

Development of a Prolog-Based Expert System for Disease Diagnosis

Artificial Intelligence Lab: CSE 714

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Outline

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- ❑ Aims and Objectives
- ❑ Queries we've considered
- ❑ Core components
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- ❑ Architecture
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Problem Statement

Due to ignorance and lack of understanding, the affected individual cannot recognize all of the signs that indicate that he seems to have a chronic and inflammatory condition.

Health checkups are getting expensive day by day.

Ignorance about the health.

Carelessness in eating.

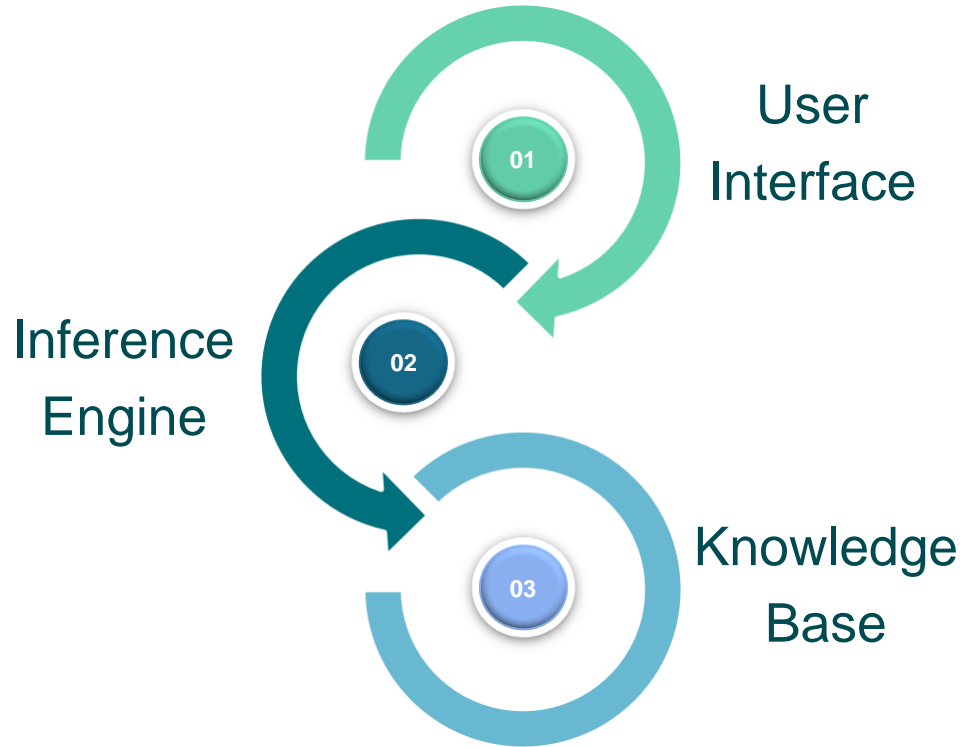
Aims and Objective



Queries we've considered

- | | | | |
|-------------------------|---------------------|---------------------------------|----------------|
| 01 Fungal Infection | 07 AIDS | 13 Cervical spondylosis | 19 Measles |
| 02 Allergy | 08 Diabetics | 14 Paralysis (brain hemorrhage) | 20 Chicken pox |
| 03 GERD | 09 Gastroenteritis | 15 Jaundice | |
| 04 Chronic cholestasis | 10 Bronchial Asthma | 16 Malaria | |
| 05 Drug Reaction | 11 Hypertension | 17 Common cold | |
| 06 Peptic ulcer disease | 12 Migraine | 18 German measles | |

