

Sequence Concatenation

Example 1 : Simple Concatenation (ASCII)

The caret operator after a sequence means concatenation:

$$\begin{aligned}\langle a \rangle \frown \langle b \rangle \\ \langle 1, 2 \rangle \frown \langle 3, 4 \rangle \\ \langle x \rangle \frown \langle \rangle\end{aligned}$$

Example 2 : Concatenation with Variables

Concatenation with sequence variables:

$$\begin{aligned}\langle x \rangle \frown s \\ s \frown t \\ \langle \rangle \frown t\end{aligned}$$

Example 3 : Cons Pattern

The cons pattern builds sequences incrementally:

$$\begin{aligned}\langle x \rangle \frown \langle \rangle \\ \langle x \rangle \frown \langle y \rangle \frown \langle z \rangle \\ \langle 1 \rangle \frown \langle 2 \rangle \frown \langle 3 \rangle \frown \langle \rangle\end{aligned}$$

Example 4 : Nested Concatenation

Concatenation is associative:

$$\begin{aligned}(\langle a \rangle \frown \langle b \rangle) \frown \langle c \rangle \\ \langle a \rangle \frown (\langle b \rangle \frown \langle c \rangle) \\ (s \frown t) \frown u\end{aligned}$$