

JSON by Example

(part 4)

Objects

Object Literals

```
var obj = {  
  x: 11,  
  y: 4 + 5  
}
```

(Code)

(Memory)

Object Literals

```
var obj = {  
  x: 11,  
  y: 4 + 5  
}
```

a. Assignment

Object Literals

```
var obj = {  
  x: 11,  
  y: 4 + 5  
}
```

- a. Assignment
 - a. Evaluate right side

Object Literals

```
var obj = {  
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```

- a. Assignment
 - a. Evaluate right side
 - a. Create object



Object Literals

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var obj = {  
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- a. Assignment
 - a. Evaluate right side
 - a. Create object
 - a. Property Assignment



Object Literals

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- a. Assignment
 - a. Evaluate right side
 - a. Create object
 - a. Property Assignment
 - a. Evaluate right side (create value)

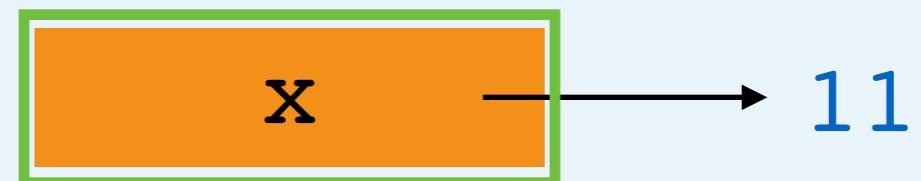


11

Object Literals

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var obj = {  
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```

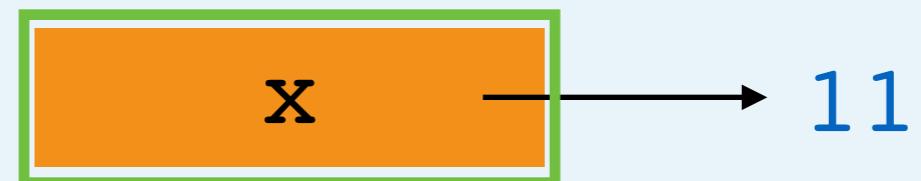
- a. Assignment
 - a. Evaluate right side
 - a. Create object
 - a. Property Assignment
 - a. Evaluate right side (create value)
 - b. Create prop x, point to value



Object Literals

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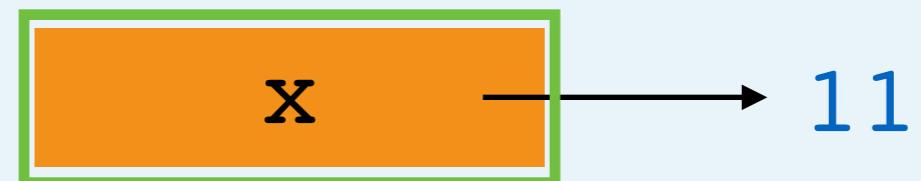
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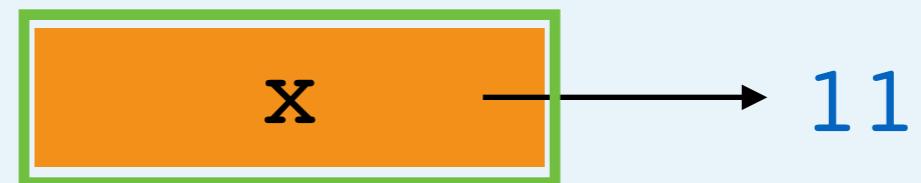
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 - a. Evaluate right side



Object Literals

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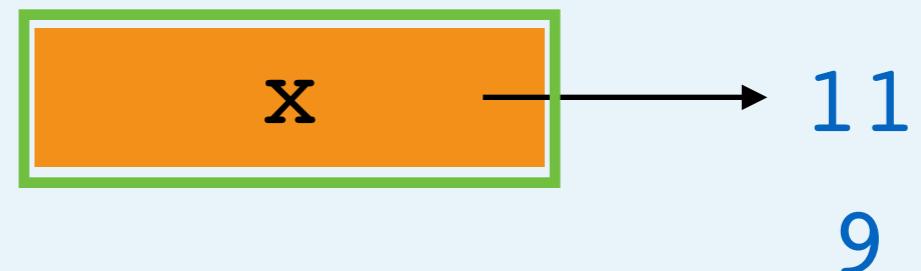
- a. Assignment
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 - b. Property Assignment
 - a. Evaluate right side
 - a. Binary Operation (addition)



Object Literals

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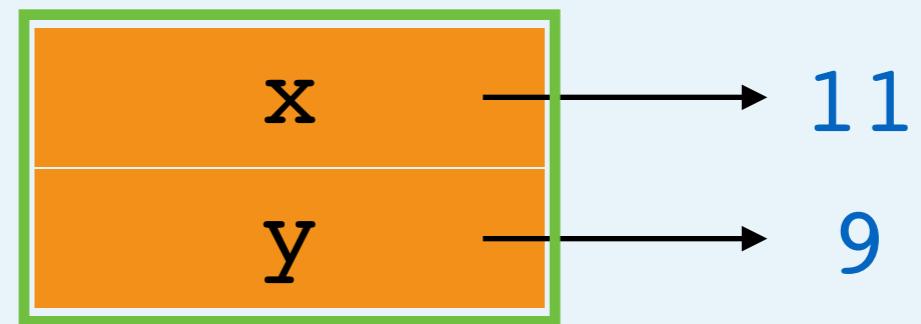
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Object Literals

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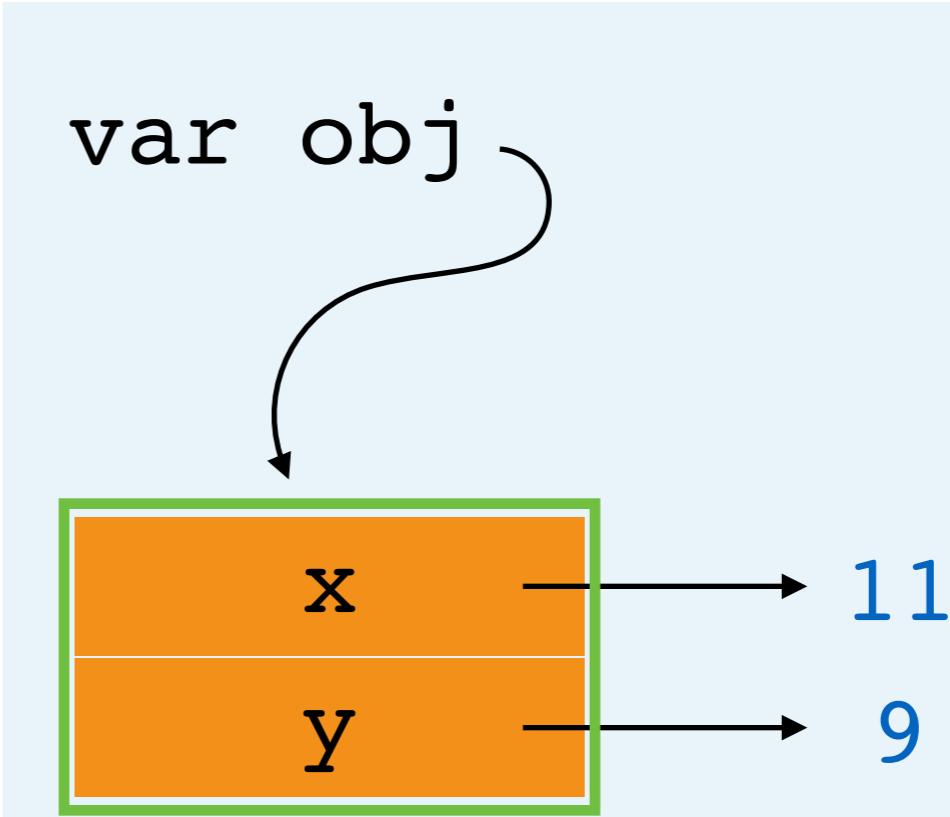
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 - a. Create value
 - b. Create prop y, point to value



Object Literals

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 - a. Evaluate right side
 - a. Binary Operation (addition)
 - a. Create value
 - b. Create prop y, point to value
 - b. Create var obj, point to object

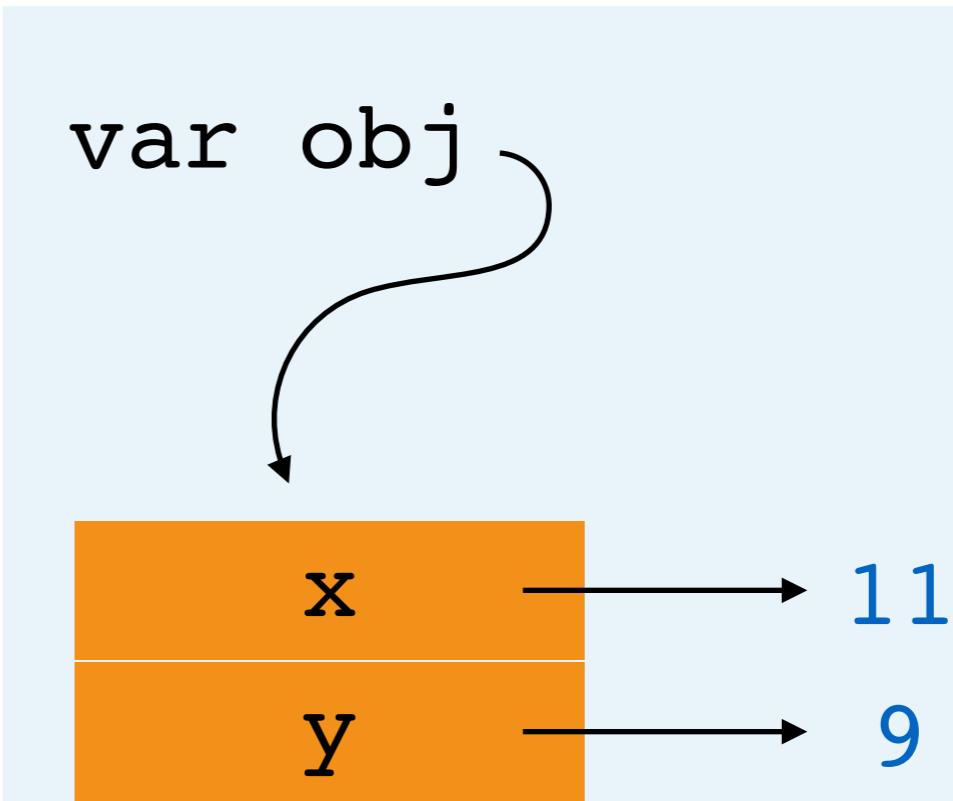


Object Literals

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var obj = {  
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```

All Done!

- a. Assignment
 - a. Evaluate right side
 - a. Create object
 - a. Property Assignment
 - a. Evaluate right side (create value)
 - b. Create prop x, point to value
 - b. Property Assignment
 - a. Evaluate right side
 - a. Binary Operation (addition)
 - a. Create value
 - b. Create prop y, point to value
 - b. Create var obj, point to object



Object with Functions

```
var button = {  
    press: function () {  
        return "buzz!"  
    }  
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Object with Functions

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 - a. Evaluate right side
 - a. Create object
 - a. Property Assignment



Object with Functions

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- a. Assignment
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 - a. Create object
 - a. Property Assignment
 - a. Evaluate right side



Object with Functions

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    press: function () {  
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- a. Assignment
 - a. Evaluate right side
 - a. Create object
 - a. Property Assignment
 - a. Evaluate right side
 - a. Create function

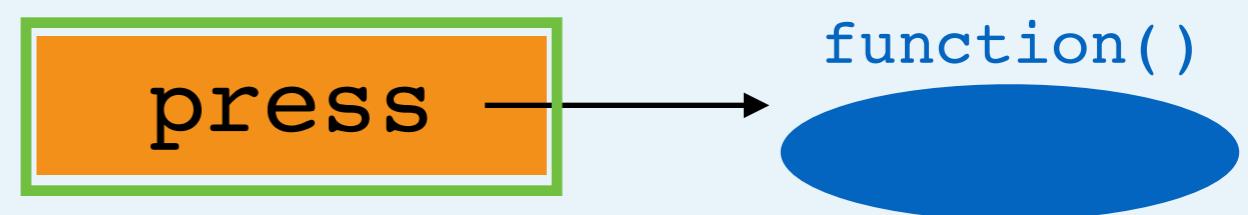


function()

Object with Functions

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var button = {  
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    }  
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```

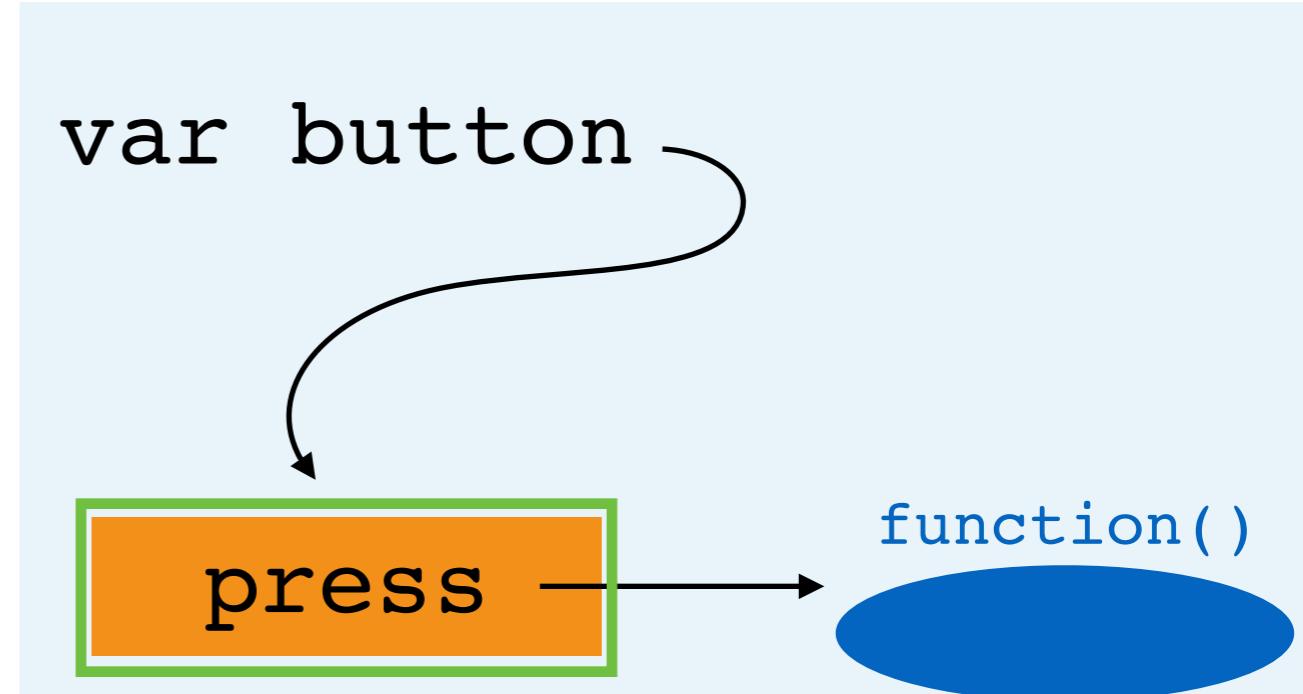
- a. Assignment
 - a. Evaluate right side
 - a. Create object
 - a. Property Assignment
 - a. Evaluate right side
 - a. Create function
 - b. Create prop “press”, point to value



Object with Functions

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var button = {  
    press: function () {  
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- a. Assignment
 - a. Evaluate right side
 - a. Create object
 - a. Property Assignment
 - a. Evaluate right side
 - a. Create function
 - b. Create prop “press”, point to value
 - b. Create var obj, point to object

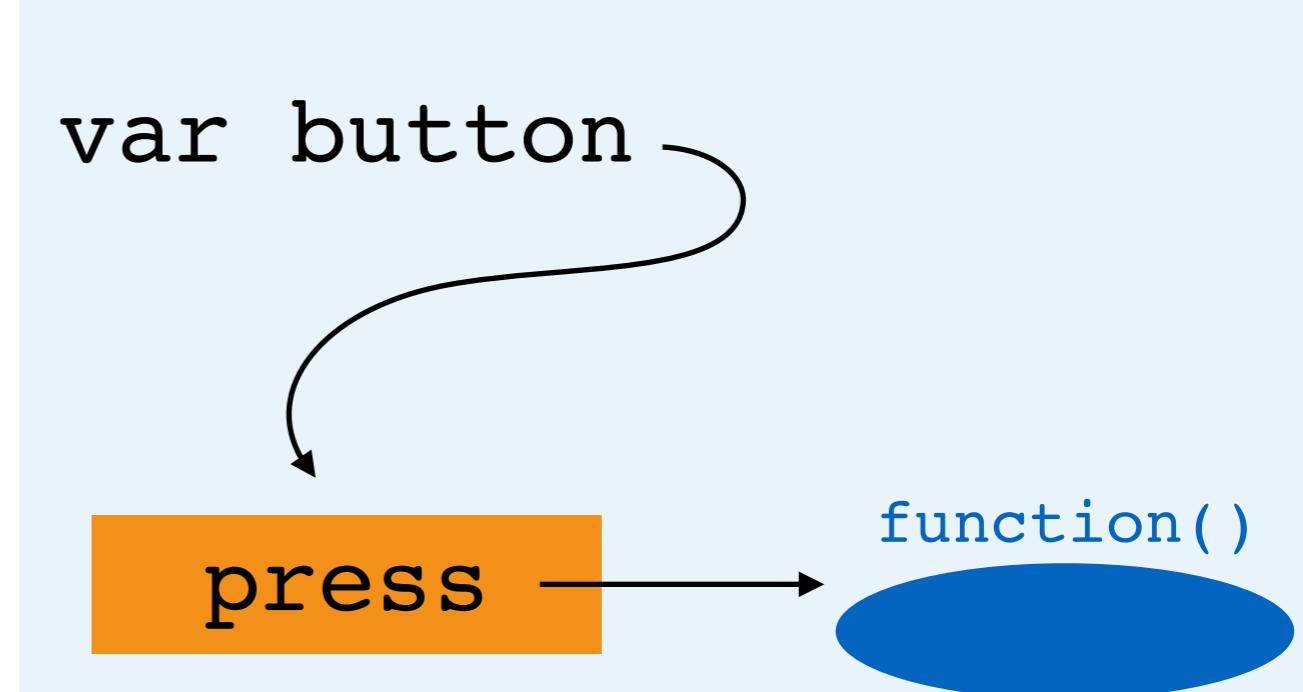


Object with Functions

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var button = {  
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```

All Done!

- a. Assignment
 - a. Evaluate right side
 - a. Create object
 - a. Property Assignment
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 - a. Create function
 - b. Create prop “press”, point to value
 - b. Create var obj, point to object



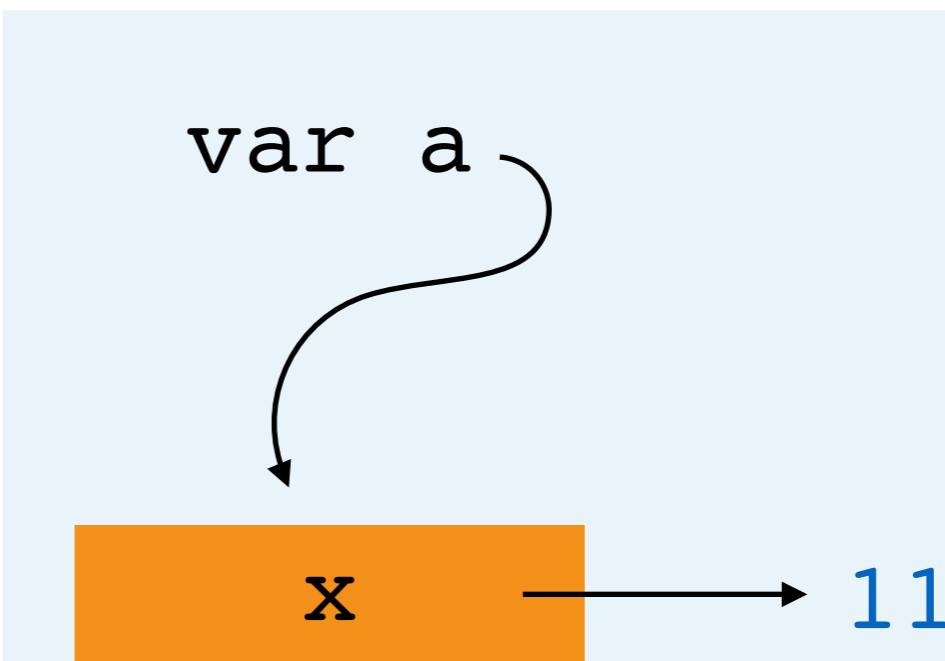
Object and Variables

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var a = { x: 11 }
var b = a
b.y = 22
a.z = a.y + 11
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Object and Variables

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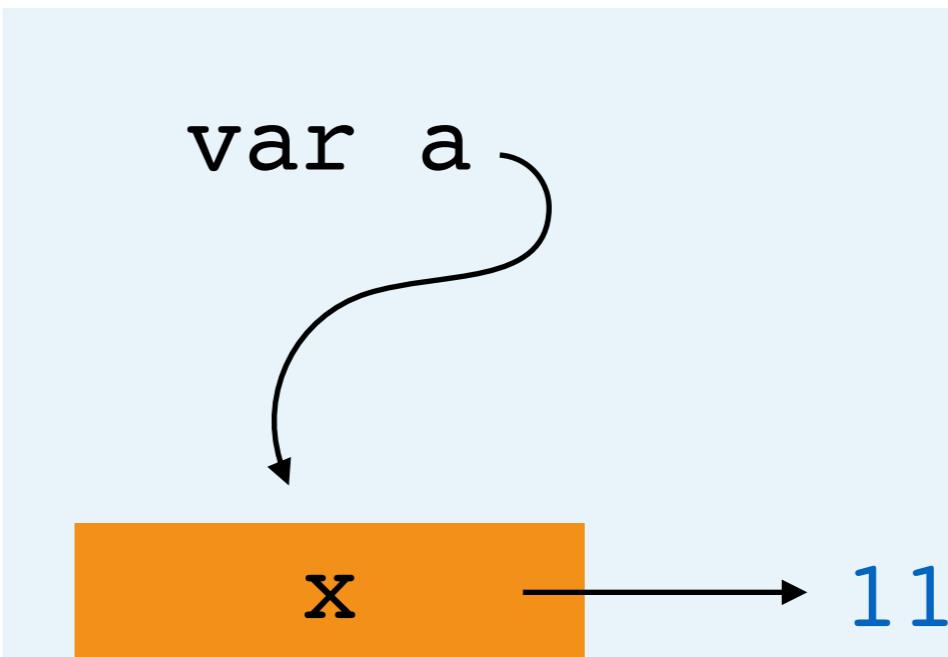
(create object)



