Goal
Gain hands-on experience in building simple transfer systems using analysis and generation grammars plus transformation rules. In the process, gain some understanding of the linguistic issues involved in this approach.

Instructions
Work alone. This homework assignment is due on April 2, Monday. Do not send the assignment by email. Hand them in in the class.

1. A mini-translation system: English to English (paraphrase)
   a. Write an analysis grammar to parse the following 3 sentences into f-structures (English).
   b. Write a generation grammar to generate from f-structures into sentences (English).
   c. Write transformation rules for English f-structures to target English f-structures.

   The sentences:
   a. Ichiro gave a bat to Hideki.
      --> Ichiro gave Hideki a bat.
   b. Ichiro had a toothache yesterday.
      --> Ichiro had a pain in his tooth yesterday.
   c. This ball was hit by Ichiro.
      --> Ichiro hit this ball.

2. A mini-translation system: English to another language
   a. Extend the English analysis grammar to parse 7 more sentences into f-structures (English). Please come up with the different sentences which may have mismatches in another language you choose.
   b. Write a generation grammar to generate from f-structures into all of the 10 sentences (3 from above and 7 from yours) in another language.
   c. Write transformation rules for English f-structures to target f-structures for the other language.
   d. Generate 10 target sentences.

3. Discuss any issues you identified with this approach.

Please provide the following:
1. List of sentences
   • 10 source English sentences (including the three above).
   • 3 target English paraphrase sentences
   • 10 target sentences in another language

2. One Analysis grammar (English)
3. Two Generation grammars (English and another language)
4. Rules for Transformation Kit for English and another language
5. Results with (genkit-tracing 1) for both languages
6. Discussion