Assignment 6: Step One:

Connecting language to KB (Due 11/29)

First, we need to integrate our natural language understanding component with our ability to **Assert** and **Ask**.

The **Assert** integration will allow you to build up an initial description of the world by telling the system what things are and where they are.

The **Ask** integration will allow you to literally ask questions and have the system return an answer. At this stage, the answer will be the bindings returned by the system applied to the query that was handed to **Ask**. So if the query is: (on ?x ?y) and the result was {?x: Block1, ?y Block2}, then the answer will be (on Block1 Block2).

Of course, the query will really be a list of statements ((on ?x ?y), (color ?x red)) that represent a conjunct of thing that have to be true. This means that Ask needs to be able to deal with a list of patterns and make sure not only that each matches, but each matches consistent with the other. Likewise, the result from Ask will be a list of bindings lists ({?x: Block1, ?y Block2},{?x: Block3, ?y Block4})) so the result will be a list of **Instantiated** patterns:

- ((on Block1 Block2), (color Block1 red))
- ((on Block3 Block4), (color Block3 red))

You will then need to make sure that you are producing the right facts for a set of statements defining blocks, boxes, tables and their features. You will also need to situate these elements by telling the system where everything is.

You will also need to verify that the rules you built will be all that you need to make the right inferences and update the world.

Finally, you will need to make sure that **Retract** works so that you can make changes to the world based on the actions you will define in the next step.