

Lecture #4: DFA Design and Verification — Part Two

Questions for Review

Design

1. The design process, described in lectures, included four necessary conditions — or “sanity checks” — that should be checked. What should you do if a sanity check fails? How is understanding *why* it failed useful?

Verification

2. Precisely what are you trying to prove about a deterministic finite automaton in order to establish that it is “correct”?
3. What do you need to check, in order to confirm that you really *have* a valid “deterministic finite automaton” with the same alphabet as a given language?
4. What else must be checked in order to identify a subset of Σ^* with each of the states of your DFA?
5. What is the final thing that must be confirmed in order to establish that your DFA has a given language?
6. How (or why) is this easier to do, if your DFA was developed using the *design process* introduced in the previous lecture?