1. Create *role frames* for the following sentences. (With these examples, represent a trajectory with a phrase, e.g. “to the theatre”, rather than with a trajectory frame.)

   a. John fried some eggs for Mary in a frying pan.
   b. Robbie went to the theatre with Suzie.
   c. The plants were grown with fertilizer by Pat.

2. Create *trajectory frames* for sentences b and c above. Why is it difficult to use a trajectory frame to represent sentence a? (Use the definition of trajectory frame described in class.)

3. Alyssa P. Hacker was working on the description of a car crashing into a wall using a *transition frame representation*. After some thought, she settled on a description using two variables: car speed, and distance between car and wall. Unfortunately, she had to leave before filling out the frame information. Please finish her work.

   After you finish with Alyssa’s work, Ben Bitdiddle walks in and notices, “Wait! I can describe a kiss the same way – as lips crashing into another person.” Revise Alyssa’s original description to differentiate the two (very obviously) different situations and show Ben a counter example to his claim.

4. Use *topological sorting* to provide a linearization of the inheritance hierarchies shown below. If there is no such linearization, explain why. Use alphabetical order to resolve ambiguities.