```
        "name": "y"
      }
    ],
    "body": {
      "type": "Identifier",
      "name": "y"
    }
  }
]
```

Body

Code

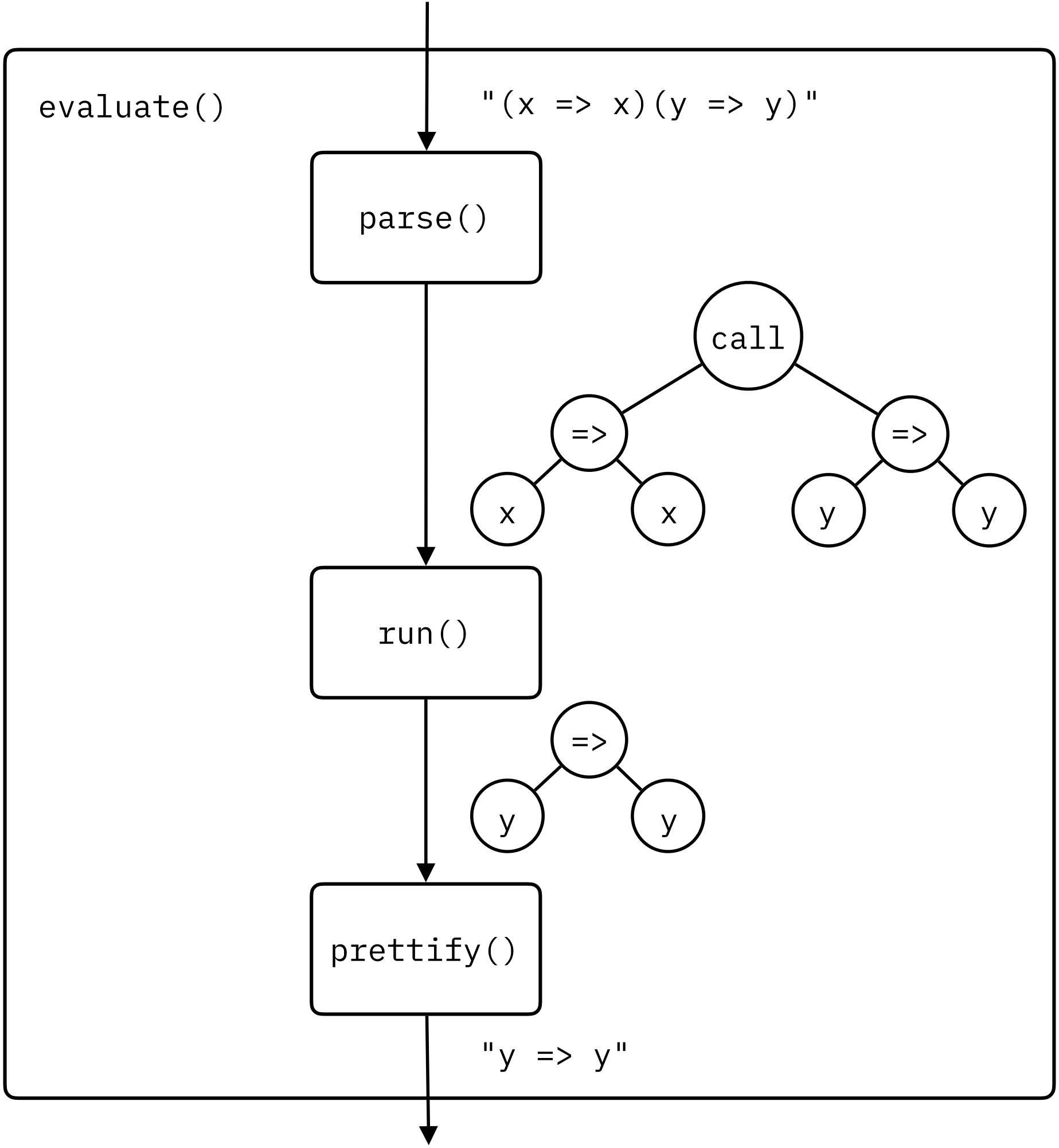
We choose to represent Yocto-JavaScript programs with the data structures above because they follow a specification called ESTree [1], and by adhering to this specification we may reuse tools from the JavaScript ecosystem (see § 1.3.17 and § 1.3.18).

