

CSC 220

11/19/2020

FA



FA is deterministic or nondeterministic

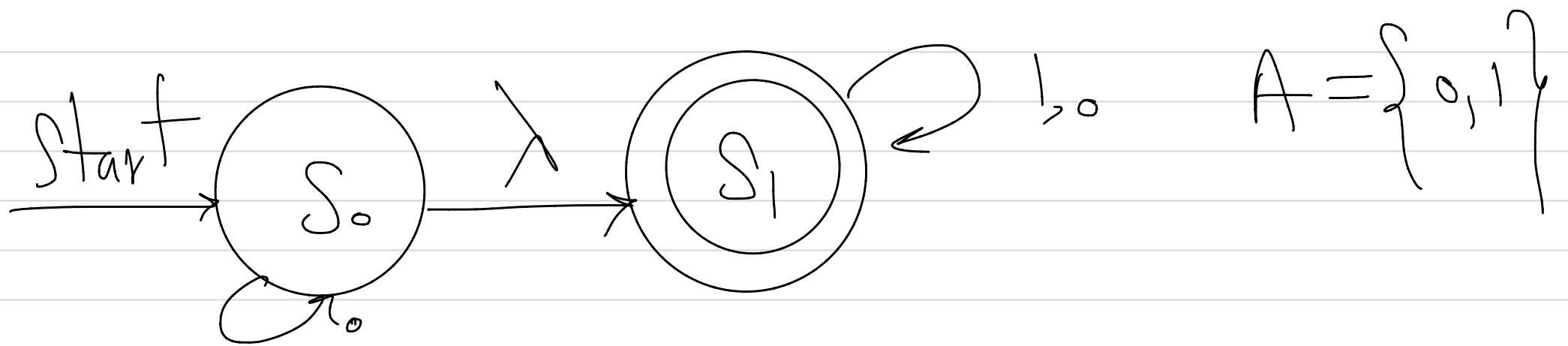
✓  
DFA

↓  
NFA

Requirements of DFA:

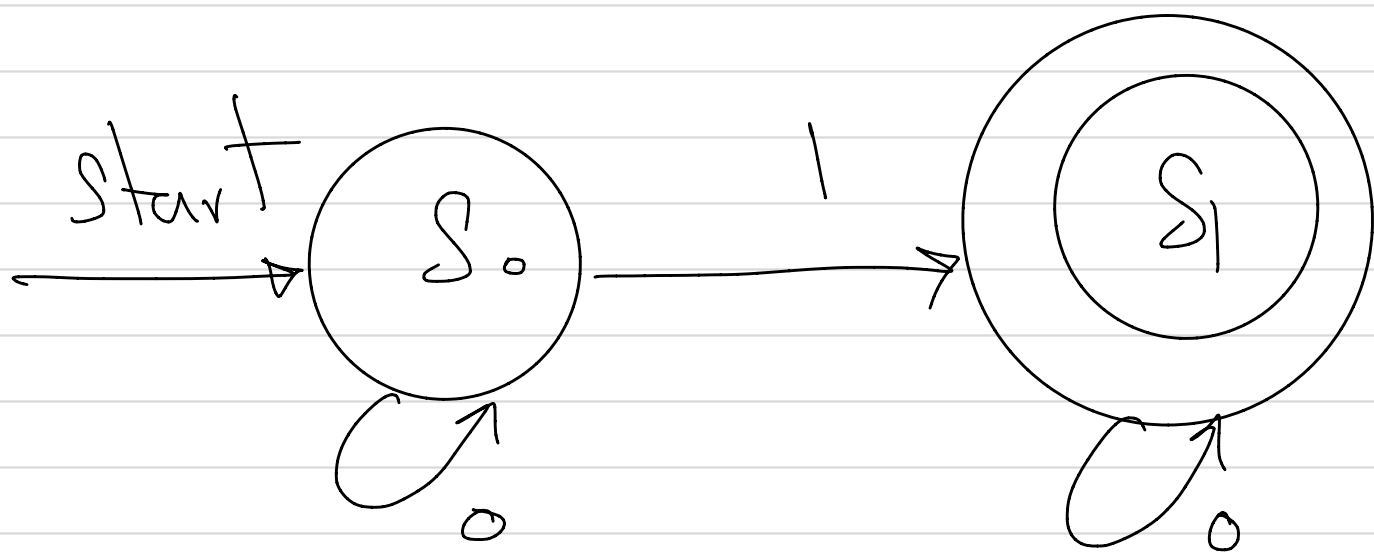
1. One labeled arrow for each symbol of alphabet.
2. No edge labeled with  $\lambda$ .
3. Not having more than one edge labeled with the same symbol.

