

1. Construct a nondeterministic finite automaton accepting  $\{ab, ba\}$ , and use it to find a deterministic automaton accepting the same set.
2. Design an  $\epsilon$  NFA for the language  $L = \{0^n 1^m, n, m \geq 0\}$ , convert it to its equivalent NFA.
3. Design an  $\epsilon$  NFA for the language  $L = \{0^m 1^n, m+n = \text{odd}\}$ , convert it to its equivalent NFA.
4. Convert the NFA obtained in question 3 to its equivalent DFA.