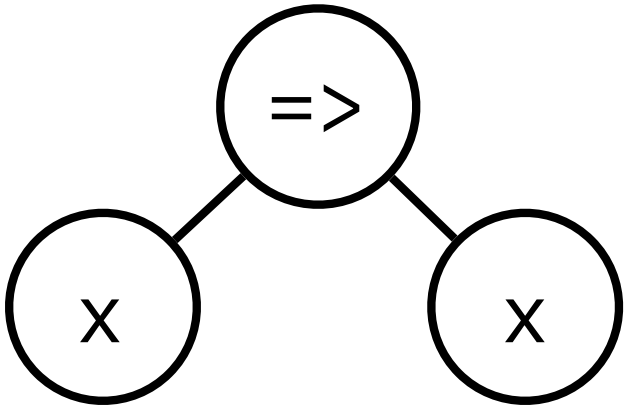
In general, the data structures used to represent Yocto-JavaScript programs are of the following types (written as TypeScript types adapted from the ESTree types [3] to include only the features supported by Yocto-JavaScript):

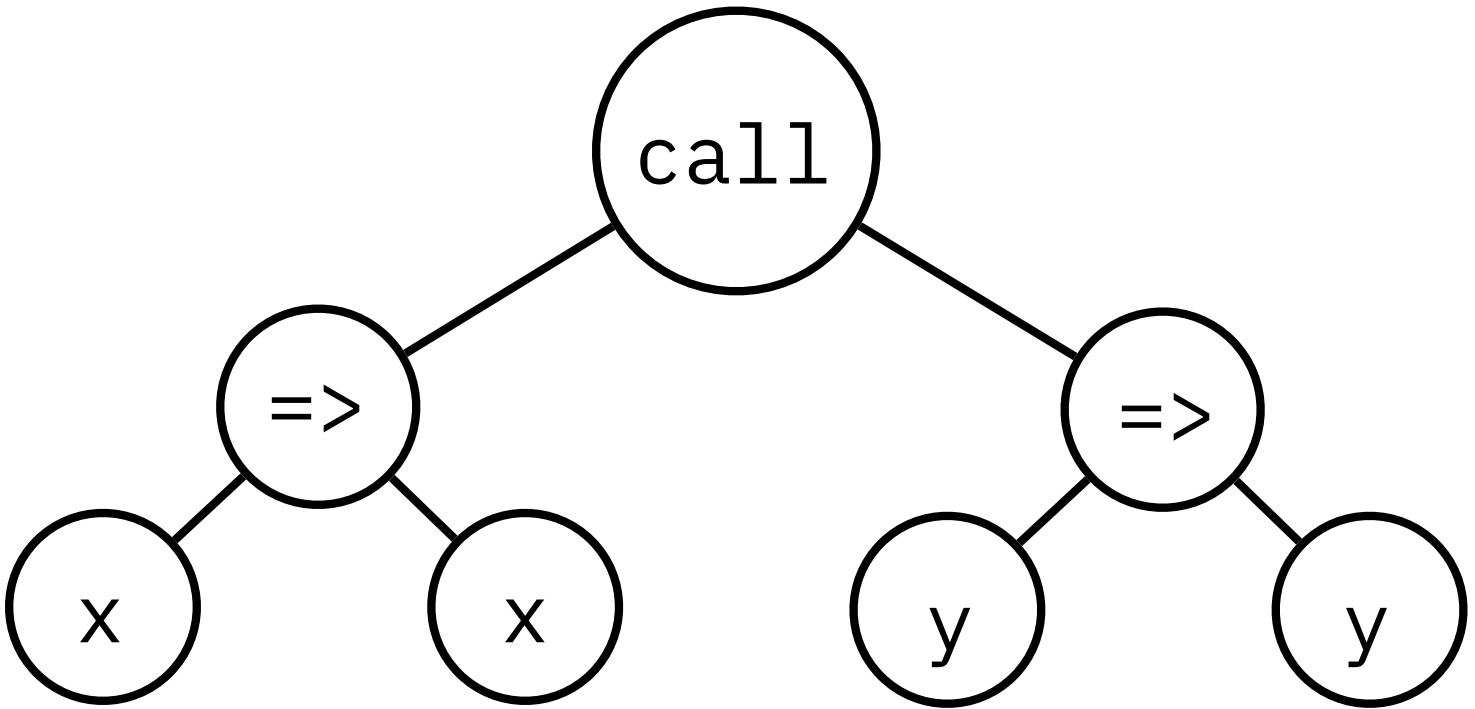
```
type Expression = ArrowFunctionExpression | CallExpression | Identifier;

interface ArrowFunctionExpression {
  type: "ArrowFunctionExpression";
  params: [Identifier];
  body: Expression;
}

interface CallExpression {
  type: "CallExpression";
  callee: Expression;
  arguments: [Expression];
}

interface Identifier {
  type: "Identifier";
  name: string;
}
```

(The definitions above correspond to elements of the Yocto-JavaScript grammar (see § 1.1.4); for example, `Expression` corresponds to e.)

