ε-TRANSIZIONE TRA BRANCH 1 (*) BRANCH 2 (**)

$(a|b)^* \underset{\text{EQUIVALENTE}}{\equiv} (a+b)^*$

$(a)^*$ / VAR. SI KLEENE SENZA ε $\underline{\sim}$ $(a)^+$

ER → $(a^*|b^*)^*$



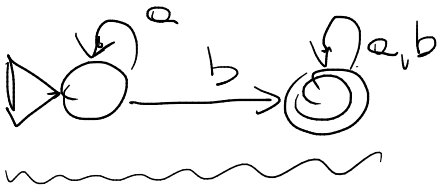
NFA → GNFA

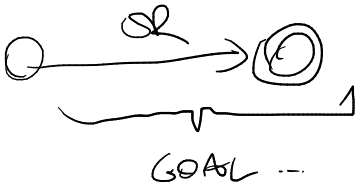
- UNICO STATO INIZIALE
- UNICO STATO FINALE
- RIMPIAZZARE TRANSIZIONI MULTIPLE CON UNIONE
- STATI NON COLLEGATI → ∅

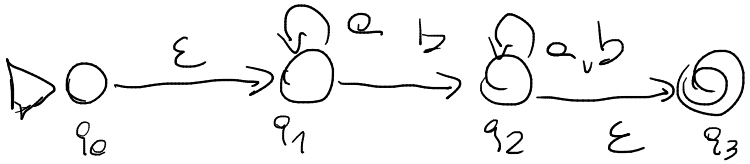
$L = \{a \dots z\}$

GRAMMATICA

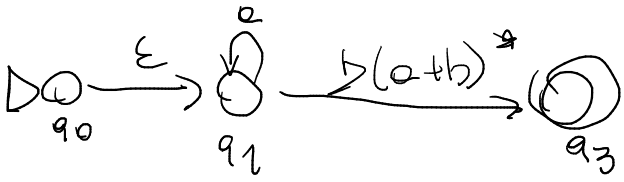
ELIMINAZIONE DEGLI STATI / THOMPSON



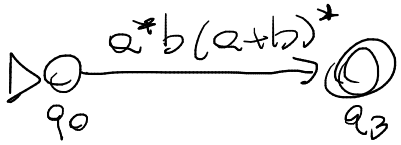


① 

(AGGIUNGI ε SU q_0/q_3)

② 

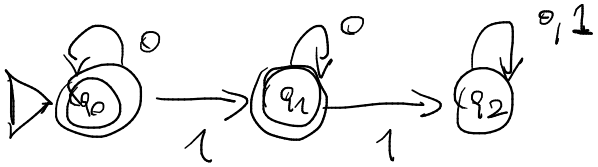
(ELIMINO q_2)

③ 

$(a+b)^* \equiv (a \cup b)^*$

(ELIMINO q_1)

↓



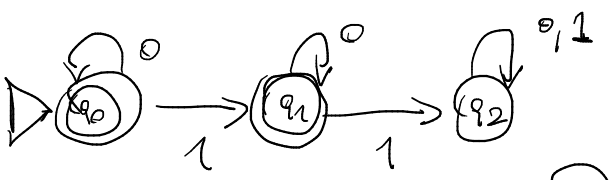
AUTOMA
- LINGUAGGIO ACCETTA?
- CONVERSIONE AD ER ?

ACCETTANO CON 1 COME SOTTO STRINGA $\Sigma = \{0, 1\}^*$

≡

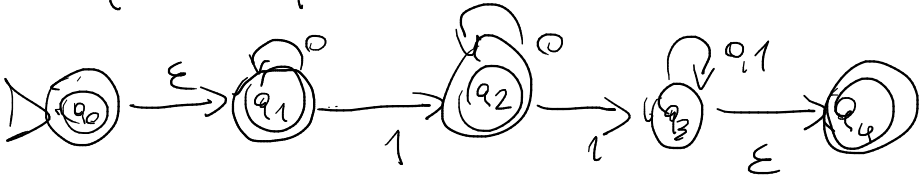
SOTTOSTRINGA C SOTTOSEQUENZA

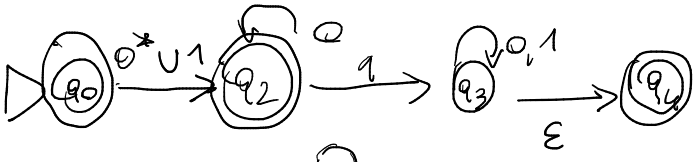
AUTOMA CHE NON COMPRENDE $\{101\}$



CONVERSIONE AD ER

UNO STATO INIZIALE E FINALE

1) 

2) 

ELIMINO q_1

3) 

ELIMINO q_3

4) 

ELIMINO q_2

GOAL