ABOUT THE WORK

Introduction to the area of the Knowledge Based Systems and current trends & developments are discussed in Chapter 1.

The four major dimensions of the rural development process namely; Economical, Social, Physical and Health development are considered in Indian context. Major resources for development are considered as Natural Resources, Human Resources, Livestock and Agricultural Resources. The KBS applications are classified according to the above dimensions & resources with examples and possible methodologies. This is described in detail with possible methodologies in Chapter 2. This chapter also justifies the need of effective KBS techniques.

An advisory system for small-scale business through multi layer approach can be an application in the dimension of economical development. This leads to the development of a design of knowledge base called multi layer knowledge base. The large size of the knowledge base and complex nature of the knowledge inside make the knowledge base difficult to handle. Thus, the partition of the knowledge base into different clusters becomes an essential task. The Chapter 3 proposes and describes the detailed theory and model design about the multi layer approach and describes its benefits and characteristics. The aim of this work is a try to bridge the technological gap between the rural and the urban environment and to provide marketing and financial assistance for the small-scale and cottage industry proprietors for rural development. At the end of the chapter, a Verification & Validation Repository concept is discussed in conjunction with database.

The Heuristic Evaluation Functions(HEF) are the loosely defined but practically applicable intelligent thumb rules. The Chapter 4 contains the Heuristic Evaluation Functions(HEF) for identifying the suitable beneficiaries for different development schemes. These functions for various clusters of locality, based on their type of needs, may be used with the intelligent search. In addition, optimization of HEFs defined above is achieved. This chapter also highlights the concepts and characteristics of methodological triangularization using a multi model approach.
To achieve the advantages of object orientation and intelligence both on a same platform, a Reusable Design Approach (RDA) to design a knowledge base is proposed in Chapter 5. This gives advantages of reusability, object orientation and intelligence by giving an additional effort. The structure of the proposed Knowledge Based System model is followed by the discussion.

Executive Expert System (EES) can be thought as an advancement of an Executive Information System (EIS) and an Executive Support System (ESS). University executives can use this approach as a decision making and/or problem solving tool to take timely and effective decisions. This hybrid model for EES containing traditional database, model management system with few forecasting models and expert system is described along with examples in Chapter 6.

In Chapter 7, the features, benefits and object oriented model of an intelligent tutoring system are proposed. Beside these, applications of such intelligent tutoring system are discussed for communities particularly children, women, poor people, handicapped, mentally retarded ones, farmers, social workers, teachers and scientists involved in R & D.

A multi media user interface is proposed in Chapter 8. The chapter also includes the structure for the Knowledge Based System, structure for the multimedia resource databases and some folders with sample values of these databases.

The future perspectives of the Knowledge Based Systems are elaborated in the Chapter 9. The scenario of future KBS in conjunction with e-brain is discussed with its applications and challenges. This work also includes the major aspects of KBS.