

Homework # 2*due: midnight 2/28 by email to TAs.**No handwritten homework!*

1. Figure 1 shows a DFA. Give a regular expression for the language it accepts.

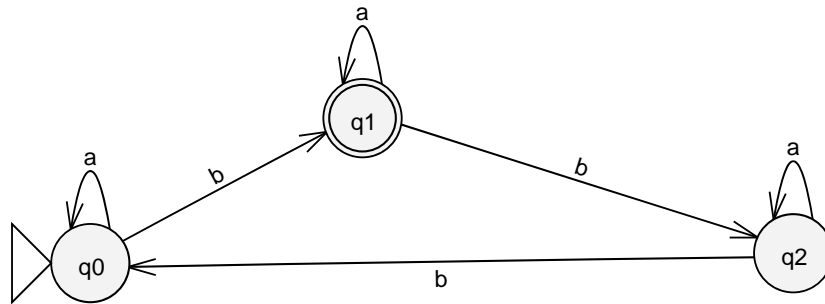


Figure 1: A DFA.

2. Let a regular language be given by the regular expression $\mathbf{a^*b^+(ab)^*}$. Attach a JFLAP file with an equivalent DFA.
3. Let a CFG be given by

$$\begin{aligned} S &\rightarrow aT|a \\ T &\rightarrow bS|b \end{aligned}$$

Describe the structure of the language generated by this CFG.

4. Let

$$L = \{a^{k+n}b^k c^n; n, k \geq 0\}.$$

Find a CFG for L .