

# Array Iteration Deep Dive



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VP of Product & Independent Developer

[fancymatt.com](http://fancymatt.com)

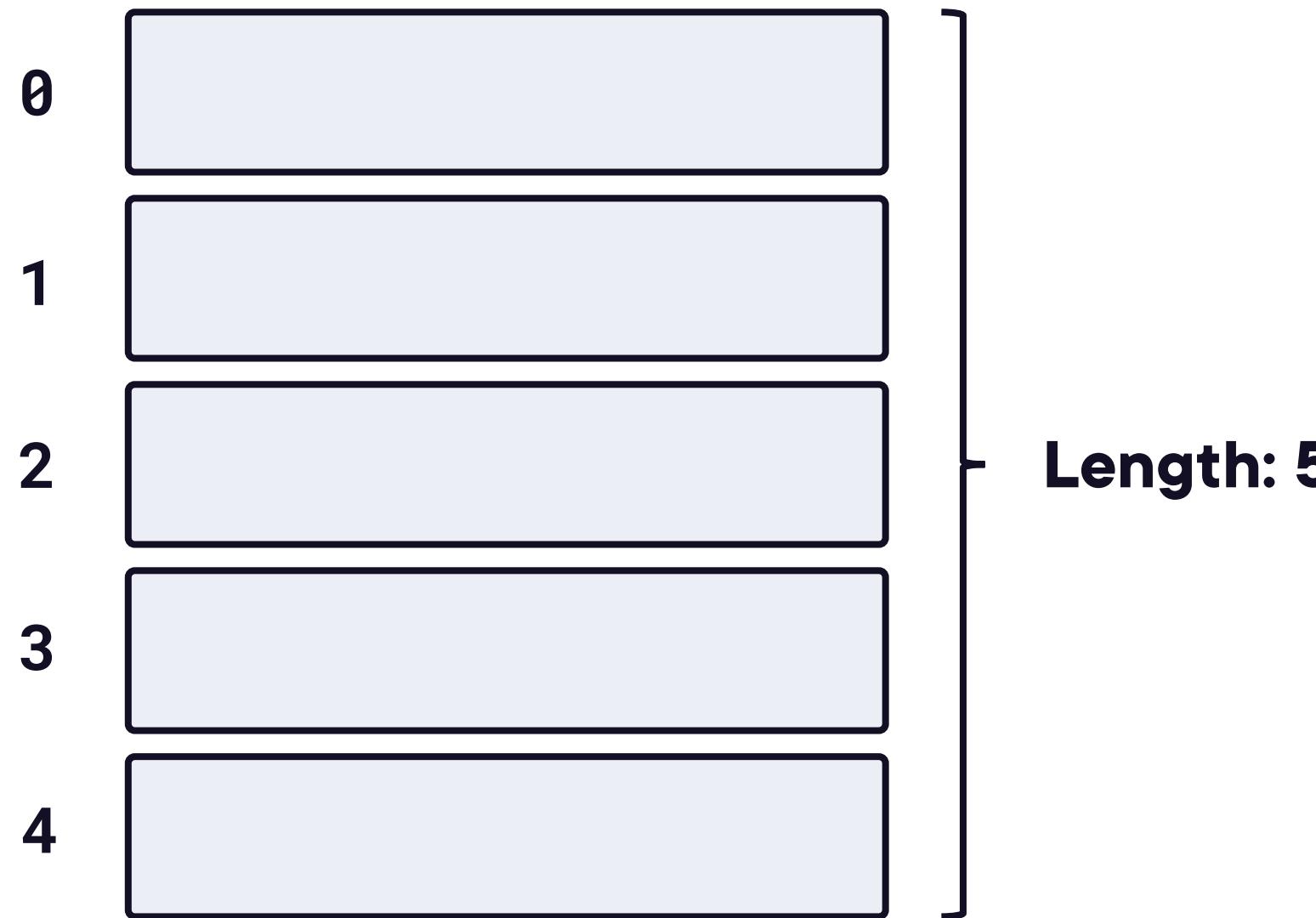
**Up Next:**

# **For Loops**

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# An Array's Largest Index is One Less Than Its Length



