ECS 120 Homework 4 Due April 26

1. Linz, Section 3.2: 4c, 9, 15
Section 3.3: 6,10, 14

2. Define a string operation *chop* that removes the rightmost symbol from a string, that is, $chop(wa) = w$, for all $w \in \Sigma^*$ and $a \in \Sigma$. We can extend this operation to languages by

$$chop(L) = \{v \in \Sigma^* : va \in L \text{ for some } a \in \Sigma\}.$$

Let M be the finite automaton in file JHW4 and let $L = L(M)$. Modify M to produce a new finite automaton M_1, so that

$$L(M_1) = chop(L).$$

3. Generalize the construction you used to solve Part 2, and prove that it always works. Then use this to show that the family of regular languages is closed under the *chop* operation.

Note: Please turn in JFLAP files for **Problem 1**: **4c** and **Problem 2**.

Use the handin utility on CSIF for electronic submission:

For example, if you're submitting the file "problem1_4c.jff"s, use the following command on your CSIF account:

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> handin shini hw4 problem1_4c.jff
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