

Formal Language and Automata Theory (CS21004)

Tutorial - III

Class: CSE 2nd Year

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Exercise 1. Give right-linear grammar for each of the following languages:

- i. $L_1 = \{x \in \{0, 1\}^* : \exists y \in \{0, 1\}^* \text{ such that } x = 01y\}$,
- ii. $L_2 = \{x \in \{0, 1\}^* : \exists y, z \in \{0, 1\}^* \text{ such that } x = 01y \text{ and } x = z10\}$,
- iii. $L_3 = \{x \in \{0, 1\}^* : |x|_0 \geq 3\}$, give both context-free and right-linear,
- iv. $L_4 = \{x \in \{0, 1\}^* : x \bmod 3 = 0, \text{ when } x \text{ is interpreted as a binary number}\}$
- v. $L_5 = \{x \in \{0, 1\}^* : x \text{ is odd and } x \bmod 3 = 0, \text{ when } x \text{ is interpreted as a binary number}\}$