

CS580 Homework 6

Fall 2024

September 25, 2024

(Due 5:00pm, Monday, September 30, 2024)

Email homework assignments to ldojcsak@vols.utk.edu by the beginning of class time.

1. Give the grammar or machine generating L .

$$L = \{ a^i b^{i+j} c^j \mid i + j \geq 1 \}:$$

- a. Chomsky Normal Form (CNF)
- b. Greibach Normal Form (GNF)
- c. Deterministic PDA that accepts by final state. (Don't forget that PDA's must read all input in order to accept.)

2. Give the grammar or machine generating L .

$$L = \{ x \mid x \in (a + b)^*, x \text{ has the same number of } a\text{'s as } b\text{'s} \}:$$

- a. Chomsky Normal Form (CNF)
- b. Greibach Normal Form (GNF)
- c. Deterministic PDA that accepts by final state. (Don't forget that PDA's must read all input in order to accept.)