

0.0.1 Remove

The inverse of the *append* Operations.

$$remove(coll, idx) = \sim append(coll, idx)$$

The operation *remove* will return a Collection minus the Value removed from the specified Numeric Index

$$\begin{array}{l} \text{remove}[Collection, \mathbb{N}] \text{-----} \\ coll?, coll!: Collection \\ idx?: \mathbb{N} \\ \text{remove} : Collection \times \mathbb{N} \rightarrow Collection \\ \hline coll! = remove(coll?, idx?) \bullet \\ \text{let } coll' == front(\{ i : \mathbb{N} \mid i \in 0 .. idx? \} \upharpoonright coll?) \\ \text{coll''} == tail(\{ j : \mathbb{N} \mid j \in idx? .. \# coll? \} \upharpoonright coll?) \bullet \\ = coll' \frown coll'' \Rightarrow coll?_{idx?} \notin coll' \wedge coll?_{idx?} \notin coll'' \wedge \# coll! = \# coll? - 1 \end{array}$$

such that

$$\begin{array}{ll} X = \langle x_0, x_1, x_2 \rangle & \\ x_0 = 0 & \\ x_1 = foo & \\ x_2 = baz & \\ remove(X, 0) = \langle foo, baz \rangle & [0 \text{ was removed from } X] \\ remove(X, 1) = \langle 0, baz \rangle & [foo \text{ was removed from } X] \\ remove(X, 2) = \langle 0, foo \rangle & [baz \text{ was removed from } X] \\ remove(X, 3) = \langle 0, foo, baz \rangle = X & [\text{nothing at 3, } X \text{ unaltered}] \end{array}$$