CSCI 450 Fall 2024
Homework 10

Problem 1: (0.5 pts * 10 = 5pts) Fill in the blank, multiple choice, and True/False questions:

1) The design of the logic languages is based on _____.

2) Logic programming languages can also be called _____ languages.

3) A statement in Prolog ends with what symbol? _____

4) When a goal has more than one subgoal, Prolog uses _____ search.

5) With a goal of multiple subgoals, if it fails to show truth of one of the subgoals, Prolog reconsiders previous subgoal(s) to find an alternative solution, this is called _____.

6) In Prolog, binding of a variable to a value is called _____.

7) Which of the following statements is **true** with regard to the clausal form:
   $B_1 \cup B_2 \cup \ldots \cup B_n \subset A_1 \cap A_2 \cap \ldots \cap A_m$

   a. The left side of the clausal form is antecedent and the right side is consequent.
   b. The clausal form means that if all the Bs are true, then at least one A is true.
   c. The clausal form means that if all the As are true, then at least one B is true.
   d. None of the above.

8) T/F: In logic languages, variables are used just as those in imperative programming languages.

9) T/F: The structure used to represent an atomic proposition in Prolog looks like this: **functor (parameter list).**

10) T/F: **is** operator in Prolog is like assignment operator in imperative programming languages, and the following is a legal statement in Prolog.   **Sum is Sum + 1.**

Problem 2: (5 pts) Finish the Prolog program, make sure to include the header comments (check Program Template on Bb). If your program does not execute, you will get NO credit.