Practice

• Example: The set of phone numbers over the alphabet
  \[ \Sigma = \{0, 1, 2, 3, 4, 5, 6, 7, 8, 9, (, ), -\} \]
  • Phone numbers must have the format "(3-digit area code) – 7 numbers; another hyphen after the third"
  • Are all strings over the alphabet in the language?
  • Give a regular expression for this language?
  • Construct an NFA
  • Convert to a DFA

Practice (2)

• Write an algorithm (steps in English) that accepts all strings in the previous language
• Write pseudo-code to realize the above algorithm

Practice (3)

• Construct a DFA that accepts the complement of the previous language

Practice (4)

• Construct a regular expression from the "complement DFA"
Practice (5)
- Consider a language of 0’s and 1’s with an even number of 1’s
- Give a regular expression, NFA, DFA, Complement DFA, Complement regular expression

Practice (6)
- Consider a language of 0’s and 1’s with an odd number of 1’s
- Give a regular expression, NFA, DFA, How is this DFA different from the “complement DFA” obtained in the previous problem?

Practice (7)
- “Construct” (using the previous two DFAs) a single DFA that accepts the intersection of the two languages
- Union?