A script of running our program solving some problem instances

1)

?- solve(dietician(X)).

Exshell allows the following responses to queries:

yes - query is known to be true.

no - query is false.

why - displays rule currently under consideration.

how(X) - if X has been inferred, displays trace of reasoning.

help - prints this message.

Your response may be abbreviated to the first letter and must end with a period (.).

willing\_to\_change\_your\_diet? y.

weight\_loss? y.

bmi(greater\_than\_25)? |: y.

exercise\_more\_than\_2Hours\_30Minutes\_aWeek? |: n.

emotional\_eating? |: n.

sweets\_desserts\_more\_than\_3\_per\_week? |: y.

Solved dietician(Try to reduce your calorie intake everyday by around 500 kcals. Work towards the Healthy Plate Model at all meals. This means filling half your plate with vegetables (or fruit at breakfast time), filling quarter of your plate with whole grains (e.g. brown rice, quinoa, whole wheat pasta, or bulgar) and the remaining quarter of your plate with lean protein (e.g. grilled fish, chicken breast, lean meat, and beans). Be sure to weigh yourself once a week. Most health benefits occur with at least 150 minutes (2 hours and 30 minutes) a week of moderate intensity physical activity, such as brisk walking. Additional benefits occur with more physical activity. Adults should also do muscle-strengthening activities that are moderate or high intensity and involve all major muscle groups on 2 or more days a week, as these activities provide additional health benefits. Check with your physician before starting an exercise program. A healthy weight loss rate is about 1-2 lbs per week. Having sweet and dessert more than 3 times per week increases intake of empty calories and saturated fat  both of which can increase weight and heart disease risk. If you would like to monitor your sugar intake for added health benefits, the American Heart Association recommends women limit sugar consumption to 6 teaspoons (25 grams) per day and men limit to 9 teaspoons (36 grams) per day. ) With Certainty = 63

Trace of reasoning to goal ? |: n.

2)

?- solve(dietician(X)).

Exshell allows the following responses to queries:

yes - query is known to be true.

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willing\_to\_change\_your\_diet? y.

weight\_loss? n.

cholesterol\_problem? |: n.

high\_blood\_pressure? |: y.

add\_salt\_to\_meals\_at\_table? |: n.

alcohol\_more\_than\_1\_per\_day? |: y.

Solved dietician(Try to reduce intake of high sodium foods such as canned soups, condiments, cured meats, and salted nuts. Eating out can be a huge source of sodium in ones diet. Reduce the number of times you eat out to lower your overall sodium intake. Less is best when it comes to alcohol consumption. Although past studies have indicated that moderate alcohol consumption has protective health benefits (e.g., reducing risk of heart disease), recent studies show this may not be true. In fact, alcohol consumption can increase blood pressure and risk for certain types of cancer. According to the US Dietary Guidelines for Americans, to reduce the risk of alcohol-related harm, aim for no more than one drink per day for women and two drinks per day for men (no saving up!) ) With Certainty = 90

Trace of reasoning to goal ? |: n.

3)

?- solve(dietician(X)).

Exshell allows the following responses to queries:

yes - query is known to be true.

no - query is false.

why - displays rule currently under consideration.

how(X) - if X has been inferred, displays trace of reasoning.

help - prints this message.

Your response may be abbreviated to the first letter and must end with a period (.).

willing\_to\_change\_your\_diet? y.

weight\_loss? n.

cholesterol\_problem? |: n.

high\_blood\_pressure? |: n.

diabetic? |: y.

blood\_sugar\_above\_130mg/dL? |: y.

male? |: n.

Solved dietician(Try to eat three balanced meals per day at regular times and space meals no more than six hours apart. You can have a healthy snack in between if you need to. Limit sugars and sweets such as regular pop, desserts, candies, jam and honey. Always choose higher fiber grains when possible (e.g. brown rice over white rice). Try to manage your blood sugar levels by having 2-3 servings of carbohydrates per meal (serving= half a cup of rice/potatoes)) With Certainty = 81

Trace of reasoning to goal ? |: n.

4)

?- solve(dietician(X)).

Exshell allows the following responses to queries:

yes - query is known to be true.

no - query is false.

why - displays rule currently under consideration.

how(X) - if X has been inferred, displays trace of reasoning.

help - prints this message.

Your response may be abbreviated to the first letter and must end with a period (.).

willing\_to\_change\_your\_diet? y.

weight\_loss? n.

cholesterol\_problem? |: n.

high\_blood\_pressure? |: n.

diabetic? |: n.

bone\_problem\_osteoporosis? |: y.

male? |: n.

less\_than\_2\_servings\_dairy\_products\_daily? |: y.

lessThan\_600\_IU\_vitamin\_D\_daily? |: y.

resistance\_training\_twice\_weekly? |: n.

above\_50\_yearsOld? |: y.

Solved dietician(recommended calcium is 1200 mg/day. you should aim for 3 dairy servings/day (serving= 1 cup of milk, 1.5oz of cheese, 3/4 cup of yogurt). It is recommended to get 600 IU/day vitamin D (check Multivitamin!). Weight-bearing exercise and resistance exercise are particularly important for improving bone density and helping to prevent osteoporosis. Speak to your physician or physical therapist for personalized recommendations. ) With Certainty = 72

Trace of reasoning to goal ? |: n.