Medical Expert System

- **Aim:**

Implement expert system for medical diagnosis of diseases based on adequate symptoms.

- **Software Requirements:**

SWI-Prolog for Windows, Editor.

- **Theory:**

A system that uses human expertise to make complicated decisions. Simulates reasoning by applying knowledge and interfaces. Uses expert's knowledge as rules and data within the system. Model the problem solving ability of a human expert.

Components of an ES:

1. Knowledge Base

    i. Represents all the data and information imputed by experts in the field.

    ii. Stores the data as a set of rules that the system must follow to make decisions.

2. Reasoning or Inference Engine

    i. Asks the user questions about what they are looking for.

    ii. Applies the knowledge and the rules held in the knowledge base.

    iii. Appropriately uses this information to arrive at a decision.

3. User Interface

    i. Allows the expert system and the user to communicate.

    ii. Finds out what it is that the system needs to answer.

    iii. Sends the user questions or answers and receives their response.

4. Explanation Facility

    i. Explains the systems reasoning and justifies its conclusions.

- **Program Execution:**

1. First step for execution is install SWI prolog on your machine.

2. Open the prolog editor.

3. Run using go. Command.

OUTPUT

Welcome to SWI-Prolog (threaded, 64 bits, version 7.6.4)

SWI-Prolog comes with ABSOLUTELY NO WARRANTY. This is free software.

Please run ?- license. for legal details.

For online help and background, visit http://www.swi-prolog.org

For built-in help, use ?- help(Topic). or ?- apropos(Word).

?- go.

Does the patient has the symptom headache? : y.

Does the patient has the symptom runny_nose? : |: n.

Does the patient has the symptom sore_throat? : |: n.

Does the patient has the symptom abdominal_pain? : |: n.

Does the patient has the symptom rash? : |: n.

Does the patient has the symptom fever? : |: n.

Does the patient has the symptom increased_hunger? : |: y.

Does the patient has the symptom dry_mouth? : |: y.

Does the patient has the symptom fatigue? : |: y.

Does the patient has the symptom blurred_vision? : |: y.

Does the patient has the symptom frequent_urination? : |: y.

Does the patient has the symptom weightloss? : |: y.

Advices and Sugestions:

1: Metformin

2: Sulfonylureas

3: Thiazolidinediones

4: DPP-4 inhibitors

4: GLP-1 receptor agonists

4: SGLT2 inhibitors

4: Insulin Therapy

Please check your blood sugar level at least twice a day. Control your blood pressure, cholesterol, and triglyceride levels. Get A1c blood tests to find out your average blood sugar for the past 2 to 3 months to track your carbohydrates .

It is suggested that the patient has diabetes.

true .