



Assignment 01

1. (20 points) Agents

- A user wants to construct an agent to monitor production of soup. In particular, they are interested in making sure that the bacteria *E. coli* O157:H7 is not present in their soup. Check the [Foodsafety.gov](http://www.foodsafety.gov) web site for how to prevent *E. coli* and propose a percept for this agent.

Answers may vary. One of the simplest solutions is to ensure that the soup is hot enough to kill *E. coli*. [Foodsafety.gov](http://www.foodsafety.gov) recommends cooking things such as ground beef to 160° F (71.1° C). Consequently, a temperature sensor in the soup vats could provide this percept.

- Propose a percept-action table for this agent.

Percept	Action
Temperature < 71.1 °C	apply heat
Temperature ≥ 71.1 °C	shut off heat

This is a toy example, a soup-cooking agent would have other percepts to worry about such as length of cooking, monitoring to ensure that the soup was being mixed, etc.

2. (20 points) Work problem 3.6b from your book. Be sure to specify, the initial state, a goal test, successor and cost functions.

Solutions may vary slightly, but should look roughly like this:

- Initial state: monkey on floor, bananas on ceiling, crate 1 on floor, crate 2 on floor
- Goal test: Monkey on 2 crates and under bananas
- Successor: Monkey move, Crate move (if monkey and crate on ground), stack crate on crate that is on ground, climb up crate, climb down crate