

**CZ3005: Artificial Intelligence**

**2020 Fall Assignment 4:**

**Implementing a Talking Box with Prolog**

**Question 4:**

**Patient with a Sympathetic Doctor**

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# **Section 1. Introduction**

Knowledge-Based Systems (KBS). Knowledge-Based Systems store structured and unstructured facts

# **Section 2. Overview**

## **2.1 Overview of KBS**

## **2.2 Logic flow of Sympathetic Doctor Program**

## **2.3 Further Considerations**

### **2.3.1 Pain Level and its effect on the biasness of diagnosis**

### **2.3.2 Mood Level and its effect on the degree of sympathy**

# **Section 3. Implementation and Explanation**

## **3.1 Code Explanation**

### **3.1.1 Predicates/Variables used**

### **3.1.2 Rules Used**

## **3.2 Logic Flow**

## **3.3 Rules of Diagnosis**

## **3.4 Heuristics/ Algorithm for conflicting diagnosis**

## **3.5 Helper Functions**

## **3.6 Further Considerations (Error Handling)**

# **Section 4. Demonstration of Sympathetic Doctor Dialogue AI**

# **Section 5: Additional Implementation (GUI) with Google Speech Recognition Engine**

## **5.1 Motivation for GUI Implementation (Additional Feature)**

## **5.2 Overall System Architecture Diagram of the GUI Implementation**

A picture containing shape

Description automatically generated

Figure 1 System Architecture Diagram of Implemented GUI

## **5.3 Set up and Installation**

## **5.4 Implementation of the GUI**

## **5.5 Screenshot of GUI Implementation**

## **5.6 Demonstration of Sympathetic Doctor Dialogue AI with GUI (YouTube Link)**

# **Section 6. Conclusion**

# **Section 7. References**