automi deterministici:
automi non deterministici:

DFA deterministico

Q

Σ

δ

q

$\delta(q,a)$

p

q

p^2

Q

F

F

Q

$A = (Q, \Sigma, \delta, q_0, F)$

A

Q

Δ

δ

q_0

F

$a_1...a_n$

q_0

δ

$\delta(q_0, a_1) =$

q_1

a_1

$\delta(q_1, a_2) =$

q_2

$\delta(q_{i-1}, a_i) =$

q_i

q_n

q_n

F

$a_1...a_n$

$L = \{w|w\} = \{01, 11010, 100011, ...\}$

$L = \{x01y | x, y \in \{0,1\}^*\}$

$\Sigma = \{0,1\}$

A

q_0

q_0

$\delta(q_0, 1) =$

q_0

q_2

$\delta(q_0, 0) =$

q_2

q_2

$\delta(q_2, 0) =$

q_2

q_1

$\delta(q_2, 1) =$

q_1

$\delta(q_1, 0) =$

$\delta(q_1, 1) =$

q_1

$Q = \{q_0, q_1, q_2\} F = \{q_1\}$

$A = \{\{q_0, q_1, q_2\}, \{0,1\}, \delta, q_0, \{q_1\}\}$

$\delta(q_0, 1) = q_0$

$\delta(q_0, 0) = q_2$

$\delta(q_2, 0) = q_2$

$\delta(q_2, 1) = q_1$

$\delta(q_1, 0) = q_1$

$\delta(q_1, 1) = q_1$

$\rightarrow$

$*$

$\rightarrow \delta \quad q_0 \quad q_1 \quad q_0$

$* q_1 \quad q_1 q_1$

$q_2 \quad q_2 q_1$

$0)_0$

$L = \{w \in \{a,b\}^* |\}$

$_0)_0$
$_1)[right =$
$of q_0]_1$
$_0)edge[bendleft =$
$25]nodeb(q_1)edge[loopbelow]nodea()(q_1)edge[bendleft =$
$25]nodeb(q_0)edge[loopbelow]nodea();$
q_0
q_1
b
q_0
a
$L = \{w \in \{a,b\}^* |\}$

$_0)_0$
$_1)[right =$
$of q_0]_1$
$_0)edge[bendleft =$
$25]nodeb(q_1)edge[loopbelow]nodea()(q_1)edge[bendleft =$
$25]nodeb(q_0)edge[loopbelow]nodea();$
q_0
q_1
b
q_1
q_1
q_0
b
$L = \{w \in \{0,1\}^* | w = 0^n 1^m\}$

Si
ha
che
q_E
è
lo
stato
pozzo
dove
vanno
le
stringhe
venute
male
$n, m \geq$
0

$_0)_0$
$_1)[right =$
$of q_0]_1$
$_E)[right =$
$of q_1]_E$
$_0)edgenode1(q_1)edge[loopbelow]node0()(q_1)edgenode(q_E)edge[loopbelow]node1()(q_E)edge[loopbelow]node0,1();$
q_0
q_1
$n \geq$
$0 \ m >$
0

$_0)_0$
$_1)[right =$
$of q_0]_1$
$_E)[right =$
$of q_1]_E$
$_0)edgenode1(q_1)edge[loopbelow]node0()(q_1)edgenode(q_E)edge[loopbelow]node1()(q_E)edge[loopbelow]node0,1();$
q_0
$n >$
$0 \ m \geq$
0

$_0)_0$
$_1)[right =$
$of q_0]_1$
$_2)[right =$
$of q_1]_2$
$_E)[right =$
$of q_2]_E$
$_0)edgenode0(q_1)edge[bendright]node1(q_E)(q_1)edgenode1(q_2)edge[loopabove]node0()(q_2)edgenode0(q_E)edge[loopabove]nod$
$CHIARIRE$
$n, m >$
0

$_0)_0$
$_1)[right =$
$of q_0]_1$
$_2)[right =$
$of q_1]_2$
$_E)[right =$
$of q_2]_E$
$_0)edgenode0(q_1)edge[bendright]node1(q_E)(q_1)edgenode1(q_2)edge[loopabove]node0()(q_2)edgenode0(q_E)edge[loopabove]nod$
$CHIARIRE$

