Lecture #5: Introduction to Nondeterministic Finite Automata

What Will Happen During the Lecture

Remember... You Had Homework!

Students were asked to work through the following set of lecture notes before this lecture.

- Lecture Notes — "Introduction to Nondeterministic Finite Automata".

As always, you may attend the lecture presentation if you have not worked through this material ahead of time — but it will not be repeated for you, and you might get a little bit lost, during the presentation, if you haven't worked through this.

Problems To Be Solved

Let $\Sigma = \{a, b\}$ and let $L \subseteq \Sigma^\star$ be the following language:

$$L = \{w \in \Sigma^\star \mid \omega \text{ ends with } aba\}.$$

Consider the following **nondeterministic** finite automaton $M = (Q, \Sigma, \delta, q_0, F)$ with the above alphabet Σ and the following transition diagram.
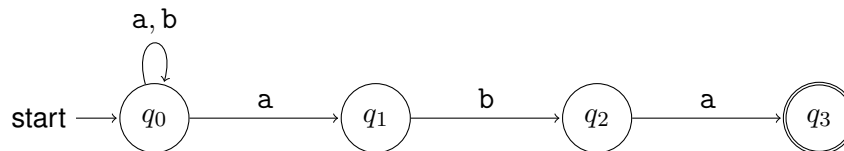
The goal for this presentation will be to use the above language and NFA to learn about nondeterministic finite automata, and to understand how it can proved that a nondeterministic finite automaton, like the above one, has a given language.

If You Want To Get Started. . .

An outline for notes, to be used during the lecture presentation, is also available. If you have time then you should try to solve the problems in the outline ahead of time. Then you can compare your work to what the instructor is presenting.