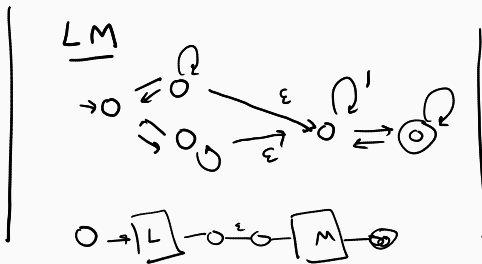
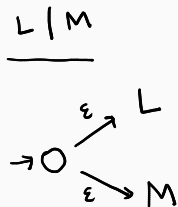
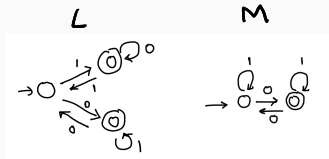


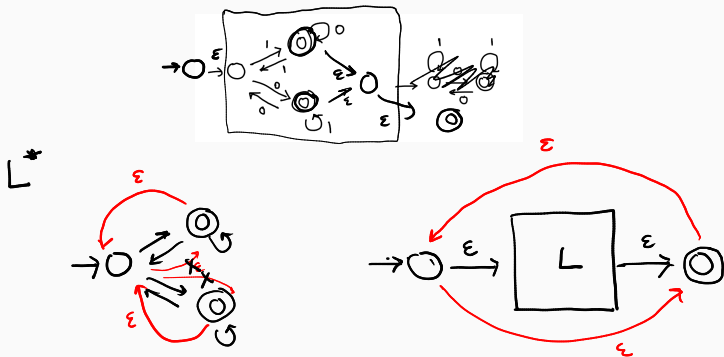
Automata LEGO

Given are two automata for languages L and M . Construct (non-deterministic) automata for $L|M$ and LM and L^* .



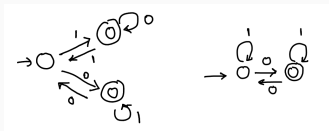
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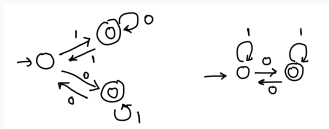
Upshot:

can do L by NFA
can do M by NFA

\Rightarrow can also do $L|M$,
 LM ,
 L^*
by NFAs

Automata LEGO

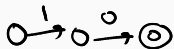
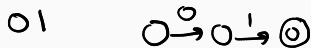
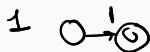
What if we wanted DFAs for $L|M$ and LM and L^* ?



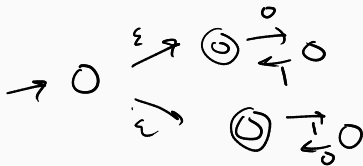
(Finally do NFA \rightarrow DFA)

Regex to automata

Construct a non-deterministic automaton for $(01)^*|(10)^*$.



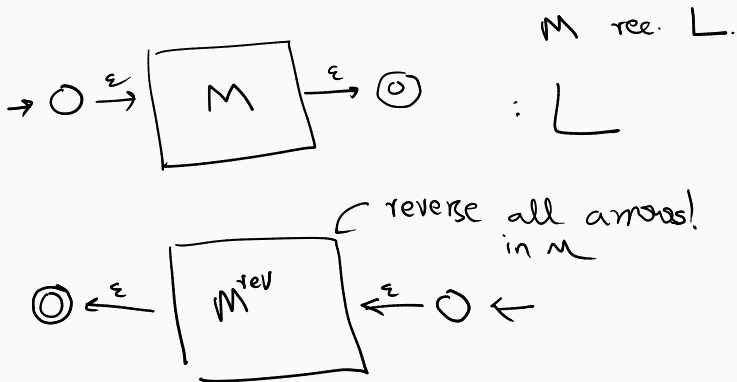
$(01)^*$



More NFA LEGO

Given an automaton with language L , can you construct an automaton with language L^{rev}

$L^{\text{rev}} = \{\text{Reverses of all the words in } L\}.$



More NFA LEGO

Given an automaton with language L , can you construct an automaton with language L^{rev}

$$L^{\text{rev}} = \{\text{Reverses of all the words in } L\}.$$