Object and Variables

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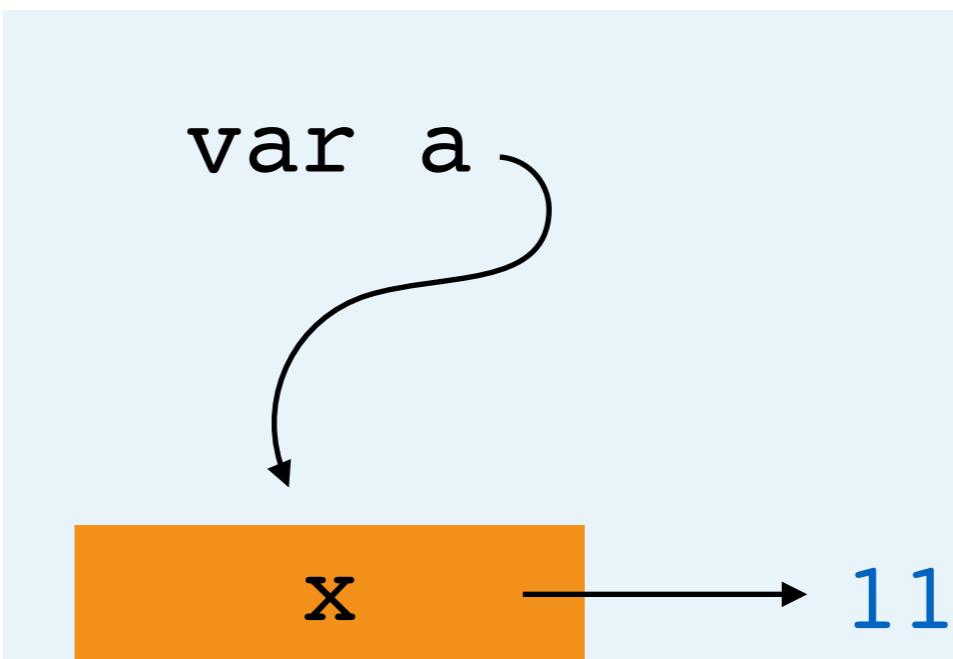
a. Assignment



Object and Variables

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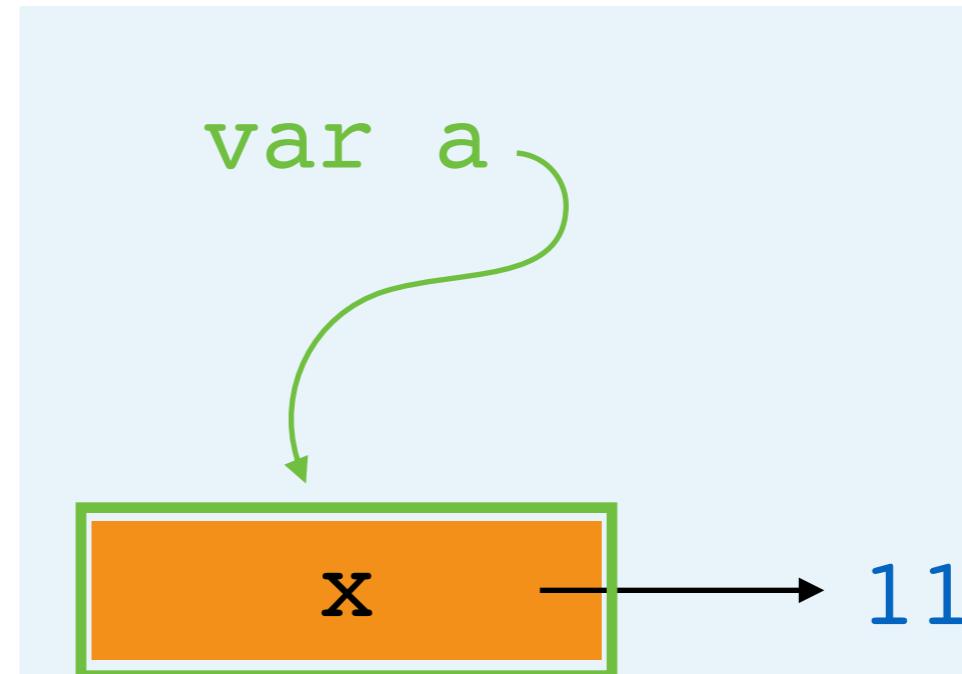
- a. Assignment
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Object and Variables

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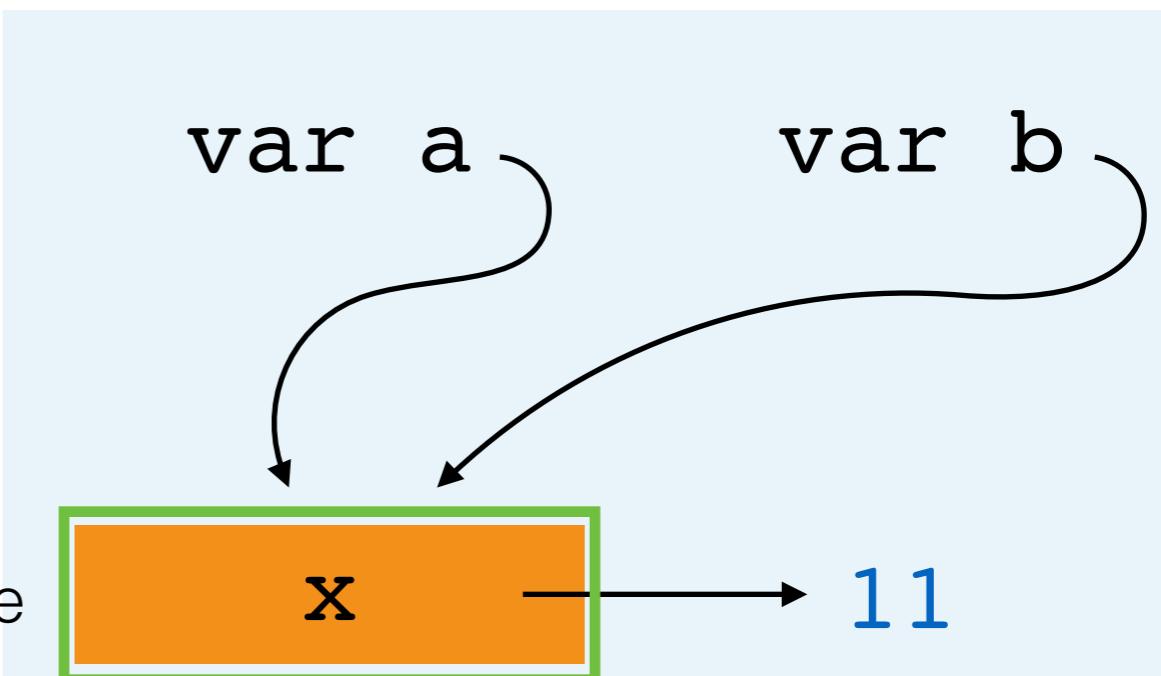
- a. Assignment
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 - a. Look up value of “a” (it’s an object!)



Object and Variables

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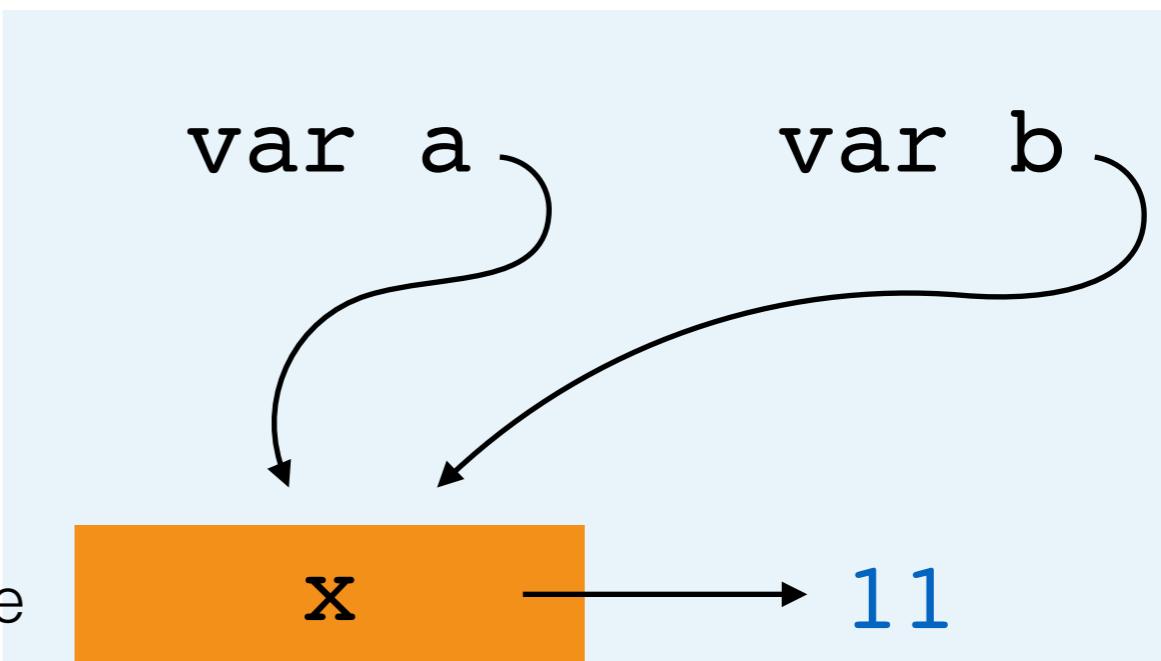
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Object and Variables

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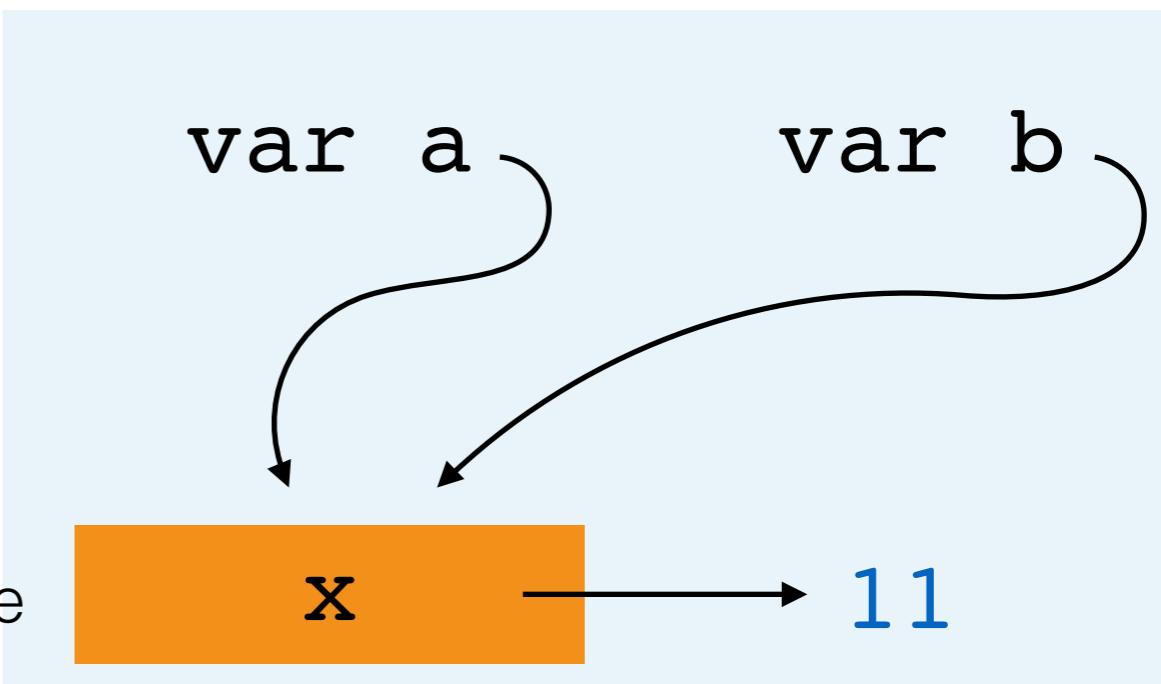
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 - b. Assignment



Object and Variables

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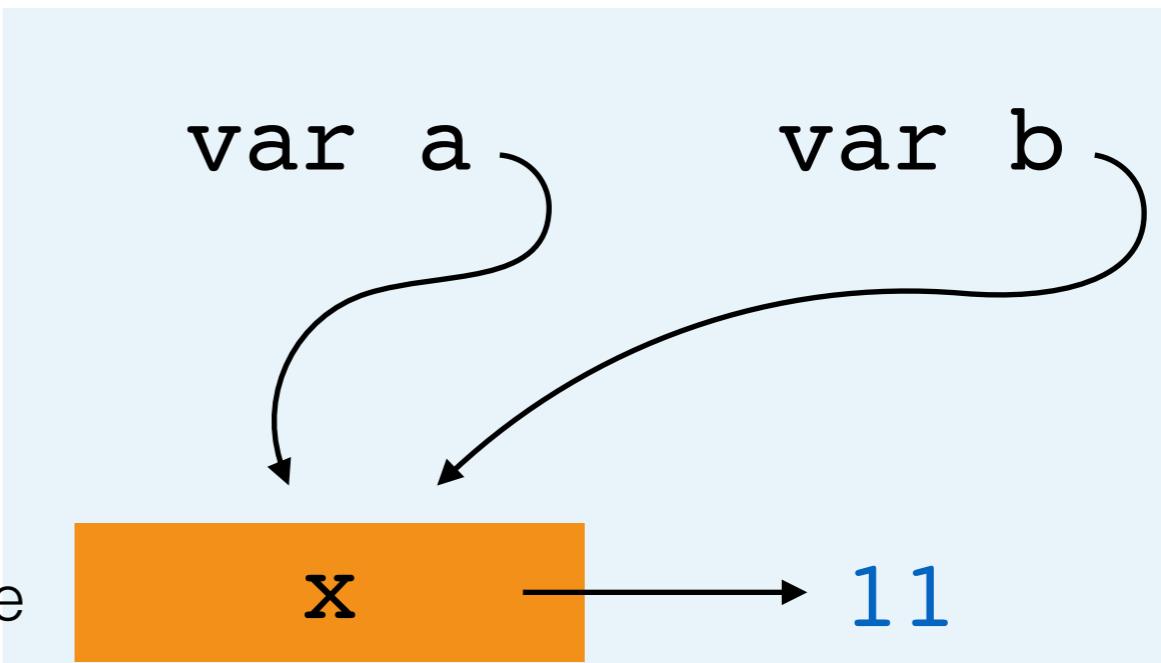
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 - b. Assignment
 - a. Evaluate right side (create value)



Object and Variables

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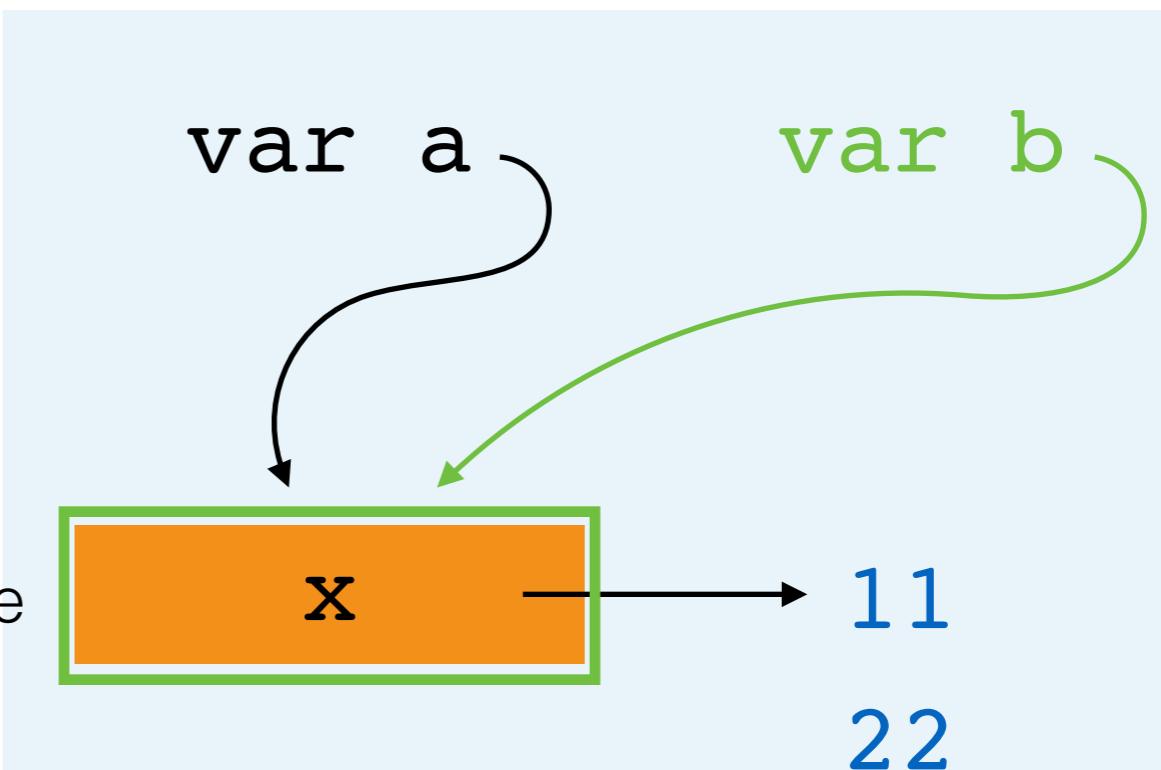
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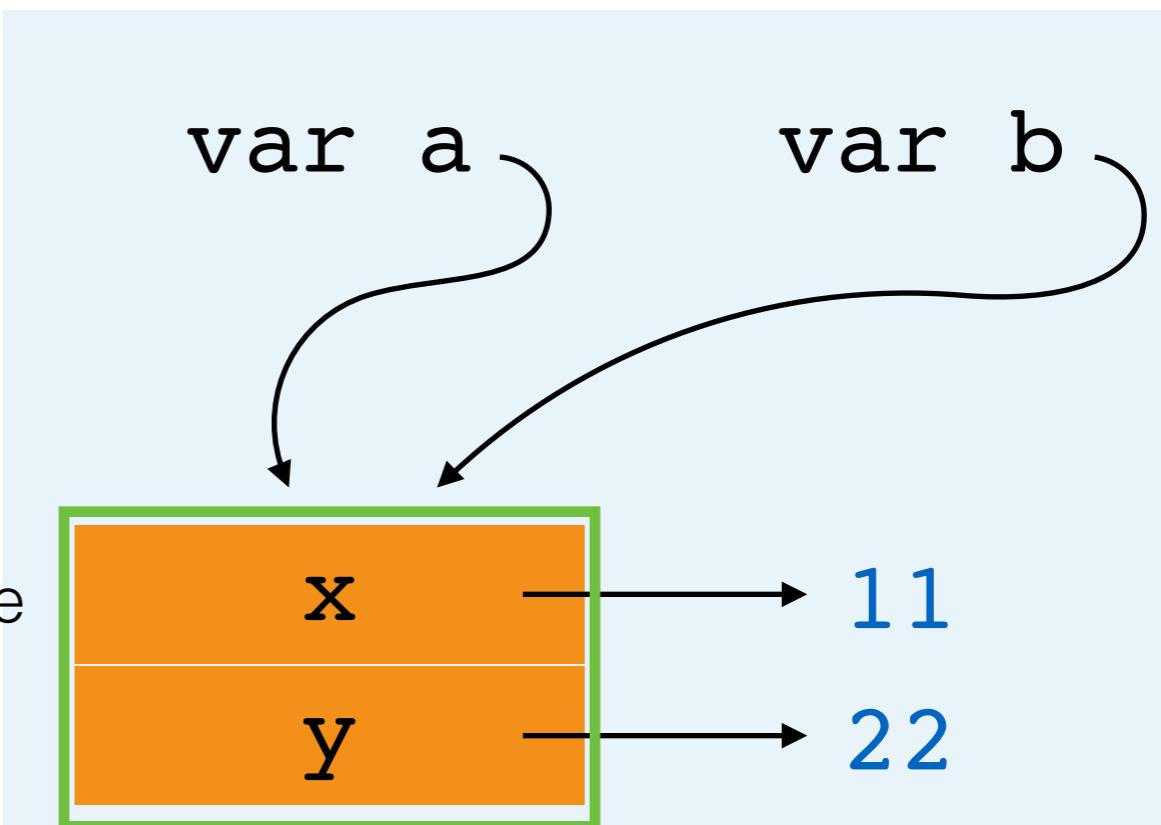
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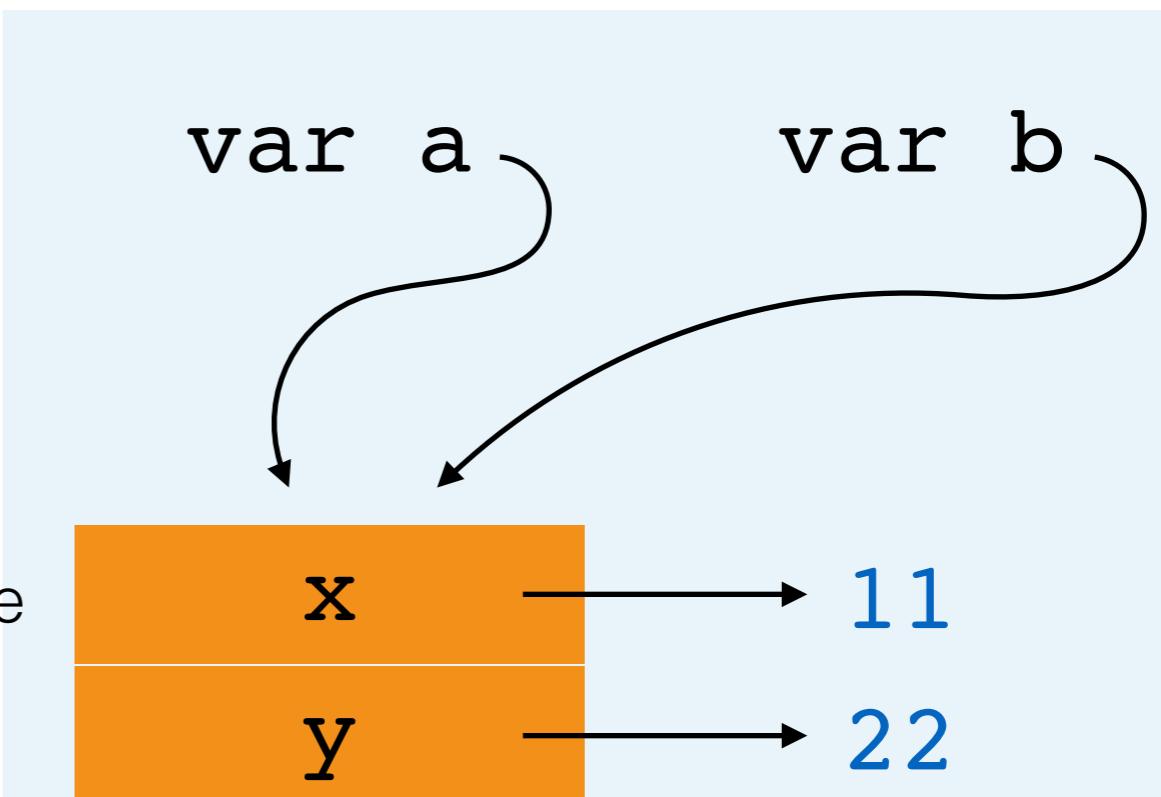
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Object and Variables

