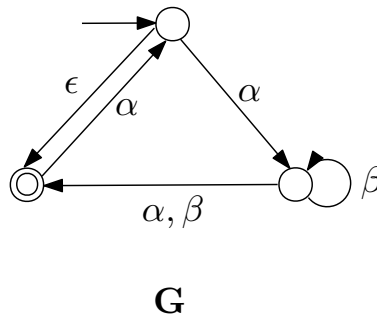


THEORY OF COMPUTATION - HOMEWORK 2

Assigned 2019.11.05. Submission deadline 2019.11.19 (for only those who want their homework to be marked).

Problems

1. Convert the following NFA (nondeterministic finite automaton) G into a DFA (deterministic finite automaton).



2. Let the alphabet be $\Sigma = \{\alpha, \beta\}$, and consider a language

$$L = \{s \in \Sigma^* \mid s \text{ contains an even number of } \alpha\text{'s, or contains exactly two } \beta\text{'s}\}.$$

Design a regular expression R such that $L(R) = L$.

3. Let the alphabet be $\Sigma = \{0, 1\}$, and consider a regular expression $R = ((00)^*(11) \cup (01))^*$.

Design an NFA G to accept the language $L(R)$.
