

A Knowledge Based System

for Medical Advice Provision

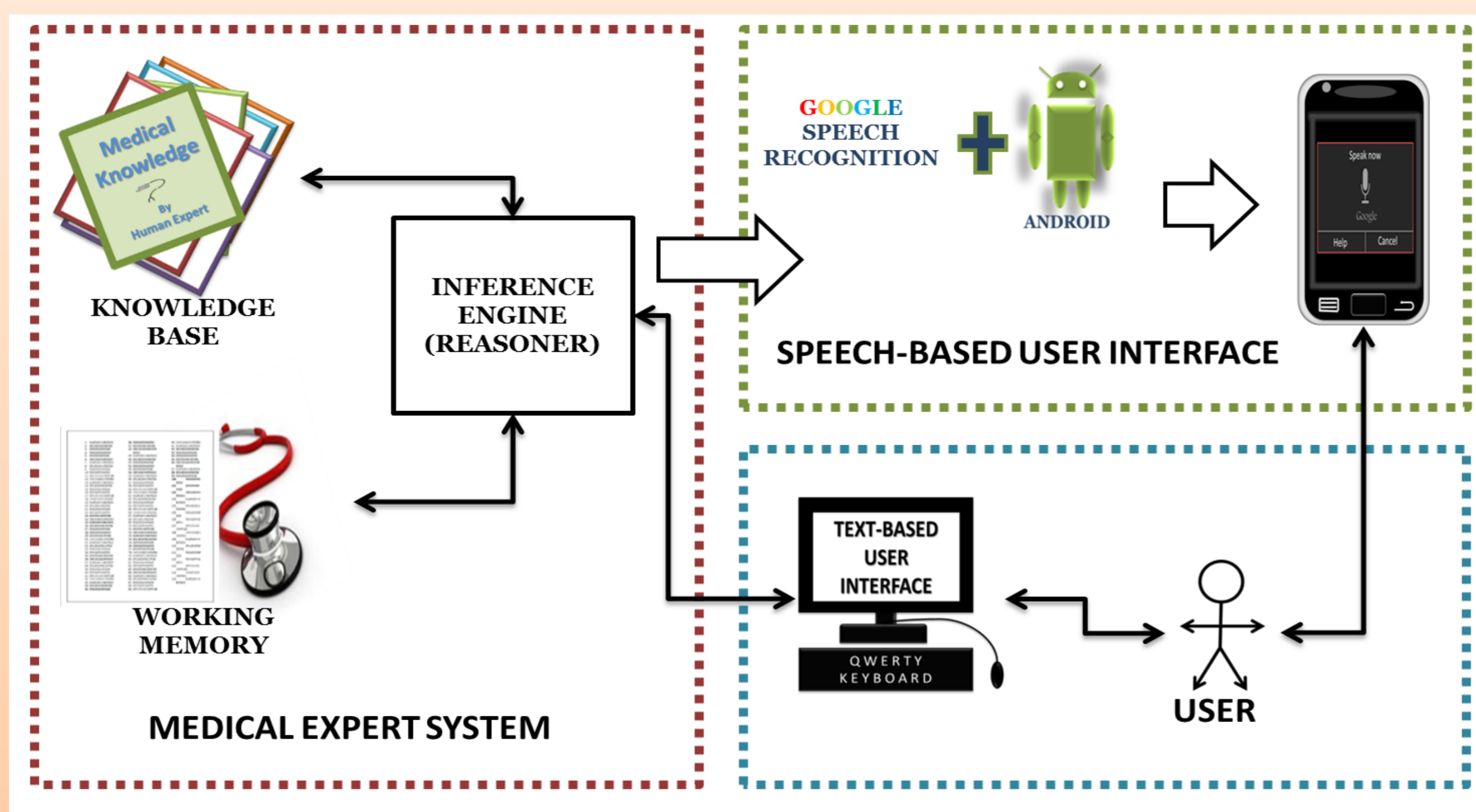
PROBLEM:

- ❑ Diabetes is fast becoming a major epidemic in South Africa. Recent surveys indicated that more than 80% of people with diabetes live in low and middle income countries .
- ❑ People in low and middle income areas have limited access to medical advice and medical experts.

