



# **SNS COLLEGE OF ENGINEERING**

**Kurumbapalayam(Po), Coimbatore – 641 107**

**Accredited by NAAC-UGC with 'A' Grade**

**Approved by AICTE, Recognized by UGC & Affiliated to Anna  
University, Chennai**

**Department of Artificial Intelligence and Data Science  
Course Name – Introduction to Artificial Intelligence**

**II Year / III Semester**

**Unit 5 Expert System and Application**



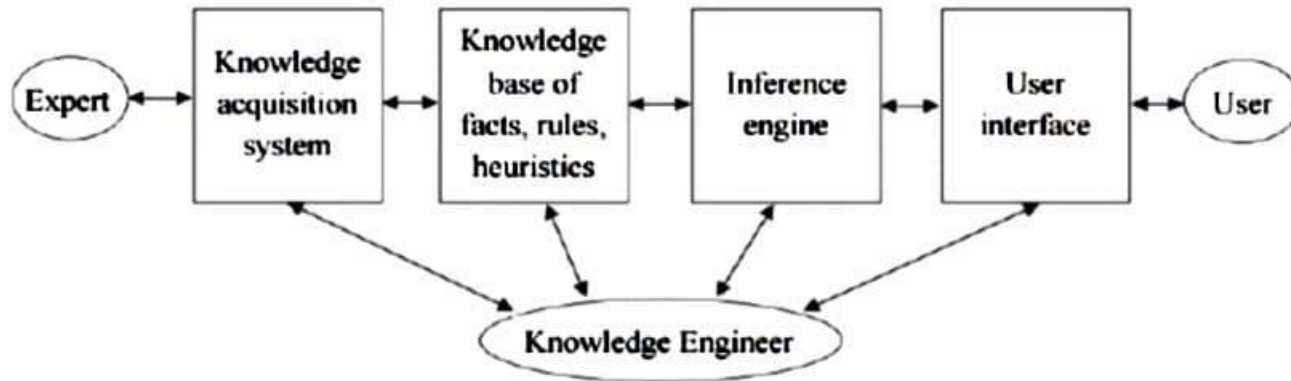


# Characteristics of Expert Systems

1. They **simulate human reasoning** about the problem domain, rather than simulating the domain itself.
2. They perform **reasoning over representations of human knowledge**, in addition to doing numerical calculations or data retrieval. They have corresponding distinct modules referred to as the inference engine and the knowledge base.
3. **Problems tend to be solved using heuristics** (rules of thumb) or approximate methods or probabilistic methods which, unlike algorithmic solutions, are not guaranteed to result in a correct or optimal solution.
4. They usually have to **provide explanations** and justifications of their solutions in order to convince the user that their reasoning is correct.

The term **Intelligent Knowledge Based System (IKBS)** is sometimes used as a synonym for Expert System

# Architecture of Expert Systems



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- The process of building expert systems is often called **knowledge engineering**.
  - The **knowledge engineer** is involved with all components of an expert system:
  - Building expert systems is generally an **iterative process**.
  - The components and their interaction will be refined over the course of numerous meetings of the knowledge engineer with the experts and users.

# Architecture

