

## Syntax Environment Examples

[NAME]

### Example 1 : Simple Enumeration

For simple free types with several branches, syntax provides column-aligned layout:

*OP1 ::= plus | minus | times | divide*

This generates aligned columns with the ::= separator clearly visible.

### Example 2 : Parameterized Constructors

Constructors can have type parameters using angle brackets:

*Tree ::= leaf <<N>> | branch <<Tree × Tree>>*

Parameters are rendered with special data delimiters in LaTeX.

### Example 3 : Multiple Definitions with Grouping

Blank lines between definitions create visual groups using \also:

```
Status2 ::= active2 | inactive2 | pending2
Response ::= ok | error <<N>> | timeout
```

The blank line causes the also command to be generated, creating vertical separation between the two type definitions.

### Example 4 : Complex BNF - Style Definitions

Syntax environment is ideal for BNF-style grammar definitions:

```
Expr ::= const <<N>> | var <<NAME>> | binop <<OP1 × Expr × Expr>>
Stmt ::= assign <<NAME × Expr>> | seq <<Stmt × Stmt>> | skip
```

This creates a professionally formatted grammar specification.

## Comparison : Syntax vs Zed Blocks

Standard zed blocks work for simple types:

*Color1 ::= red1 | green1 | blue1*

But syntax environment provides better alignment for complex types:

```
Color2 ::= red2 | green2 | blue2
Shape ::= circle <<N>> | rectangle <<N × N>> | polygon <<seq N>>
```

The column alignment makes the structure more readable.