Datum Data Model

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Abstract

Data model.

1. Introduction

In summary we make the following contributions:

- things

2. Formal System

$$
\begin{array}{lll}
\textit{tree} & ::= & \textbf{tree}\ \textit{branch}\ \textit{branchtype} \\
\textit{forest} & ::= & \textbf{forest}\ \textit{group}\ \textit{branchtype} \\
\textit{branch} & ::= & \textbf{branch}\ \textit{tuple}\ \{\textit{group}\} \\
\textit{group} & ::= & \textbf{group}\ \{\textit{branch}\} \\
\textit{tuple} & ::= & \textbf{tuple}\ \{\textit{atom}\} \\
\textit{atom} & ::= & \textit{unit} \mid \textit{bool} \mid \textit{nat} \mid \textit{float} \mid ... \\
\textit{branchtype} & ::= & \textbf{branchtype}\ \textit{name}\ \textit{tupletype}\ \{\textit{branchtype}\} \\
\textit{tupletype} & ::= & \textbf{tupletype}\ \{\textit{atomtype}\} \\
\textit{atomtype} & ::= & \textbf{unit} \mid \textbf{bool} \mid \textbf{nat} \mid \textbf{float} \mid ...
\end{array}
$$

$$\frac{\vdash\ \textit{branch}\ ::\ \textit{branchtype}}{\vdash\ (\textbf{tree}\ \ \textit{branch}\ \ \textit{branchtype})\ \textbf{ok}}\ \text{(TyTree)}$$

$$\frac{\{\ \vdash\ (\textbf{tree}\ \ \textit{branch}_i\ \ \textit{branchtype})\ \textbf{ok}\ \}^i}{\vdash\ (\textbf{forest}\ \ (\textbf{group}\ \ \{\textit{branch}_i\}^i)\ \ \textit{branchtype})\ \textbf{ok}}\ \text{(TyForest)}$$

$$\frac{\vdash\ \textit{tuple}\ ::\ \textit{tupletype}\quad \{\ \vdash\ \textbf{forest}\ \ \textit{group}_i\ \ \textit{branchtype}_i\quad \textbf{ok}\ \}^i}{\vdash\ \textbf{branch}\ \textit{tuple}\ \{\textit{group}_i\}^i\ ::\ \textbf{branchtype}\ \textit{name}\ \textit{tupletype}\ \{\textit{branchtype}_i\}^i}\ \text{(TyBranch)}$$

$$\frac{\{\ \vdash\ \textit{atom}_i\ ::\ \textit{atomtype}_i\ \}^i}{\vdash\ \textbf{tuple}\ \{\textit{atom}_i\}^i\ ::\ \textbf{tupletype}\ \{\textit{atomtype}_i\}^i}\ \text{(TyTuple)}$$

References