Assignment 10

Homework requirement:
From now on, use anonymous variables as described in Section 1.13. Points will be taken off for consult warnings because of singleton variables.

Exercises 2 – 5 are programming problems. Submit them in a single file named a10.pl electronically per the instructions for your course.

1. Study Bratko, Sections 3.3 to 3.4.

2. Do Bratko, Exercise 3.4.
   Name your predicate my_reverse, and do not use the built-in predicate reverse. The recursive rule should have two goals, one of which is my_reverse, but the other of which is conc.

3. Do Bratko, Exercise 3.5.

   You can do it with only one rule with conc. Note that the name of the predicate is shift, not my_shift.

5. Do Bratko, Exercise 3.11.
   flatten is built-in to gprolog, so you must name your predicate my_flatten. Here are two queries to illustrate the two base cases.

   ?- my_flatten( [], X).
   X = []

   ?- my_flatten( a, X).
   X = [a]

   Note that my_flatten/2 must produce a list, even if the first argument is not a list. This is an unusual problem, because the base cases must be placed after the single recursive rule. When you test your predicate you will probably get erroneous instantiations after the first correct unification. With the tools we have so far in the course, you cannot avoid the later erroneous results. Think about why you cannot.

   ?- my_flatten( [a,b,[c,d],[],[[e]]],f], List).
   List = [a,b,c,d,e,f]