

CP HW02

2025-10-20

Aksel Shen

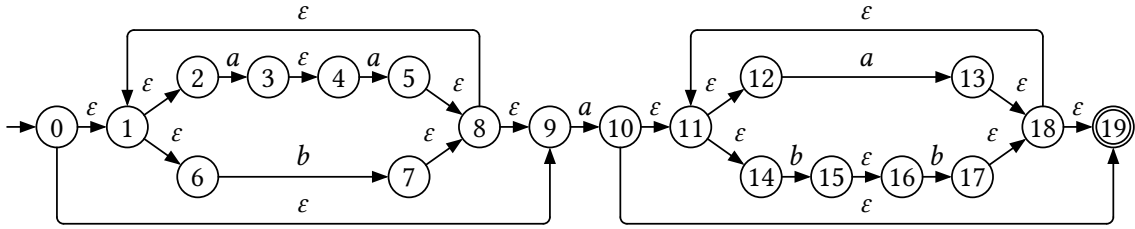
20234001053@m.scnu.edu.cn South China Normal University

1.

考虑正则表达式：

$$(aa|b)^* a(a|bb)^*$$

(1) 构造该正则表达式对应的 NFA。



(2) 将得到的 NFA 转为等价的 DFA。

$$\bar{s}_0 = \{s_0, s_1, s_2, s_6, s_9\},$$

$$\bar{s}_1 = \{s_1, s_2, s_6\},$$

$$\bar{s}_2 = \{s_2\},$$

$$\bar{s}_3 = \{s_3, s_4\},$$

$$\bar{s}_4 = \{s_4\},$$

$$\bar{s}_5 = \{s_1, s_2, s_5, s_6, s_8, s_9\},$$

$$\bar{s}_6 = \{s_6\},$$

$$\bar{s}_7 = \{s_1, s_2, s_6, s_7, s_8, s_9\},$$

$$\bar{s}_8 = \{s_1, s_2, s_6, s_8, s_9\},$$

$$\bar{s}_9 = \{s_9\},$$

$$\bar{s}_{10} = \{s_{10}, s_{11}, s_{12}, s_{14}, s_{19}\},$$

$$\bar{s}_{11} = \{s_{11}, s_{12}, s_{14}\},$$

$$\bar{s}_{12} = \{s_{12}\},$$

$$\bar{s}_{13} = \{s_{11}, s_{12}, s_{13}, s_{14}, s_{18}, s_{19}\},$$

$$\bar{s}_{14} = \{s_{14}\},$$

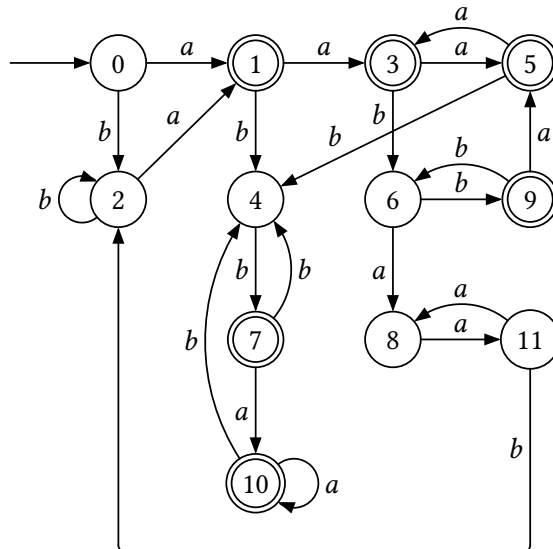
$$\bar{s}_{15} = \{s_{15}, s_{16}\},$$

$$\bar{s}_{16} = \{s_{16}\},$$

$$\bar{s}_{17} = \{s_{11}, s_{12}, s_{14}, s_{17}, s_{18}, s_{19}\},$$

$$\bar{s}_{18} = \{s_{11}, s_{12}, s_{14}, s_{18}, s_{19}\},$$

$$\bar{s}_{19} = \{s_{19}\}.$$



(3) 将得到的 DFA 最小化。