In later steps various aspects of the interpreter will change, including parts of


evaluate()
"(x => x)(y => y)"
parse()
call
=>
=>
x
x
y
y
run()
=>
y
y
prettify()
"y => y"

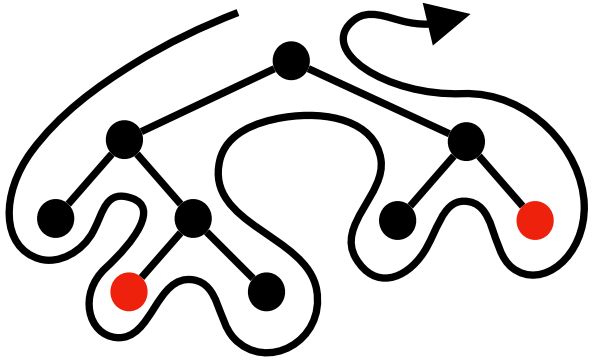

=>
X
X


call
=>
=>
x
x
y
y

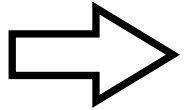
parameter

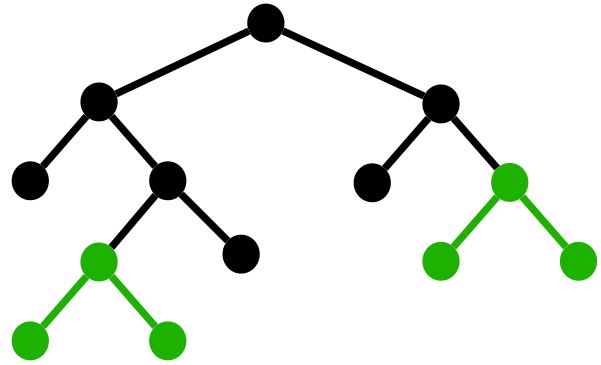
body

argument



substitute()



