THAWATCHAI CHANKONG : DEVELOPMENT OF A BLACKBOARD CONSULTATION EXPERT SYSTEM SHELL FOR MECHANICAL SYSTEM DIAGNOSIS. THESIS ADVISOR : PROF. VARIDDHI UNGBHAKORN,Ph.D. 163 PP.

The research concerns the development of an expert system shell for mechanical system diagnosis. The system shell shall work on a 16 bit IBM PC compatible microcomputer with minimum memory of 640 KB RAM and a color or monochrome monitor. The system shell is the blackboard consultation expert system shell which can call up several linking knowledge bases during one consultation. The system architecture consists of the backward-chaining inference engine with depth-first search, the user interface in natural language, the explanation facility in response to "why" and "how" questions and the facilities for creating, adding and editting the knowledge bases. Production rules are used for knowledge representation with the tree knowledge base structure. This expert system shell is suitable for creating a mechanical system diagnosis expert system. It is also applicable for creating other type of expert systems whose knowledge bases can be represented in the same structure.