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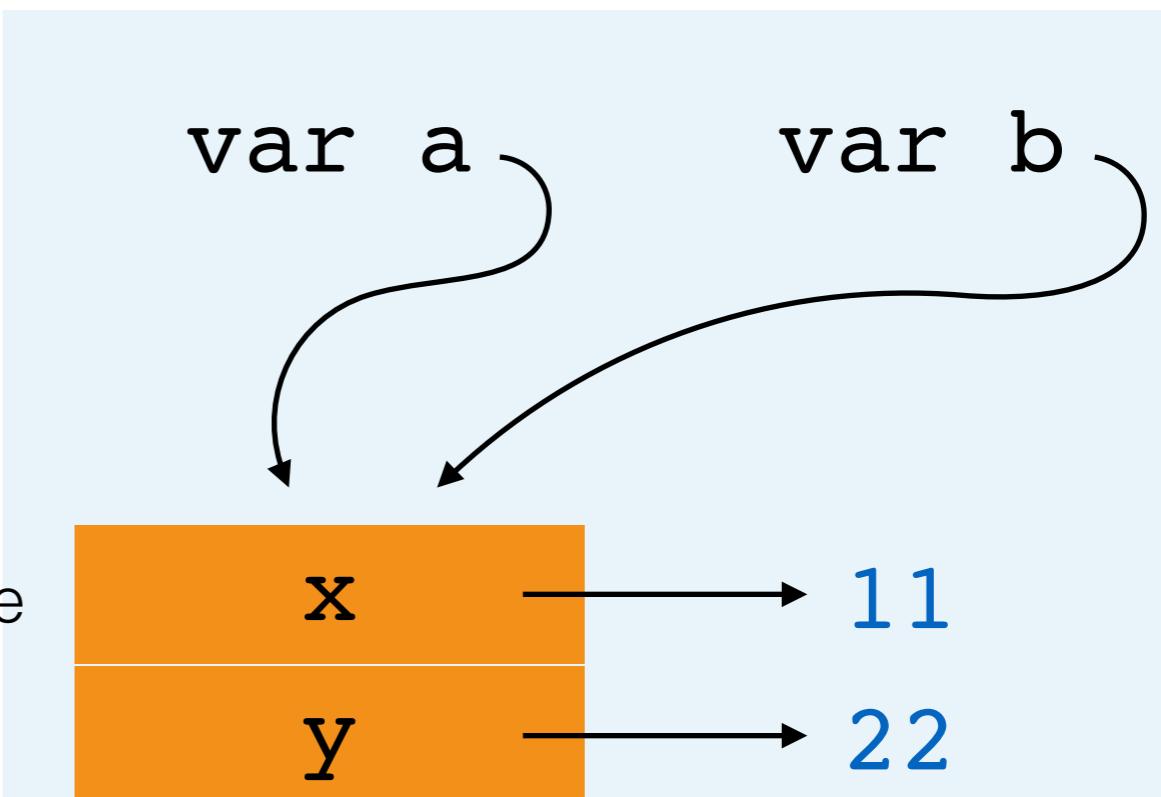
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- c. Assignment



Object and Variables

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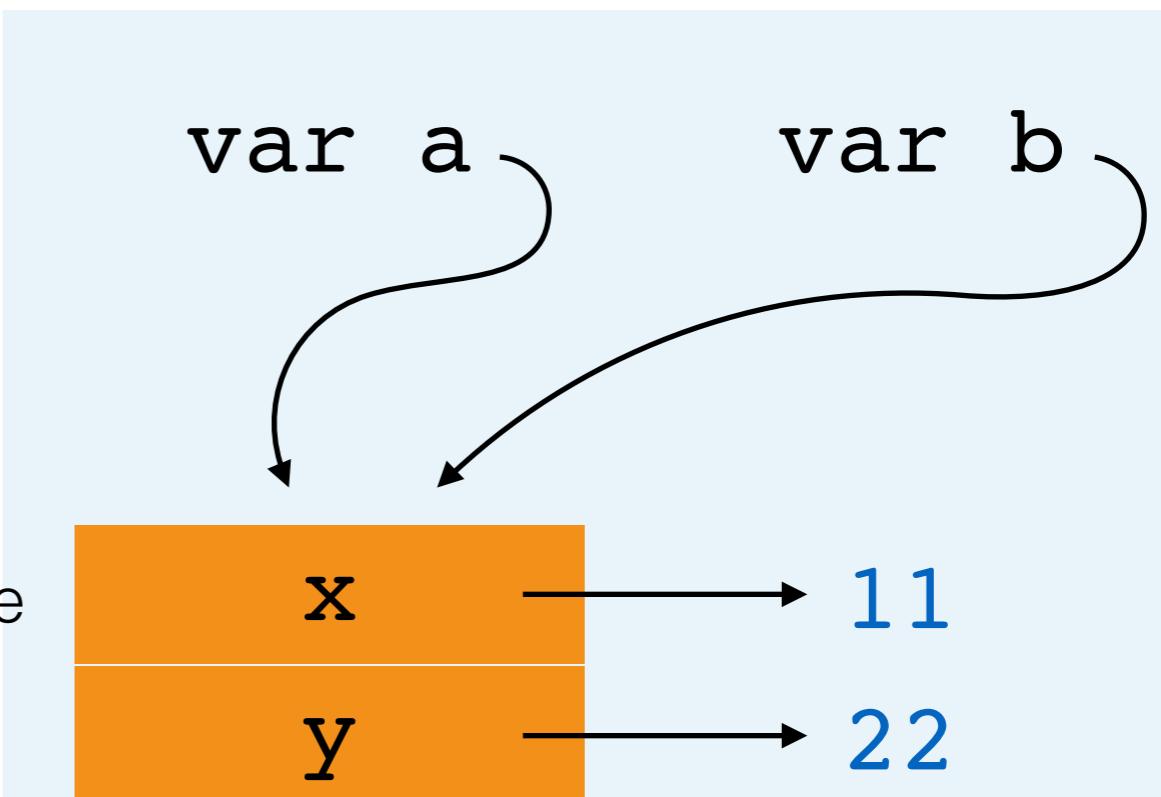
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- c. Assignment
 - a. Evaluate right side



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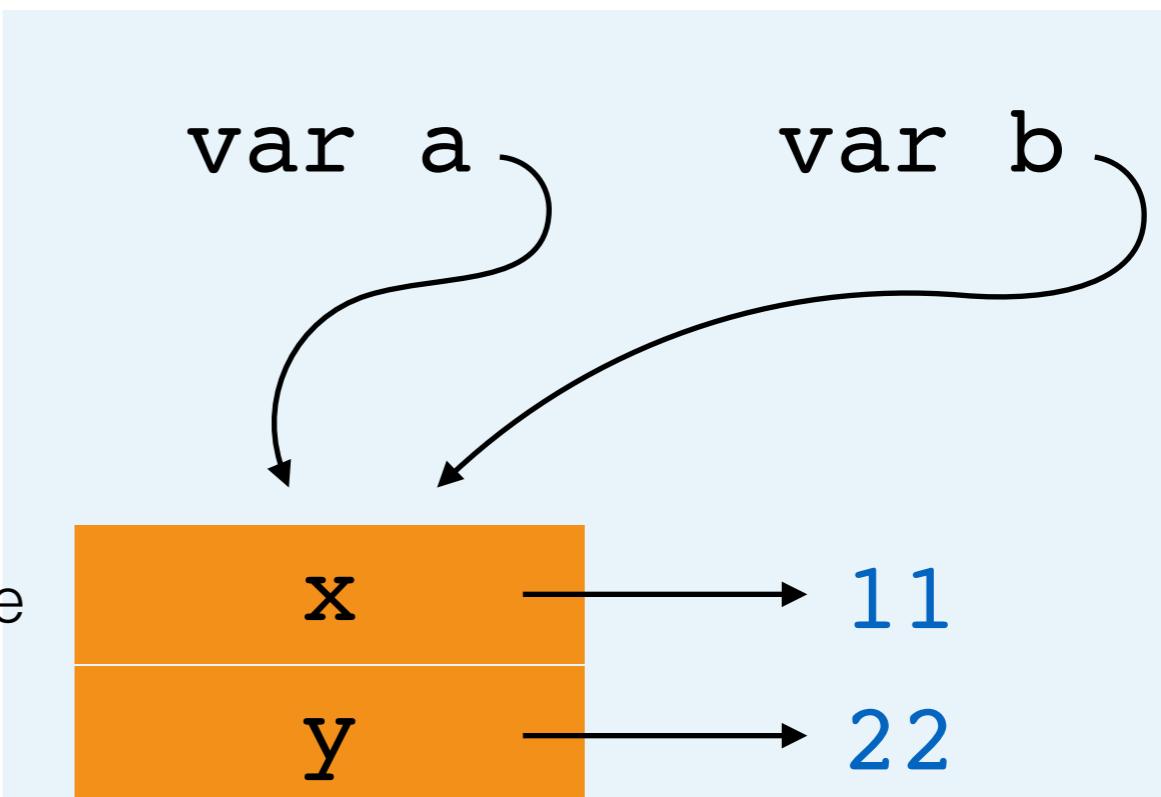
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- c. Assignment
 - a. Evaluate right side
 - a. Binary operation



Object and Variables

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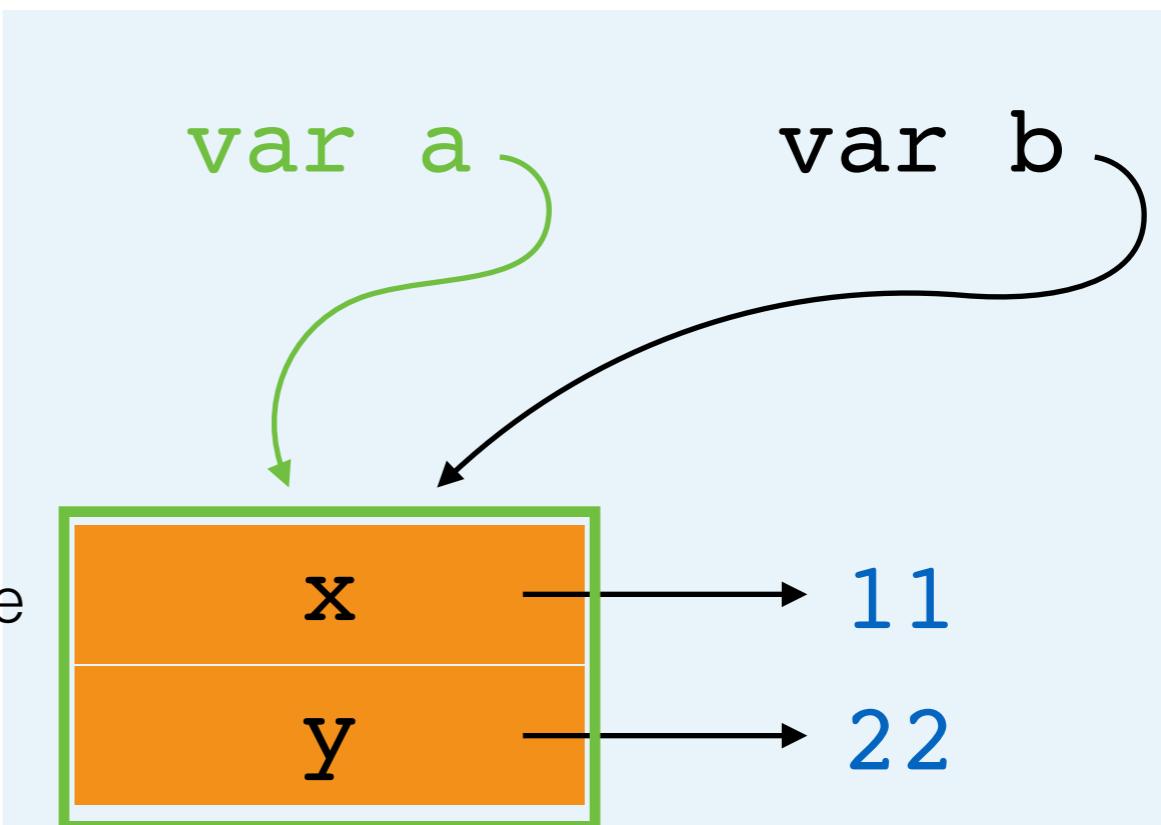
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 - a. Object member expression



Object and Variables

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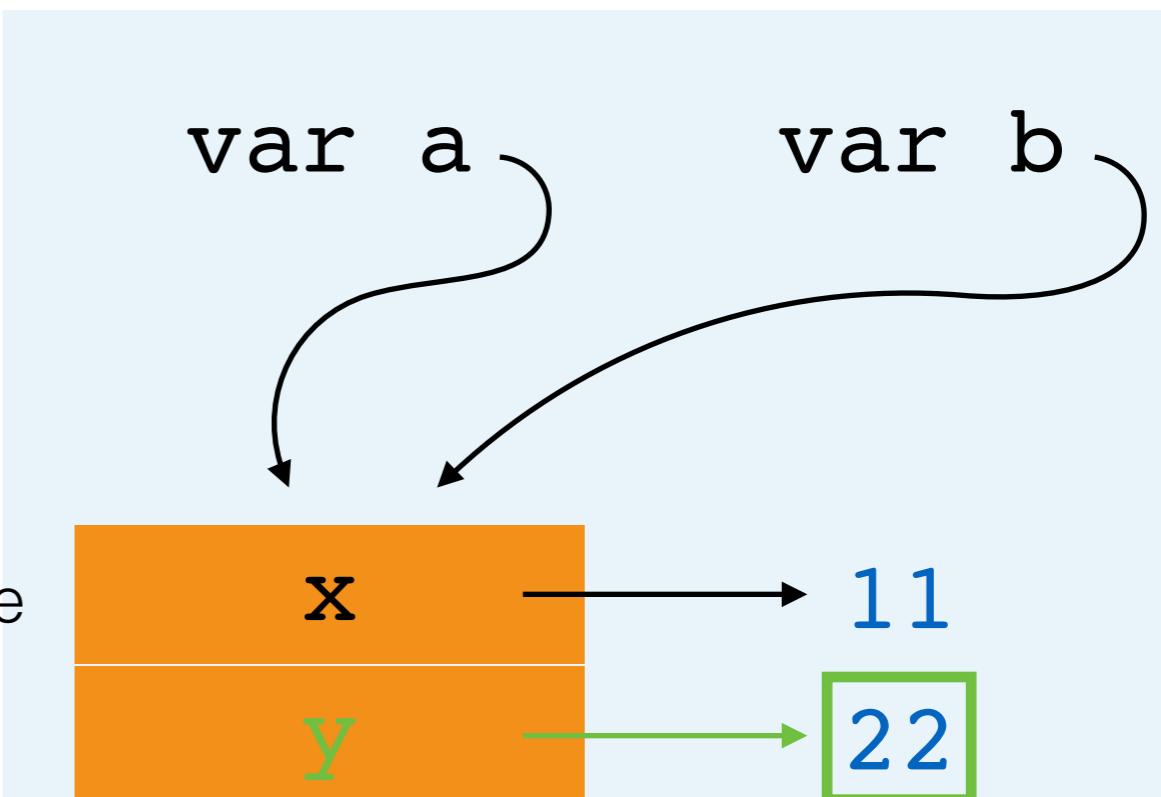
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 - a. Evaluate right side
 - a. Binary operation
 - a. Object member expression
 - a. Look up value of variable "a"



Object and Variables

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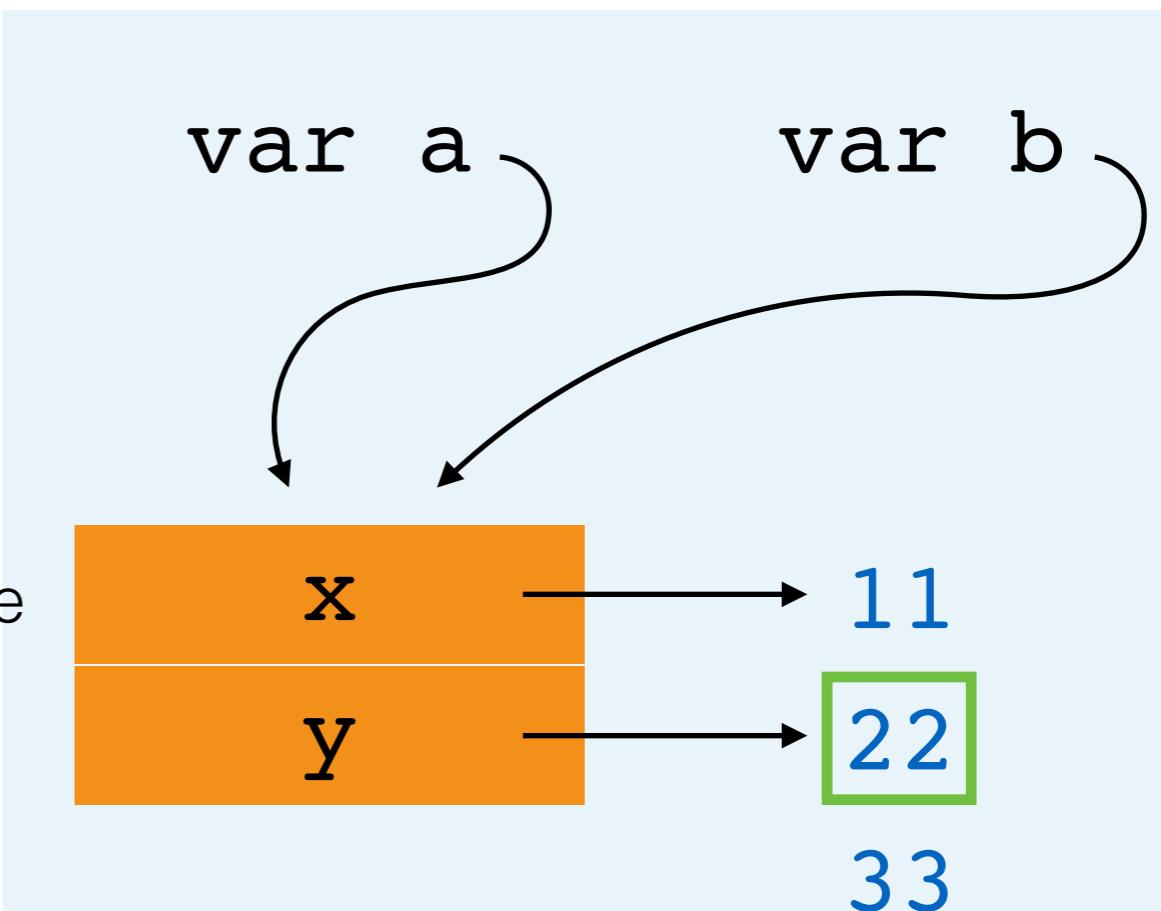
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 - a. Look up value of variable "a"
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Object and Variables

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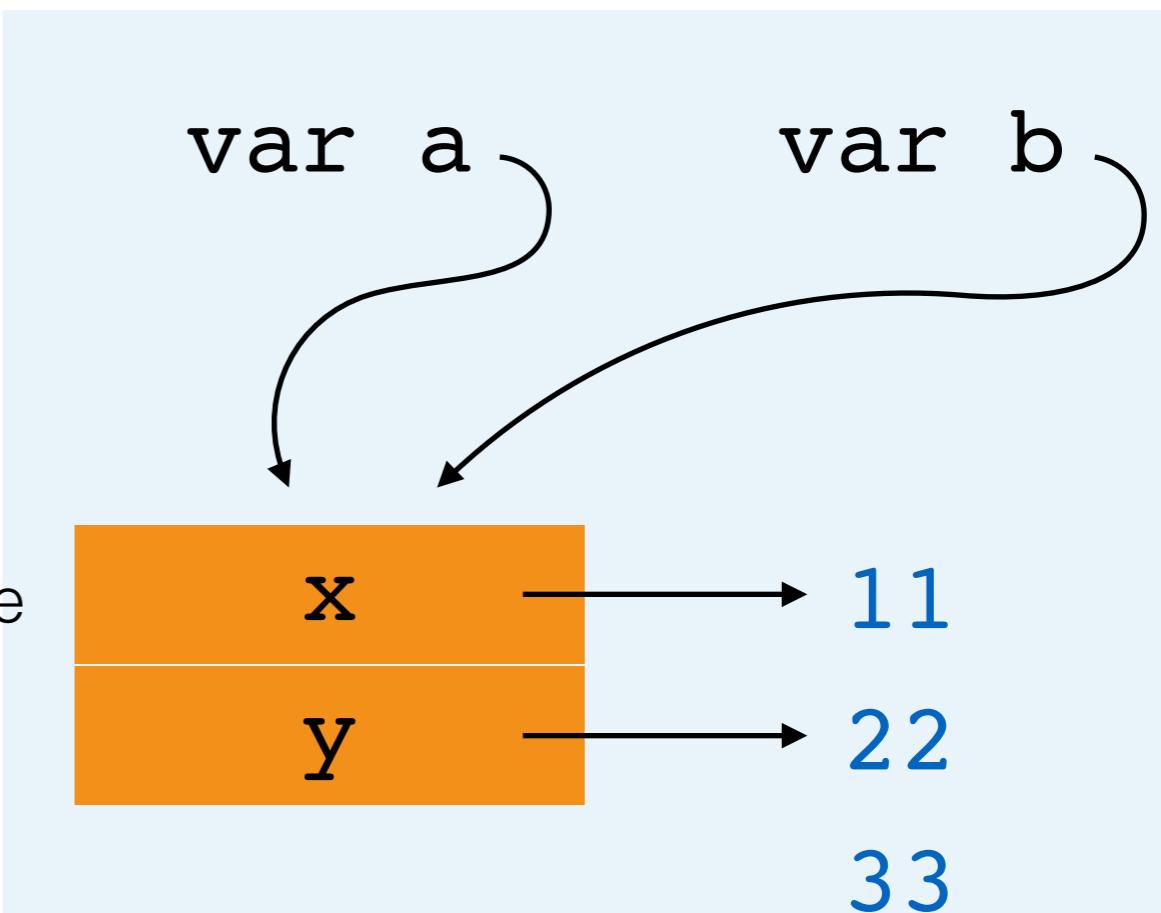
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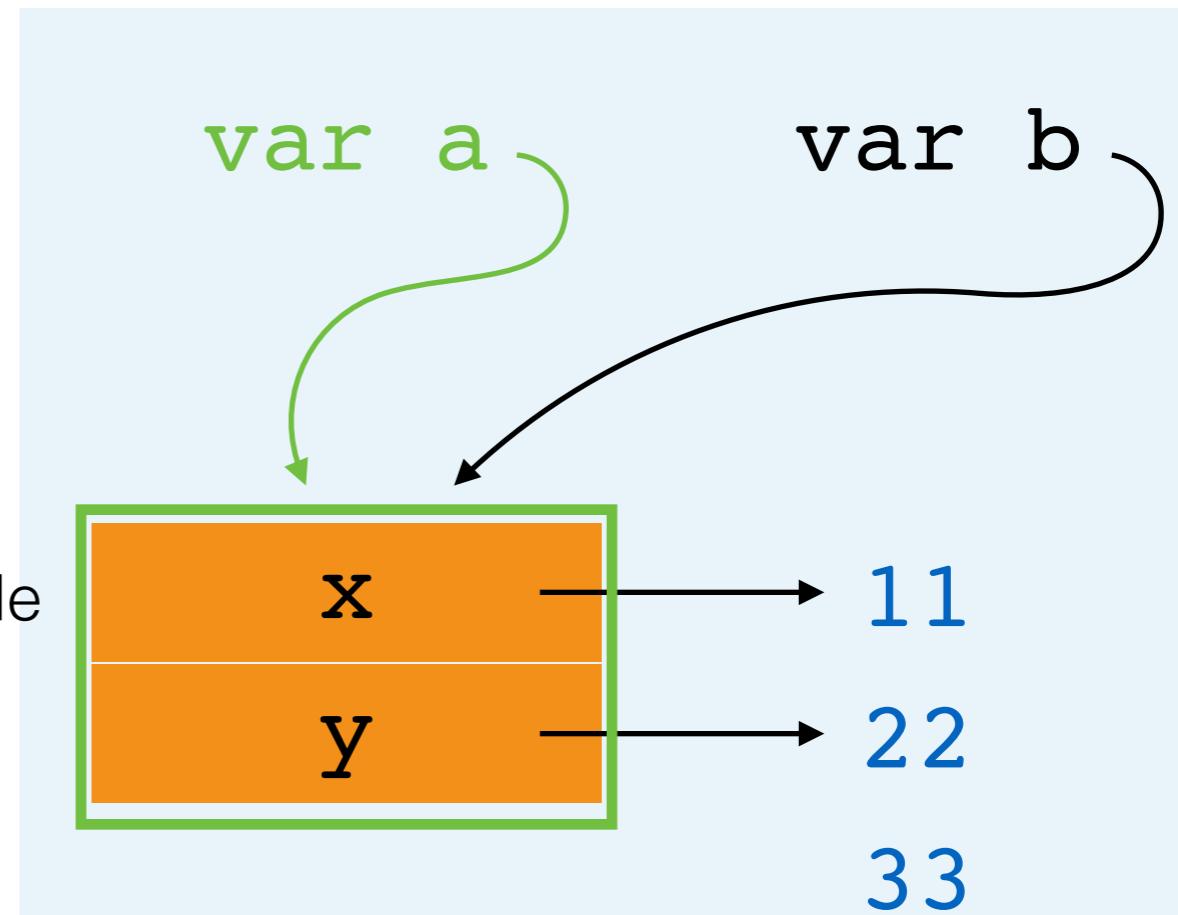
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Object and Variables

