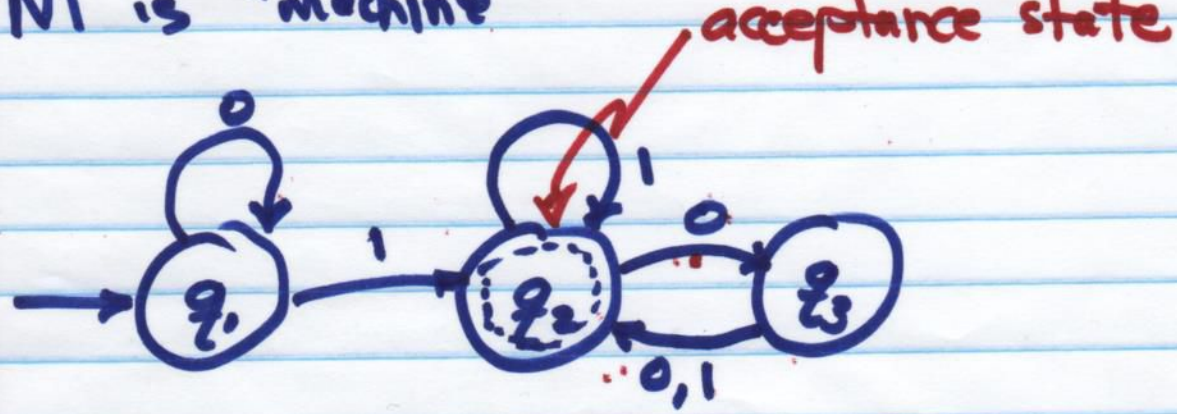
1-19

M is "machine"



1st char "1" $q_1 \rightarrow q_2$

"1" $q_2 \rightarrow q_2$

"0" $q_2 \rightarrow q_3$

"1" $q_3 \rightarrow q_2$

Not accepted

0
00
000
010

Accepted

1
11
111...
1101
11011
100
↑.

A DFA (deterministic finite automaton)

is a 5-tuple. $\langle Q, \Sigma, \delta, q_0, F \rangle$

$Q = \{q_1, \ldots\}$ states

Σ = alphabet (allowed symbols)

$\delta : Q \times \Sigma \to Q$ transition function

q_0 initial state

F : set of acceptance states

ε = null word

IN	OUT
ε	
$\ldots 0$	$\ldots 1$

δ :

$(q_1, 0) \to q_1$

$(q_1, 1) \to q_2$

$(q_2, 0) \to q_1$

$(q_2, 1) \to q_2$