

Formal Languages and Compilers

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- A review of material from the previous lectures
- Syntax-directed translation and intermediate code (16-69)
- Chomsky hierarchy and the corresponding models
- Exercises
- Extra exercise for home - 0.5 point when completed and send to me today

- 2021-12-07: Preparation for final exam (by Zbyněk Křivka)
- 2021-12-14: Predate term
- 2021-12-14: Also the project deadline!

- 1st term: 2022-01-10, 14:00 - 16:00
- 2nd term: 2022-01-19, 13:00 - 15:00
- 3rd term: 2022-01-31, 13:00 - 15:00
- Please, do NOT write me you cannot attend one of these terms.
- After new year I will contact you by email to discuss the current situation (Covid, if the exam will be done in person/online, etc.).
- Everyone will have enough chances to pass this course
- !!!To receive the points from the final exam, you have to obtain 20 points during the semester; out of these 20 points, at least 5 points have to be obtained from the project!!!

- **What is relation between regular and context-free languages?**
- **What are terminals and nonterminals?**
- **What is format of context-free rules?**
- **Generate a valid string with the grammar:
 $S \rightarrow aSb, S \rightarrow ab$. What language it donates?**
- **What are the differences between finite automaton and pushdown automaton?**
- **Do deterministic and nondeterministic pushdown automaton accept the same class of languages?**

Create a CFG that generates following language:
 $L = \{xy : x, y \in \{a, b\}^* \text{ and } y = \text{reversal}(x)\}.$

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- $G = (N, T, P, S)$
- $N = \{S\}$
- $T = \{a, b\}$
- $S = \{S \rightarrow aSa, S \rightarrow bSb, S \rightarrow \epsilon\}$

Syntax-directed translation and intermediate code (16-69)

Chomsky hierarchy and the corresponding models

- Solve till today's midnight
- Send your solution to iregeciova@fit.vutbr.cz
- You can get 0.5 points for correct and nice solution (short answer does not count!)
- Extra points does not count into credit and course minimum

Create a CFG that generates following language:

$$L_4 = \{x: x \in \{a, b\}^* \wedge \#_a x > \#_b x\}.$$

(In string there is higher number of symbol a than b)

Thank you for your attention