Syntax of Eigenlanguage

Primitive Forms

Function Application

$f\ a_1\ \cdots$

Left-Recursive Group

$(x_1\ \cdots)$

Right-Recursive Group

$[x_1\ \cdots]$

Code as Data

$\backslash x$

Data as Code

$/x$

Function Definition

$\rightarrow (\![p_1\ \cdots]\!)\, z$

Binding

$$
\begin{array}{l}
= (\![y_1\ \ x_1 \\
\quad \cdots\ \ \cdots]\!) \\
\ \ z
\end{array}
$$

Module Declaration

$$
\begin{array}{l}
\leftrightarrow (\![m\ \ p_1\ \cdots]\!)(\![\\
\rightarrow (\![e_1 \\
\quad (\![= (\![b_2\ \ e_2 \\
\qquad\ \ b_3\ \ e_3 \\
\qquad\ \ \cdots\ \ \cdots]\!) \\
\quad\ \ \cdots\ \ \cdots]\!) \\
\quad \cdots]\!) \\
\leftarrow (\![i_1 \\
\quad (\![i_2\ \ a_{2,1}\ \cdots]\!) \\
\quad (\![= (\![c_3\ \ i_3 \\
\qquad\ \ c_4\ \ (\![i_4\ \ a_{4,1}\ \cdots]\!) \\
\qquad\ \ \cdots\ \ \cdots]\!) \\
\quad\ \ \cdots\ \ \cdots]\!) \\
\quad \cdots]\!) \\
y_1\ \ x_1 \\
\cdots\ \ \cdots \\
]\!)
\end{array}
$$

Syntactic Sugar

Singleton

$(\![]\!)$

Name Qualification

m/y

Number

$+18\_12$

Character

‘T’

String

“This text
is arbitrary.”

External String

$\leftarrow$ “arbitrary_file.text”

Syntactic Comment

$\%x$

Line Comment

% This text is arbitrary.

Block Comment

%%
This text
is arbitrary.
%%