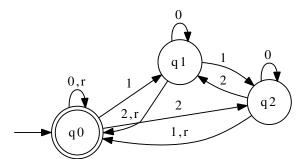
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Today Reg. exps. \leftrightarrow FSAs; Context-free grammars; pushdown automata. § 1.3, 2. $\{0, 1, 2\}$. **Next class** Quiz 1. Non-context-free languages. § 2.3.

- 1. List the members of your group below. Underline your name.
- 2. Use the textbook's method to find FSAs equivalent to the regular expressions $a(d \cup a)^*$ and $(a \cup b \cup c)^*(ab \cup ba)$. Ensure you can provide DFAs, but NFAs are OK for now.

3. Use the textbook's method to find a regular expression equivalent to the following ${\it FSA}$:



- 4. For each part below, determine if the given grammar generates the string. If so, provide a leftmost derivation. If not, justify your answer.
 - (a) bcb

 $A \rightarrow Bb \mid cC \mid CBA \mid a$

(b) bcbcba

 $B \rightarrow BCC \mid b$

(c) bbbcbcbb

 $C \rightarrow BBC \mid cb$

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