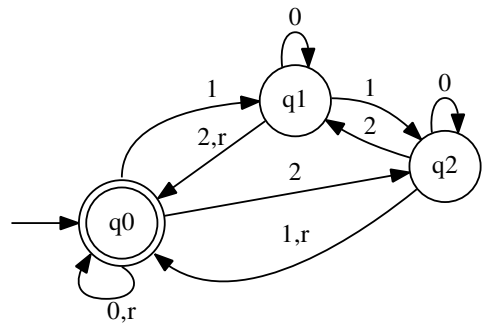


Today Reg. exps. \leftrightarrow FSAs; Context-free grammars; pushdown automata. § 1.3, 2. $\{0, 1, 2\}$.

Next class Non-context-free languages. § 2.3.

1. List the members of your group below. Underline your name.

2. Use the textbook's method to find a regular expression equivalent to the following FSA:



3. Consider the 3-rule grammar on the right below. For each string on the left: (1) determine whether the grammar generates the string; (2) if so, provide a leftmost derivation; if not, justify your answer.

- (a) $bc b$
- (b) $bc b c b a$
- (c) $bb b c b c b b$

$$\begin{array}{l} A \rightarrow Bb \mid cC \mid CBA \mid a \\ B \rightarrow BCC \mid b \\ C \rightarrow BBC \mid cb \end{array}$$

[additional space for answering the earlier question]

4. Prove or disprove (separately): $L = \{a^i c^j b^{2i} \mid i, j \geq 0\}$ is
- (a) context-free.
 - (b) regular.