The Welkin Standard

Syntax

Atoms

- Strings are sequences of characters.
- Identifiers are strings without white space.
- Numbers are a subset of strings with an injective function $q : \text{NUMBER} \to \mathbb{Q}$.

Semantics

Equality on Terms

- Two strings are equal if they contain the same strings, in order.
- Two numbers are equal if $q(a) = q(b)$.

A **Welkin Information Graph (WIG)** is a structure $G = (T, H)$ with two components:

- A tree T,
- A hypergraph H.

The **encoding** E_G of the WIG G is the unique string where

- All nodes are listed in breadth-first order
- Leaves are terms ending with #
- Edges are enumerated, starting from 0. They are included in nodes:
  - s means source,
  - c means connector,
  - t means target.