Language: set of strings

w is a string

$|w|$: length

empty string: ε λ

z is a substring w

aba bbacababb

x, y strings xy

$x = 0100$

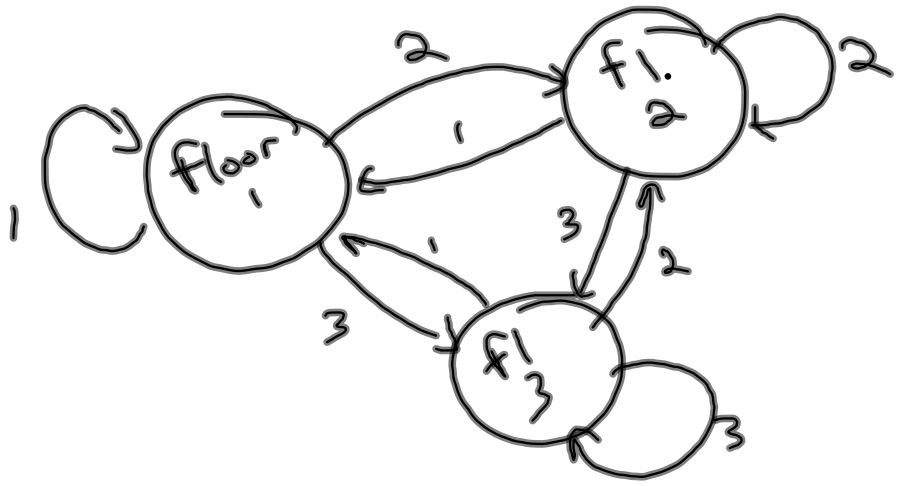
$y = 110$

$xy = 0100110$

w^R - reverse of w

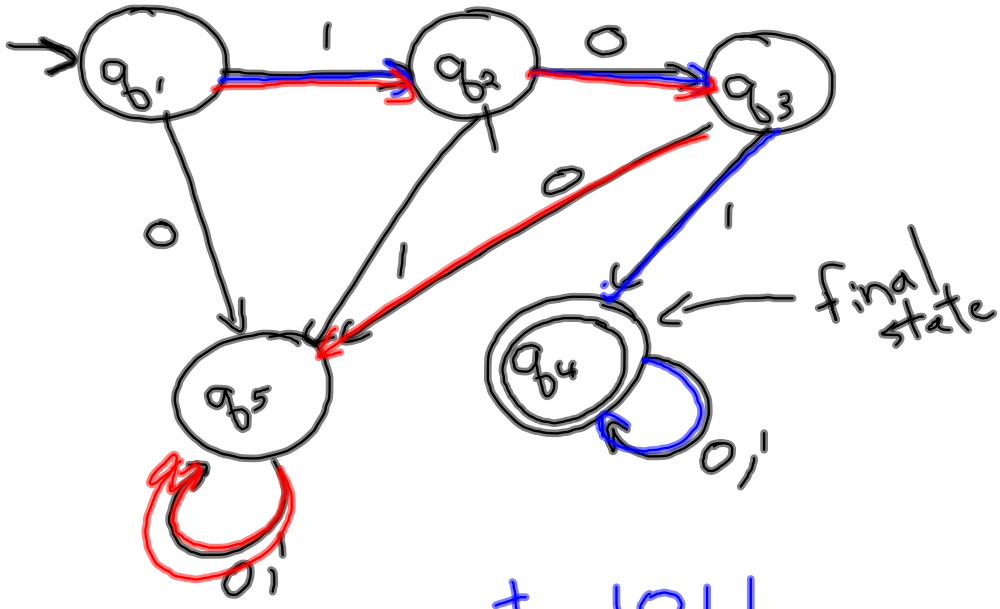
Finite Automata

Elevator: 3 floors
3 inputs



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

start



input: 1011

ends in q_4

accepts input

Language: set of strings starting with 101

10010

ends in q_5

rejects input

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

1. Q: set of states
2. Σ: input alphabet
3. $\delta: Q \times \Sigma \to Q$ (function)
4. $q_0 \in Q$ start state
5. $F \subseteq Q$ final states

$Q = \{q_0 .. q_5\}$

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

q_0 ~~q_6~~ q_1

$F = \{q_4\}$

δ:

current	0	1
~~q_6~~		
q_1	q_5	q_2
q_2	q_3	q_5
q_3	q_4	q_5
q_4	q_4	q_4
q_5	q_5	q_5