①

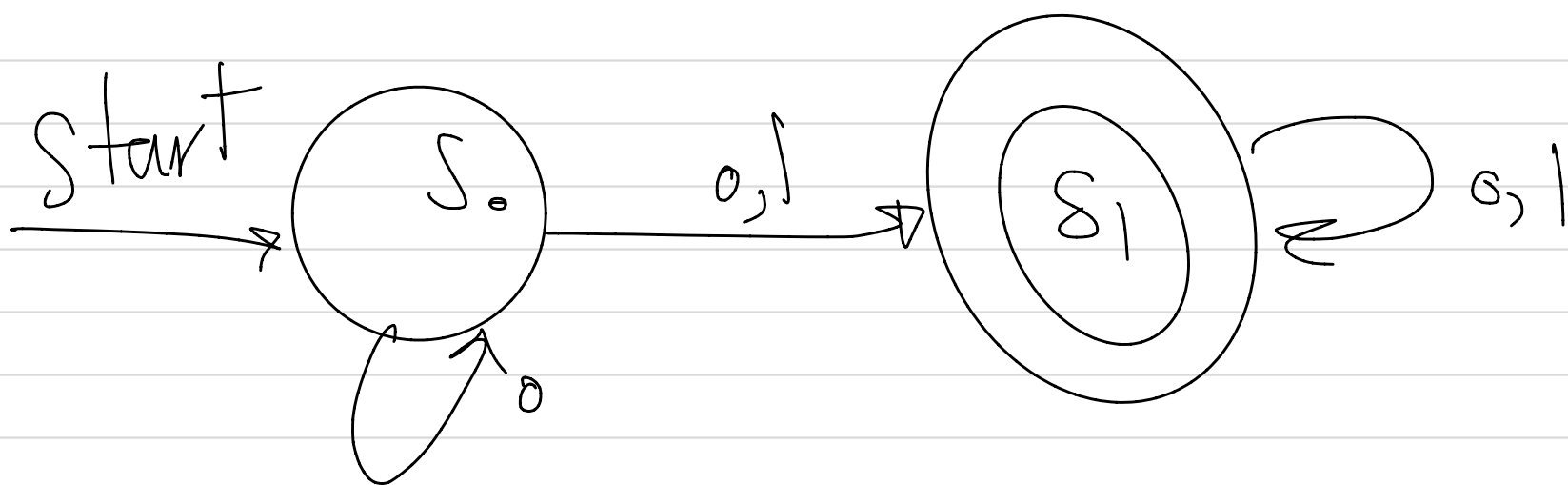


Not a DFA

$A = \{0, 1\}$

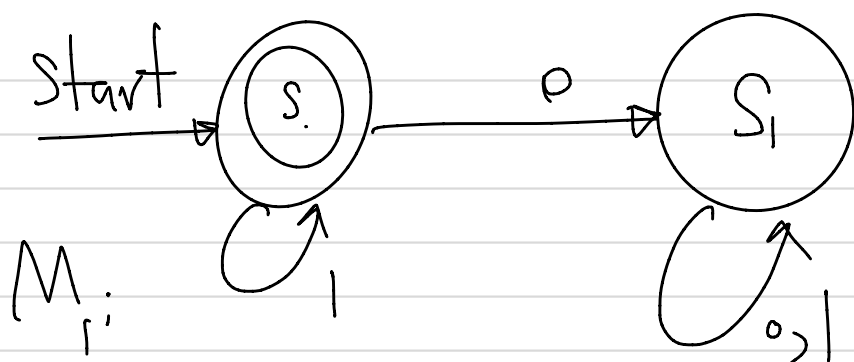


not a DFA



not a DFA

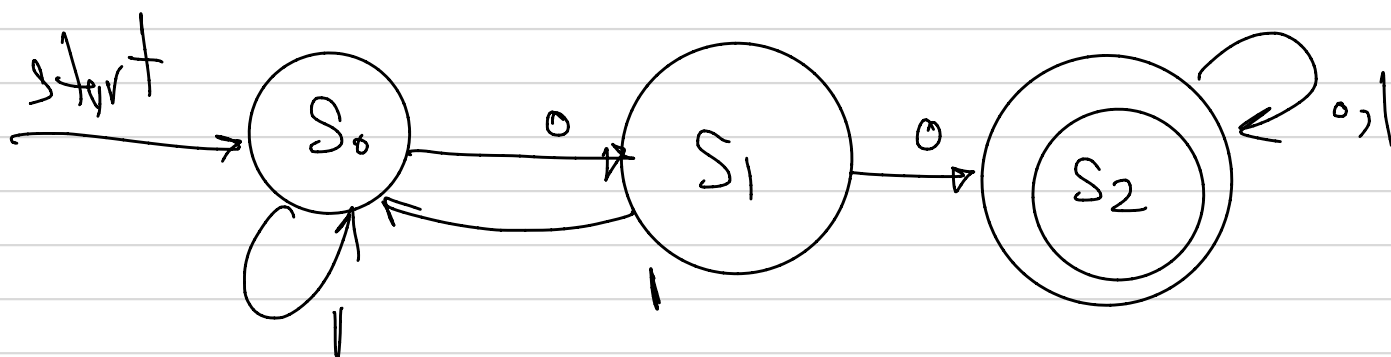
