1. **Discourse Planning:** In class we briefly discussed that decompositional planning can be used to plan narrative discourse. Define decompositional planning operators to tell a murder mystery story (e.g. consisting of a "show body", "show investigation", "show conclusion"). The concrete actions you should use are `convey-person(X)` ("tell the audience about a person X"), `convey-event(Y)` "tell the audience about an event Y" and `convey-fact(Z)` ("tell the audience about a fact Z"). Since there is no standardized syntax for describing such decompositions, use whatever you find suitable.

For the following problems, use the PyHOP planner from https://bitbucket.org/dananau/pyhop/src/default/. To present your solution, either email me the code, bring a laptop or bring a flash drive.

2. **Blocksworld:** Download the PyHOP planner and look at the blocksworld implementation. Define a PyHOP planning problem with 5 blocks, `a,b,c,d` and `e`, that are stacked in one large stack in order (`a` on top, `e` on bottom), with a goal of having `d` on the table. Which plan does PyHOP return?

3. **Elevator Domain:** Encode the elevator domain (with 5 floors and 3 passengers) in PyHOP: Define what a state looks like, and write operators for `up`, `down`, `board`, and `depart`. Test the domain on some simple examples (since you don't have methods yet, you won't be able to solve entire planning problems).

4. **Elevator Domain:** Add the necessary methods to be able to solve entire planning problems in the elevator domain, then use PyHOP to solve a problem where `p1` is on `f1` and wants to go to `f4`, `p2` is on `f4` and wants to go to `f0`, and `p3` is on `f2` and wants to go to `f5`.