Recursive datatype

datatype 'a binTree =
| Empty
| Node of 'a binTree * 'a * 'a binTree;

- Defines a type variable for use in the datatype constructors
- Still just defines a new type called “binTree”

What is this?

A binary tree is a recursive data structure where each node in the tree consists of a value and then two other binary trees.
Recursive datatype

data type 'a binTree =
| Empty
| Node of 'a binTree * 'a * 'a binTree;

Node(Empty, 1, Empty);

What does this look like?

Recursive datatype

data type 'a binTree =
| Empty
| Node of 'a binTree * 'a * 'a binTree;

Node(Empty, 1, Empty);

What does this look like?
Recursive datatype

datatype 'a binTree =
    | Empty
    | Node of 'a binTree * 'a * 'a binTree;

Node(Node(Empty, "apple", Node(Empty, "banana", Empty)),
    "carrot",
    Node(Empty, "rhubarb", Empty));

What does this look like?