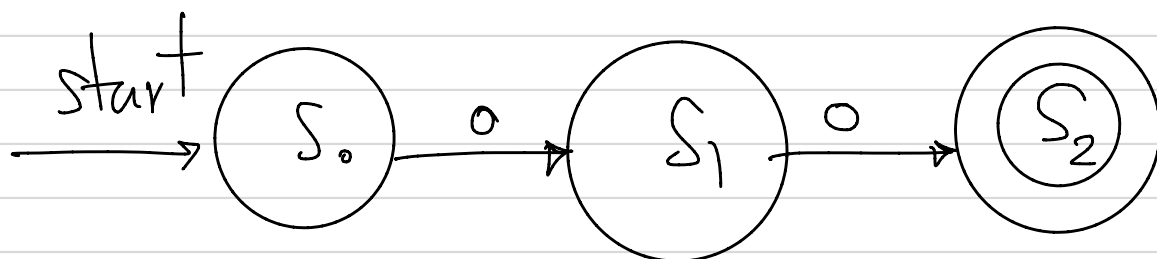
2



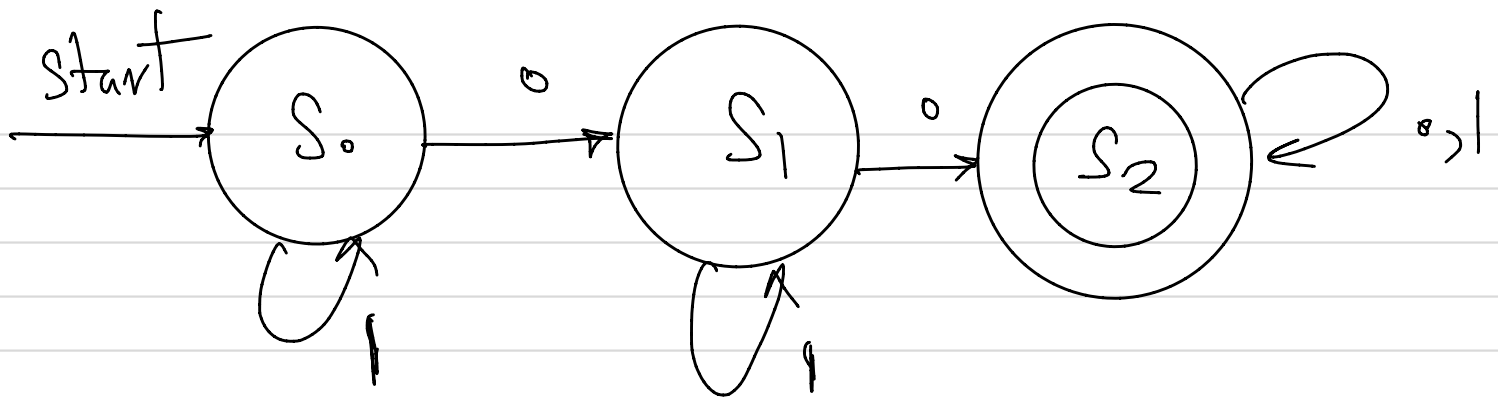
$$L(M_1) = \{1^n \mid n \in \mathbb{N}\}$$

• Construct a DFA to recognize:

