CS 6905 Advanced Topics in Computer Science:
Functional and Logic Programming
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Project Proposal: Rules for a Product Consultant

Student Names: Hai Wang, En Zhang

Problem Statement

A *product consultant* is considered here as an online computer program for simulating a product-oriented dialog with a customer. You input a question or statement about some product, and the product consultant replies, more or less like a human consultant would (but using its own version of logic!).

Suppose some store wants to improve its quality of services using a product consultant on their website, and this 'virtual person' can answer simple customer questions. For example, it can answer whether a product is for sale; how much it costs; what discount one can get for it; whether you are entitled to get the discount for it; if not, why, etc.

Solution Approach

1 There are some facts and rules (in either a functional or a relational version) for answering the questions. They may be stored in a database or a file. Here are sample facts:

```
location(shop_a, fredericton).   % shop_a is in Fredericton.
price(shop_a, chair,30).         % the price of a chair in the shop_a is $30.
discount(chair,10).              % the store sells chairs at 10% discount.
premium("Wang").                 % customer Wang can buy any product at a discount
luxury(camera).                  % Camera is a luxurious product
manufacturer(fridge, "Siemens"). % Fridge is manufactured by Siemens.
```

2 According to such facts and rules over them, a simple product-consultant program can iterate a case analysis on the questions and give the corresponding answers to those questions.

3 This project will construct at least 40 facts and rules for such a consultant, show which questions can be answered by them, and discuss the functional and relational style used.