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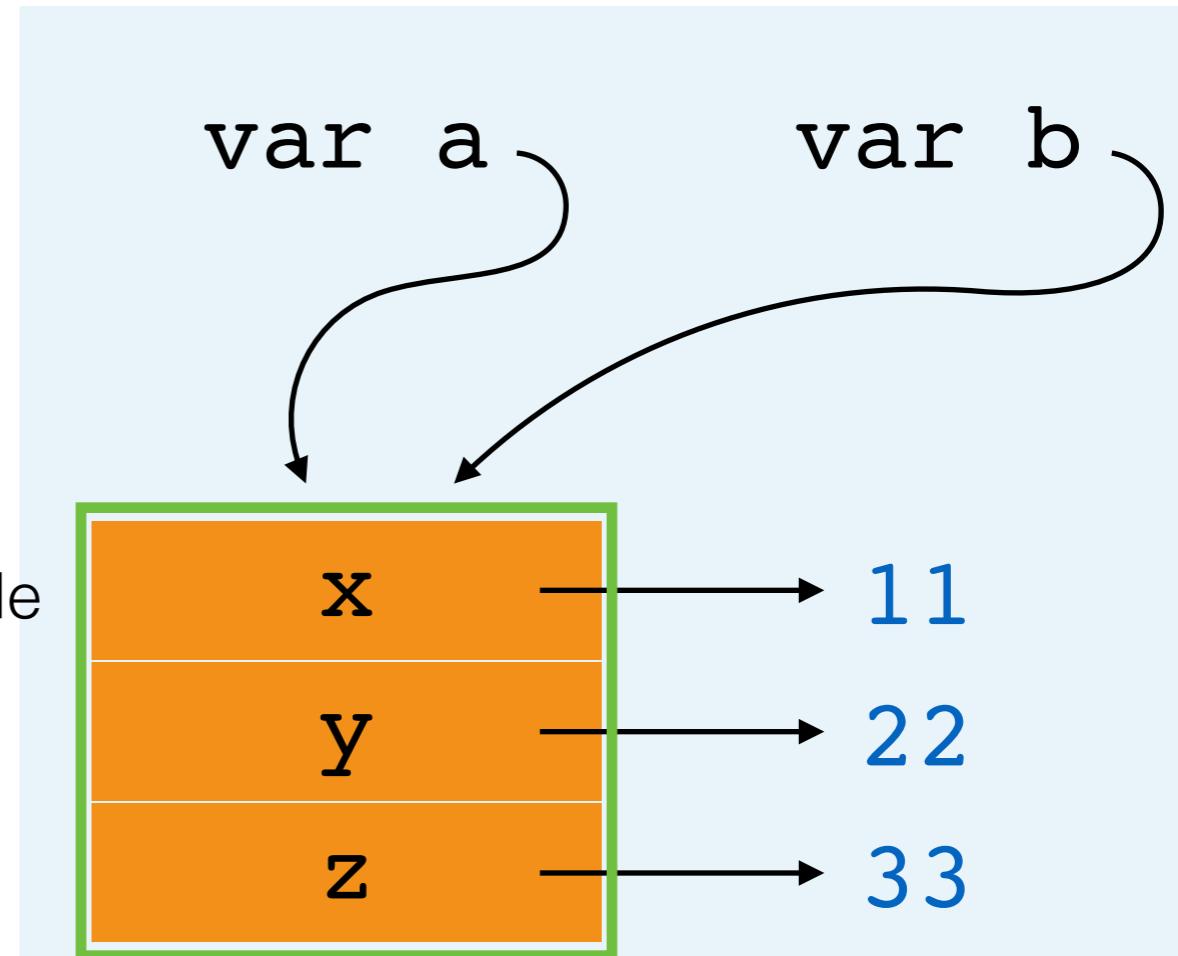
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 - a. Look up value of variable "a"
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 - b. Create value
 - b. Object member assignment
 - a. Look up value of variable "a"



Object and Variables

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a.z = a.y + 11
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- b. Assignment
 - a. Evaluate right side (create value)
 - b. Object member assignment
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 - a. Evaluate right side
 - a. Binary operation
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 - a. Look up value of variable "a"
 - b. Look up value of property "y"
 - b. Create value
 - b. Object member assignment
 - a. Look up value of variable "a"
 - b. Set property "z" to value of right side

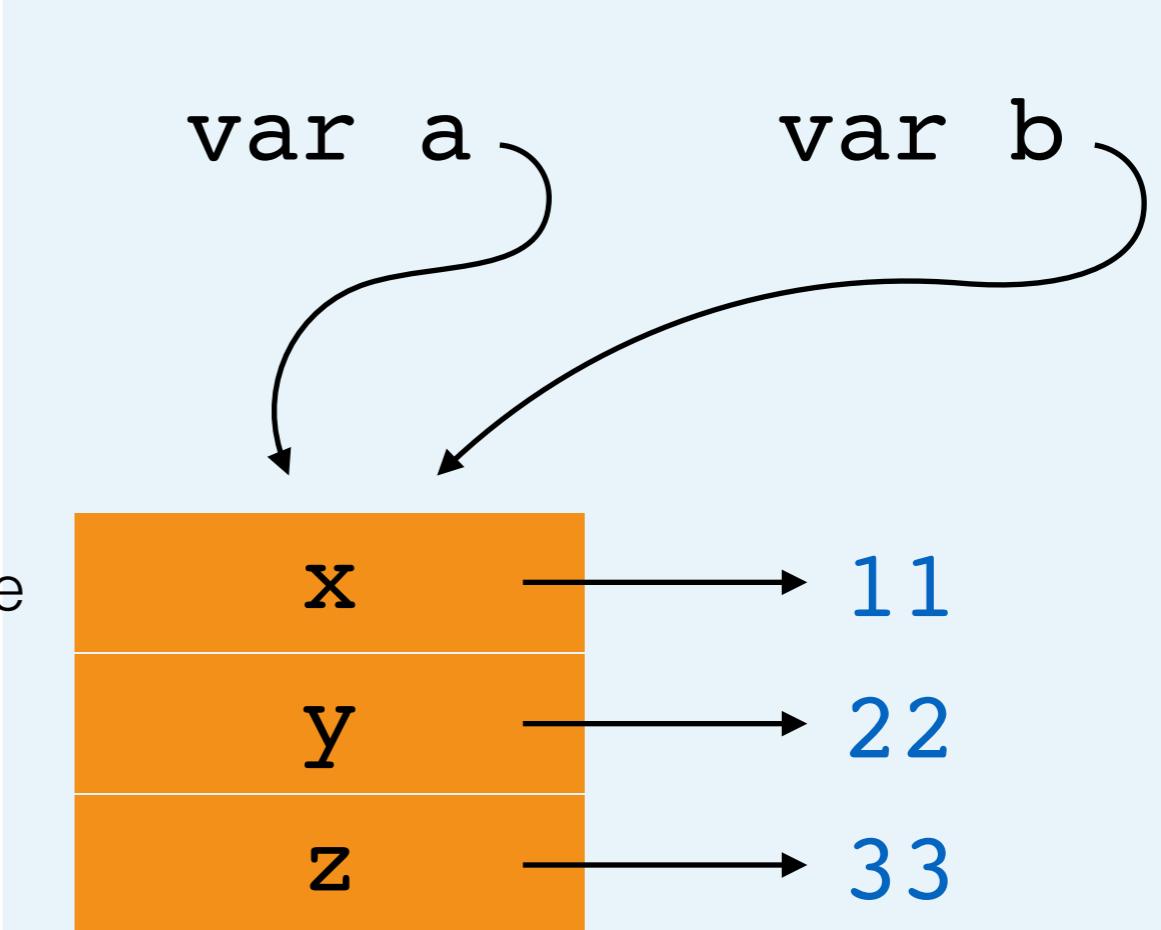


Object and Variables

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All Done!

- a. Assignment
 - a. Evaluate right side
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- b. Assignment
 - a. Evaluate right side (create value)
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 - a. Look up value of “b” (it’s an object!)
 - b. Set property “y” to value of right side
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 - a. Evaluate right side
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 - a. Object member expression
 - a. Look up value of variable “a”
 - b. Look up value of property “y”
 - b. Create value
 - b. Object member assignment
 - a. Look up value of variable “a”
 - b. Set property “z” to value of right side



Nested Objects

```
var obj = {  
  inner: {  
    x: 11  
  },  
  y: 22  
}
```

Nested Objects

```
var obj = {  
  inner: {  
    x: 11  
  },  
  y: 22  
}
```

- a. Assignment

Nested Objects

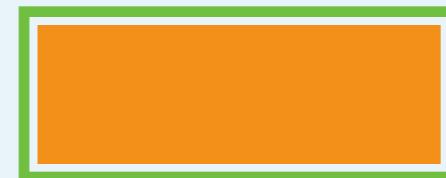
```
var obj = {  
  inner: {  
    x: 11  
  },  
  y: 22  
}
```

- a. Assignment
 - a. Evaluate right side

Nested Objects

```
var obj = {  
  inner: {  
    x: 11  
  },  
  y: 22  
}
```

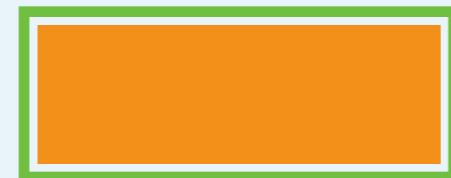
- a. Assignment
 - a. Evaluate right side
 - a. Create object



Nested Objects

```
var obj = {  
  inner: {  
    x: 11  
  },  
  y: 22  
}
```

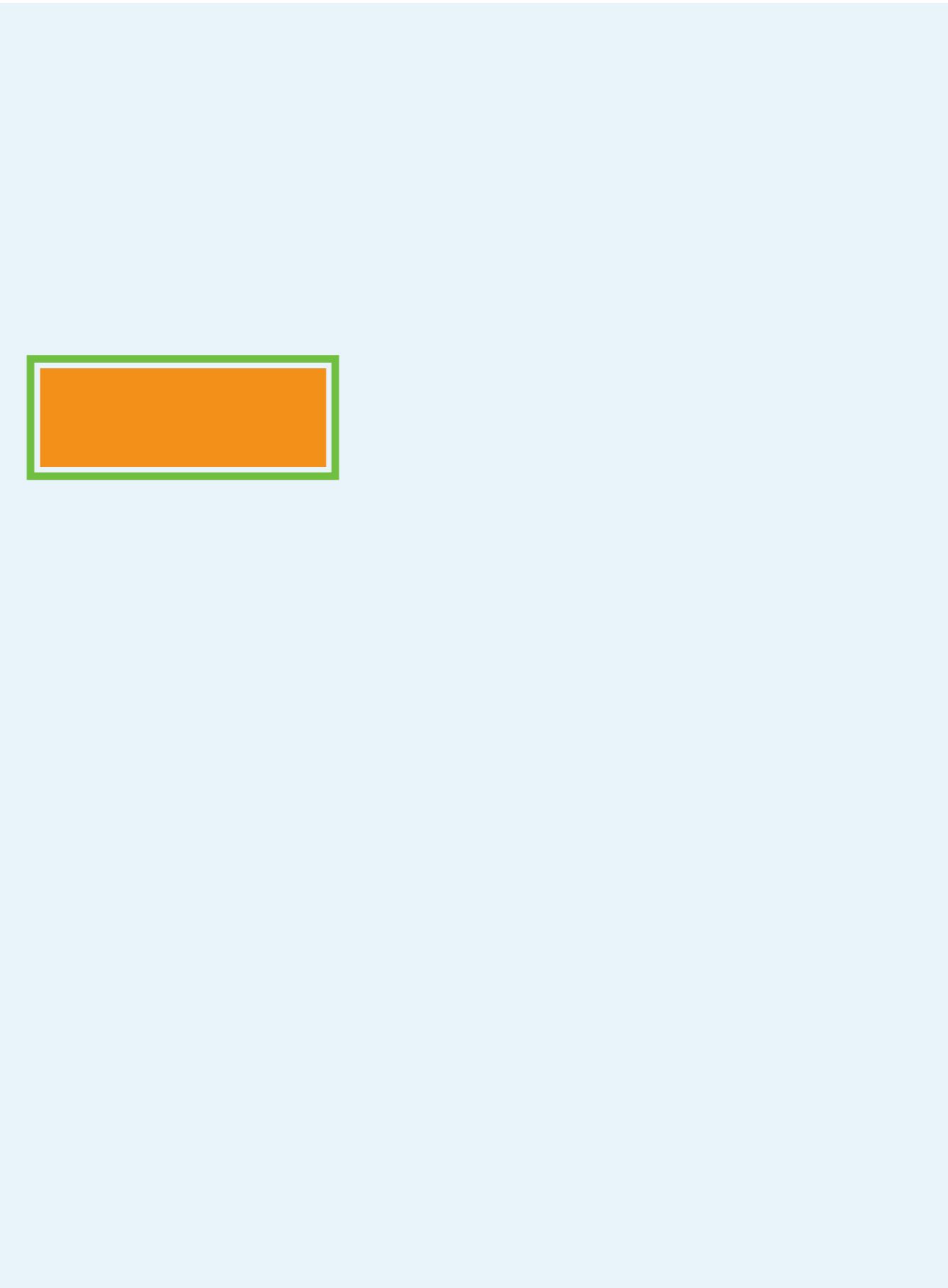
- a. Assignment
 - a. Evaluate right side
 - a. Create object
 - a. Property Assignment



Nested Objects

```
var obj = {  
  inner: {  
    x: 11  
  },  
  y: 22  
}
```

- a. Assignment
 - a. Evaluate right side
 - a. Create object
 - a. Property Assignment
 - a. Evaluate right side



Nested Objects

```
var obj = {  
  inner: {  
    x: 11  
  },  
  y: 22  
}
```

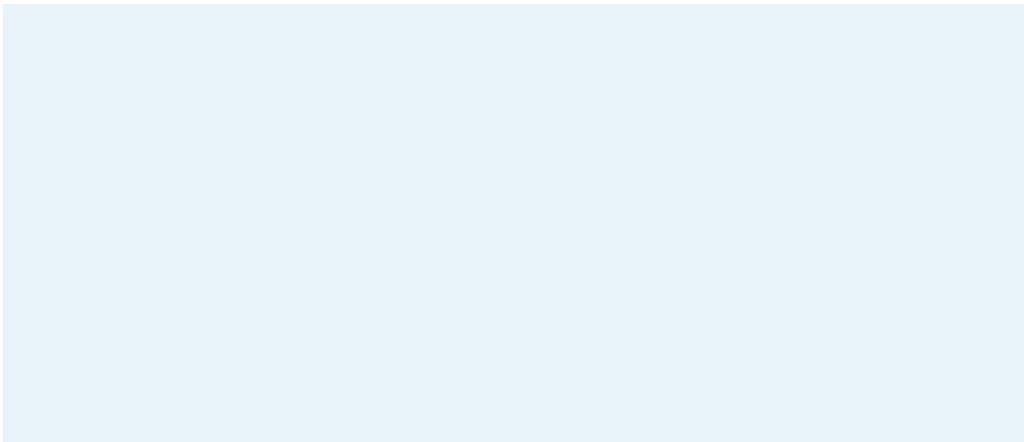
- a. Assignment
 - a. Evaluate right side
 - a. Create object
 - a. Property Assignment
 - a. Evaluate right side
 - a. Create Object



Nested Objects

```
var obj = {  
  inner: {  
    x: 11  
  },  
  y: 22  
}
```

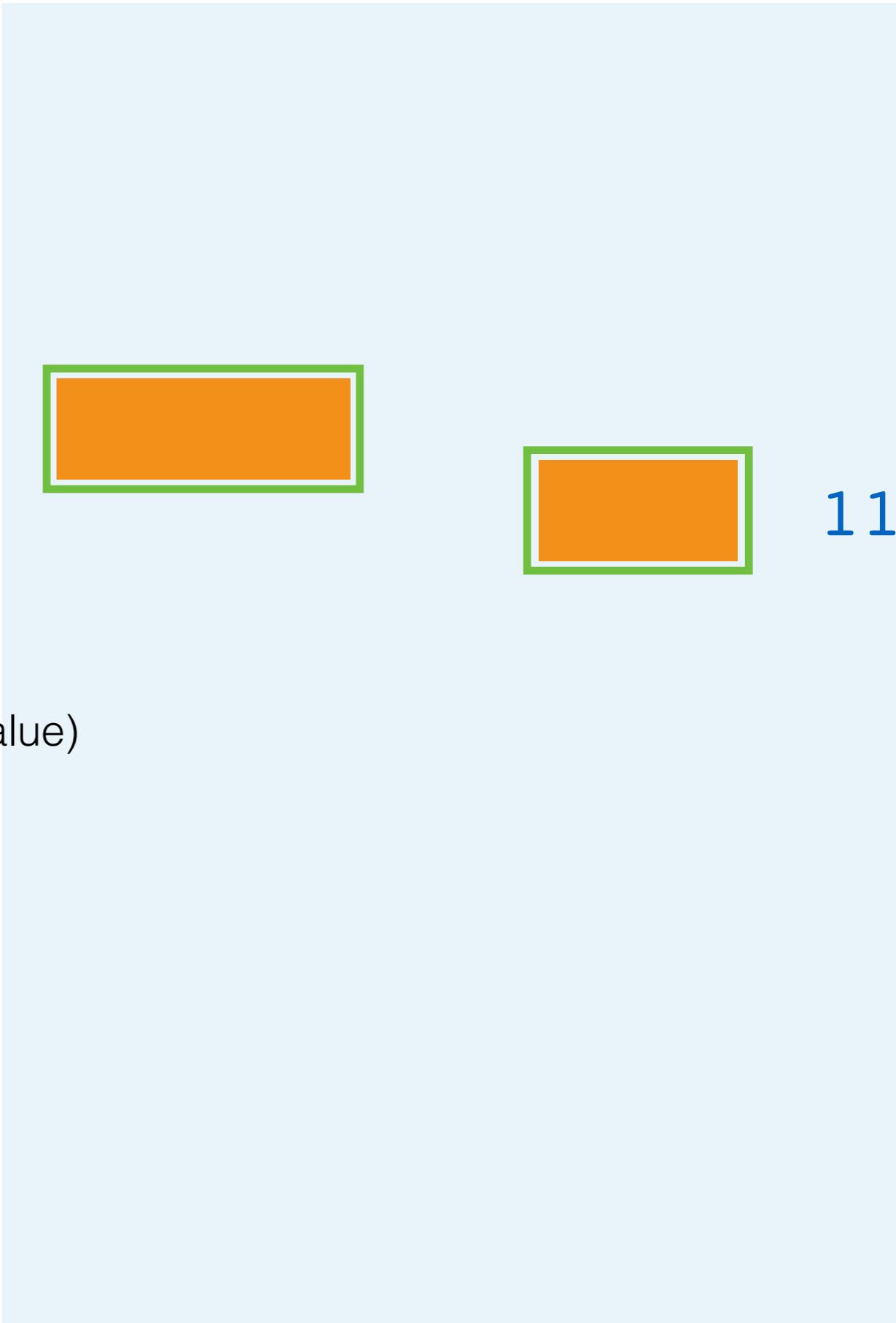
- a. Assignment
 - a. Evaluate right side
 - a. Create object
 - a. Property Assignment
 - a. Evaluate right side
 - a. Create Object
 - a. Property Assignment



Nested Objects

```
var obj = {  
  inner: {  
    x: 11  
  },  
  y: 22  
}
```

