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PAWEENA PANICHAYAPICHET : QUALITATIVE INFORMATION REPRESENTATION BY USING PREDICATE LOGIC. THESIS ADVISOR: SITTIPOONG DILOKWANICH Ph.D., SUPICHAJ TANGJAITRONG Ph.D., ANUCHAT POUNGSOMLEE Ph.D. 129 p. ISBN 974-589-956-9

The objective of this research is to study the approach of representing qualitative information by using predicate logic. The research was conducted by two types of knowledge-knowledge script and assumed-knowledge script. The knowledge script was prepared from transcripts of the case study called "Public Participation in Governmental Large-scaled Development Project : A Case Study of Dam or Reservoir Project" on the question "Who should participate and what are their characteristics?". The assumed-knowledge script was revised from the knowledge script for more complex vocabularies and interrelations between sentences. Both knowledge-script sentences were converted to simple patterns such as structured form or semantic network and represented by using predicate logic. The correctness of representation was tested by converting predicate logic statements into Turbo Prolog forms and retrieving knowledge until no error was found.

Predicate logic was able to represent both types of knowledge script. There are two types of predicate statements-fact and rule. Fact statement consists of predicate name and argument, and rule statement consists of predicate name, argument and relationship between predicate statements. Predicate statement can be converted to Turbo Prolog forms and used for knowledge retrieval. The result of knowledge retrieval by using a program compared with manual reading from the knowledge script was correct.

As predicate logic can represent qualitative information, it could be used for representing concepts of social data. The representations can also be converted to Turbo Prolog forms for deducing the implications of theoretical assertions. For further research, there should be a study of integrating sentence parsing with the step of converting sentences to appropriate forms before representing by predicate logic.