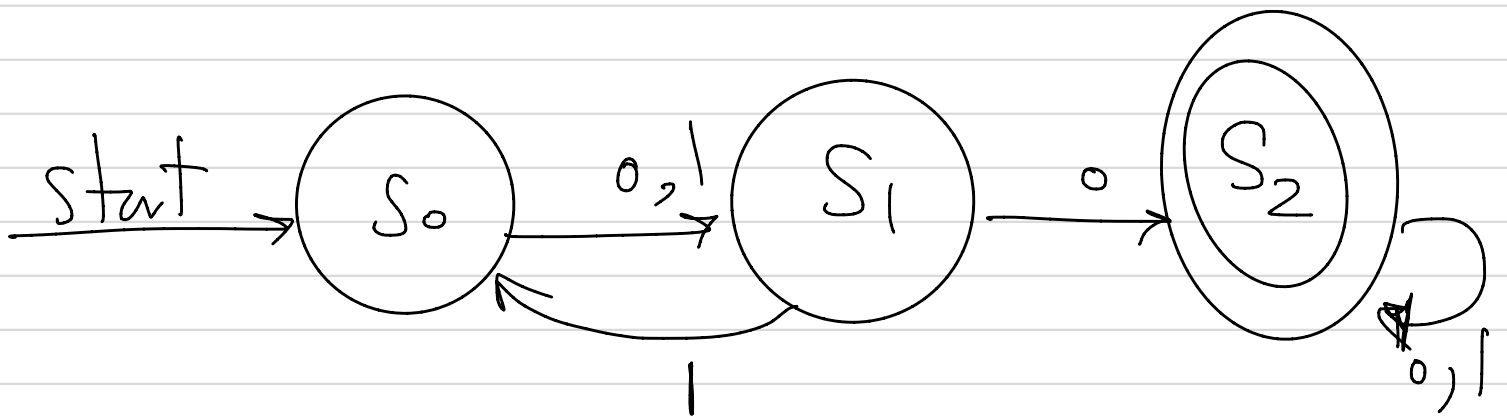
• Contains 2 consecutive 0's



(3)