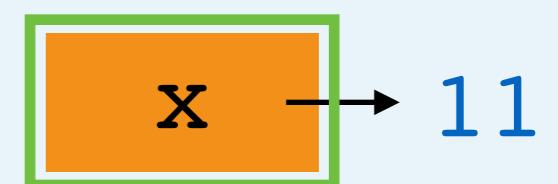
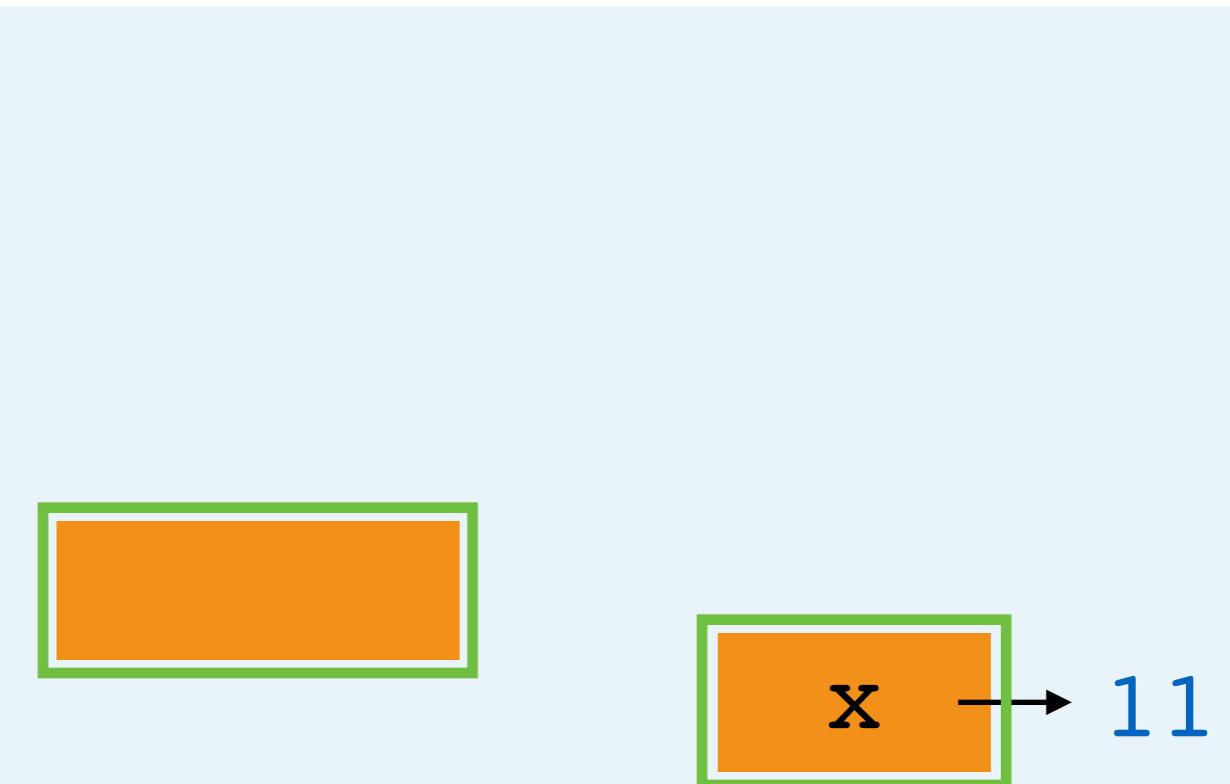
- a. Assignment
- a. Evaluate right side
 - a. Create object
 - a. Property Assignment
 - a. Evaluate right side
 - a. Create Object
 - a. Property Assignment
 - a. Evaluate right side (create value)



Nested Objects

```
var obj = {  
  inner: {  
    x: 11  
  },  
  y: 22  
}
```

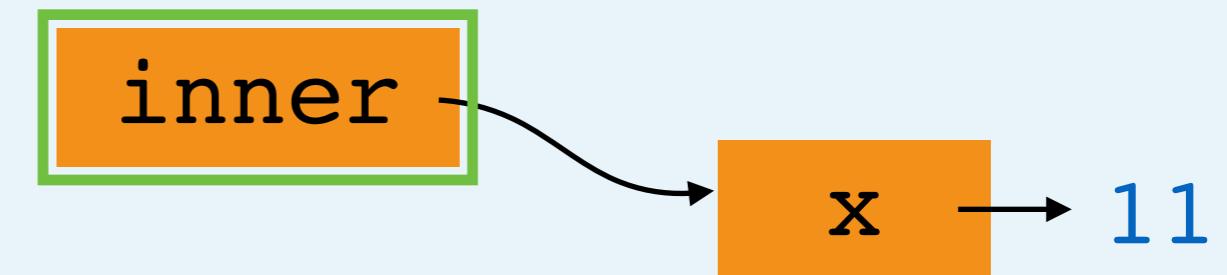
- a. Assignment
 - a. Evaluate right side
 - a. Create object
 - a. Property Assignment
 - a. Evaluate right side
 - a. Create Object
 - a. Property Assignment
 - a. Evaluate right side (create value)
 - b. Create prop "x", point to value



Nested Objects

```
var obj = {  
  inner: {  
    x: 11  
  },  
  y: 22  
}
```

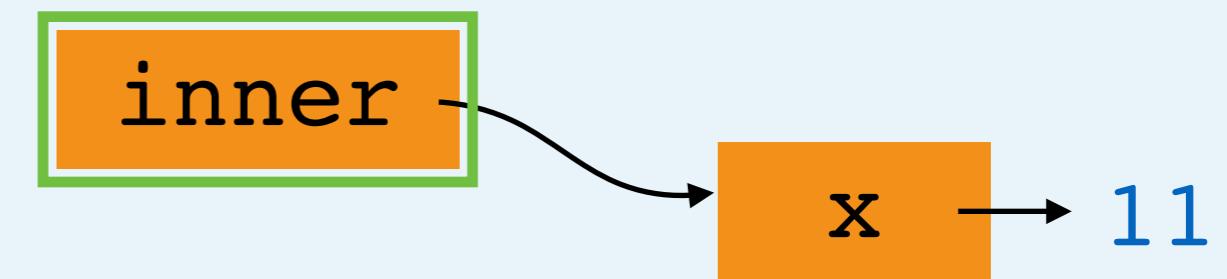
- a. Assignment
- a. Evaluate right side
 - a. Create object
 - a. Property Assignment
 - a. Evaluate right side
 - a. Create Object
 - a. Property Assignment
 - a. Evaluate right side (create value)
 - b. Create prop “x”, point to value
 - b. Create prop “inner”, point to value



Nested Objects

```
var obj = {  
  inner: {  
    x: 11  
  },  
  y: 22  
}
```

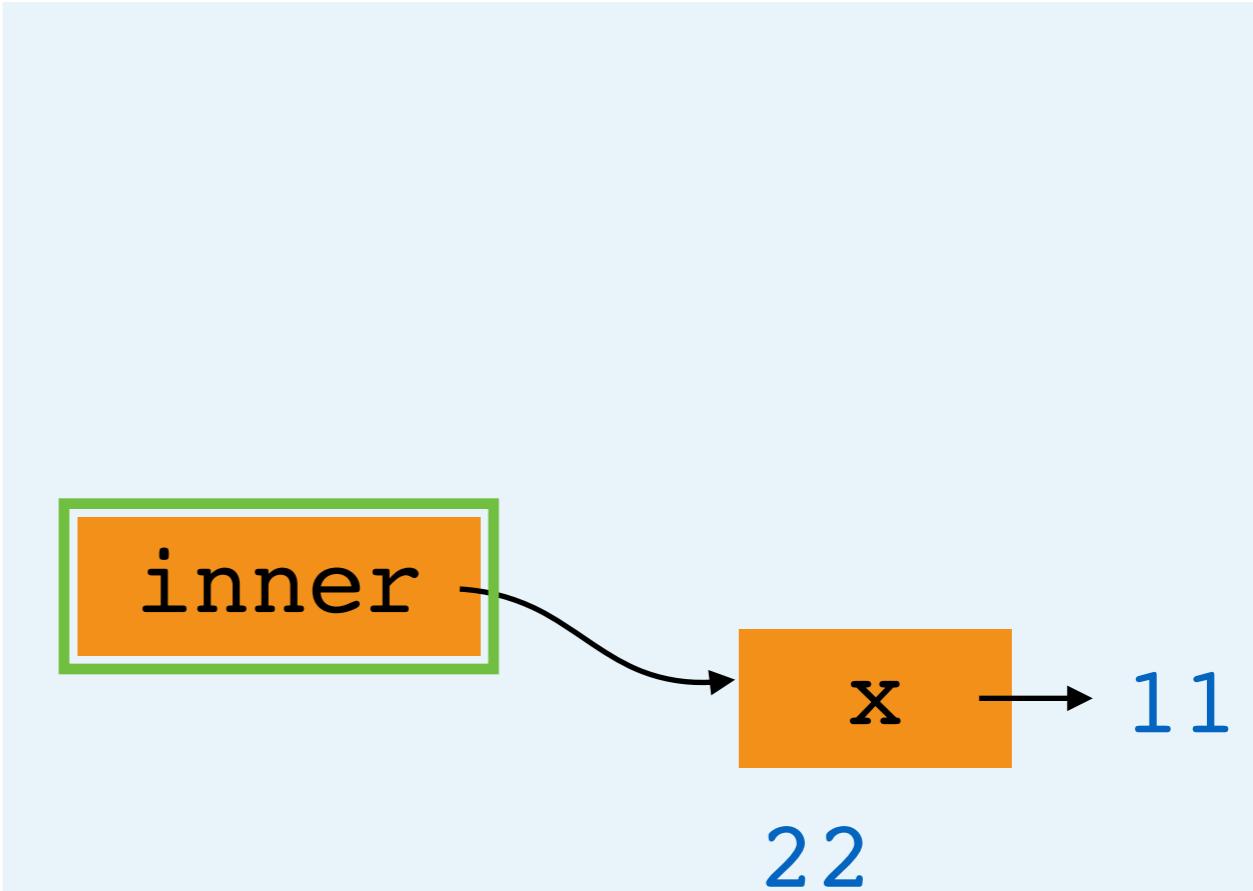
- a. Assignment
- a. Evaluate right side
 - a. Create object
 - a. Property Assignment
 - a. Evaluate right side
 - a. Create Object
 - a. Property Assignment
 - a. Evaluate right side (create value)
 - b. Create prop "x", point to value
 - b. Create prop "inner", point to value
 - b. Property Assignment



Nested Objects

```
var obj = {  
  inner: {  
    x: 11  
  },  
  y: 22  
}
```

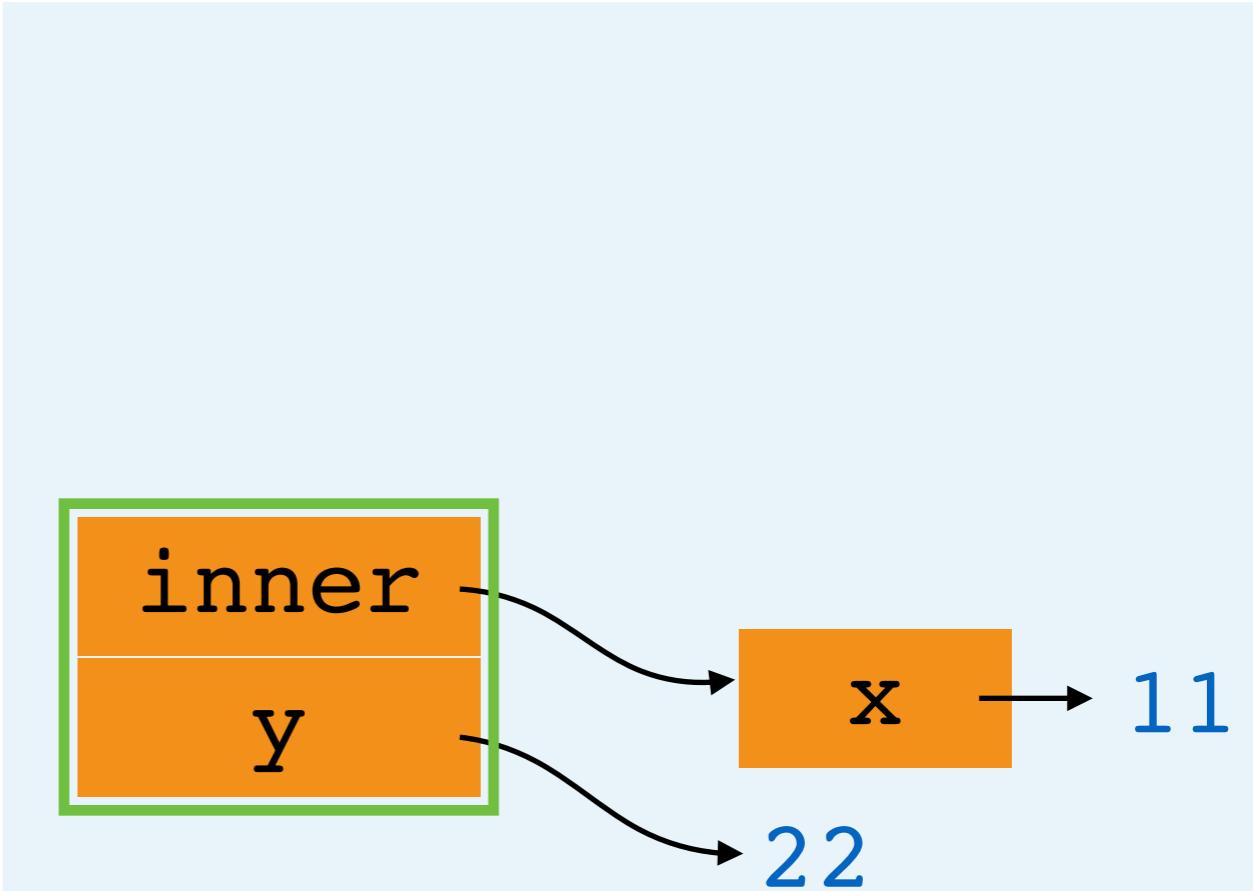
- a. Assignment
 - a. Evaluate right side
 - a. Create object
 - a. Property Assignment
 - a. Evaluate right side
 - a. Create Object
 - a. Property Assignment
 - a. Evaluate right side (create value)
 - b. Create prop "x", point to value
 - b. Create prop "inner", point to value
 - b. Property Assignment
 - a. Evaluate right side (create value)



Nested Objects

```
var obj = {  
  inner: {  
    x: 11  
  },  
  y: 22  
}
```

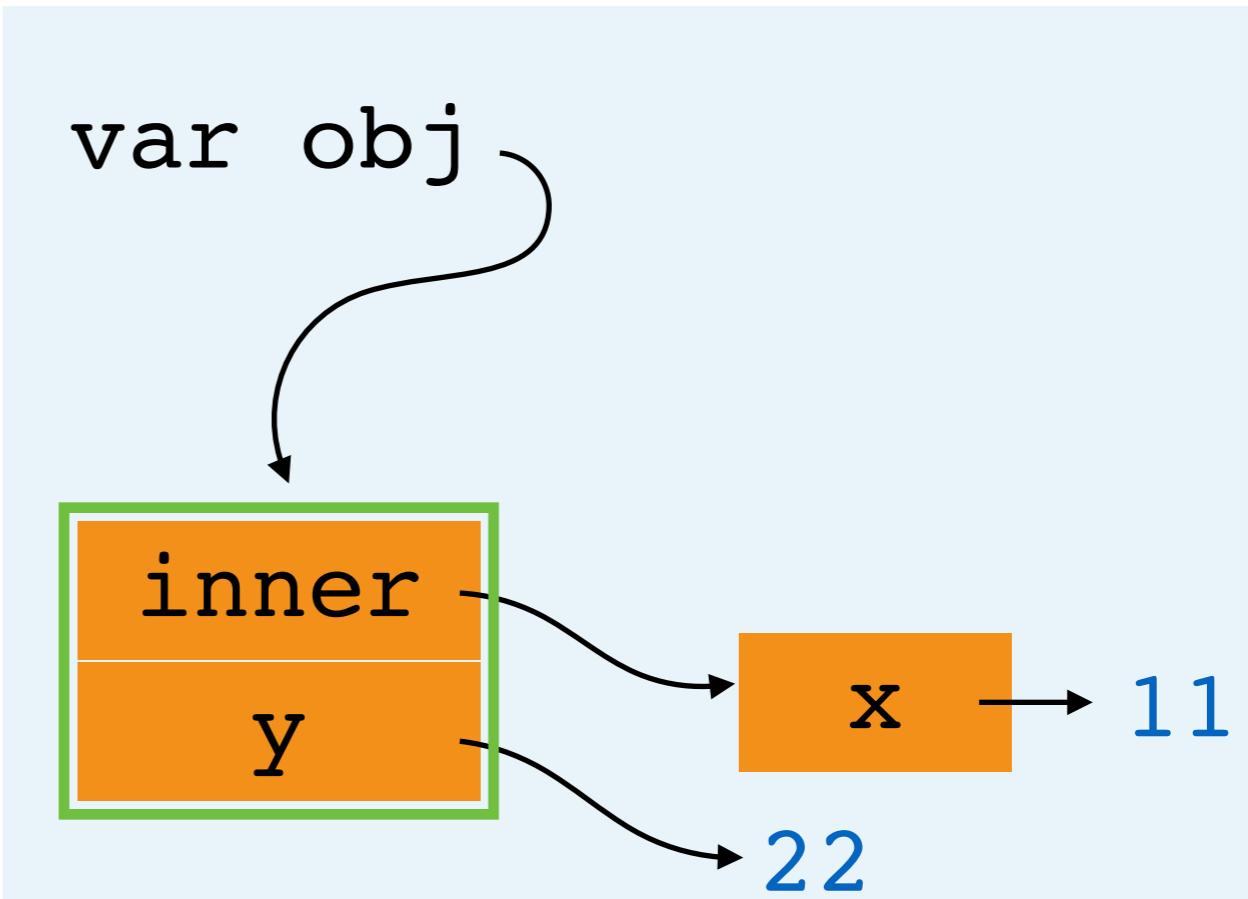
- a. Assignment
 - a. Evaluate right side
 - a. Create object
 - a. Property Assignment
 - a. Evaluate right side
 - a. Create Object
 - a. Property Assignment
 - a. Evaluate right side (create value)
 - b. Create prop "x", point to value
 - b. Create prop "inner", point to value
 - b. Property Assignment
 - a. Evaluate right side (create value)
 - b. Create prop y, point to value



Nested Objects

```
var obj = {  
  inner: {  
    x: 11  
  },  
  y: 22  
}
```

- a. Assignment
 - a. Evaluate right side
 - a. Create object
 - a. Property Assignment
 - a. Evaluate right side
 - a. Create Object
 - a. Property Assignment
 - a. Evaluate right side (create value)
 - b. Create prop "x", point to value
 - b. Create prop "inner", point to value
 - b. Property Assignment
 - a. Evaluate right side (create value)
 - b. Create prop y, point to value
 - b. Create var obj, point to object

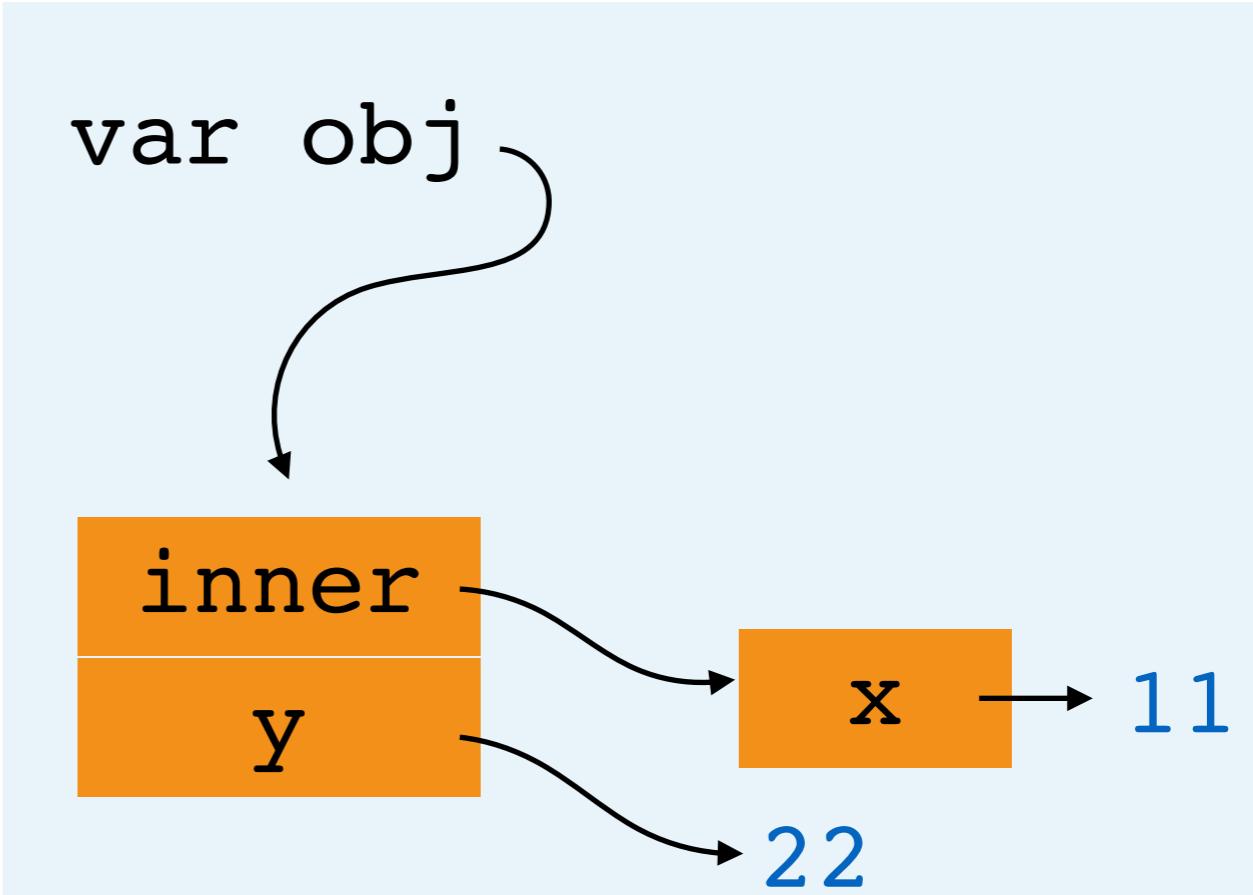


Nested Objects

```
var obj = {  
  inner: {  
    x: 11  
  },  
  y: 22  
}
```

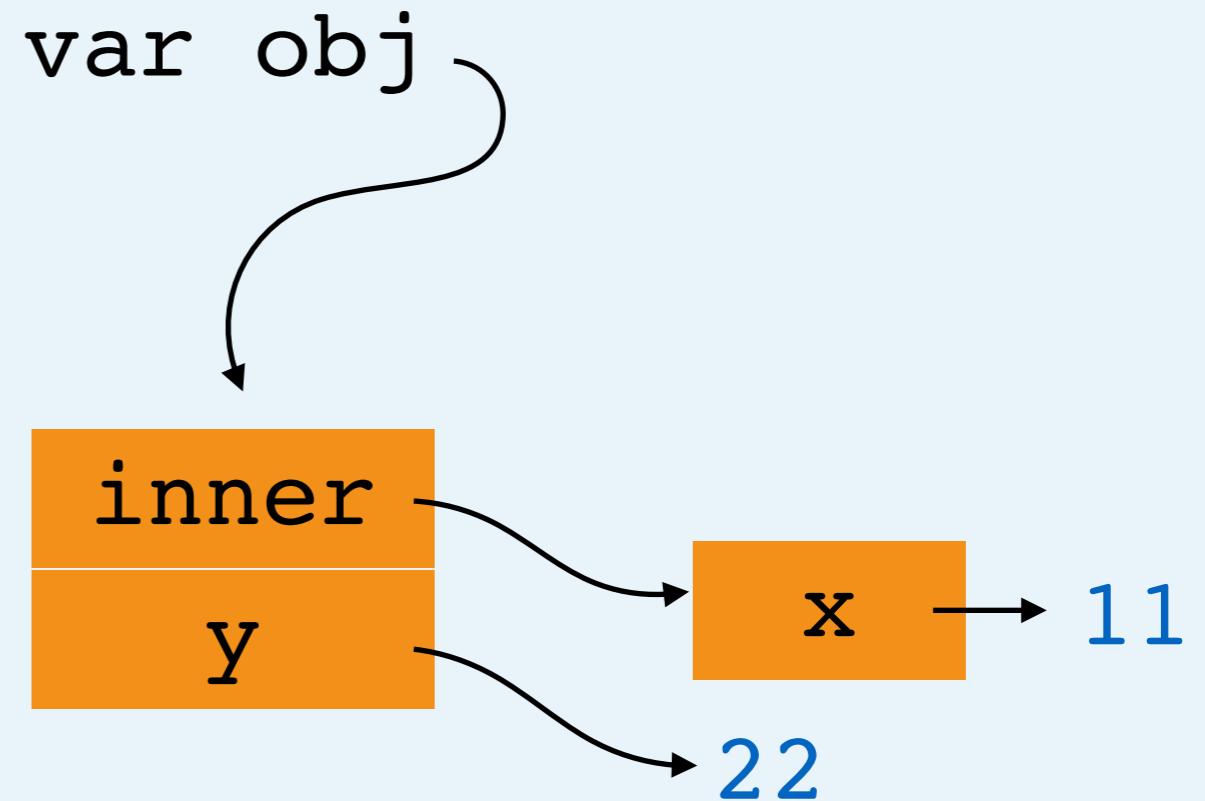
All Done!

