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A Functional Quantum Programming Language
Peter Selinger’s influential paper introduces a single-assignment (essentially functional) quantum programming language, which is based on the separationof classical control and quantum data.

A functional quantum programming language
We introduce the language QML, a functional language for quantum computations on finite types. Its design is guided by its categorical semantics: QML programs are interpreted by morphisms in the category FQC of finite quantum computations, which provides a constructive se- mantics of irreversible quantum computations realisable as quantum gates.

A functional quantum programming language
We introduce the language QML, a functional language for quantum computations on finite types.

(PDF) A functional quantum programming language
Or even look at Quipper, a functional Quantum programming language. With monadic semantics, built in functionality for reversible quantum computation, hierarchical circuit support, and more! Used in actual practice too – for an algorithm to compute the solution of the Dirac equation by LaFlamme.

What programming languages are available for quantum ...
Q Language is the second implemented imperative quantum programming language. Q Language was implemented as an extension of C++ programming language. It provides classes for basic quantum operations like QHadamard, QFourier, QNot, and QSwap, which are derived from the base class Qop. New operators can be defined using C++ class mechanism.

Quantum programming - Wikipedia
A Compiler for a Functional Quantum Programming Language Jonathan Grattage and Thorsten Altenkirch Abstract: We introduce a compiler for the functional quantum programming language QML, developed in Haskell.

A Compiler for a Functional Quantum Programming Language
Scalable functional programming language for quantum computing based on Quantum Lambda Calculus.

List of Open Quantum Projects
The multi-paradigm quantum programming language Q# was analysed and used to study and create novel programs that were able to go beyond the capabilities of any classical program. This language was built by Microsoft to succeed LIQUi|> and is a Domain-Specific Language (DSL) that can be used within Microsoft’s Quantum Development Kit (QDK).

Q#: A Quantum Programming Language by Microsoft
Functional Quantum Programming Shin-Cheng Mu Richard Bird DRAFT Abstract It has been shown that non-determinism, both angelic and demonic, can be encoded in a functional language in different representation of sets. In this paper we see quantum programming as a special kind of non-deterministic programming where negative probabilities are allowed.

Functional Quantum Programming
Quipper is an embedded, scalable functional programming language for quantum computing. It provides, among other things: A high-level circuit description language. This includes gate-by-gate descriptions of circuit fragments, as well as powerful operators for assembling and manipulating circuits.

The Quipper Language - Dalhousie University
Quantum Programming Language is a programming language, which can be used to write programmes for quantum computer.

Quantum Programming Language | Quantiki
We introduce the language QML, a functional language for quantum computations on finite types. Its design is guided by its categorical semantics: QML programs are interpreted by morphisms in the category FQC of finite quantum computations, which provides a constructive semantics of irreversible quantum computations realisable as quantum gates.

[quant-ph/0409065] A functional quantum programming language
Quipper is intended for the same kinds of programming tasks as QCL, but it has a different structure and appearance. The language is implemented as an extension of the programming language Haskell (named for the logician Haskell B. Curry), which adopts a functional rather than imperative mode of expression.

Programming Your Quantum Computer | American Scientist
Abstract: Quipper is a practical programming language for describing families of quantum circuits. In this paper, we formalize a small, but useful fragment of Quipper called Proto-Quipper-M. Unlike its parent Quipper, this language is type-safe and has a formal denotational and operational semantics.

Peter Selinger: Papers - Dalhousie University
The motivations for designing and building a quantum programming language (abbreviated as QLisp) are presented in this summary, together with the aimed results of the project. The new language (QLisp) is an extension of the AI language ‘Common Lisp’, and thus is a fully general computing language for digital (classical) computers.

Q-Lisp Project (Quantum Computer Programming Language)
Today, Dr. Peyton Jones shares his passion for functional programming research, reveals how a desire to help other researchers write and present better turned him into an unlikely YouTube star, and explains why, at least in the world of programming languages, purity is embarrassing, laziness is cool, and success should be avoided at all costs.

Functional Programming Languages and the Pursuit of ...
Lambda Calculus, Functional Programming, and Quantum Computing Peter Selinger, a Professor of Mathematics at Dalhousie University, has been publishing papers regarding Quantum Computer programming languages and Lambda Calculus for a number of years, extending the work of van Tonder and others.

Quantum Computing and Lisp | (null '()) => T
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