$0110 \notin L$

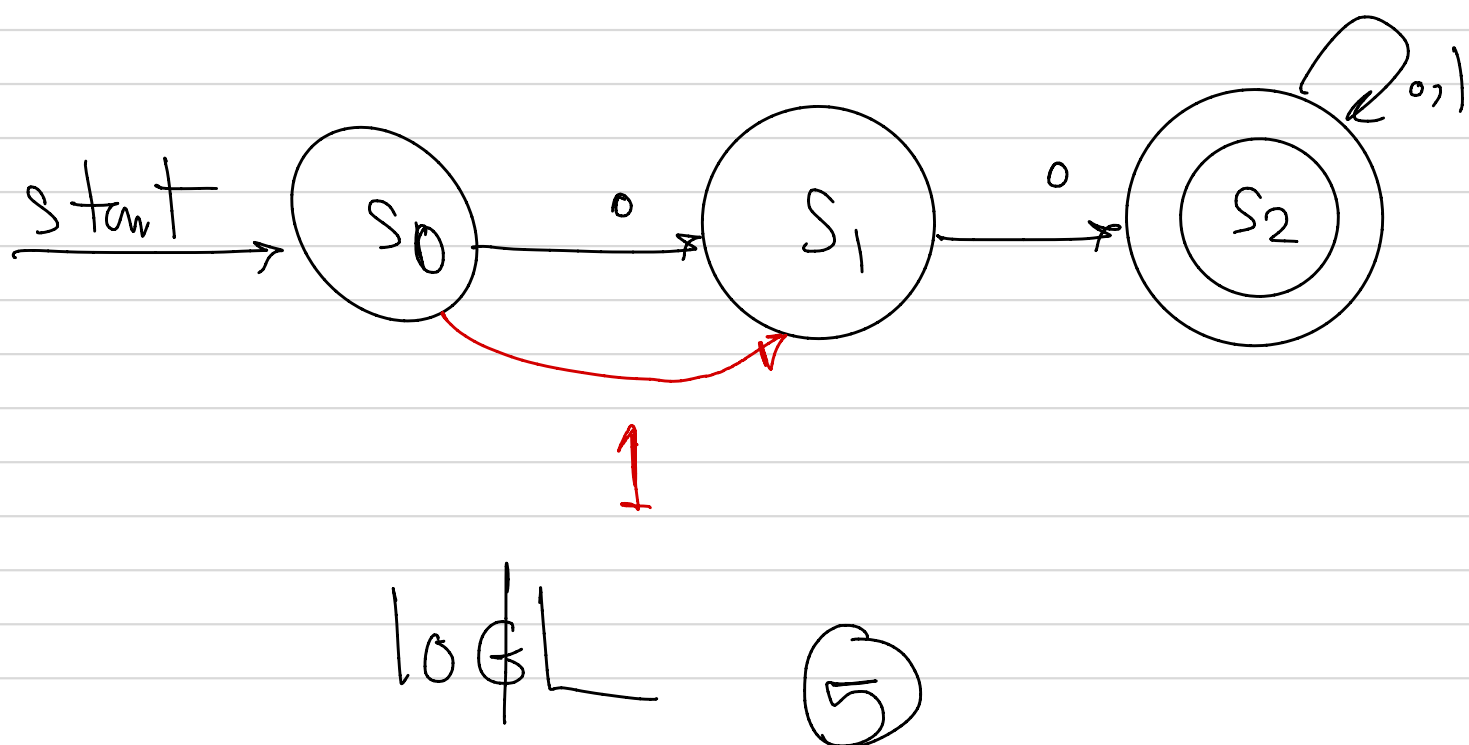
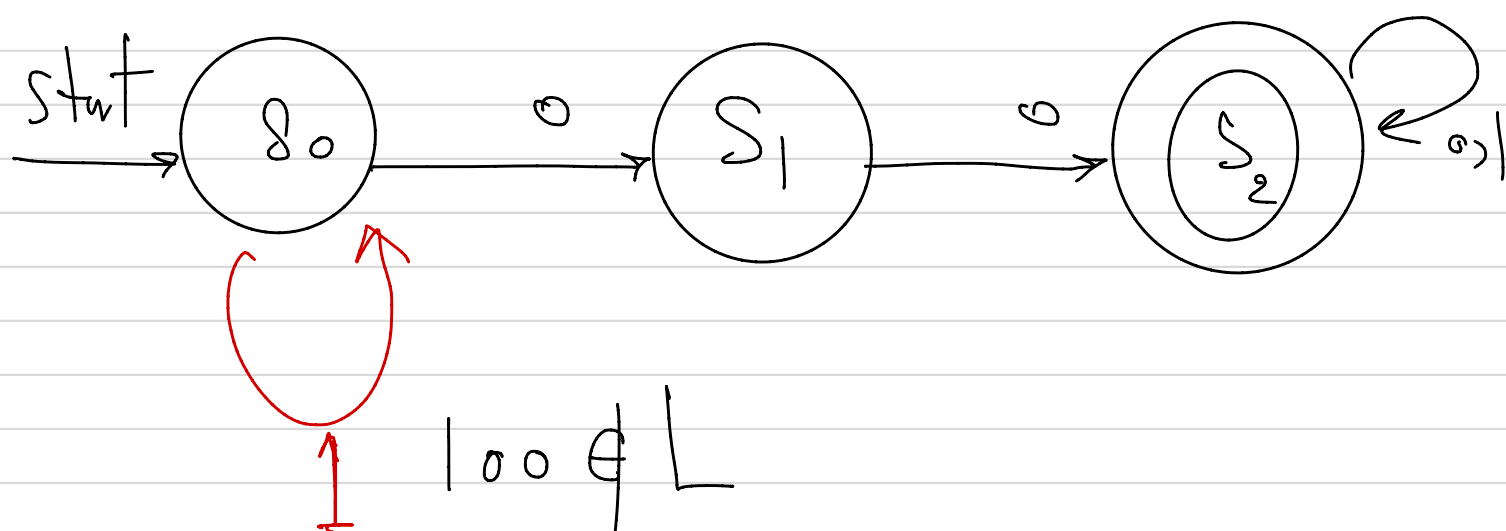
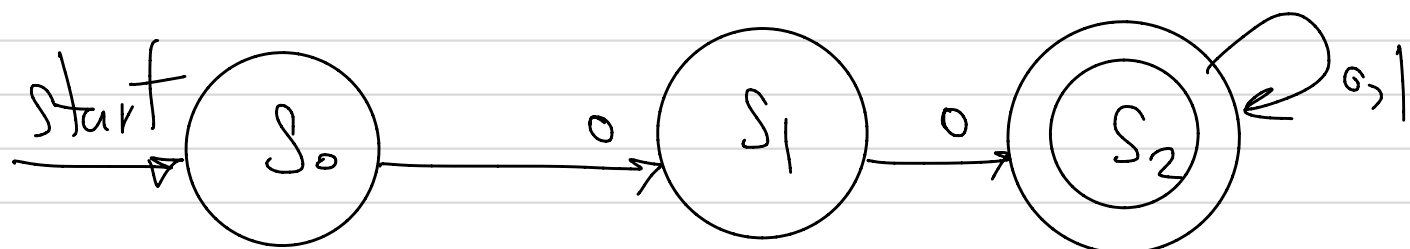