- a. Assignment
 - a. Evaluate right side
 - a. Create object
 - a. Property Assignment
 - a. Evaluate right side
 - a. Create Object
 - a. Property Assignment
 - a. Evaluate right side (create value)
 - b. Create prop "x", point to value
 - b. Create prop "inner", point to value
 - b. Property Assignment
 - a. Evaluate right side (create value)
 - b. Create prop y, point to value
 - b. Create var obj, point to object



Nested Objects (with vars)

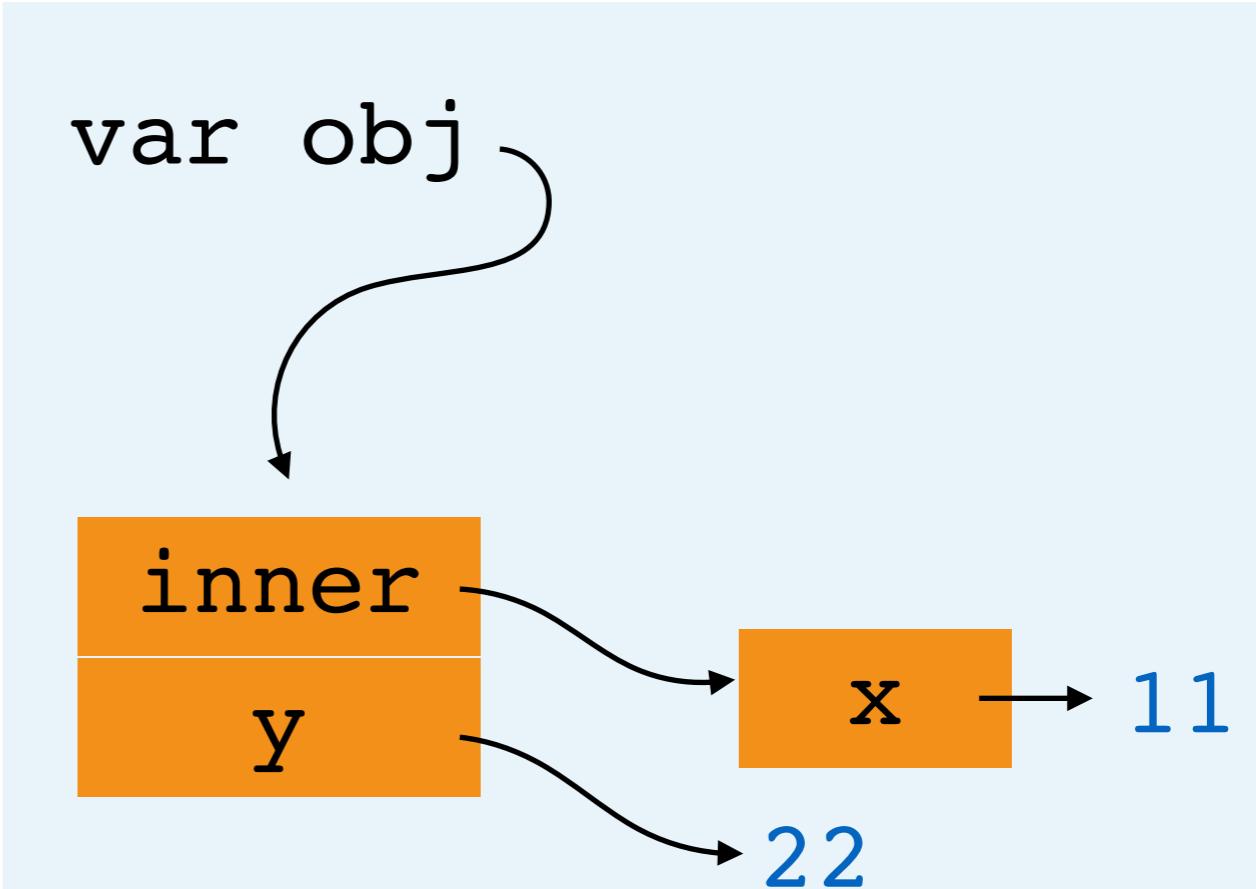
```
var obj = {  
  inner: { x: 11 },  
  y: 22  
}  
var result = obj.inner
```



Nested Objects (with vars)

```
var obj = {  
  inner: { x: 11 },  
  y: 22  
}  
var result = obj.inner
```

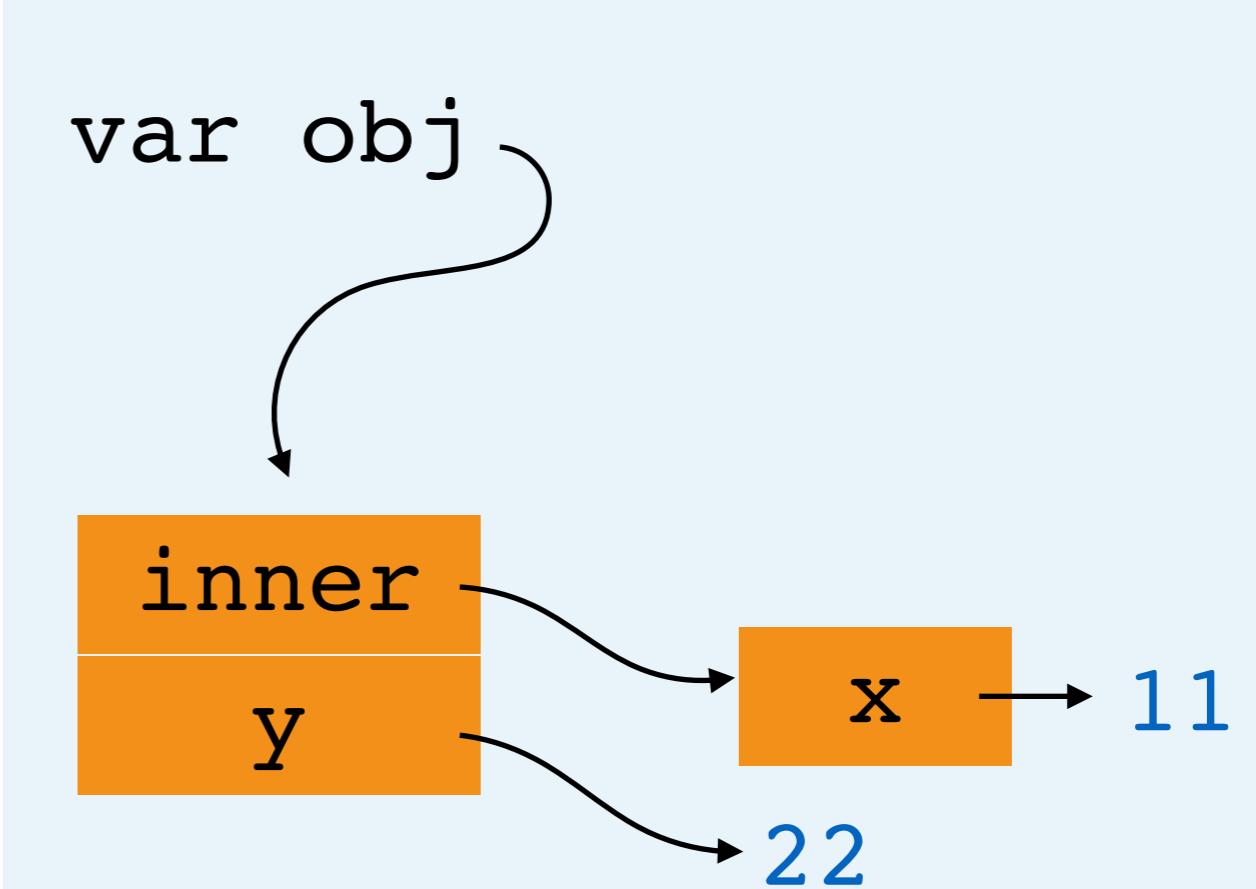
a. Assignment



Nested Objects (with vars)

```
var obj = {  
  inner: { x: 11 },  
  y: 22  
}  
var result = obj.inner
```

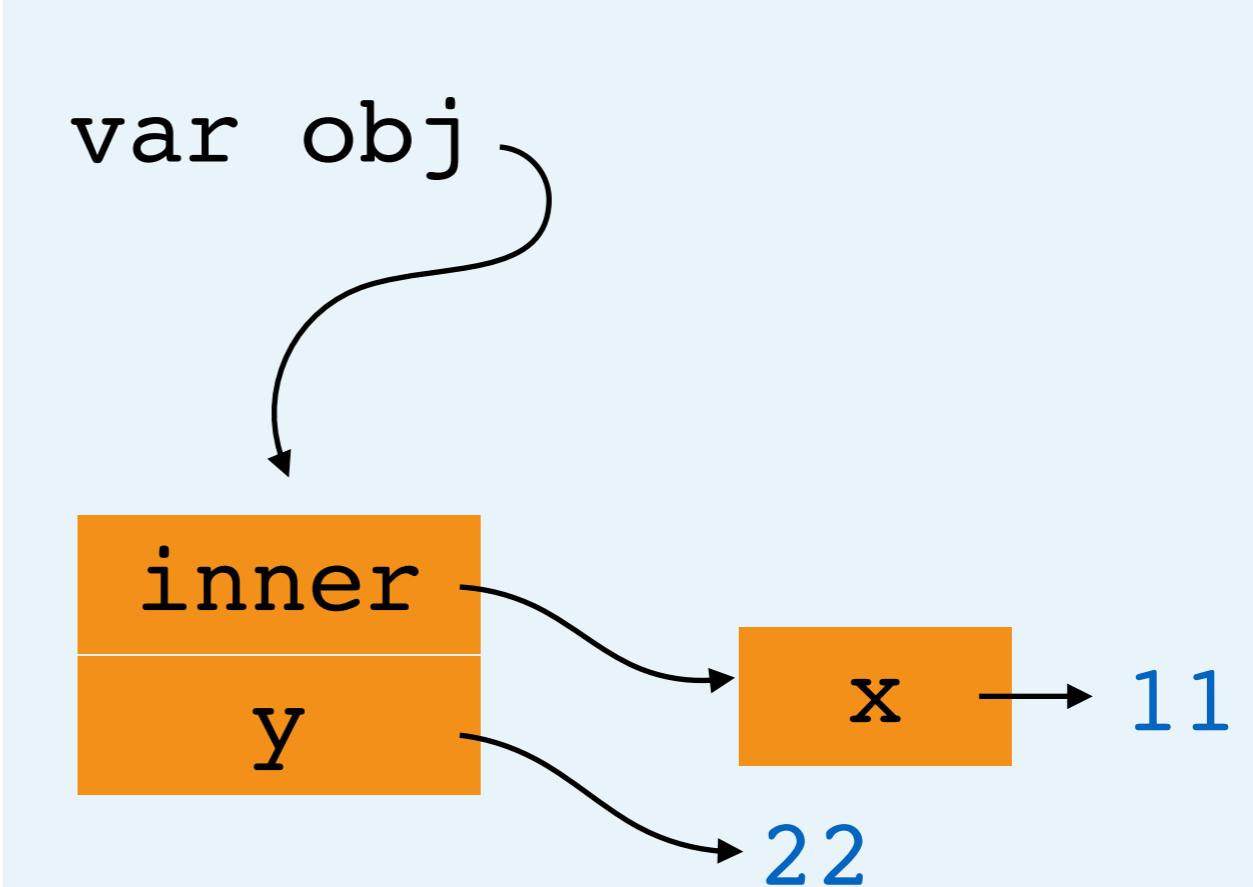
- a. Assignment
- a. Evaluate right side



Nested Objects (with vars)

```
var obj = {  
  inner: { x: 11 },  
  y: 22  
}  
var result = obj.inner
```

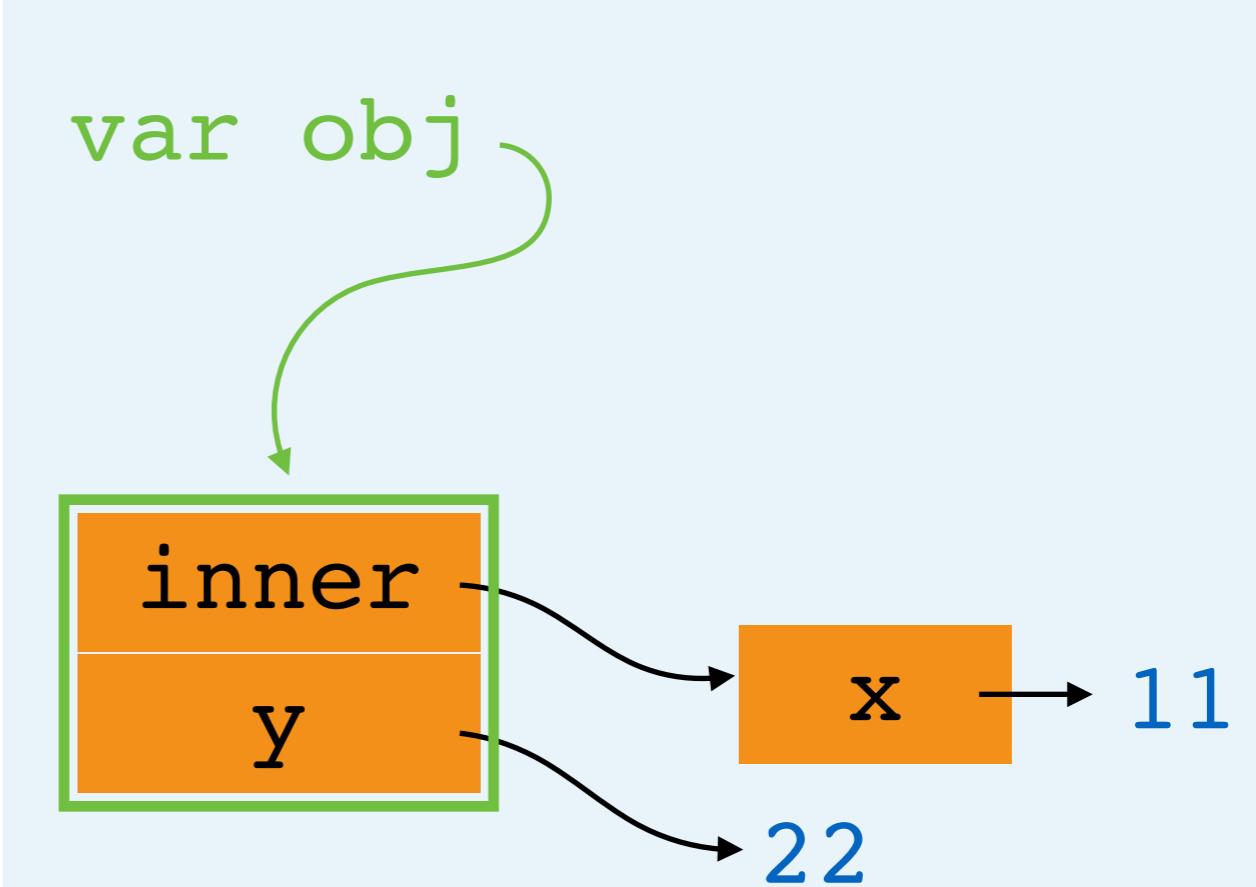
- a. Assignment
- a. Evaluate right side
 - a. Object member expression



Nested Objects (with vars)

```
var obj = {  
  inner: { x: 11 },  
  y: 22  
}  
var result = obj.inner
```

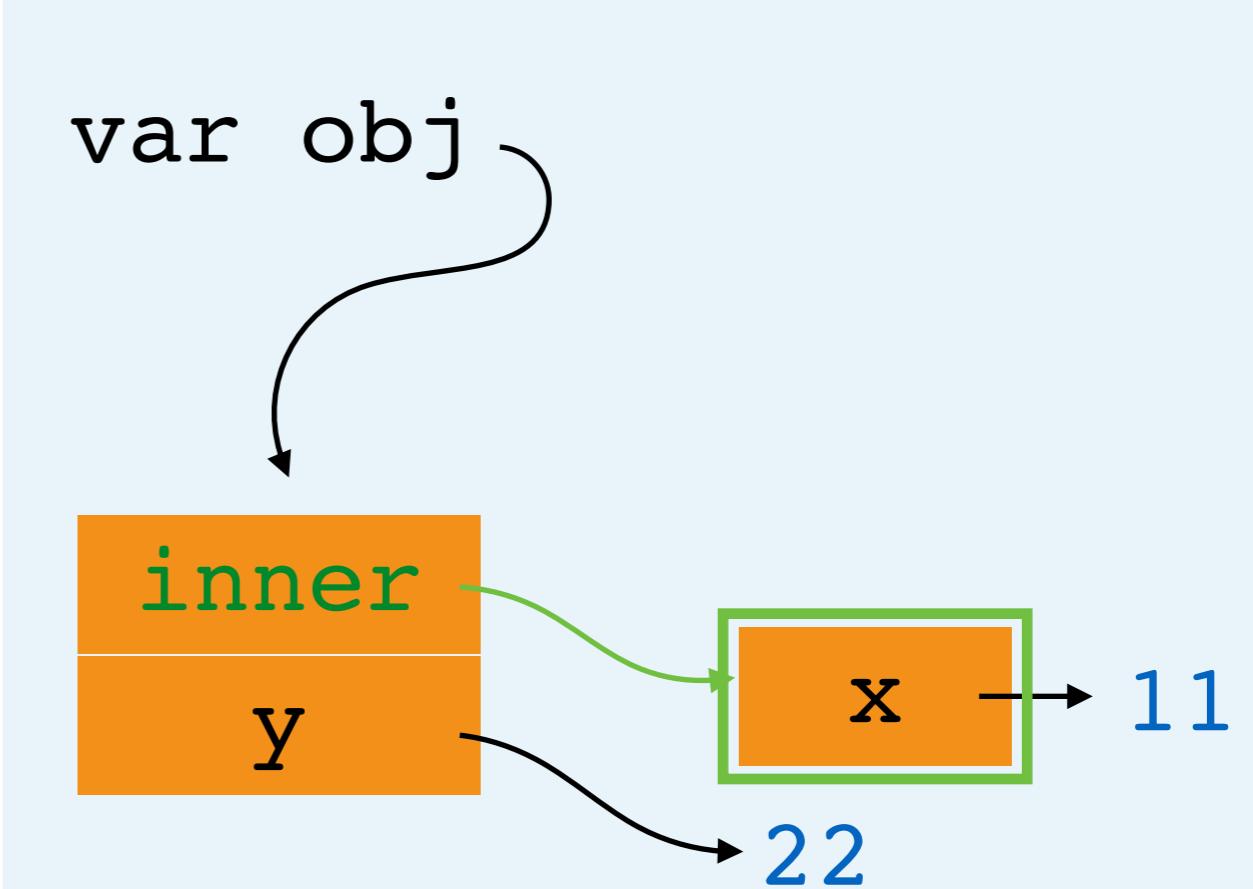
- a. Assignment
- a. Evaluate right side
 - a. Object member expression
 - a. Look up value of variable “obj”



Nested Objects (with vars)

```
var obj = {  
  inner: { x: 11 },  
  y: 22  
}  
var result = obj.inner
```

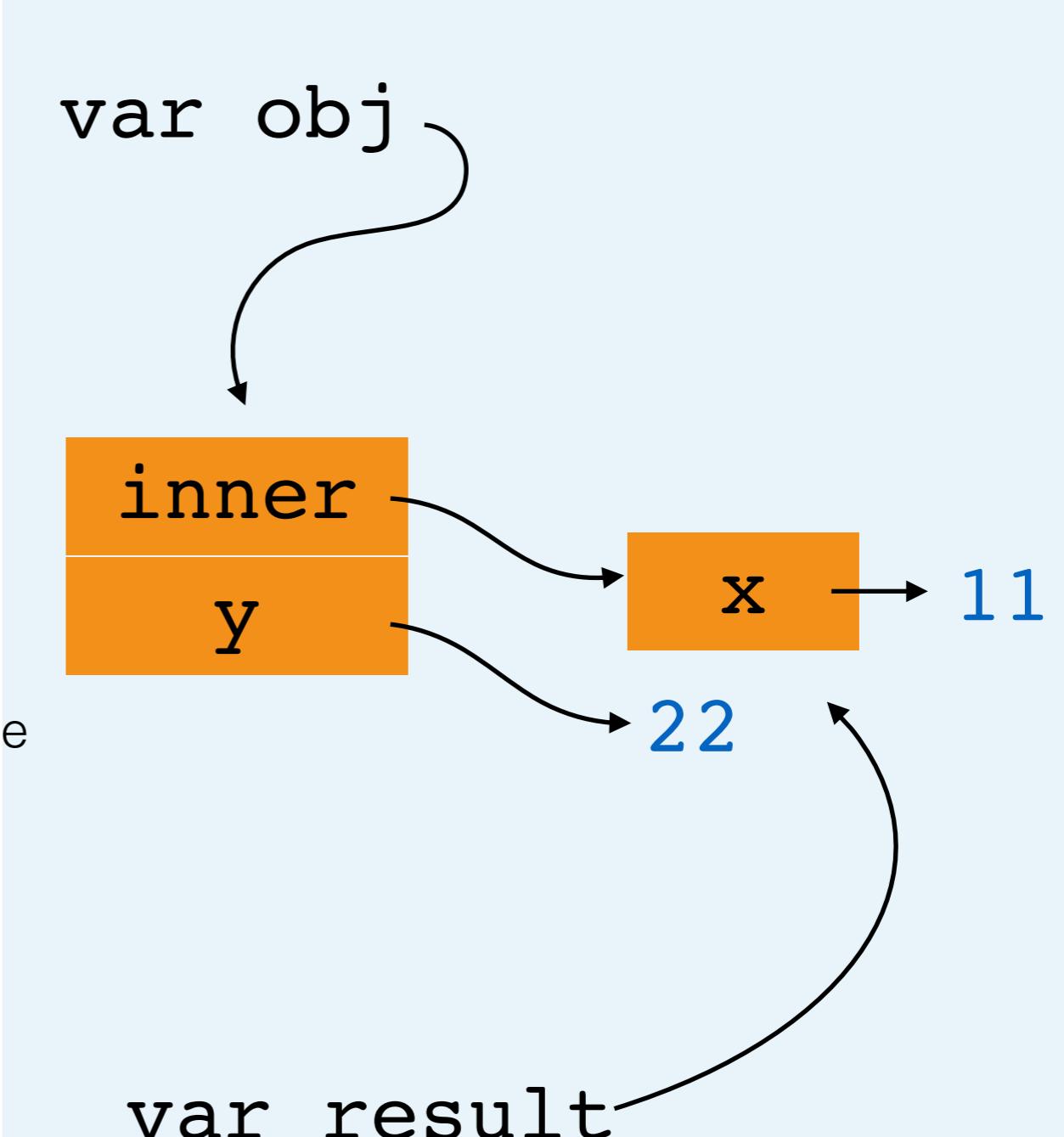
- a. Assignment
- a. Evaluate right side
 - a. Object member expression
 - a. Look up value of variable “obj”
 - b. Look up value of property “inner”



