

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?