CSC 3370 – Prolog Project

The purpose of this assignment is to give you experience building simple programs in Prolog.

Part 1 – Taco Truck Tuesday

Consider the following taco ingredients and their costs:

```
cost(carne_asada,6).
cost(lengua,2).
cost(birria,2).
cost(carnitas,2).
cost(adobado,2).
cost(al_pastor,2).
cost(guacamole,1).
cost(rice,1).
cost(beans,1).
cost(salsa,1).
cost(cheese,1).
cost(sour_cream,1).
cost(taco,1).
cost(tortilla,1).
```

In addition, consider the following collection of food with ingredients:

```
ingredients(carnitas_taco,
            [taco,carnitas, salsa, guacamole]).
ingredients(birria_taco,
            [taco,birria, salsa, guacamole]).
ingredients(al_pastor_taco,
            [taco,al_pastor, salsa, guacamole, cheese]).
ingredients(guacamole_taco,
            [taco,guacamole, salsa,sour_cream]).
ingredients(al_pastor_burrito,
            [tortilla,al_pastor, salsa]).
ingredients(carne_asada_burrito,
            [tortilla,carne_asada, guacamole, rice, beans]).
ingredients(adobado_burrito,
            [tortilla,adobado, guacamole, rice, beans]).
ingredients(carnitas_sopa,
            [sopa,carnitas, guacamole, salsa,sour_cream]).
```

```
ingredients(lengua_sopa,
            [sopa,lengua, salsa, beans,sour_cream]).
ingredients(combo_plate,
            [al_pastor, carne_asada,rice, tortilla, beans,
salsa, guacamole, cheese]).
ingredients(adobado_plate,
            [adobado, guacamole, rice, tortilla, beans,
cheese]).
```

Finally, consider the following taco trucks:

```
taco_truck(el_cuervo, [ana,juan,maria],
        [carnitas_taco, combo_plate, al_pastor_taco,
carne_asada_burrito]).

taco_truck(la_posta,
        [victor,maria,carla], [birria_taco, adobado_burrito,
carnitas_sopa, combo_plate, adobado_plate]).

taco_truck(robertos, [hector,carlos,miguel],
        [adobado_plate, guacamole_taco, al_pastor_burrito,
carnitas_taco, carne_asada_burrito]).

taco_truck(la_milpas_quatros, [jiminez, martin, antonio,
miguel],
        [lengua_sopa, adobado_plate, combo_plate]).
```

Given these facts make the following rules in your file. Test that they work properly.

- Write a Prolog rule `available_at(X,Y)` that is true if the item `X` is available at taco truck `Y`.
- Write a Prolog rule `multi_available(X)` that is true if the item `X` is available at more than one place.
- Write a Prolog rule `overworked(X)` that is true the person `X` works at more than one taco truck.
- Write a Prolog rule `total_cost(X,K)` that is true if the sum of the costs of the ingredients of item `X` is equal to `K`.
- Write a Prolog rule `has_ingredients(X,L)` that is true if the item `X` has all the ingredients listed in `L`.

- Write a Prolog predicate `avoids_ingredients(X,L)` that is true if the item `X` does not have any of the ingredients listed in `L`.

Grading Rubric

- Each Prolog rule that is implemented correctly (15 points)
- General happiness points (10 points)

Submission

You must upload a copy of your work through the portal. If you have any issues or questions please let me know.