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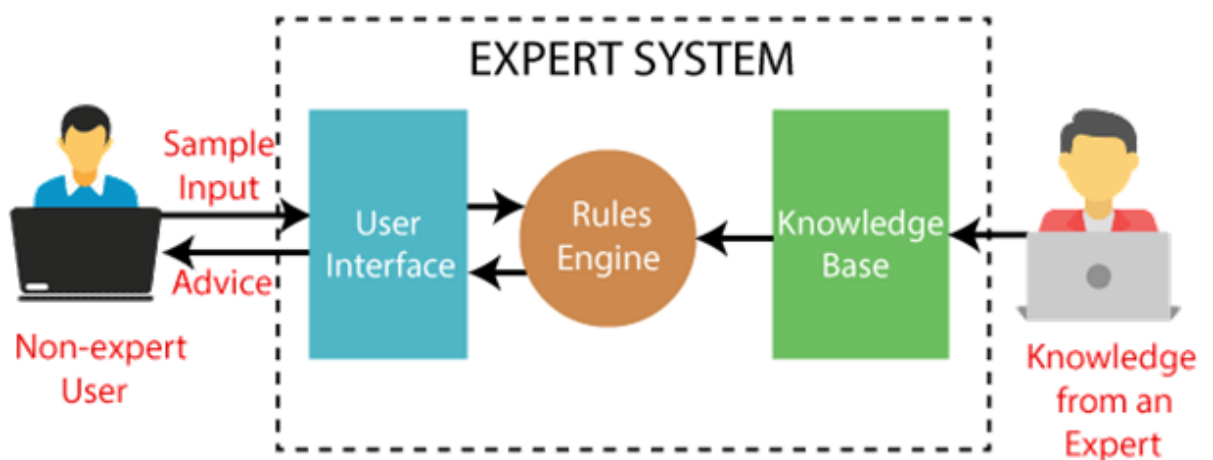
## Expert system submission On Healthcare

Upload the expert system report in the following points

1. Abstract ( Overall of your expert system with outcomes)
2. Introduction
3. Design the model (working flow diagram ) with an explanation
4. Facts and Rules description
5. Result and Explanation of each output screen ( Separate Output screen with respect to no of rule defined )
6. Graph/ Table based on result with explanation
7. Conclusion and Future Scope
8. References

### 1. Abstract

- Provide a concise summary of your expert system, including its purpose, goals, and main functionalities. Highlight the expected outcomes and why the system is beneficial.



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- **Example:**  
*This expert system is designed to assist users in diagnosing common technical issues in*

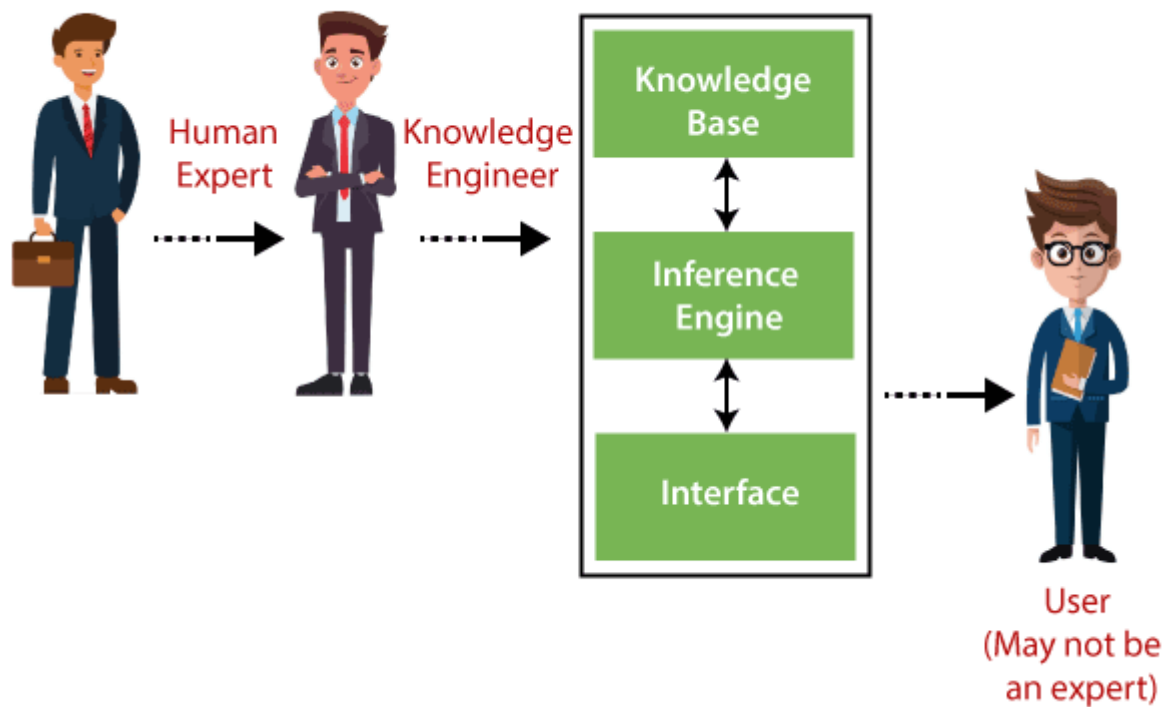
computer systems based on a set of predefined rules. The system provides accurate and efficient problem identification, saving time and resources for both technicians and non-experts. The expected outcome is a reliable automated diagnostic tool.