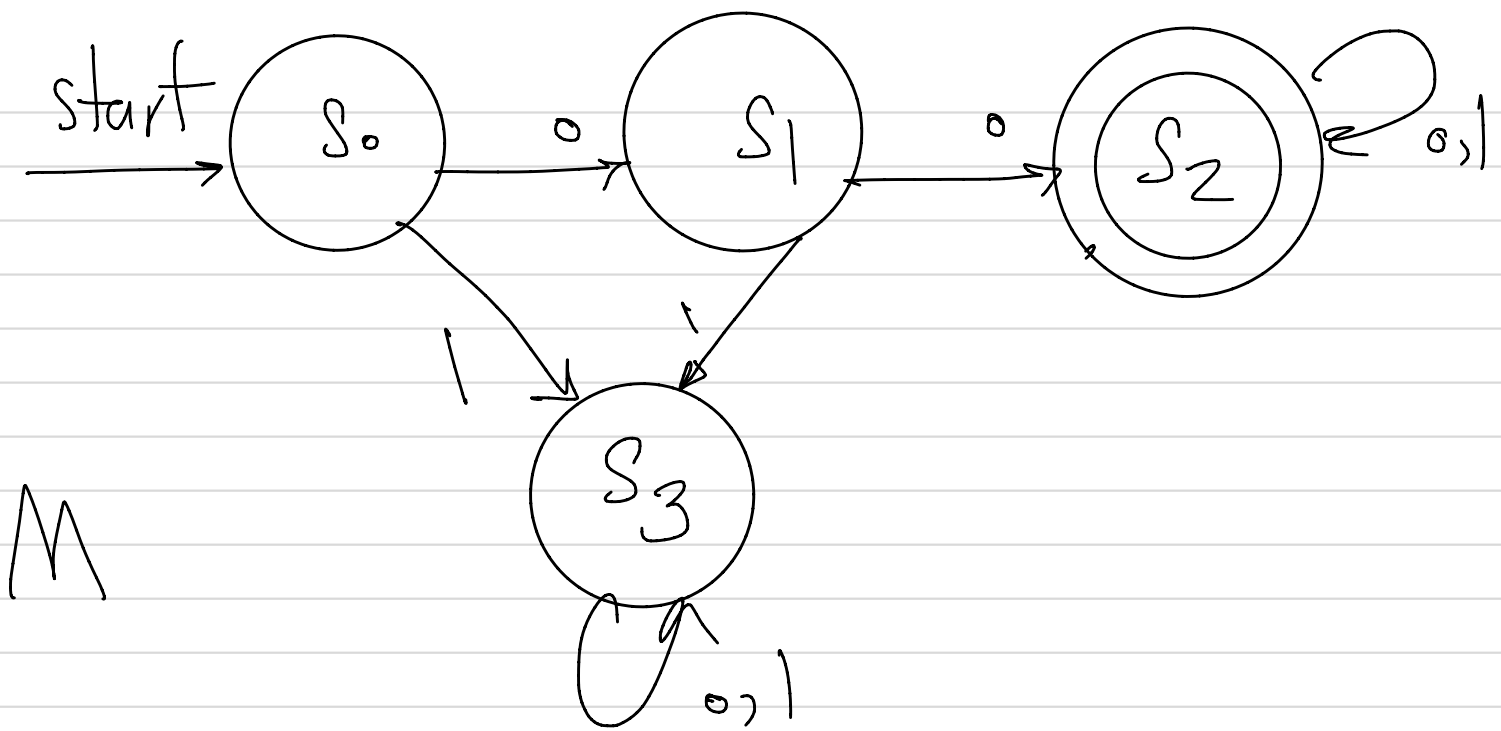
$10 \notin L$

. Add new states only if there is no other way!

(4)

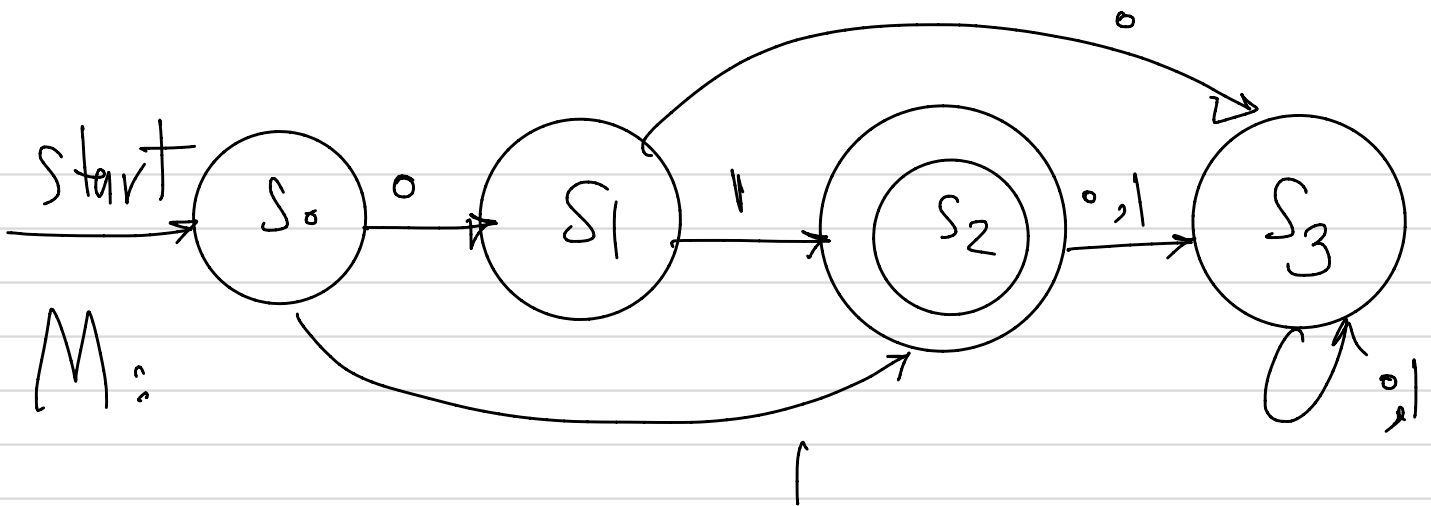
. begin with at least 2 0's.