Nested Objects (with vars)

```
var obj = {  
  inner: { x: 11 },  
  y: 22  
}  
var result = obj.inner
```

- a. Assignment
- a. Evaluate right side
 - a. Object member expression
 - a. Look up value of variable “obj”
 - b. Look up value of property “inner”
 - b. Create var “result”, point to value of right side

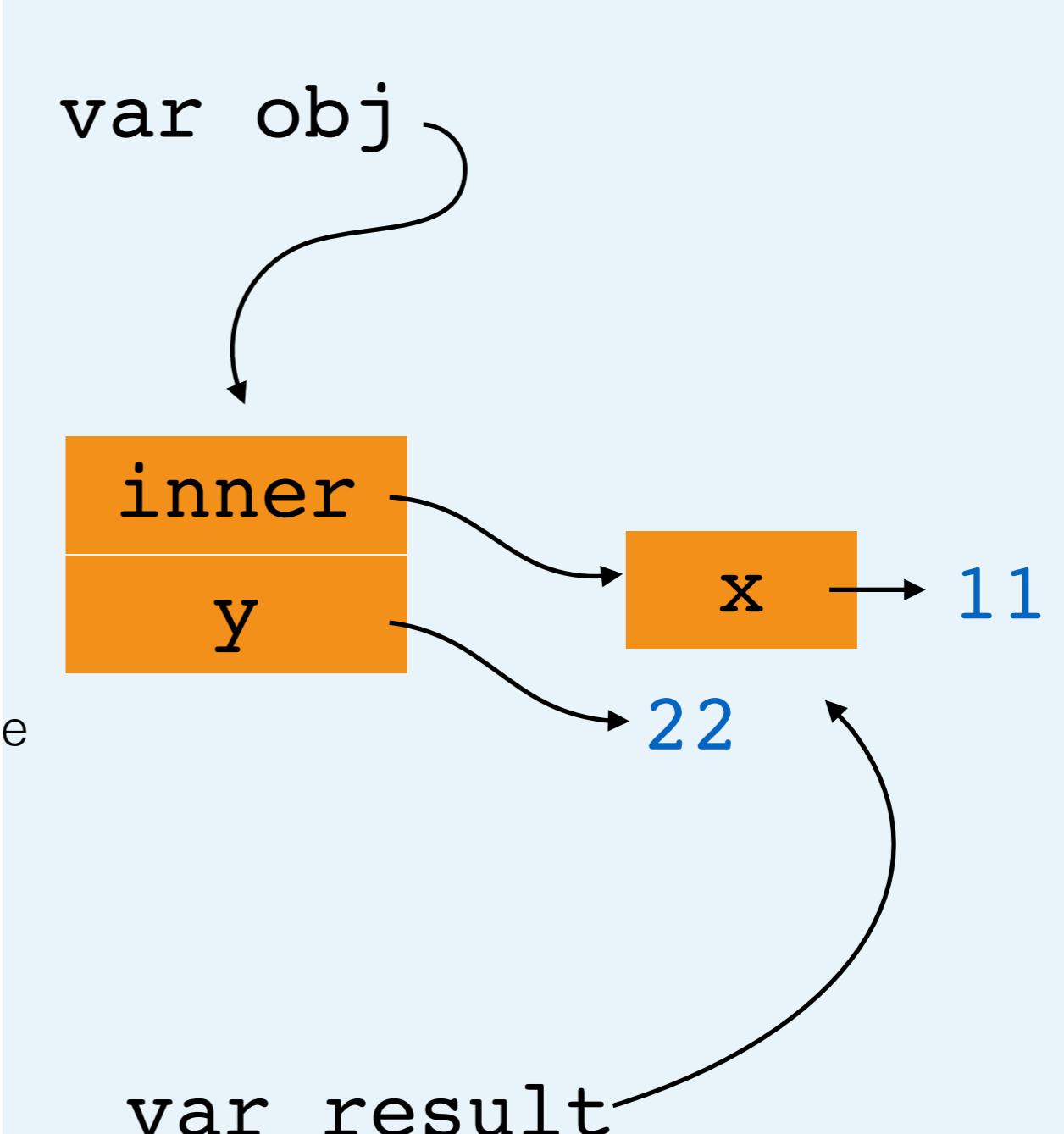


Nested Objects (with vars)

```
var obj = {  
  inner: { x: 11 },  
  y: 22  
}  
var result = obj.inner
```

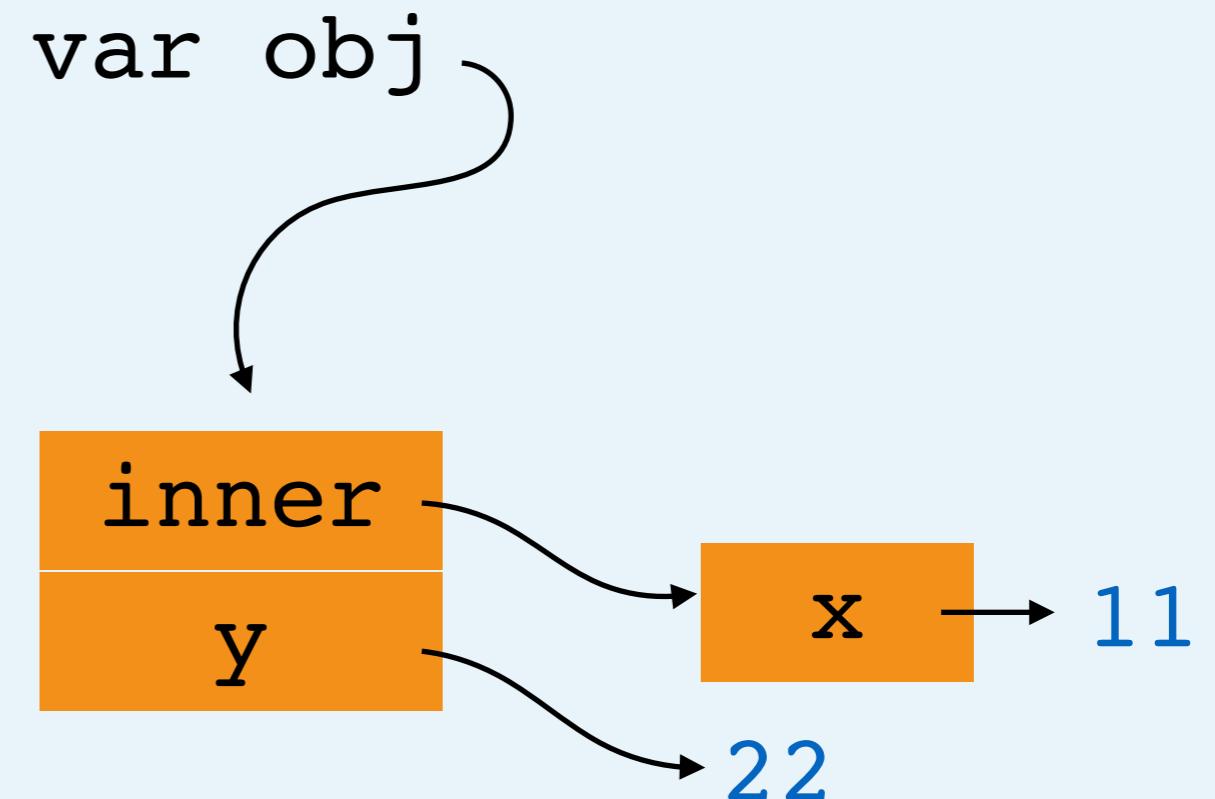
All Done!

- a. Assignment
- a. Evaluate right side
 - a. Object member expression
 - a. Look up value of variable “obj”
 - b. Look up value of property “inner”
 - b. Create var “result”, point to value of right side



Nested Objects (properties)

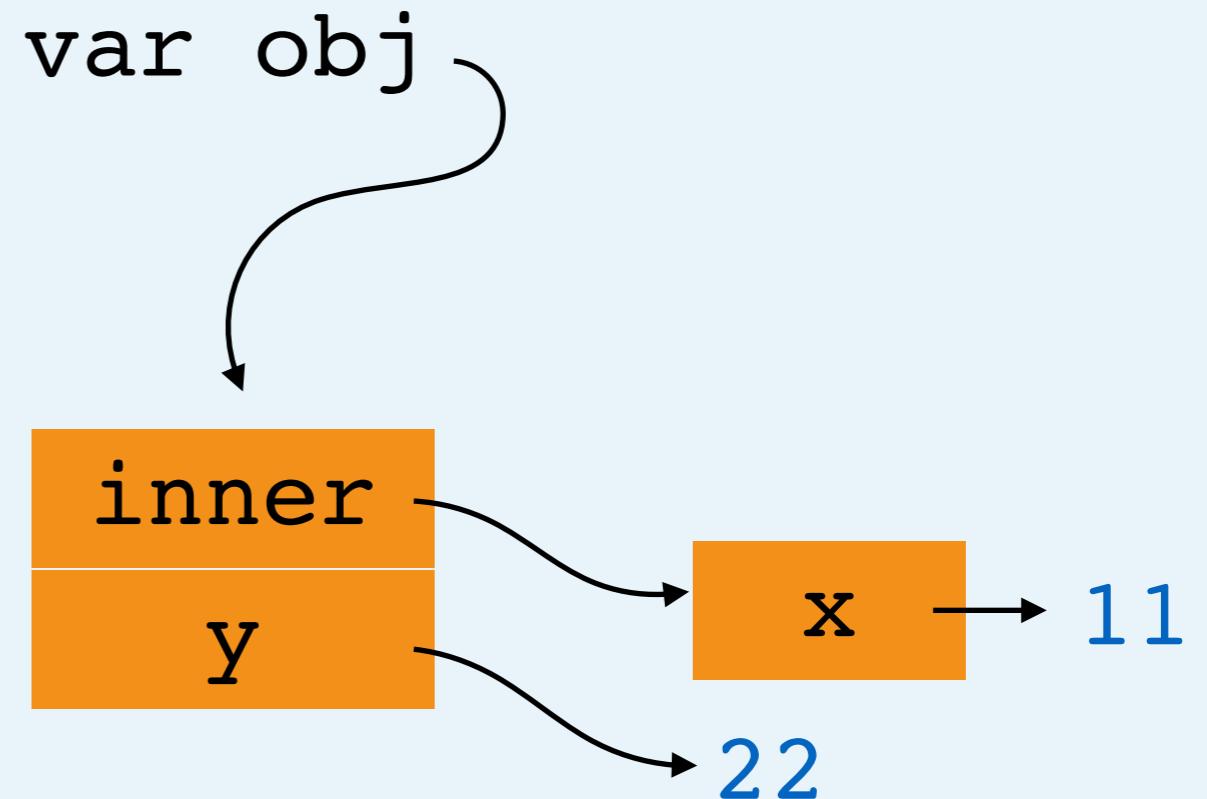
```
var obj = {  
  inner: { x: 11 },  
  y: 22  
}  
var result = obj.inner.x + 5
```



Nested Objects (properties)

```
var obj = {  
  inner: { x: 11 },  
  y: 22  
}  
  
var result = obj.inner.x + 5
```

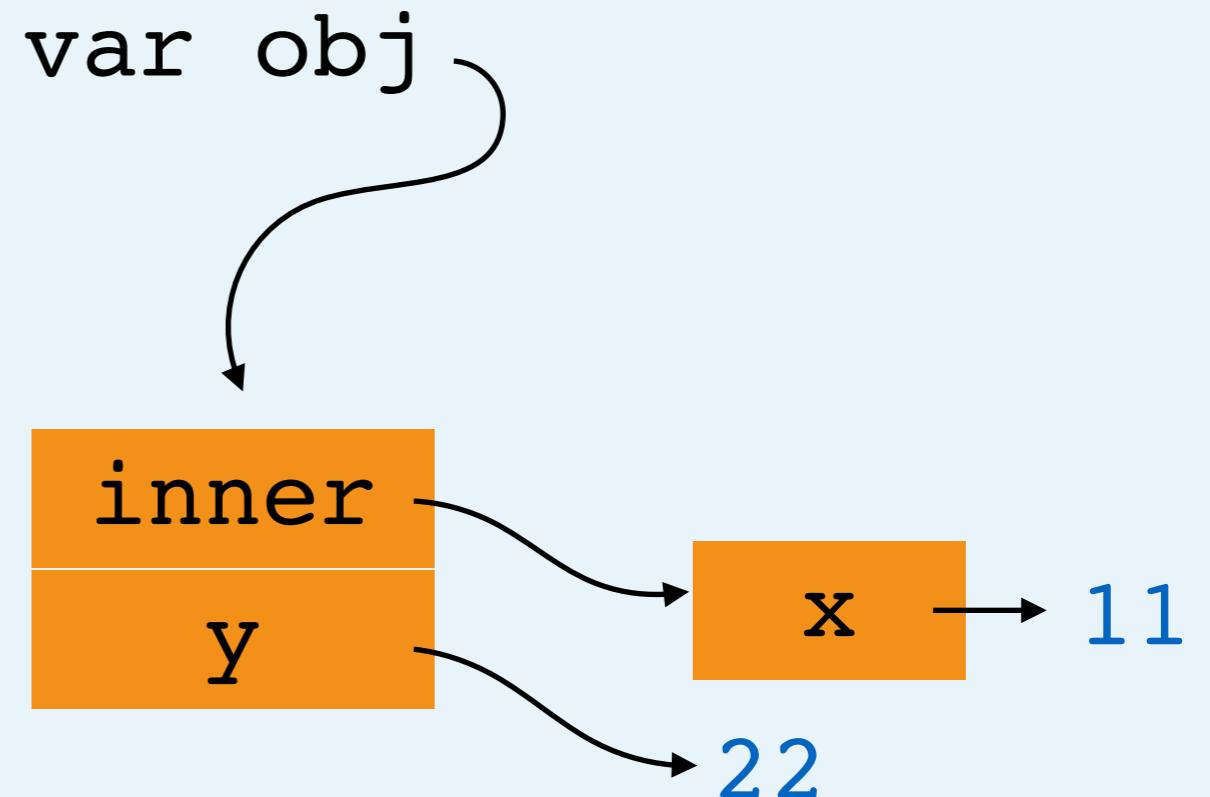
(same as before)



Nested Objects (properties)

```
var obj = {  
  inner: { x: 11 },  
  y: 22  
}  
  
var result = obj.inner.x + 5
```

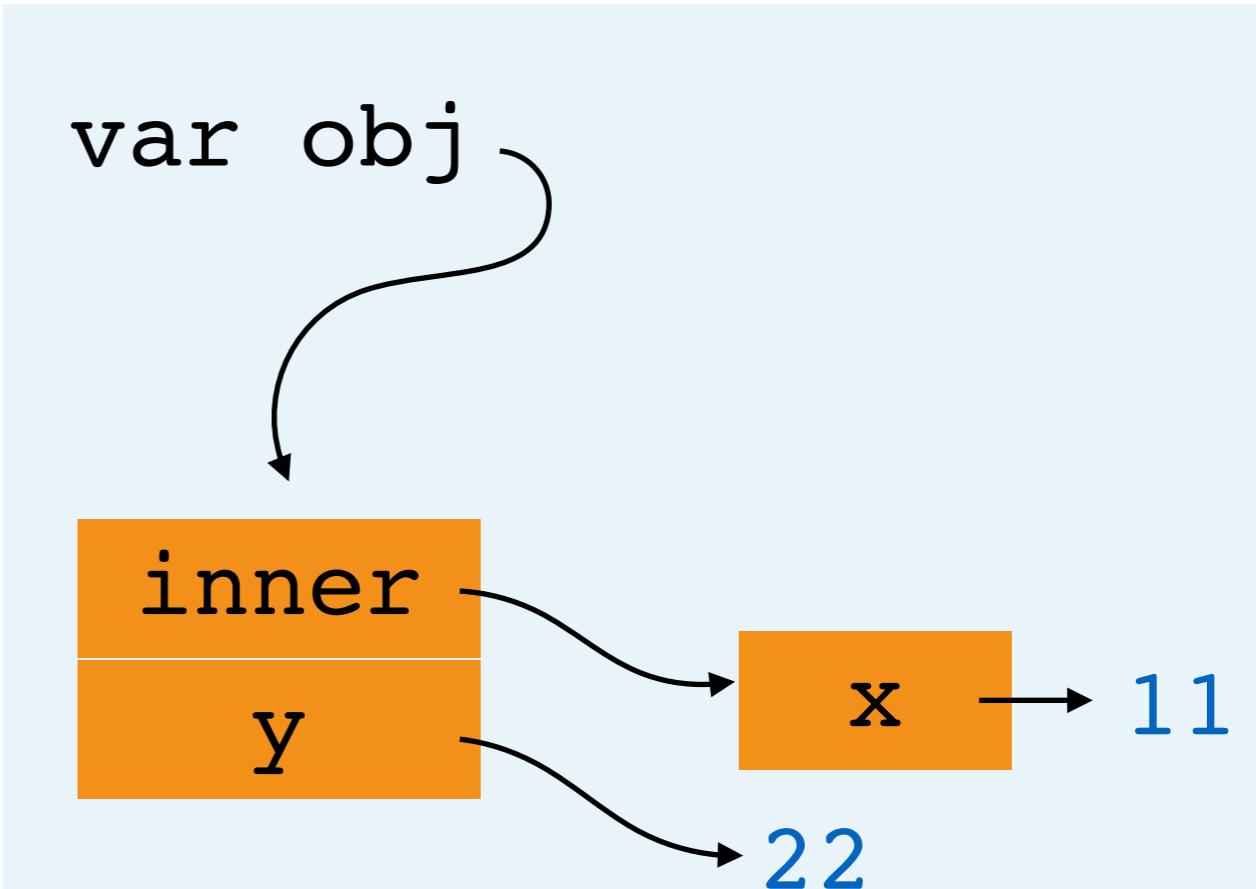
- a. Assignment



Nested Objects (properties)

```
var obj = {  
  inner: { x: 11 },  
  y: 22  
}  
var result = obj.inner.x + 5
```

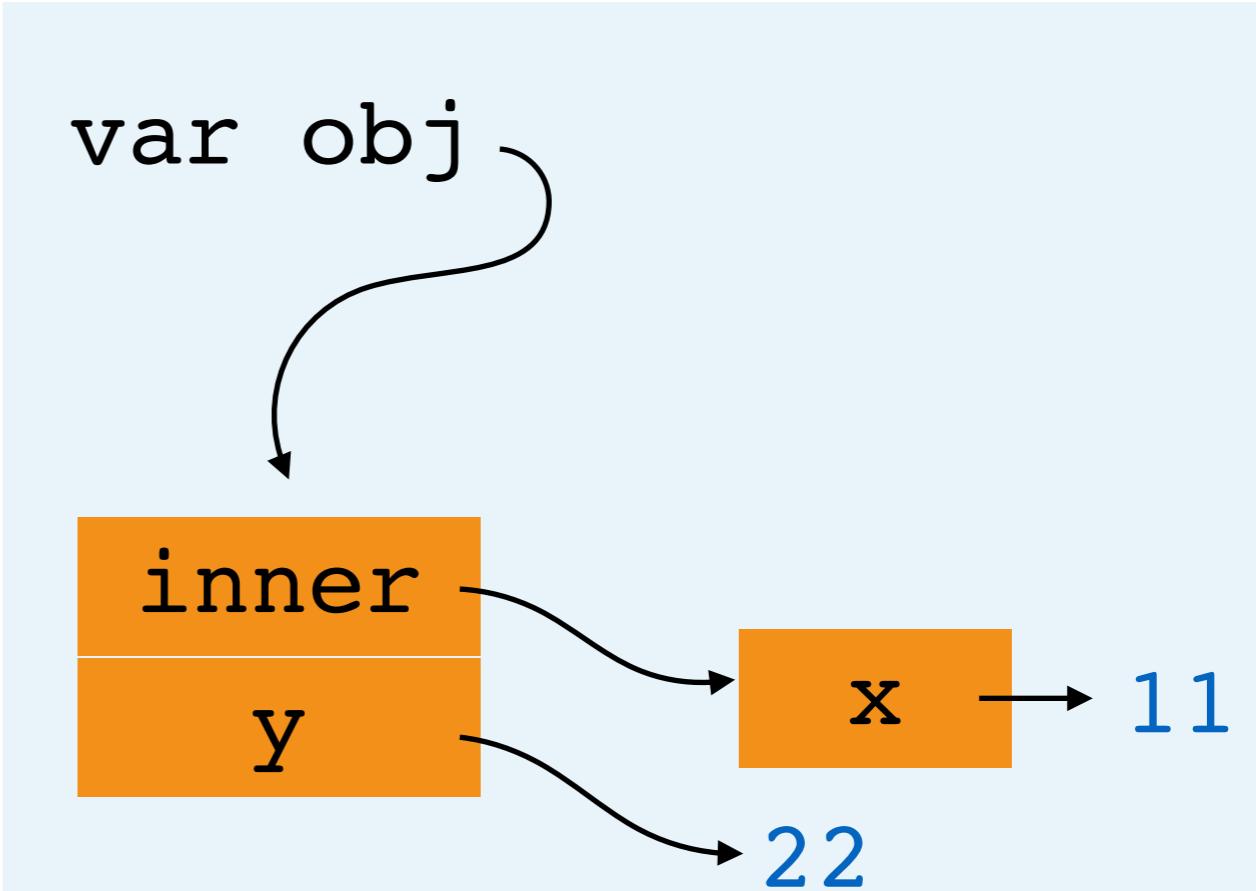
- a. Assignment
- a. Evaluate right side



Nested Objects (properties)

```
var obj = {  
  inner: { x: 11 },  
  y: 22  
}  
var result = obj.inner.x + 5
```