AIM:

- ❑ To develop a prototype knowledge-based expert system for diabetes advice which emulates the decision making ability of a human diabetes expert.
- ❑ To provide a speech-based interface to the diabetes expert system using speech recognition and speech synthesis.

APPROACH TO SOLUTION:



TERMINOLOGIES:

- ❖ **Knowledge Base:**
 - ❑ The heart of a knowledge-based expert system.
 - ❑ It contains a collection of knowledge about the problem domain.
 - ❑ It stores all relevant information used by the expert system.
- ❖ **Working Memory:**
 - ❑ Similar to a relational database system.
 - ❑ It contains all the knowledge about the problem supplied by the end user.

❖ Inference Engine:

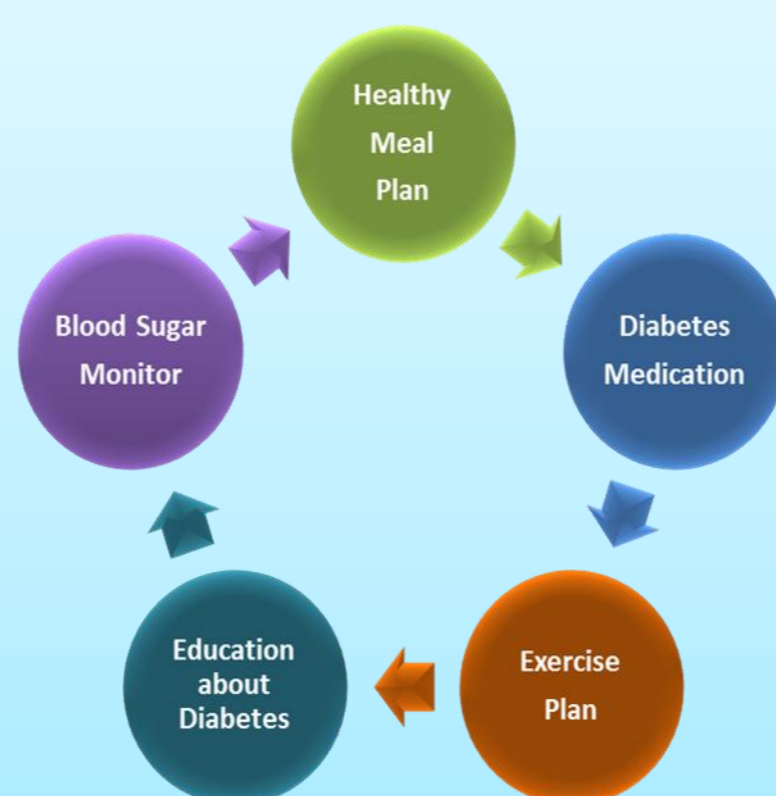
- ❑ The brain of the knowledge-based expert system.
- ❑ It is an analogy to human reasoning.
- ❑ It implements the reasoning process of artificial intelligence.
- ❑ Its role is to work with the available data from the system and the user to derive a solution to the problem.



Medical Advisor System

The knowledge-based expert system gives advice to the following areas:

- ❑ Meal planning
- ❑ Exercise program
- ❑ Diabetes oral medication or insulin injections
- ❑ Monitoring of blood glucose levels
- ❑ Moderate usage of alcohol
- ❑ Education about diabetes



CONCLUSION:

- ❑ The Medical Advisor System software evaluation was carried out and positive feedback was received from users.
- ❑ The speech-based interface was successfully implemented and user evaluation was positive.



Department of Computer Science
University of Cape Town
Private Bag X3
Rondebosch
7700
<http://www.cs.uct.ac.za>

Team members:

Kevin Brenkel
Kulani Makhubele

Supervisor:

Dr Audrey Mbogho

Medical Expert:
Dr Joel Dave

