Expert System for Diet Planning

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# Introduction

This expert system is developed using Prolog to assist in personalized diet planning. It considers various user parameters such as age, gender, allergies, primary goal (e.g., weight loss or gain), chronic diseases, and available foods and drinks to recommend an appropriate diet.

# System Purpose

The main purpose of this expert system is to simulate the reasoning of a human dietitian. By inputting personal characteristics and preferences, the system suggests suitable meals and drinks while avoiding health risks.

# Knowledge Base Overview

We have many facts like:

1-meal\_list

2- avoid\_meals\_for\_diabetes

3- avoid\_meals\_for\_cholesterol

4- avoid\_list\_for\_heart\_disease

5- avoid\_meals\_for\_gluten\_allergy

6- avoid\_list\_for\_nut\_allergy

7- avoid\_list\_for\_lactose\_intolerant

8- fitness

9- lose\_weight

10- healthy\_habits

11- avoid\_male\_items

12- avoid\_female\_items

13- avoid\_list\_for\_teen

14- avoid\_list\_for\_young\_adult

15- avoid\_list\_for\_adult

16- avoid\_list\_for\_senior

17- map\_age

# Rules

1-my\_member

2-subtract\_common

3-get\_common

4-format\_list\_in\_lines

5-take\_n

6-filter\_gender

7-filter\_disease

8-filter\_allergy

9-filter\_age

10-get\_Goal

11-get\_final\_list

12-start\_gui

13-recommend\_gui

14-find\_diet

# User Interaction

The system utilizes SWI-Prolog's library(pce) to create a graphical user interface (GUI) for user interaction. This library enables developers to design windows, buttons, labels, and other GUI elements, making the expert system more user-friendly. Instead of typing queries directly in the console, users can select options, enter data, and receive suggestions via a visual interface.

# Conclusion

This expert system demonstrates how logic programming can be used for practical healthcare applications. It automates dietary advice, adapts to individual needs, and offers extendability for future improvements.