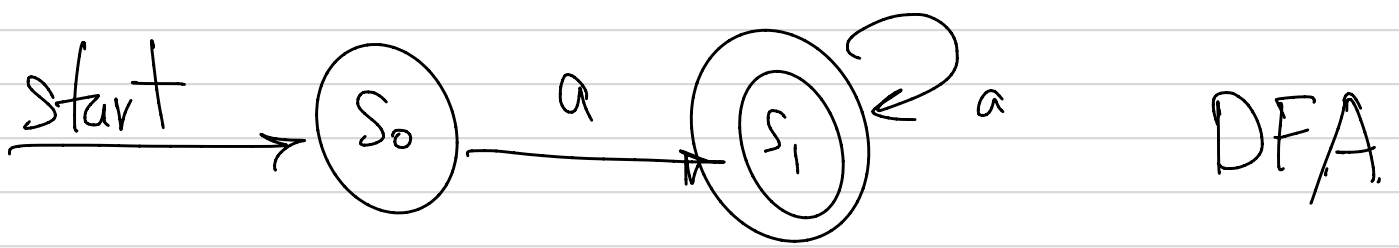
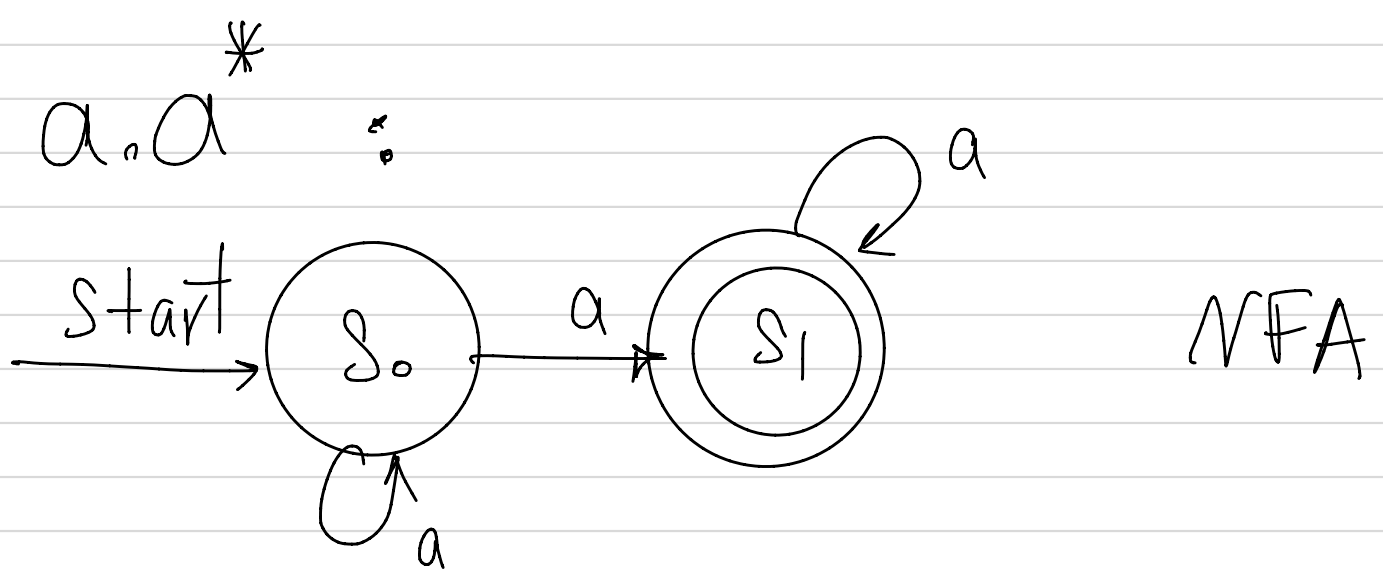


- $s_3$  is called error state
- $M$  has 4 states.

