

Discussion 4

1. Let $L_1 = \{w \mid w \text{ starts with } 0^i 1 \text{ and ends with } 10^i \text{ for some } i \geq 0\}$. Give a CFG generating L_1 .

2. Prove that $L = \{wtw^{\mathcal{R}} \mid w, t \in \{0, 1\}^* \text{ and } |w| = |t|\}$ is not context-free.
Hint: If A is CFL and B is regular, $A \cap B$ is CFL.