1. I’m going to give you a morphology exercise on Swahilli taken from The Language Files. You are to do parts (a) & (b). And then, for our part (c), do:

   (c) Provide (i.e., properly define) a finite-state transducer (FST) to recognize and analyze the words.

2. Do question 3.2 on p. 81 from Jurafsky & Martin, extending a transducer to deal with sh and ch.

3. Do question 3.4 on p. 81 from Jurafsky & Martin, dealing with consonant doubling in English. (This refers to the chart on p. 63 in section 3.6.)

4. Draw a FST which accounts for the following spelling rules, where the input is a morphotactic form and the output is an actual English word:

   (1) y → ie C s#
   (2) y → i C ed#

   where C stands for any consonant.

   Remember to account for words with non-final y (e.g., yes, dystopia); to not change y before other morphemes (e.g., currying); and to disallow the strings ys or yed ending a word (when s or ed is a morpheme). You do not need to worry about interactions with other spelling rules.

   • Question 4 is required for L545/B659 enrollees and a bonus question for L445 enrollees.

5. Do question 3.5 on p. 81-82 of Jurafsky & Martin, involving the Soundex algorithm.