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PRAYOOTH DUAKGLAI : AUTOMOBILE TROUBLESHOOTING EXPERT SYSTEM

THESIS ADVISOR : PROF. VARIDDHI UNGBHAKORN, Ph.D. 300 pp.

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The research concerns with the development of an automobile troubleshooting expert system. The system works on a 16 bit IBM PC compatible microcomputer with minimum memory of 640 KB RAM and a monochrome or color monitor. This expert system is built via the blackboard-type expert system shell developed for this thesis which can call up several linking knowledge bases during one consultation. The system architecture consists of the backward-chaining inference engine with the depth-first search, the user interface in natural language, the explanation facility in response to "why" and "how" questions and the facilities for creating, updating and editing the knowledge bases. Production rules are used for knowledge representation with the tree knowledge base structure.

This expert system has knowledge bases which can be used to find the causes of the problem which usually exist in various systems of an automobile, consist of about 350 production rules. The accuracy of troubleshooting depends on the response of the user in answering questions. Thus the user should have knowledge and be interested in an automobile and understand English language. This expert system is also applicable for other vehicle troubleshooting expert systems whose knowledge bases can be represented in the same structure.