2nd Coursework
9/2/2004

Deadline: 14/2/2004 - 15:30 (A39)

Consider the following NFA $E$ over $\Sigma_E = \{a, b, c\}$.

1. Give the tuple representation of $E$, i.e. $E = (Q_E, \Sigma_E, \delta_E, S_E, F_E)$. You may write $\delta_E$ as a set of pairs or use a table as suggested in the notes.

2. Which of the following words are accepted by $E$ and which ones aren’t?
   - acab
   - beaa
   - $\epsilon$
   - bab
   - acc

3. Calculate $\hat{\delta}_E(\{q_0, q_1\}, ab)$. The answer should show each step of the calculation.

4. Informally describe the language accepted by $E$.

5. Apply the subset construction to $E$ to construct a DFA $D(E)$ and draw the transition diagram of $D(E)$ (ignoring unreachable states).