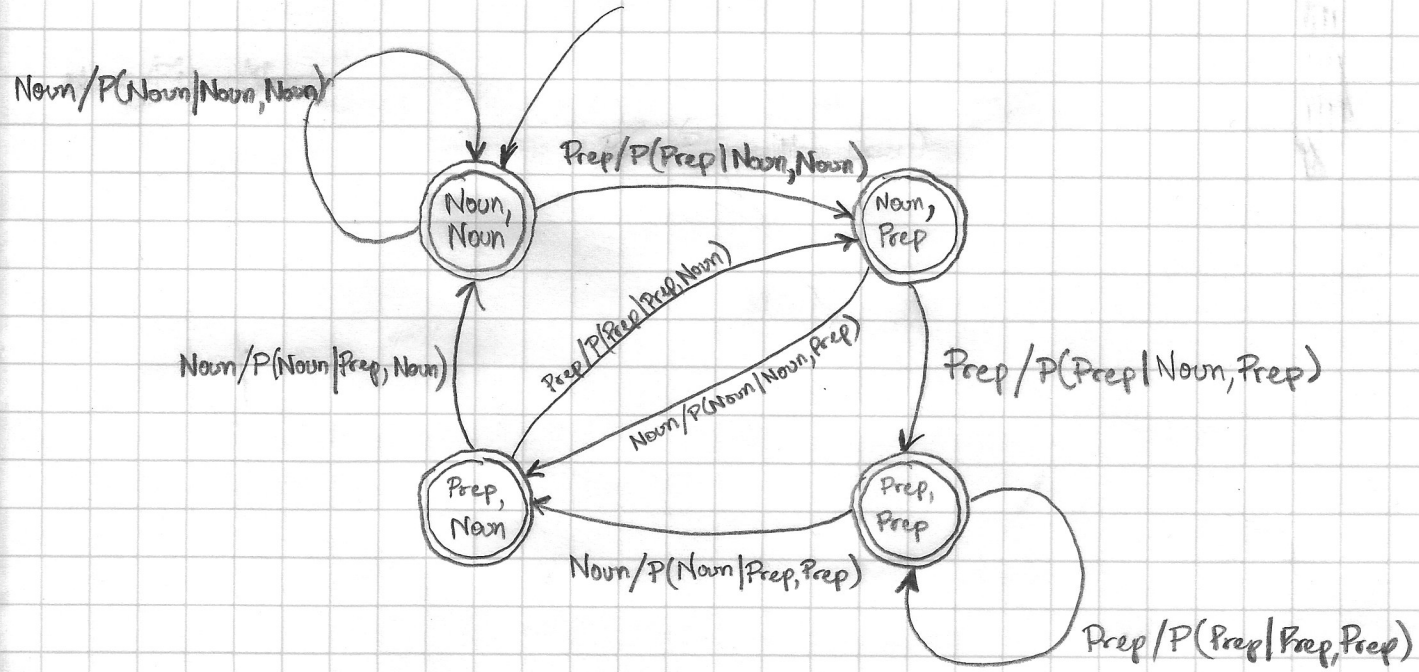
Stefan Behr
LING 570
Homework #2
10/11/2012

Part C

(1) Draw the weighted finite automaton for the state transitions of a trigram POS tagger. Restrict your attention to the POS tags Noun and Prep.



(2) How many states and transitions would a trigram POS tagger have if the model captured three tags instead of just two?

Such a tagger would have 9 states and 27 transitions.

In general, an n-gram tagger which captures m tags will have m^{n-1} states (the number of (n-1)-grams composed from a set of m tags) and m^n transitions (the number of n-grams composed from the same set of m tags).