The midterm will be Wednesday, October 29th in class. It will be 50 minutes in length and will be closed book. The midterm will cover everything covered in class up to and including the class on October 22nd. In other words, the midterm will cover Chapter 1 of Sipser and the lecture notes on Myhill-Nerode. Pattern matching and minimizing DFAs will not be covered. Here is a handy dandy list of topics you should prepare yourself for:

1. Strings and languages. Operations on languages.

2. Deterministic finite automata: formal definition, state diagrams, δ^*, the language of a DFA

3. Nondeterministic finite automata: formal definition, state diagrams, ε transitions, the language of a NFA

4. Converting NFAs to DFAs by the subset construction

5. Closure properties of regular operations (complement, intersection, union, star, etc)

6. Regular expressions and their languages

7. Construction of a regular expression representing the language accepted by an NFA

8. Construction of a NFA which recognizes the language of a regular expression

9. The pumping lemma. Proving that a language is not regular using the pumping lemma.

10. The Myhill-Nerode theorem and the equivalence relation $\equiv_L$ for a language L. The equivalence relation $\equiv_M$ for a DFA M. How to prove a language not regular using the Myhill-Nerode theorem.

Sample midterms are available on the website.