$110^*$ $\quad \{110^n : n \geq 0\}$

$w(n) = 110^n$

$x = 1 \quad y = 1 \quad z = 0^n$

$xyyz = 1110^n \notin L$

$x = 11 \quad y = 0 \quad z = 0^{n-1}$

$xy^i z = 110^{n+i-1} \in L$

$1^{\ell} 0^{k}$ con $\ell$ multiplo di $k$

$\forall n_0$
$\exists w \in L$ Tranne $w(n_0) \in L$
$\forall w = xyz$, con $|xy| \le n_0$, $y \neq \varepsilon$
$\exists i : xy^i z \notin L$

$w = 1^{n_0} 0^{n_0}$ $\quad w = xyz$ $\quad x = \varepsilon$, $y = 1^{n_0}$, $z = 0^{n_0}$

$xy^i z = 1^{i n_0} 0^{n_0} \in L$ per ogni $i$

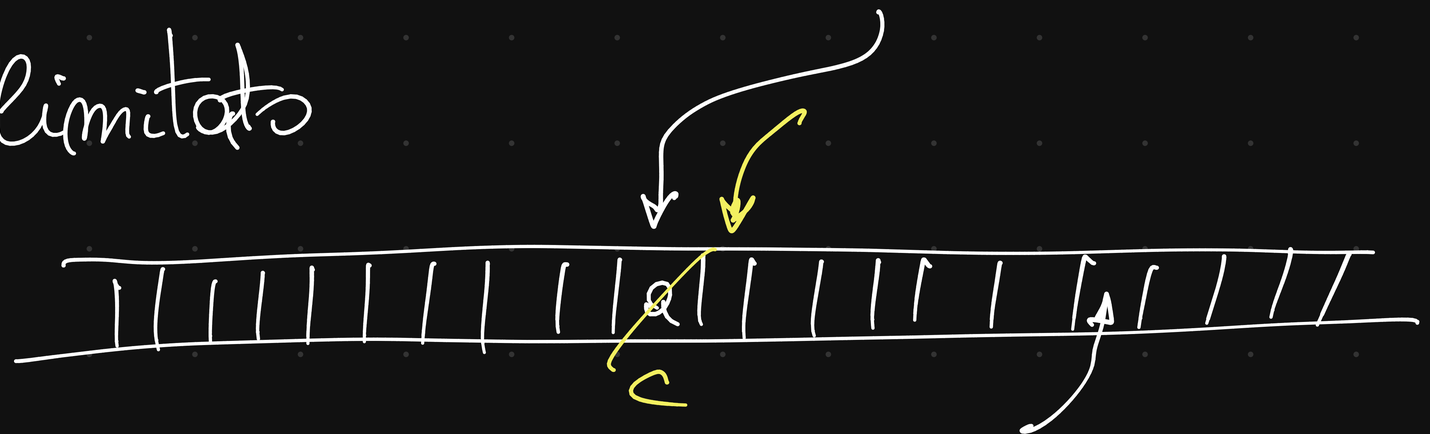
$4n_0 \quad 2n_0$
$1 \quad 0$
$n_0+1 \quad n_0+1$
$1 \quad 0$

