The tool must allow users to create simple programs. The functions that compose a program must be visualized as blocks, each with their own inputs and outputs. Each block acts on the inputs, and yields some output. The input of each block comes from the output of another block, creating a pipeline flow.

Functional Requirements

Program Design

When designing a program, the user must be able to:
Create new blocks (functions)
Duplicate blocks
Delete blocks
Rearrange blocks
Map a block's output to another block's input
Convert groups of blocks into a single block (called a "module")
Undo/redo actions

The user must be able to edit each block. When editing, they must be able to define:
Input names and types
Output type
Code that the block executes

Running the program

Run the program
Validate the program
See all program output, including error messages and warnings

Sharing

Share modules with other users
Make changes to previously shared modules
Browse modules shared by other users
Add shared modules to a program
Receive updated versions of shared modules
Modify shared modules locally

Program Management

Create a new program
Name a program

Save/load a program
Browse programs