Sept 21

COMPSCI 3331

Fall 2022
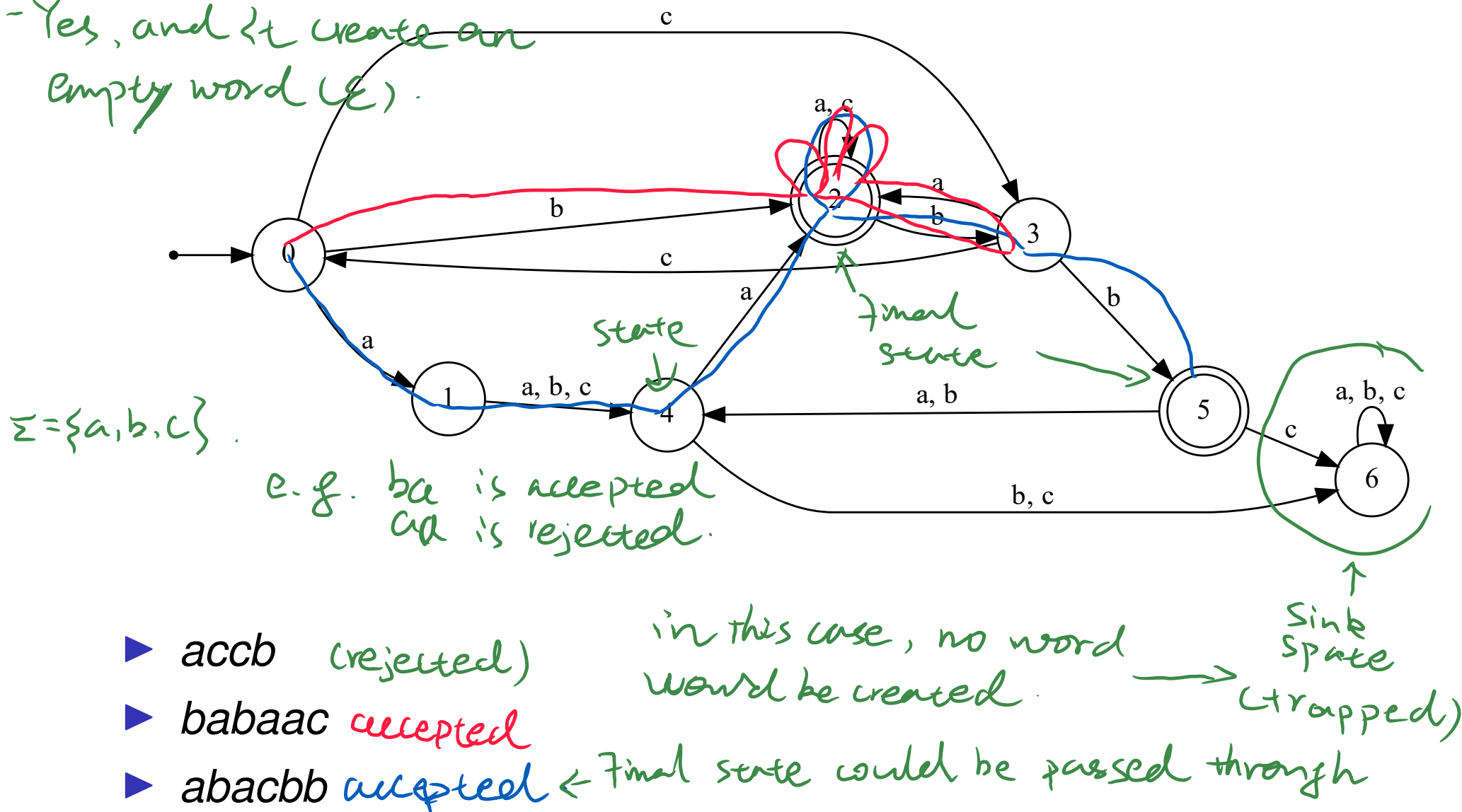
What's next?

► 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).
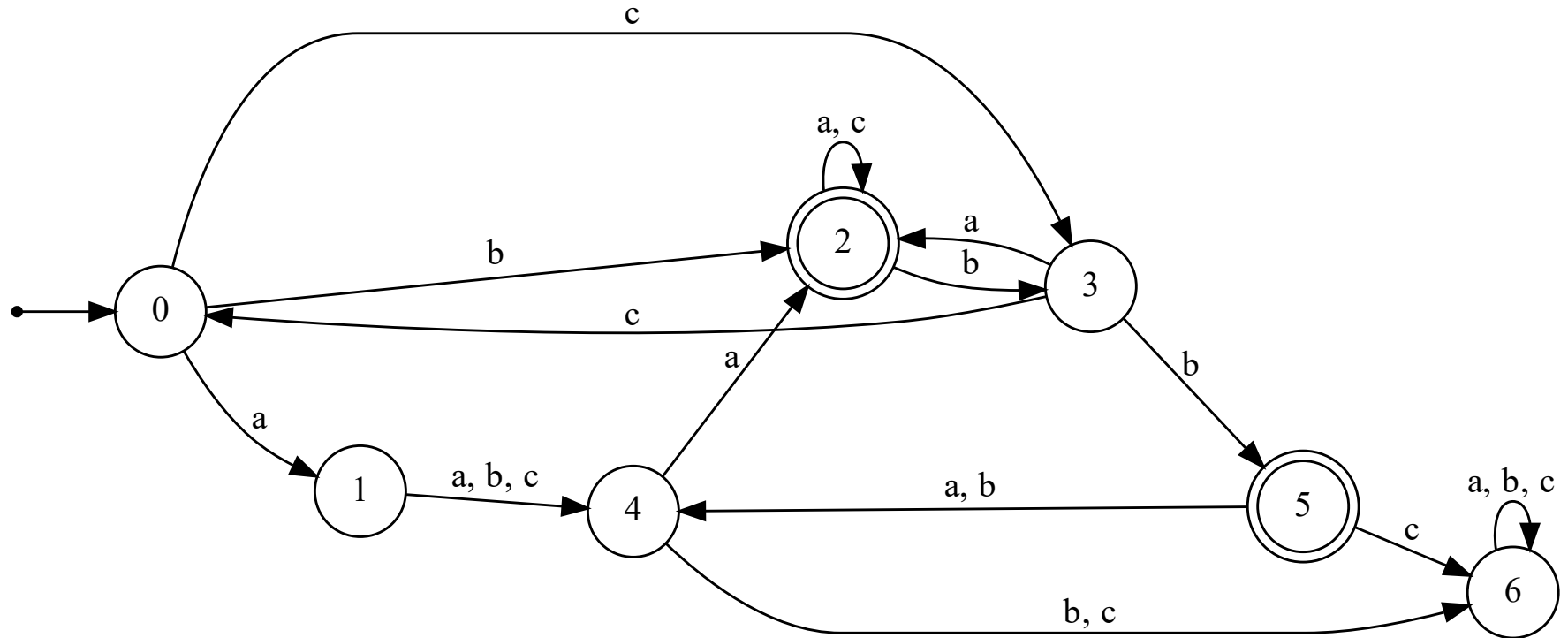

$\Sigma = \{a, b, c\}$.

State

final state

e.g. ba is accepted
ca is rejected.

in this case, no word would be created

Sink space (trapped)

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

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.

DFA = the language

accept, reject.

Build DFAs for the following languages. ⟵ the only restriction

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

any number of c

L_1: empty word.

L_2:

L_3: