

- Sipser p. 13

Alphabets:  $\{0, 1\}$   
 $\{a, b, c\}$

often  $\Sigma, \Gamma$

Strings: 01101  
||  
cat CS  
 $\epsilon == ""$

$|w|$  - length  
 $w^R$  - backwards  
 $wx$  - concatenate

Languages:  $\{0, 1\}^*$

$\{x \in \{0, 1\}^* \mid x \text{ starts and ends with } 0\}$

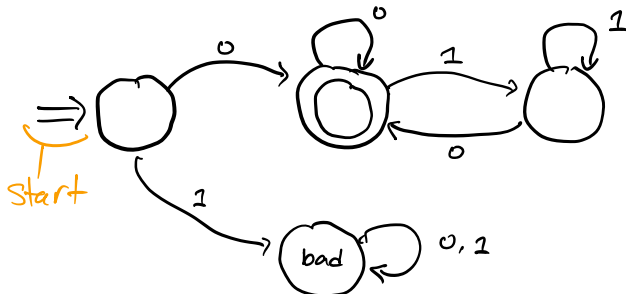
All strings over  $\Sigma = \{a, b, c\}$  that are palindromes  
( $w = w^R$ )

$0^+ \cup 1^+$

LCD)

Sipser pp. 31-34

$L =$  "strings over  $\{0, 1\}$  that start and end in zero."



Double-checks:

- start arrow

- transitions from every state on every alphabet symbol.
- fast

input	output
0110	✓
01010	✓
01	X
100	X
$\epsilon$	X

Sipser p. 35

Def (DFA). A DFA is a 5-tuple with the following parts:

