variable –, and B with Y, so that the right-hand side of the clause becomes

$$range(-,20,30),range(B,140,160)$$

The first call assigns the range 20–30 to the anonymous variable, the second assigns the range 140–160 to B. Thus the goal casualties $(-,A,-,B)$ will succeed. The system will then call $iexact(B)$ with B instantiated to the range 140–160, which must fail.

The second clause in the definition of casualties matches with casualties $(-,A,-,B)$, instantiating A with *brown*, and B with 127, and returns the value **true**. This time the call to $iexact(B)$ will succeed, as will the final condition, causing the value *brown* to be recorded as a valid answer. And so on.

8. CONCLUSION

In the real world there are many instances in which complete information on a particular attribute for some object is not available; nevertheless, some information does exist which could be helpful and is worthwhile recording. Such information, referred to as incomplete or partial information, can take various forms. In order to handle this type of information in a database system, it is necessary to provide appropriate data structures and to extend the database query language accordingly.

This paper focuses on one approach to handling incomplete information based on Lipski's model and describes how the language QBE can be extended to cater for this. This approach caters for three basic types, namely sets, simple ranges and multiple ranges. Mechanisms are discussed for handling both simple and complex queries.

One assumption underlying these forms of incomplete information is that all values in some range or set are equally probable. Work is continuing on the case where this is not true and probabilities need to be associated with individual values from the range or set.

An implementation of the query language QBE, which has been developed in the logic programming language Prolog and used as the basis of various studies, has been extended to incorporate the ideas outlined in this paper. This system is currently running on a High Level Hardware Orion and a Vax 11/750.

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Announcement

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