SONGWUT ASUWAPONGPATANA : DEVELOPMENT OF AN AIR CONDITIONING EXPERT SYSTEM. THESIS ADVISOR : PROF. VARIDDHI UNGBHAKORN, PH.D., PP 75.

The research describes the development of an expert system for air-conditioning systems and gives overview of the structure of expert system. The expert system consists of three parts of domain knowledge. The first part is air-conditioning system selection by considering factors and constraints of buildings. The second part is air-conditioning system, cooling tower and water pump diagnosis and the third part is diagnostic tutorials in multiple choice pattern. This expert system has been developed on 16 bit IBM PC/XT microcomputer with 640K bytes RAM, and color/monochrome monitor. The air-conditioning system data within the knowledge base are those commonly used in Thailand. The expert system is a rule-based system with backward-chaining inference engine which can give multiple solutions in the system selection part. The inference engine contains friendly user interface. Language and the tool used in building this expert system are Prolog and Turbo Prolog respectively.