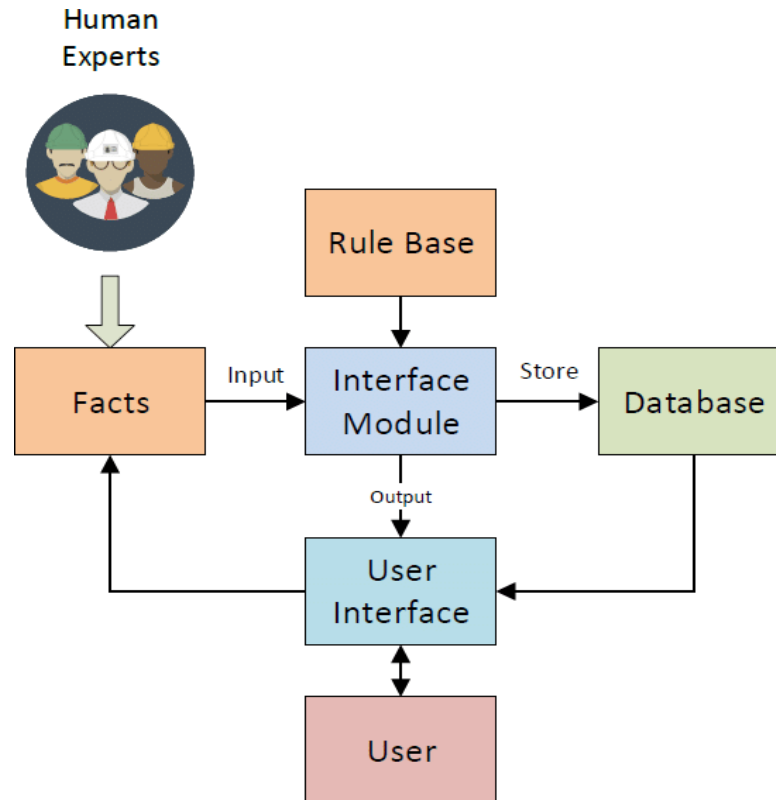
Core components



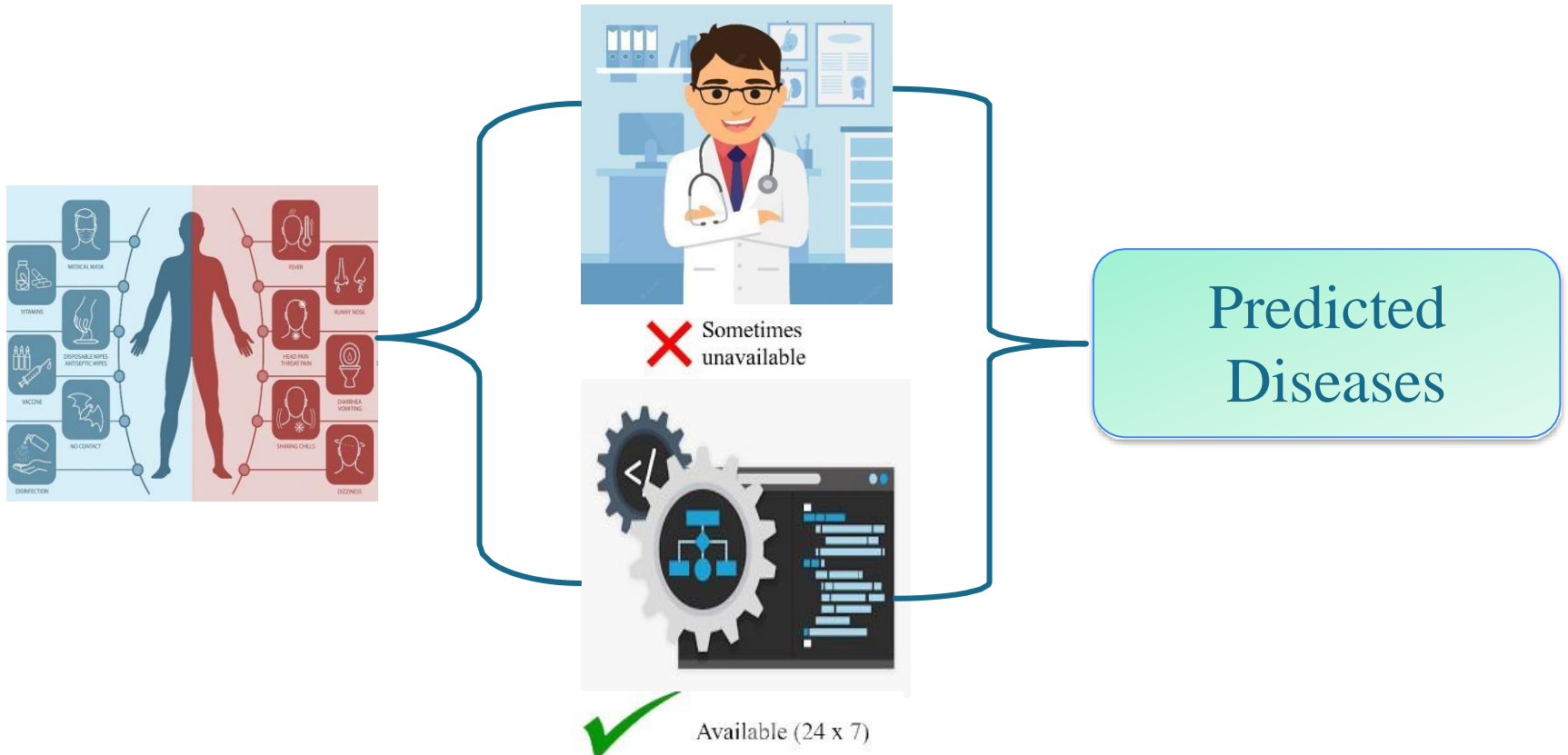
Query Table

Symptom	Jaundice	Malaria
Itching	Y	
Vomiting	Y	Y
Fatigue	Y	
Weight loss	Y	
High fever	Y	Y
Dark urine	Y	
Yellowish skin	Y	
Chills		Y
Sweating		Y
nausea		Y

Architecture



Methodology



Snapshots

DOSBox 0.74, Cpu speed: 3000 cycles, Frameskip 0, Program: ...

FilesEditRunCompileOptionsSetup

Editor

Line 1Col 1C:\PROJECT2.PROIndentInse

Domains

disease, indication = symbol
Patient, name = string

Predicates

hypothesis(string,disease)
symptom(name,indication)
response(char)
go

Clauses

go:-
write("What is the patient name? "),
readln(Patient),
hypothesis(Patient,disease),
write(Patient," probably has ",disease,"."),

Dialog

ting(y/n)?y
Does tashin have a high_
fever(y/n)?y
Does tashin have a sweat
ing(y/n)?y
Does tashin have a heada
che(y/n)?y
Does tashin have a nause
a(y/n)?y
Does tashin have a diarr
hoea(y/n)?y
Does tashin have a abdom
inal_pain(y/n)?y
Yes
Goal:

Message

Trace

hypothesis
symptom
response
go

2-Save F3-Load F5-Zoom F6-Next F8-Previous goal Shift-F10-Resize F10-End

DOSBox 0.74, Cpu speed: 3000 cycles, Frameskip 0, Program: ...

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Predicates

hypothesis(string,disease)
symptom(name,indication)
response(char)
go

Clauses

go:-
write("What is the patient name? "),
readln(Patient),
hypothesis(Patient,disease),
write(Patient," probably has ",disease,"."),

Dialog

Yes
Goal: hypothesis(tashin,
malaria)
Does tashin have a chill
s(y/n)?y
Does tashin have a vomit
ting(y/n)?y
Does tashin have a high_
fever(y/n)?y
Does tashin have a sweat
ing(y/n)?y
Does tashin have a heada
che(y/n)?y
Does tashin have a nause
a(y/n)?_

Message

Trace

hypothesis
symptom
response
go

2-Save F3-Load F5-Zoom F6-Next F8-Previous goal Shift-F10-Resize F10-End

Future Work



Including recommendations for diet and medications



Adding more precise rules and information



Changing the prolog based expert system to ML based system