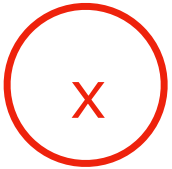


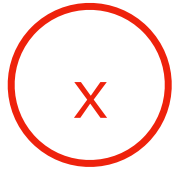
Traversal

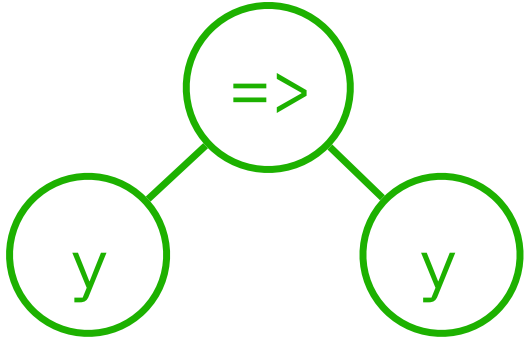
parameter

body

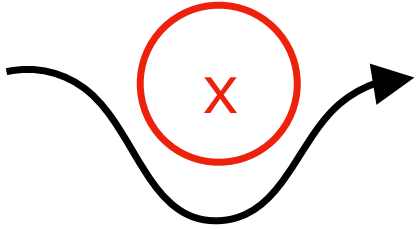
argument

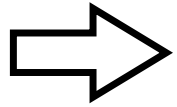


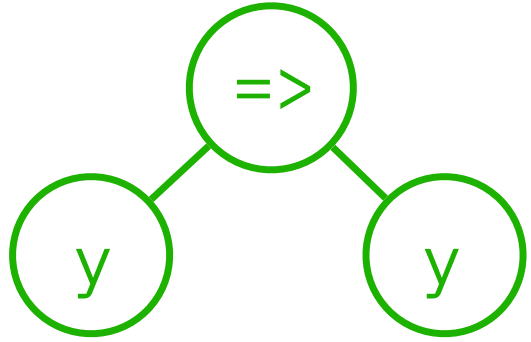




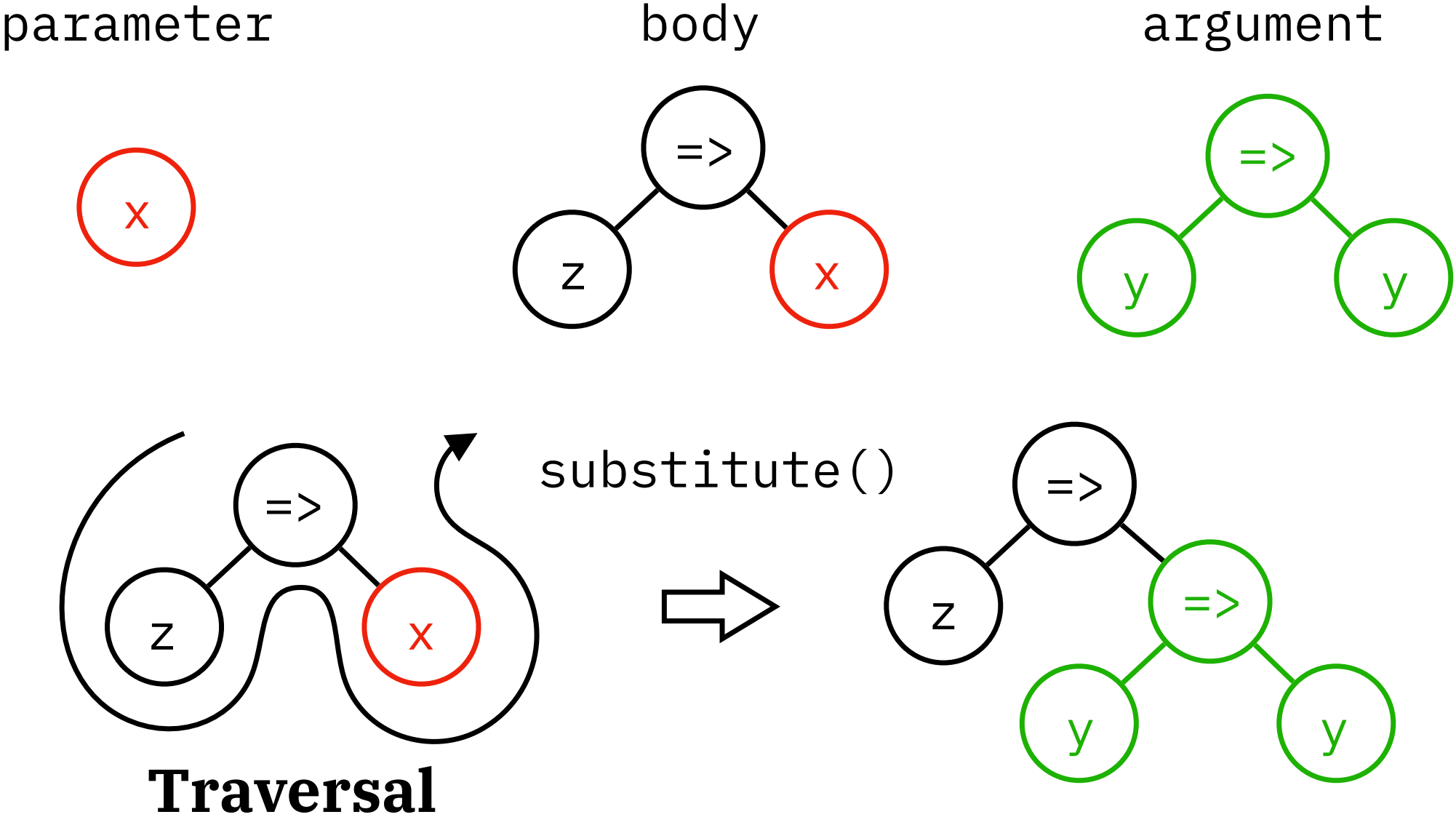
substitute()





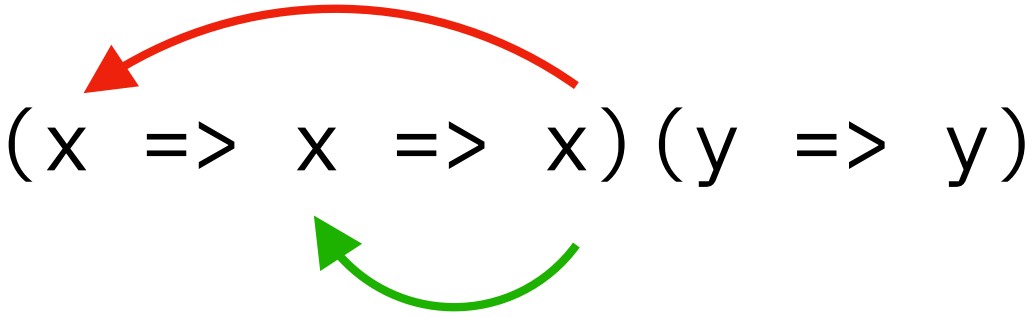


Traversal


parameter
body
argument
x
=>
z
x
=>
y
y
=>
z
x
Traversal
substitute()
=>
z
=>
y
y

Option 1: No shadowing

Refers to **Result**



x => y => y

x => x

Option 2: Shadowing