Sept 21

COMPSCI 3331

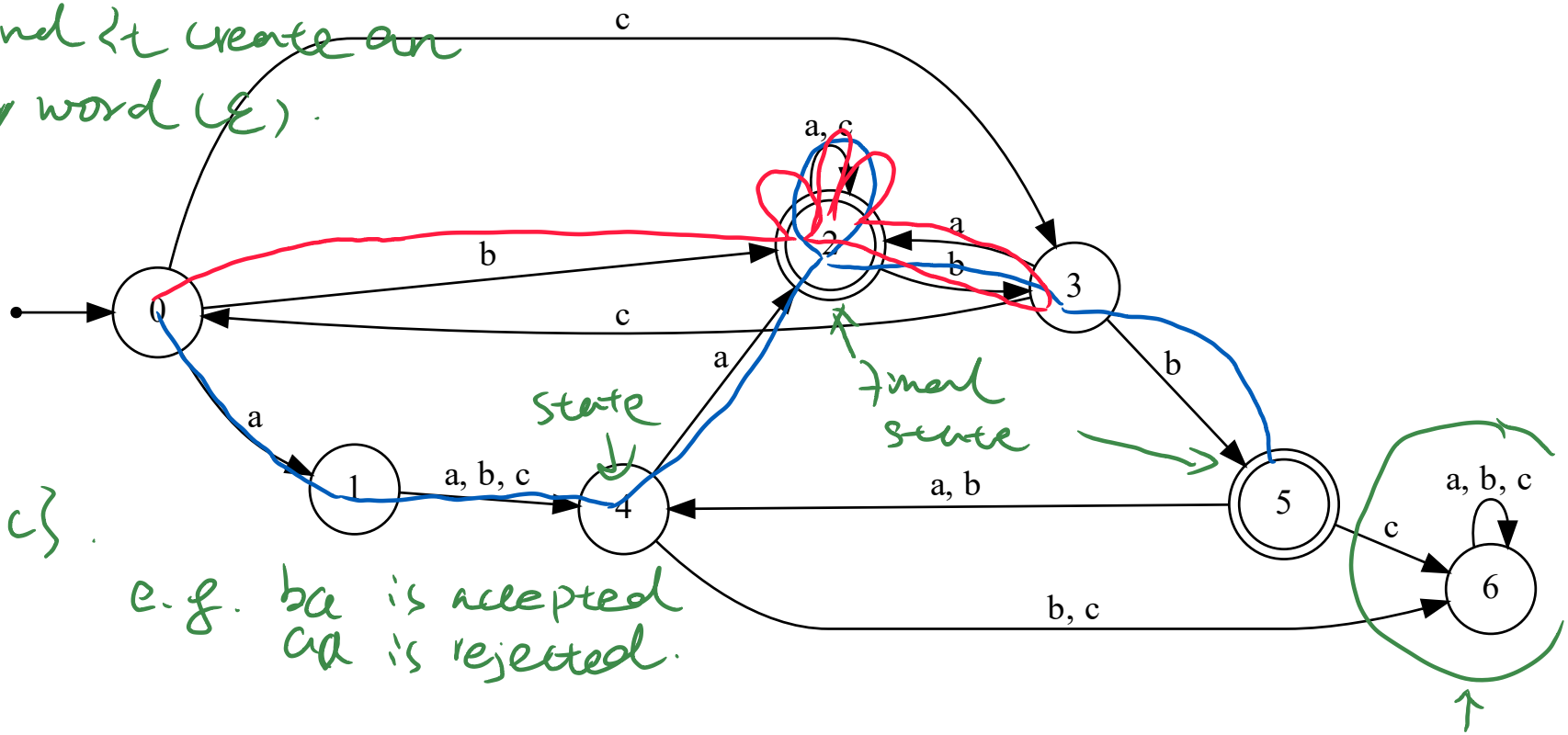
Fall 2022

What's next?

- Current location: Lecture 3.
- Tuesday - more on Lecture 3.
- Assignment 1: out by Sept 27 (at the latest), due Oct 11.
- Quiz 1: Sept 28 (Lecture 2)

DFA membership

could a start state be a final state?
- Yes, and it create an empty word (ε).