$xyyz =$
$2n_0+1$ $\quad 2(n_0+1) = 2n_0+2$

# Macchina di Turing

Nastro illimitato

Controllo



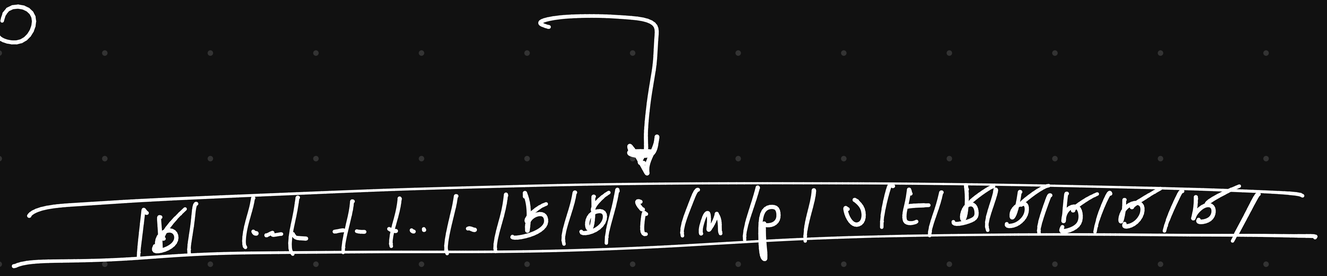

$M = (Q, q_0, F, \Sigma, \Gamma, \delta, b)$

$\Gamma$

$b \in \Gamma \setminus \Sigma$ blank

$\delta(q, a) = (q_1, c, \rightarrow)$ $\quad a \in \Gamma \quad c \in \Gamma$

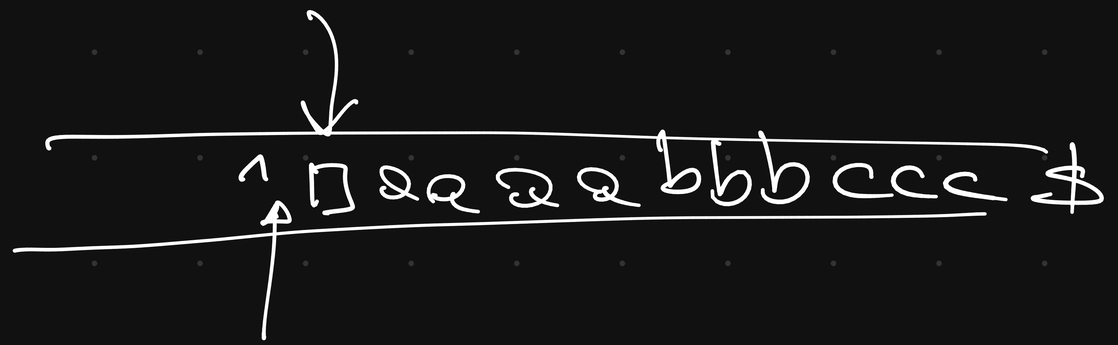
$\Sigma = \{$



qinit

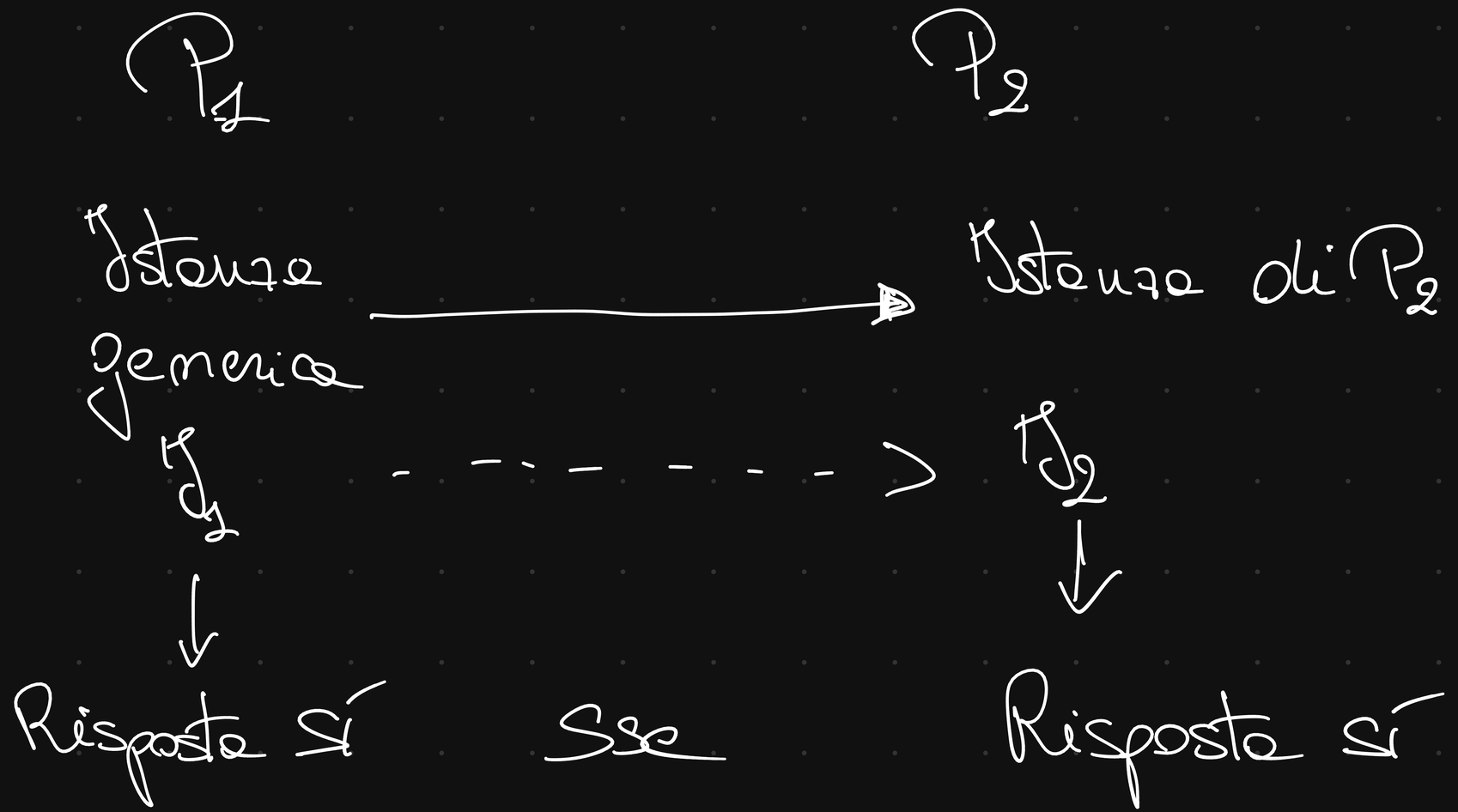
qYES qNO

MdT che riconosce il linguaggio $\{a^n b^n c^n : n \geq 0\}$



# Riduzione fra problemi

$P_1$ $P_2$



Date due parole $w_1$ e $w_2$ dice se $w_1$ è anagramma di $w_2$

↓

Date due parole $t_1, t_2$ in cui i caratteri compaiono in ordine lessicografico, dice se sono identiche

$w_1$ = ANAGRAMMA $\quad$ $t_1$ = AAAAGMMNR

- $L \subseteq \Sigma_B^*$ delle parole che hanno stesso numero di 0 e 1
- $\{ww^R : w \in \Sigma_B^*\}$