

Lists

General

Lists: an ordered sequence of elements of the same type

```
[] :: [a]
```

```
head [1, 2, 3] = 1
tail [1, 2, 3] = [2, 3]
init [1, 2, 3] = [1, 2]
last [1, 2, 3] = 3
```

These functions are dangerous since they are partial functions: they are undefined for empty lists.

Decomposition

```
[1, 2, 3] = 1 : [2, 3] = 1 : 2 : [3] = 1 : 2 : 3 : []
```

(:) :: Adds an element to a list, in order

Infinite Lists

Called a stream.

Natural Numbers = [0..]