



CHAPTER VI

CONCLUSION AND RECOMMENDATIONS

This study deals with fuzzy relational models, which handle impreciseness of data values as well as the impreciseness of association among data. The few existing investigation of such data models and related studies, have led to very little theory for the design of such databases. In fact, the only study of the theory in this direction is by Raju and Majumdar(1988). Their work concerns the functional dependency on the model which is called fuzzy functional dependency. On the basis of their definition of this property, these authors found that the inference rules are similar to Armstrong's rules in classical relational databases. Thus, they applied to such databases lossless join decomposition theories in the presence of functional dependency. Extending their study, multivalued dependency in the fuzzy relational data model is defined as fuzzy multivalued dependency. It is shown that the inference rules are similar to those of classical relational databases. Next, problems of lossless join decomposition in the presence of fuzzy multivalued dependency are considered, in order to eliminate redundancy, while preserving information. By measuring the association among attributes that are obtained from natural join common to the measurement in original relations, the lossless join synthesis of the relation scheme is achieved. Finally, an ABU algorithm is applied to test lossless join decomposition for a given set of fuzzy multivalued dependencies.

This study concerns only the two types of data dependency, fuzzy functional and fuzzy multivalued dependencies. There still remains the task of extending the work to other types of data dependency, such as join dependency(Yang, 1986; Maier, 1983; Elmasri et al., 1989), template dependency(Maier, 1983; Elmasri et al., 1989), etc. Furthermore, this study is restricted to

truth values of propositions to take binary values, a generalization of fuzzy constraints can be achieved by means of fuzzy logic concepts (Zadeh, 1987a), where the truth values are linguistic.