1 At Index

The operation $atIndex$ will return the Value at

- a numeric Index
$$atIndex(X, idx) \rightarrow v$$
- some depth of numeric indexes
$$atIndex(X, <2, 1>) \rightarrow v$$

such that if X is a collection $< x_0, x_1, x_2 >$ where

$$x_0 = 0$$

$$x_1 = foo$$

$$x_2 =< a, b, c >$$

then

$$atIndex(X, 0) = 0$$

$$atIndex(X, 1) = foo$$

$$atIndex(X, 2) =< a, b, c >$$

$$atIndex(X, <2, 1>) = b$$

and if idx does not exist within X, $atIndex$ will return the representation of nothingness

$$atIndex(X, 3) = nil$$

$$atIndex(X, <2, 3>) = nil$$