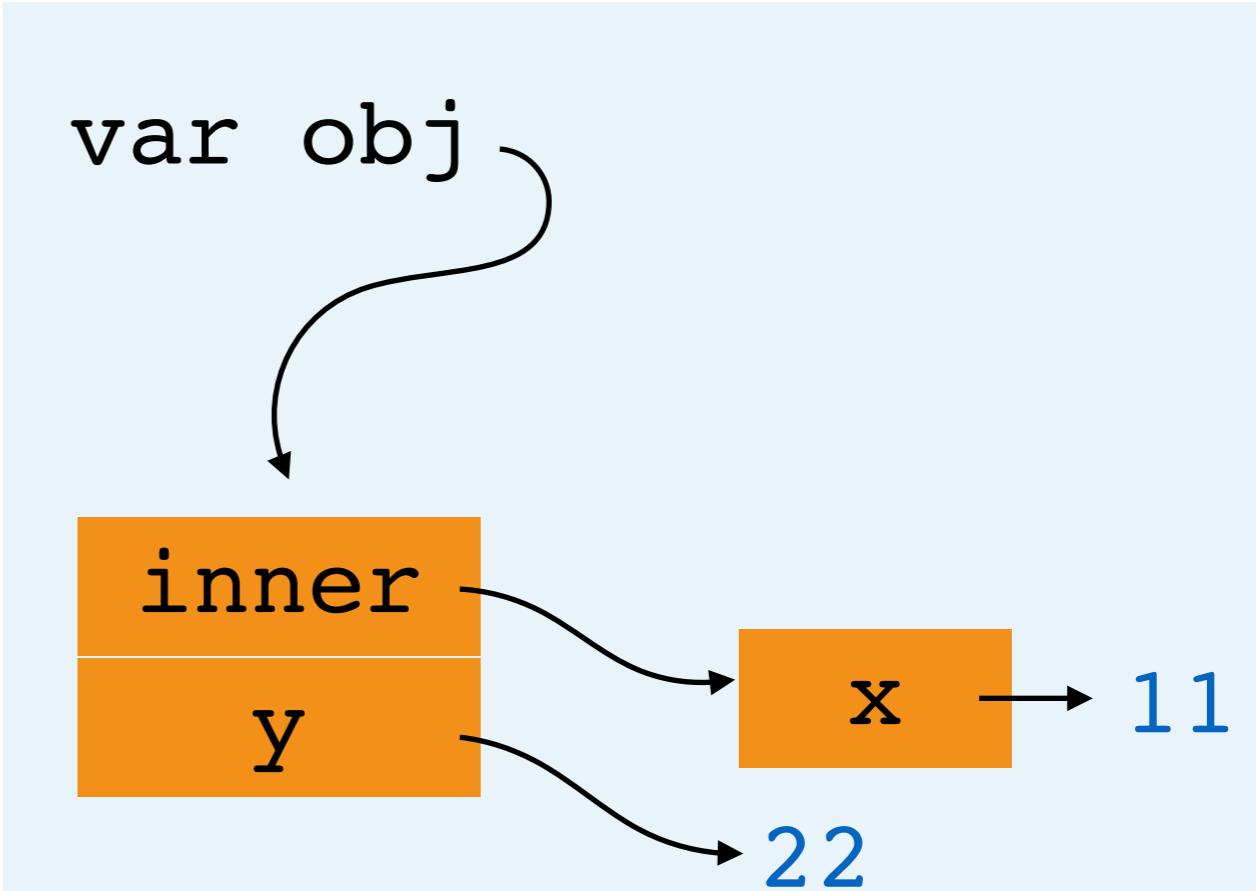
- a. Assignment
- a. Evaluate right side
 - a. Binary operation (addition)



Nested Objects (properties)

```
var obj = {  
    inner: { x: 11 },  
    y: 22  
}  
var result = obj.inner.x + 5
```

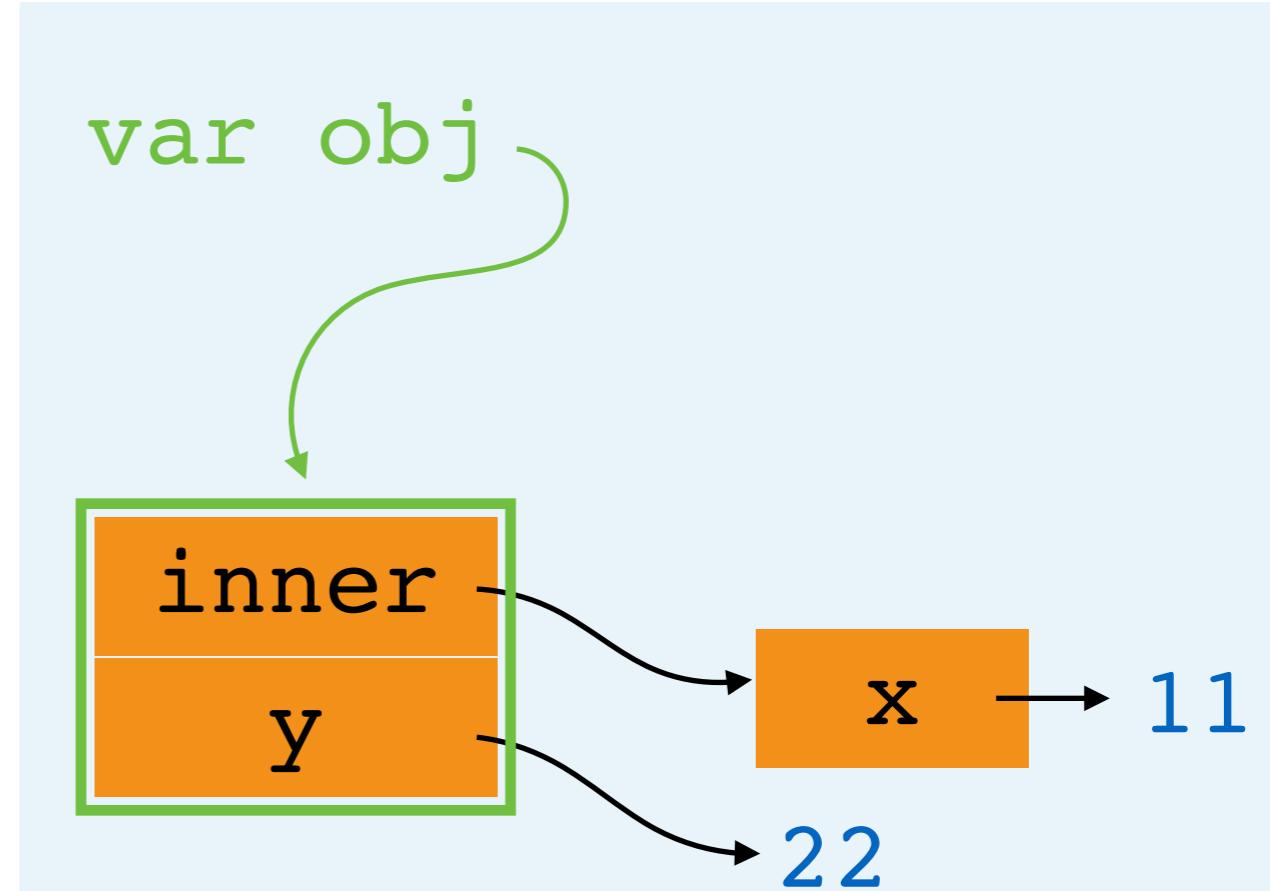
- a. Assignment
- a. Evaluate right side
 - a. Binary operation (addition)
 - a. Object member expression



Nested Objects (properties)

```
var obj = {  
    inner: { x: 11 },  
    y: 22  
}  
var result = obj.inner.x + 5
```

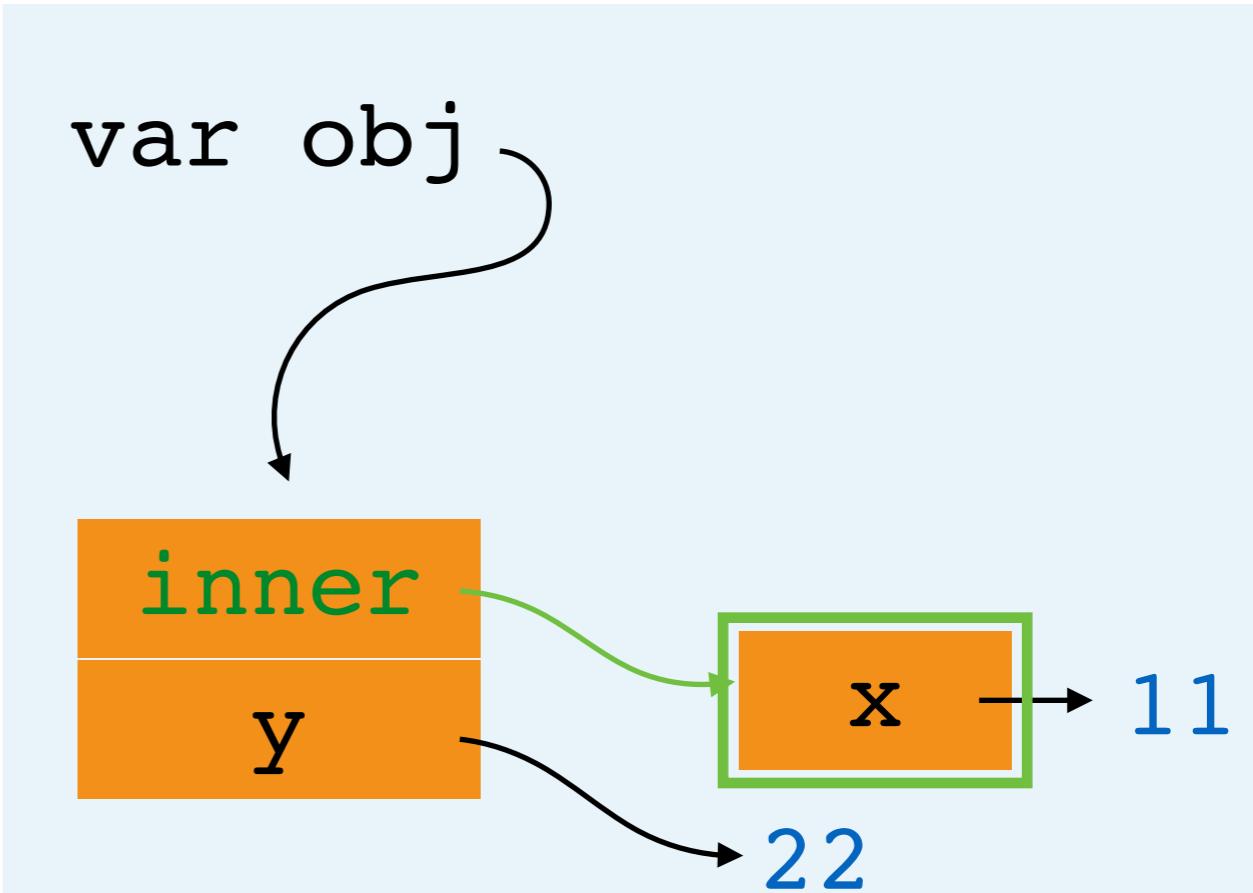
- a. Assignment
- a. Evaluate right side
 - a. Binary operation (addition)
 - a. Object member expression
 - a. Look up value of variable “obj”



Nested Objects (properties)

```
var obj = {  
  inner: { x: 11 },  
  y: 22  
}  
var result = obj.inner.x + 5
```

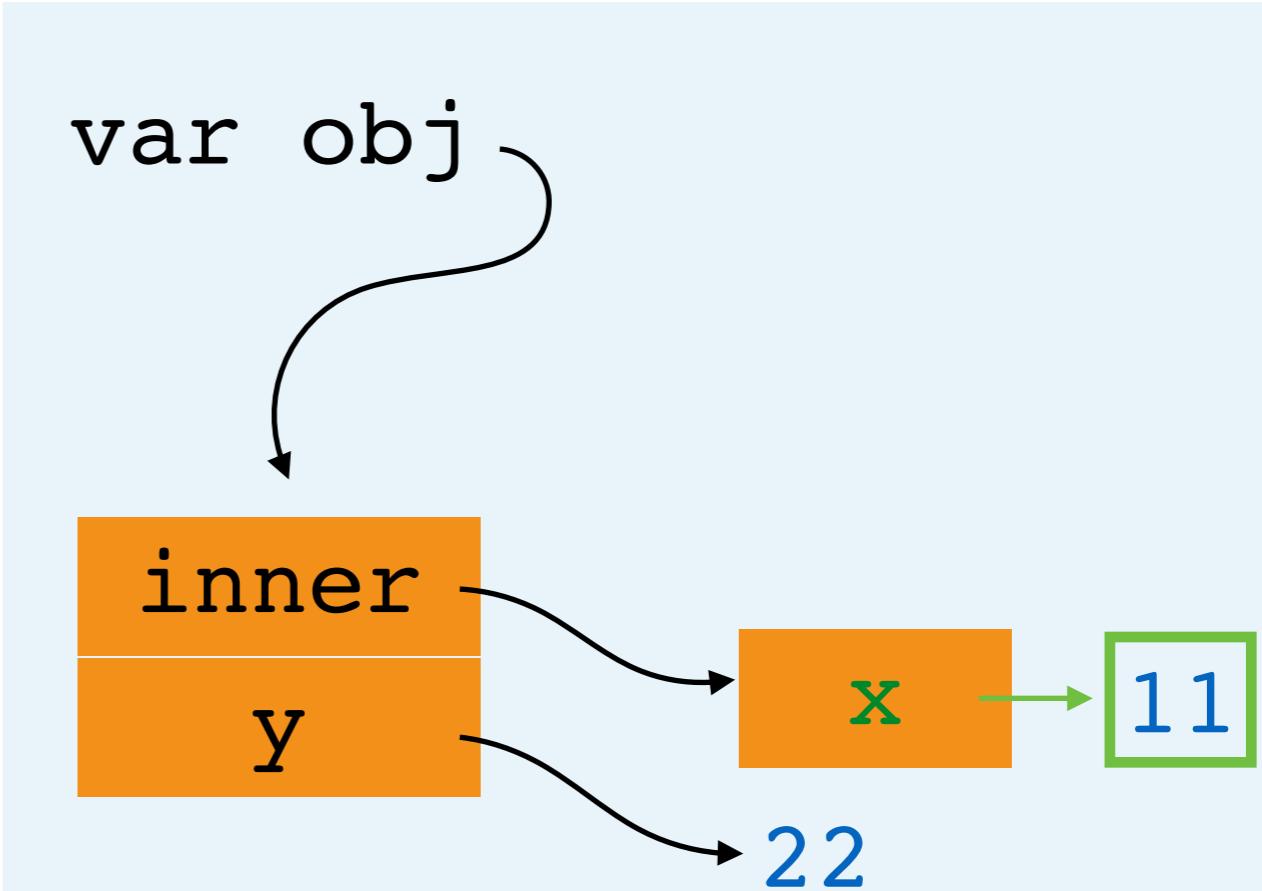
- a. Assignment
- a. Evaluate right side
 - a. Binary operation (addition)
 - a. Object member expression
 - a. Look up value of variable “obj”
 - b. Look up value of property “inner”



Nested Objects (properties)

```
var obj = {  
    inner: { x: 11 },  
    y: 22  
}  
var result = obj.inner.x + 5
```

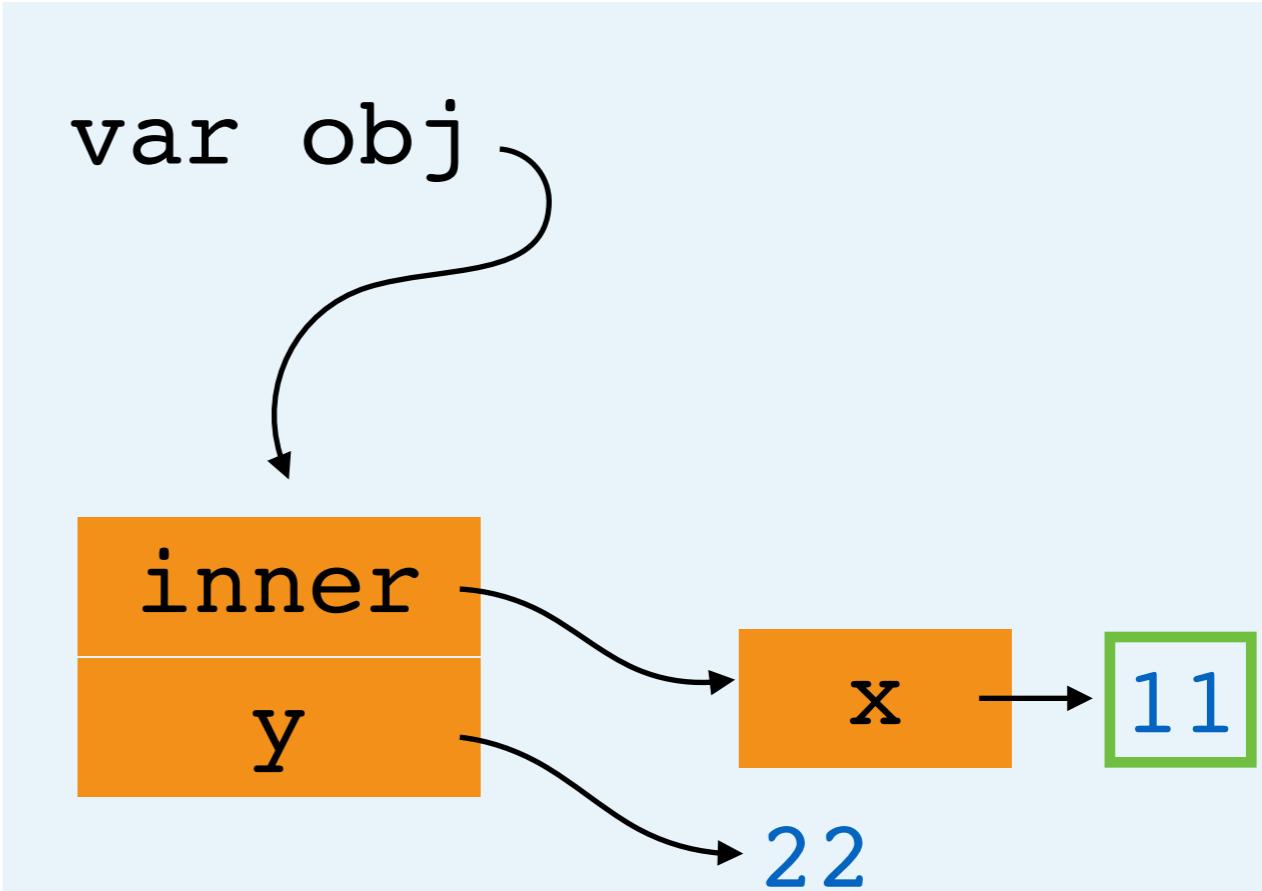
- a. Assignment
- a. Evaluate right side
 - a. Binary operation (addition)
 - a. Object member expression
 - a. Look up value of variable “obj”
 - b. Look up value of property “inner”
 - c. Look up value of property “x”



Nested Objects (properties)

```
var obj = {  
    inner: { x: 11 },  
    y: 22  
}  
var result = obj.inner.x + 5
```

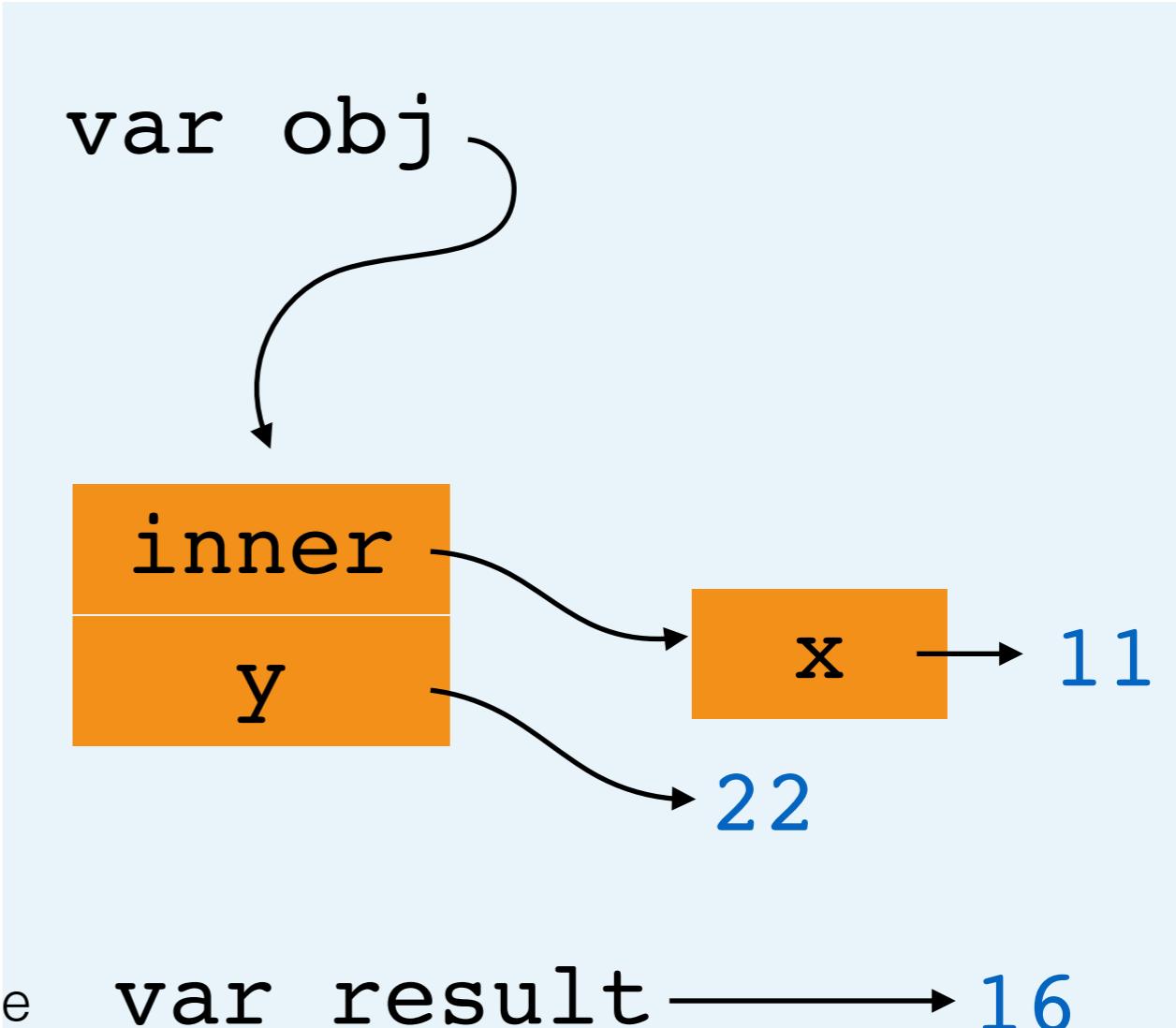
- a. Assignment
- a. Evaluate right side
 - a. Binary operation (addition)
 - a. Object member expression
 - a. Look up value of variable “obj”
 - b. Look up value of property “inner”
 - c. Look up value of property “x”
 - b. Create value



Nested Objects (properties)

```
var obj = {  
    inner: { x: 11 },  
    y: 22  
}  
  
var result = obj.inner.x + 5
```

- a. Assignment
- a. Evaluate right side
 - a. Binary operation (addition)
 - a. Object member expression
 - a. Look up value of variable “obj”
 - b. Look up value of property “inner”
 - c. Look up value of property “x”
 - b. Create value
 - b. Create var “result”, point to value of right side



Nested Objects (properties)

```
var obj = {  
    inner: { x: 11 },  
    y: 22  
}  
var result = obj.inner.x + 5
```

All Done!

- a. Assignment
- a. Evaluate right side
 - a. Binary operation (addition)
 - a. Object member expression
 - a. Look up value of variable “obj”
 - b. Look up value of property “inner”
 - c. Look up value of property “x”
 - b. Create value
 - b. Create var “result”, point to value of right side

