An Expert System to Assess Heart Disease under Uncertainty

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Motivation

Nowadays, health disease is increasing day by day due to lifestyle, hereditary. Especially, heart disease has become more common these days. Heart disease is considered as one of the major causes of death throughout the world.The heart is an operating system of our human body. If the function of the heart is not done properly means, it will affect other human body parts also.

The term heart disease includes several types of disorders which may damage the heart. Most common types of heart diseases are congenital heart disease, heart failure, hypertensive heart disease, cardiomyopathy, and coronary artery disease.
These diseases are the main reasons for death for a huge number of people all over the globe. WHO (World Health Organization) and CDC (Centers for Disease Control and Prevention) reported that heart disease is the major reason for death for the people of the UK, Canada and Australia. Medical journal The Lancet reported that in Bangladesh about 1.78 lakh people died of strokes, 1.06 lakh died of ischemic heart disease and 28,000 died of hypertensive heart disease in 2013.

That's where "An Expert System to Assess Heart Disease" comes to the scheme and Helping the users knowing whether they have heart disease or not, staying at home.

Aims and Objectives

The main objectives of my project are

- Helping the users knowing whether they have heart disease or not, staying at home.
- Also whether the users have any similar kind of disease or not
- Sharing knowledge with mass people
- Creating awareness about Heart Disease
- Making a user-friendly heart disease diagnosis system

Architecture

The system is based on "Rule Based Architecture". It interacts with the user through a user interface. It takes facts from the database, uses rules defined into knowledge base and infer an answer. Then it shows the answer to the user.

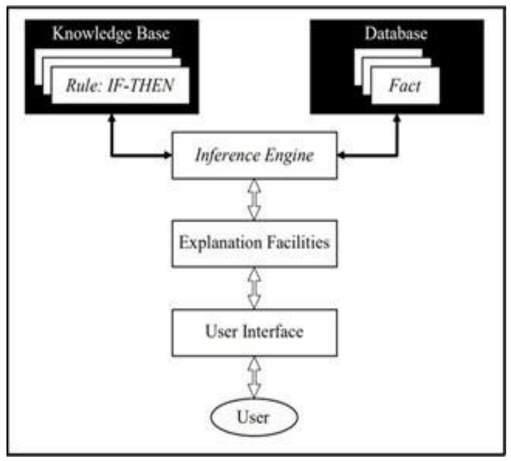
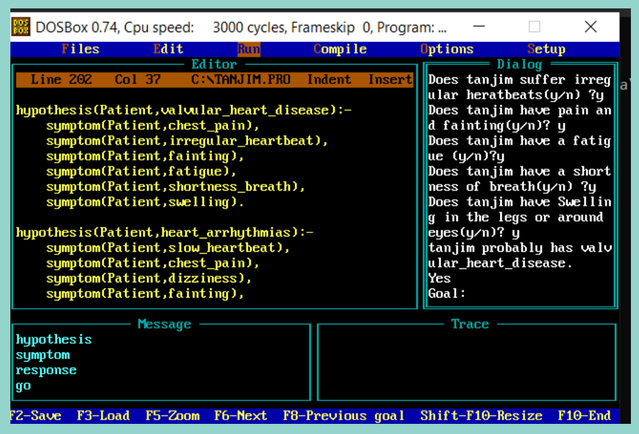
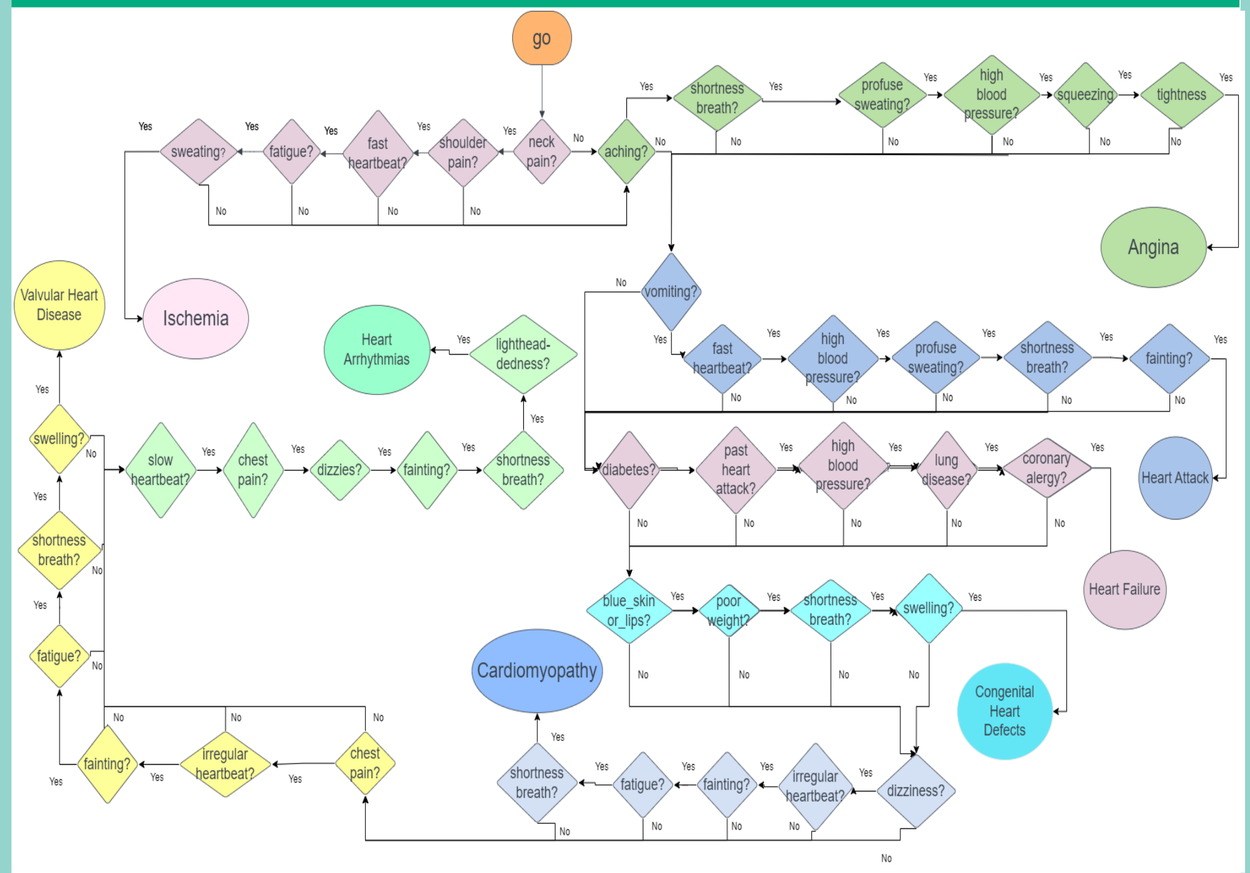


Figure: Architecture of the System

Test Case and Result



Query



Conclusion

In Conclusion, Our Expert System is very simple to use and efficient. It's pretty accurate too. Our Expert System has been typically designed to provide capabilities similar to those of a human expert when performing a task. The program asks a few yes/no questions to the user to note down which symptoms the user is facing. Then after knowing all the symptoms that the user is facing the expert system searches up on its knowledge base and then generates the most probable answer i.e. in this case Heart Disease type.

Future Work

It is noted that the knowledge base is also accompanied with an interference base. Thus the expert system is more enriched and learns from experience bit by bit.
This work can be extended by-

- Adding more realistic rules and facts.
- Including suggestions on foods and medicines