$L = \{w \in \{a, b\}^* |\}$

$_0)_{pp}$
$_1)[right =$
$of q_0]_{dp}$
$_2)[below =$
$of q_0]_{pd}$
$_3)[right =$
$of q_2]_{dd}$
$_0)edge[bendleft =$
$25]nodea(q_1)edge[bendright =$
$25]node[left]b(q_2)(q_1)edge[bendleft =$
$25]nodea(q_0)edge[bendright =$
$25]node[left]b(q_3)(q_2)edge[bendright =$
$25]node[right]b(q_0)edge[bendleft =$
$25]nodea(q_3)(q_3)edge[bendright =$
$25]node[right]b(q_1)edge[bendleft =$
$25]nodea(q_2);$
$L = \{w \in \{a, b\}^* |\}$

$L = \{a^{2n}b^{2k+1} | j, k \geq 0\}$

$_0)_0$
$_1)[right =$
$of q_0]_1$
$_2)[below =$
$of q_0]_2$
$_3)[right =$
$of q_2]_3$
$_4)[right =$
$of q_3]_E$
$_0)edge[bendleft =$
$25]nodeb(q_1)edge[bendright =$
$25]node[left]a(q_2)(q_1)edge[bendleft =$
$25]nodea(q_4)edge[bendright =$
$25]node[left]b(q_3)(q_2)edge[bendright =$
$25]node[below]b(q_4)edge[bendright =$
$25]node[right]a(q_0)(q_3)edge[bendright =$
$25]node[right]b(q_1)edge[bendleft =$
$25]nodea(q_4);$

$\to$	δ	q_0	q_1	q_2
	q_1		q_0	q_E
$*$	q_2		q_E	q_3
	q_3		q_E	q_2
	q_E		q_E	q_E

$L = \{a^{2k+1}b^{2h} | h, k \geq 0\}$

$_0)_0$
$_1)[right =$
$of q_0]_1$
$_3)[right =$
$of q_1]_3$
$_2)[below =$
$of q_1]_2$
$_4)[right =$
$of q_2]_4$
$_5)[right =$
$of q_4]_E$
$_0)edgenode[bendleft =$
$25]a(q_1)(q_1)edge[bendleft =$
$25]nodea(q_2)edgenode[bendleft =$
$25]b(q_3)(q_2)edge[bendleft =$
$25]node[left]a(q_1)(q_3)edge[bendright =$
$25]node[left]b(q_4)(q_4)edge[bendright =$
$25]node(q_3);$
$L = \{a^{2n+1}b^{2k+1} | n, k \geq 0\}$

$_0)_0$
$_1)[right =$
$of q_0]_1$
$_3)[right =$
$of q_1]_3$
$_2)[below =$
$of q_1]_2$
$_4)[right =$
$of q_2]_4$
$_5)[right =$
$of q_4]_E$

$_0$); $[state, accepting](q_1)[right =$
$of q_0]$; $[state, accepting](q_2)[below =$
$of q_0]$; $[state](q_3)[right =$
$of q_2]$; $[->$
$](q_0)edge nodeb(q_1)edge nodec(q_2)edge[loopabove]nodea()(q_1)edge nodec(q_2)edge nodea(q_3)edge[loopabove]nodeb()(q_2)edgen$
$_0)\{_0, q_1, q_2\}$
$_1)[right =$
$of q_0]\{_1, q_2\}$
$_2)[below =$
$of q_0]\{_2\}$
$_3)[right =$
$of q_2]_E$
$_0)edge nodeb(q_1)edge nodec(q_2)edge[loopabove]nodea()(q_1)edge nodec(q_2)edge nodea(q_3)edge[loopabove]nodeb()(q_2)edgenod$
$w =$
$x0\overline{1}0y$

$_0\rangle_0$
$_1)[right =$
$of q_0]_1$
$_2)[right =$
$of q_1]_2$
$_3)[right =$
$of q_2]_3$
$_0)edge node0(q_1)edge[loopabove]node0, 1()(q_1)edge node1(q_2)(q_2)edge node0(q_3)(q_3)edge[loopabove]node0, 1();$