

1 Nondeterministic Finite Automata (1.2, Continued)

This continues from the notes from Monday, January 12.

1.1 Equivalence of NFAs and DFAs

Deterministic and nondeterministic finite automata both recognize the same class of languages.

Theorem 1.1

Every nondeterministic finite automaton has an equivalent deterministic finite automaton.

Remark: Here, we say that two machines are equivalent if they recognize the same language.

Proof. The proof is omitted due to potential academic integrity issues. □

1.2 Applications of Theorem

There are several applications of this theorem.

Corollary 1.1

A language is regular if and only if some nondeterministic finite automaton recognizes it.