L1 Syntax and Documentation

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Introduction

The $L1$ programming language is a functional language. It has a simple I/O system supporting only direct string operations. It is strongly and statically typed language supporting both explicit and implicit typing.

This document both specifies the $L1$ language and shows its implementation in F#. It is divided into 4 categories:

1. Abstract Syntax and Semantics

   This defines the abstract syntax and semantics for the functional language. It only contains the bare minimum for the language to function, without any syntactic sugar.

2. Concrete Syntax

   This is the actual syntax when programming for $L1$. This defines all operators, syntactic sugar and other aspects of the language.

3. Implementation

   Technical aspects on how $L1$ is implemented in F#, showing the interpreter, evaluator and type inference.

4. Change log

   A chronological list of changes made both to the language definition and its implementation.

Part I

Abstract Syntax and Semantics