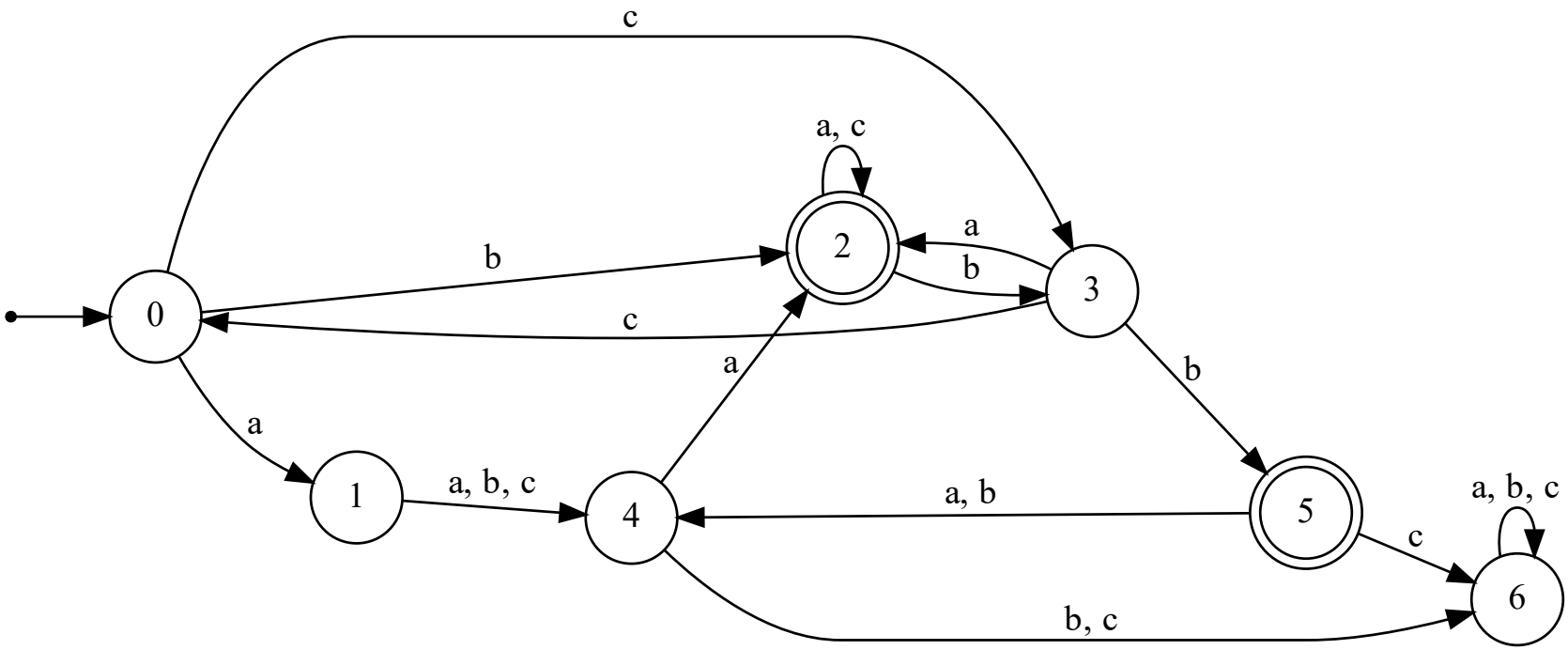
$\Sigma = \{a, b, c\}$.

e.g. ba is accepted
ca is rejected.

- accb (rejected)
- babaac accepted
- abacbb accepted ← final state could be passed through

in this case, no word would be created. → (trapped)

DFA language



What is the language accepted by this DFA?

- Set of all words that lead us from the initial state to the final state.

DFAs

DFA = the language accept, reject.

Build DFAs for the following languages.

- $L_1 = \{x \in \{a,b,c\}^* : |x|_b \equiv 0 \pmod 3\}$. ← the only restriction.
- $L_2 = \{(aabc^i)^j : i \geq 0, j \geq 0\}$ $L_2 = \{(aabc^i)^j\}$ ← any number of c
- $L_3 = \{(abbd^i)^j : i \geq 0, j \geq 0\}$
- $L_4 = L_2 \cup L_3$