

Name: Mangesh Khode  
Class: B.Tech VI Sem  
AUID: 217106004  
Subject: AI

## Expert System :

Expert Systems are knowledge based programs which provide expert quality solution to the problems in specific domain of applications.

The core components of expert system are

(i) Knowledge base

(ii) navigational capability (Inference System (engine))

Generally its knowledge is extracted from human experts in the domain of application by Knowledge Engineer.

- Often based on useful thumb rules and experience rather than absolute certainties.

A process of gathering knowledge from domain expert and codifying it according to the formalism is called knowledge engineering.

Characteristic of ES

- i) High performance
- ii) Understandable
- iii) Reliable
- iv) Highly responsive



MYCIN : MYCIN was an early expert system that used artificial intelligence to identify bacteria causing severe infections, such as bacteremia and meningitis and to recommend antibiotics, with the dosage adjusted for patient's body weight - the name derived from the antibiotics themselves, as many antibiotics have the suffix "-mycin".

MYCIN was developed over five or six years in the early 1970s at Stanford University. It was written in Lisp as the doctoral dissertation of Edward Shortliffe under the direction of Bruce G. Buchanan, Stanley N. Cohen and others.

DART : Diagnostic Assistance Reference Tool :

DART is a joint project of the Stanford University and IBM that explores the applications of artificial intelligence techniques to the diagnosis of computer faults. It assists a technician in finding the faults in a computer system (hardware & software).

DART uses a device-independent language for describing devices and device independent inference procedure for diagnosis.

The primary goal of the DART project is to develop programs that capture the special design knowledge and diagnostic abilities



of these experts and to make them available to field engineers. The practical goal is the construction of an automated diagnostician capable of pin pointing the functional units responsible for observed malfunctions in arbitrary system configurations.

XCON : expert Configurer : XCON/RI is one of the most cited expert system. It was developed by DEC (Digital Equipment Corporation) and was a system that ensured the customer was supplied with all the components and software that was needed to make up the specified computer system that they had ordered. This is not as easy as it sounds.

Building a bespoke computer system means that every system is different and as such, needs different components and S/W.

RI was developed by DEC to design and configure VAX computers based on customer specification for the computer.

The configuration would include the components including no. and type of disks, drivers, no. of power supply units, cables, etc. and the configuration would dictate where each of these components would be housed in the mainframe's cabinet.