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QLISP: A LANGUAGE FOR THE INTERACTIVE DEVELOPMENT OF COMPLEX SYSTEMS

by

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## ABSTRACT

This paper presents a functional overview of the features and capabilities of QLISP, one of the newest of the current generation of very high level languages developed for use in artificial intelligence (AI) research.

QLISP is both a programming language and an interactive programming environment. It embeds an extended version of QA4, an earlier AI language, in INTERLISP, a widely available version of LISP with a variety of sophisticated programming aids.

The language features provided by QLISP include a variety of useful data types, an associative data base for the storage and retrieval of expressions, the ability to associate property lists with arbitrary expressions, a powerful pattern matcher based on a unification algorithm, pattern-directed function invocation, "teams" of pattern invoked functions, a sophisticated mechanism for breaking a data base into contexts, generators for associative data retrieval, and easy extensibility.

System features available in QLISP include a very smooth interaction with the underlying INTERLISP language, a facility for aggregating multiple pattern matches, and features for interactive control of programs.

A number of the implemented applications of QLISP are briefly discussed, and some directions for future development are presented.

