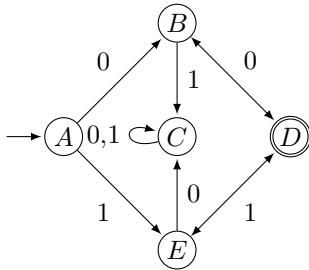


## Regular grammars, context-free grammars

1. Consider the grammar  $S \rightarrow aS | bS | cS | cA \quad A \rightarrow cB | c \quad B \rightarrow aB | bB | cB | a | b | c$ 
  - (a) Construct a finite automaton from this grammar.
  - (b) What is the generated language?
2. Construct the regular grammar based on the following FA.



3. Construct equivalent grammars without  $\varepsilon$ -rules and chain rules
  - (a)  $S \rightarrow SaSb | \varepsilon$
  - (b)  $S \rightarrow ABC, A \rightarrow BB | \varepsilon, B \rightarrow CC | a, C \rightarrow AA | b$