## 2. Introduction

- Introduce the problem you are addressing with the expert system and explain why an expert system is the ideal solution. Give an overview of expert systems and their importance in the given field.
- **Example:**  
*Expert systems are crucial in areas where expert knowledge is required to solve complex problems. This system focuses on diagnosing software and hardware problems. By using a rule-based framework, it mimics the reasoning process of human experts.*

## 3. Design the Model

- Include a **working flow diagram** of the expert system. This should illustrate how inputs are processed, rules are applied, and outputs are generated. Provide an explanation of each stage.



- 
- **Diagram Example:**  
Start → User Input → Knowledge Base → Inference Engine → Rule Matching → Output (Diagnosis)
- **Explanation:**  
Describe each element of the diagram, detailing the flow of data, how rules are applied, and how the inference engine processes facts.

## 4. Facts and Rules Description

- Describe the facts that your expert system uses (e.g., symptoms, error messages) and the rules it follows to make decisions. Each rule should have a clear description of its purpose.

- **Example:**

\_Facts: "The computer won't turn on," "The screen is blank."

Rules:

- IF "The computer won't turn on" AND "The power light is off" THEN "Check power supply."
- IF "The screen is blank" AND "The power light is on" THEN "Check display connection."\_

## 5. Result and Explanation of Each Output Screen

- Present the results for different scenarios and explain how the system arrived at each conclusion based on the rules defined.

- **Example:**

*Output 1: "Check your power supply" (based on Rule 1).*

*Output 2: "Reconnect your display" (based on Rule 2).*

Include screenshots or mockups of the output screens for clarity.

## 6. Graph/Table Based on Results

- Provide graphs or tables showcasing the performance, accuracy, or any measurable results from your expert system. Explain what each graph or table represents and how it was derived.

- **Example:**

*A table showing the number of correctly diagnosed issues versus incorrect diagnoses.*

*A pie chart showing the types of issues most frequently diagnosed by the system.*

## 7. Conclusion and Future Scope

- Summarize the overall performance and utility of the expert system. Discuss its limitations and areas for improvement.

- **Example:**

*The expert system successfully mimics human diagnosis for common technical problems.*

*However, further refinement of the knowledge base and the inclusion of machine learning could improve accuracy in diagnosing more complex issues.*

## 8. References

- List all the references and sources you used to build your expert system, including books, research papers, websites, and any other resources you consulted.

- **Example:**

1. "Artificial Intelligence: A Modern Approach" by Stuart Russell and Peter Norvig

2. [Expert Systems Overview on Britannica](#)

class HealthcareExpertSystem:

```
def __init__(self):
```

```
self.rules = {  
    'Influenza': ['fever', 'cough'],  
    'Cold': ['cough', 'fatigue'],  
    'Pneumonia': ['fever', 'cough', 'difficulty breathing']  
}
```

```
def diagnose(self, symptoms):  
    possible_conditions = []  
    for condition, condition_symptoms in self.rules.items():  
        if all(symptom in symptoms for symptom in condition_symptoms):  
            possible_conditions.append(condition)  
    return possible_conditions
```

```
def main():  
    symptoms = input("Enter your symptoms (comma separated): ").split(",")  
    symptoms = [symptom.strip() for symptom in symptoms]
```

```
expert_system = HealthcareExpertSystem()  
diagnoses = expert_system.diagnose(symptoms)
```

```
if diagnoses:  
    print("Possible conditions:", ", ".join(diagnoses))  
else:  
    print("No matching conditions found.")
```

```
if __name__ == "__main__":  
    main()
```