

# 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  $q : \text{NUMBER} \rightarrow \mathbb{Q}$ .

## 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.