

Oct 19

COMPSCI 3331

Fall 2022

# What's next?

- ▶ Assignment 1: solutions available . Marks available before A2 deadline.
- ▶ Assignment 2: due Oct 26.
- ▶ Quiz 2 marks available now.
- ▶ Midterm: October 25. Includes **at least** all of Lecture 8.

# Choose your difficulty!

$$\star\star\star L = \{uu^R : u \in \{a,b\}^*\}$$

$$\star\star\star L = \{w \in \{a,b\}^* : w \neq uu^R \text{ for any } u \in \{a,b\}^*\}$$

$$\star\star\star L = \{w \in \{a,b\}^* : w \neq uu \text{ for any } u \in \{a,b\}^*\}$$

# More examples

- ▶  $L_1 = \{a^i b^j c^i : i, j \geq 0\}$ .
- ▶  $L_2 = \{a^n b^m : n > m\}$
- ▶  $L_3 = \{a^n b^m : n \neq m\}$
- ▶  $L_4 = L_1^*$ .
- ▶  $L_3 = \{a^i b^j c^k : i = j \text{ or } j = k\}$ .

# Removing Uses Symbols

$S \rightarrow aaBaA \mid aHE \mid caDbb$

$A \rightarrow HE \mid AHH$

$B \rightarrow aB \mid \varepsilon$

$C \rightarrow CC \mid a$

$D \rightarrow aba$

$E \rightarrow EEF \mid aEaa$

$F \rightarrow aF \mid aG \mid ababb$

$G \rightarrow GG \mid aGa \mid \varepsilon$

$H \rightarrow Ha$