Project Part 4 & 5: Morning Dress-up

This is where we will be basing our project off of other similar projects.

Part 4: Research

Prolog Project 1: [Prolog Challenge 1 - Daniel R. Schlegel (danielschlegel.org)]

IMAGINARY FRIENDS BY KEITH KING ★

Grantville's local library recently sponsored a writing contest for young children in the community. Each of four contestants (including Ralph) took on the task of bringing to life an imaginary friend in a short story. Each child selected a different type of animal (including a moose) to personify, and each described a different adventure involving this new friend (one story described how an imaginary friend had formed a rock band). From the following clues, can you match each young author with his or her imaginary friend and determine the adventure the two had together?

Solution is on page 54.

1. The seal (who isn't the creation of either Joanne or Lou) neither rode to the moon in a spaceship nor took a trip around the world on a magic train.
2. Joanne's imaginary friend (who isn't the grizzly bear) went to the circus.
3. Winnie's imaginary friend is a zebra.
4. The grizzly bear didn't board the spaceship to the moon.

	Grizzly bear	Moose	Seal	Zebra	Circus	Rock band	Spaceship	Train
Joanne								
Lou								
Ralph								
Winnie								
Circus								
Rock band								
Spaceship								
Train								

{ % What We Know
adventure(circus).
adventure(rock_band).
adventure(spaceship).
adventure(train).

child(joanne).
child(lou).
child(ralph).
child(winnie).

friend(grizzly_Bear).
friend(moose).
friend(seal).
friend(zebra). }

The way our project is slated to work and function are quite similar to the work we had all accomplished for the first assignment in this class. We are going to have to frame and model the project in a way where taking all three parameters into account will give us only a select few options like in the first assignment where circumstances of the adventure, kid, and character matched each fact to each other.

The Zebra Puzzle: [Using Prolog to Solve Logic Puzzles (bennycheung.github.io)]

The famous `Zebra Puzzle` comes with 15 facts and 2 questions: *Who has a zebra and who drinks water?*

The list of facts (or constraints):

1. **There are 5 colored houses in a row, each having an owner, which has an animal, a favorite cigarette, a favorite drink.**
2. **The English lives in the red house.**
3. **The Spanish has a dog.**
4. **They drink coffee in the green house.**
5. **The Ukrainian drinks tea.**
6. **The green house is next to the white house.**
7. **The Winston smoker has a serpent.**
8. **In the yellow house they smoke Kool.**
9. **In the middle house they drink milk.**
10. **The Norwegian lives in the first house from the left.**
11. **The Chesterfield smoker lives near the man with the fox.**
12. **In the house near the house with the horse they smoke Kool.**
13. **The Lucky Strike smoker drinks juice.**
14. **The Japanese smokes Kent.**
15. **The Norwegian lives near the blue house.**

```
:-consult('bibmm.pl').

start(Sol):- length(Sol,5),                  % 1
    member([english,_,_,_,red],Sol),         % 2
```

```
    member([spanish,dog,_,_,_],Sol),        % 3
    member([_,_,_,coffee,green],Sol),       % 4
    member([ukrainian,_,_,tea,_],Sol),      % 5
    right([_,_,_,_,green],[_,_,_,_,white], Sol),    % 6
    member([_,snake,winston,_,_],Sol),      % 7
    member([_,_,kool,_,yellow],Sol),        % 8
    Sol= [_,_,[_,_,_,milk,_],_,_],          % 9
        Sol= [[norwegian,_,_,_,_],_,_,_,_],         % 10
    next([_,_,chesterfield,_,_],[_,fox,_,_,_],Sol), % 11
    next([_,_,kool,_,_],[_,horse,_,_,_], Sol),  % 12
    member([_,_,lucky,juice,_],Sol),        % 13
    member([japanese,_,kent,_,_],Sol),      % 14
    next([norwegian,_,_,_,_],[_,_,_,_,blue],Sol),   % 15
    member([_,_,_,water,_],Sol),            % someone drinks water
    member([_,zebra,_,_,_],Sol).            % someone has a zebra
% swipl
?- ['zebra'].
?- start(Sol), write_list(Sol), fail.
[norwegian,fox,kool,water,yellow]
[ukrainian,horse,chesterfield,tea,blue]
[english,snake,winston,milk,red]
[japanese,zebra,kent,coffee,green]
[spanish,dog,lucky,juice,white]
false.
?- halt.
```

The zebra puzzle is another example of using a knowledge base to come to a conclusion(s). A variety of information is provided on individuals and the houses but inferences need to be made to come to a decisive conclusion about who owns the zebra and who drinks water. This is useful to us as we will be using the same sort of logic to come to a conclusion about how to dress for the day. The people and houses would be like the mood and weather facts which would be used to derive whether or not a certain outfit will be chosen.

This also provides us with a good way of representing our model as it gives us both structure and function. Representing the model in an efficient and intuitive way is half the battle when it comes to cognitive models and implementation.

Part 5: The Logic of our World

The weather, activity, and mood affect how the optimal outfit for the day will be chosen. They will likely be presented as such:

weather(rainy, sunny, cloudy, snowy)
mood(happy, sleepy, sad, sexy)
activity(regularDay, busyDay, funDay, bumDay)
tops(t-shirt, buttonedTop, tankTop, hoodie)
bottoms(jeans, shorts, suitPants, sweatpants)
shoes(sneakers, dressShoes, boots, sandals)
headAccessories(baseballCap, beanie, scarf, topHat)
faceAccessories(earrings, sunGlasses,
bag(backpack, handbag, noBag, smallBag)

Emotions/mood, weather, and activity of the day are going to influence the logic of the cognitive model so we can choose an optimal outfit. Emotions will primarily be happy, sad, sleepy, and sexy. These are all subject to change.