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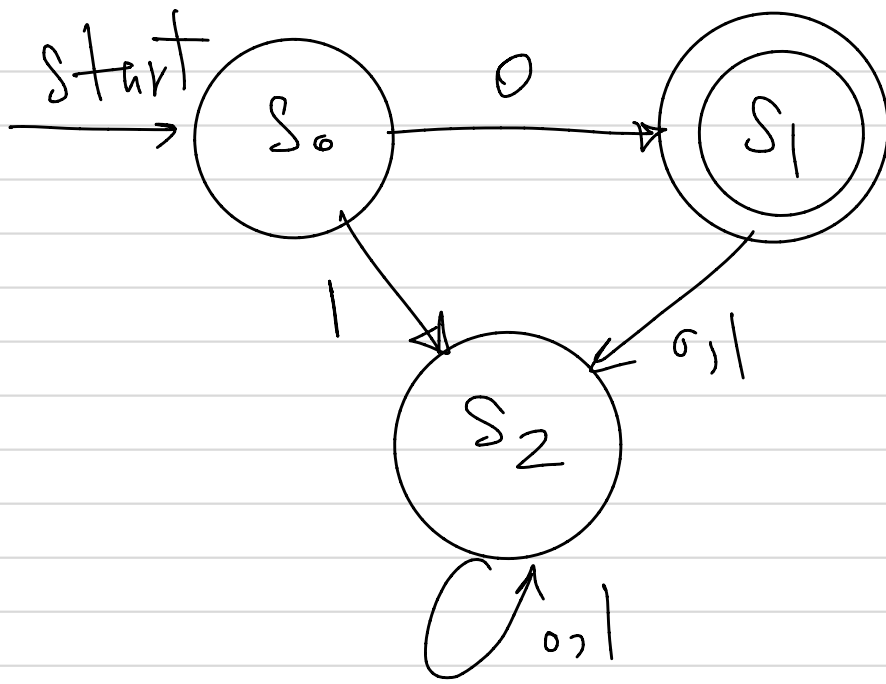
$$L(M) = \{ 01, 11 \}$$





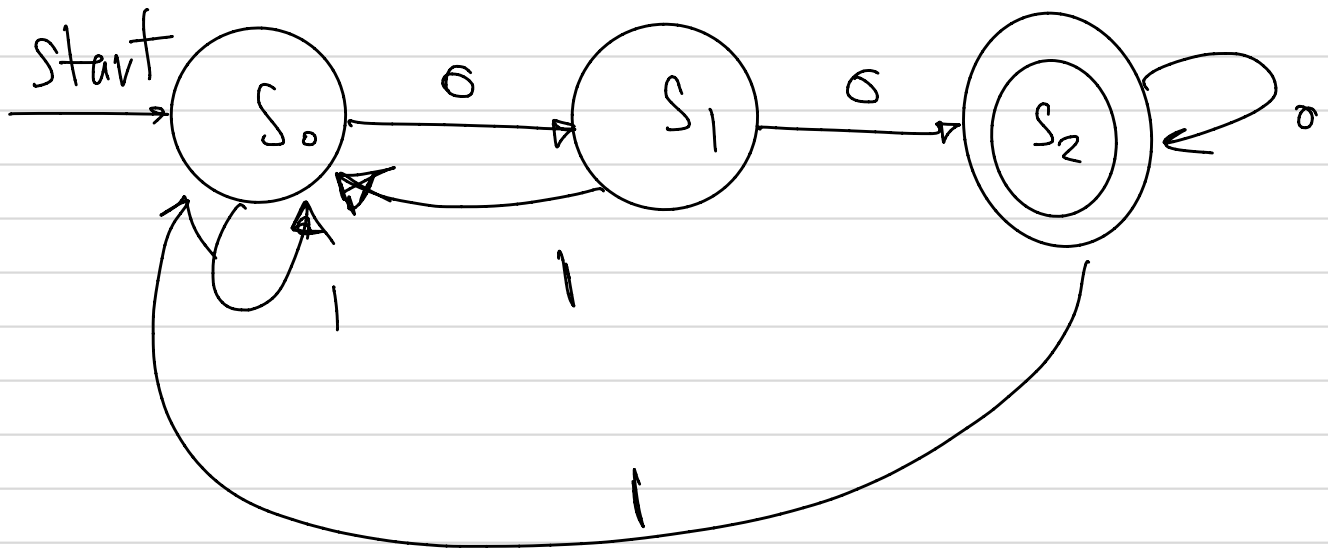
Construct a DFA to recognize  $\{0\}$

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



. DFA ends with at least 2 0's.

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