

CSC236 – Tutorial 10: DFAs

Exercise 1: Developing DFA

Consider $L = \{w \in \{0, 1, 2\}^* \mid \text{every } 0 \text{ in } w \text{ is immediately followed by a } 1, \text{ or is immediately preceded by a } 2\}$. Develop a DFA for L . Your goal is not only a correct DFA, but also a minimal DFA (a DFA with the minimum number of states).

Exercise 2: Proving DFA

Give state invariants for your DFA in Exercise 1. Then, prove that the DFA is correct.

Exercise 3: Proving Minimal DFA

Prove that your DFA in Exercise 1 is minimal.