# Tools for Control Flow in For Loops

**continue**

```
if (elementIsIrrelevant) {  
    continue;  
}
```

**break**

```
if (elementIsFound) {  
    break;  
}
```



# For loops get the job done



# For Loops Aren't a Great Choice for Array Iteration

**Lots of boilerplate code**

**Easy to make an off-by-one error**

**Difficult to read**



# Improved For Loops for Array Iteration

**for... in**

```
for (let property in object) {  
    // do something  
}
```

**for... of**

```
for (let element of array) {  
    // do something  
}
```



# Comparison of JavaScript For Loops

	<b>for</b>	<b>for... in</b>	<b>for... of</b>	<b>forEach</b>
<b>Iterates through...</b>	An index	Enumerable properties	Iterable objects	Array elements
<b>Sparse Array Handling</b>	No handling	No handling	No handling	Ignores undefined
<b>Continue and Break?</b>	Yes	Yes	Yes	No



**ForEach** is clearly the best  
way to loop through an  
array...



**ForEach** is clearly the best way to loop through an array... but there's usually a better option



**Up Next:**

# **Summarizing Arrays**

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# Functions for Summarizing Arrays

**join**

**some**

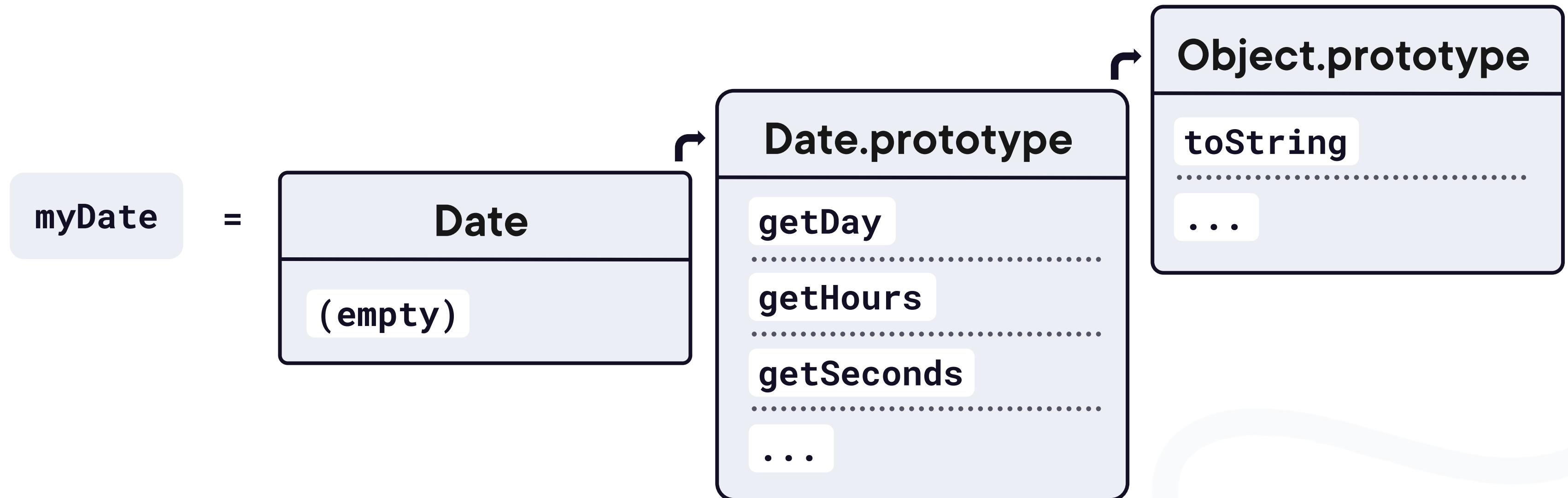
**every**

**reduce**

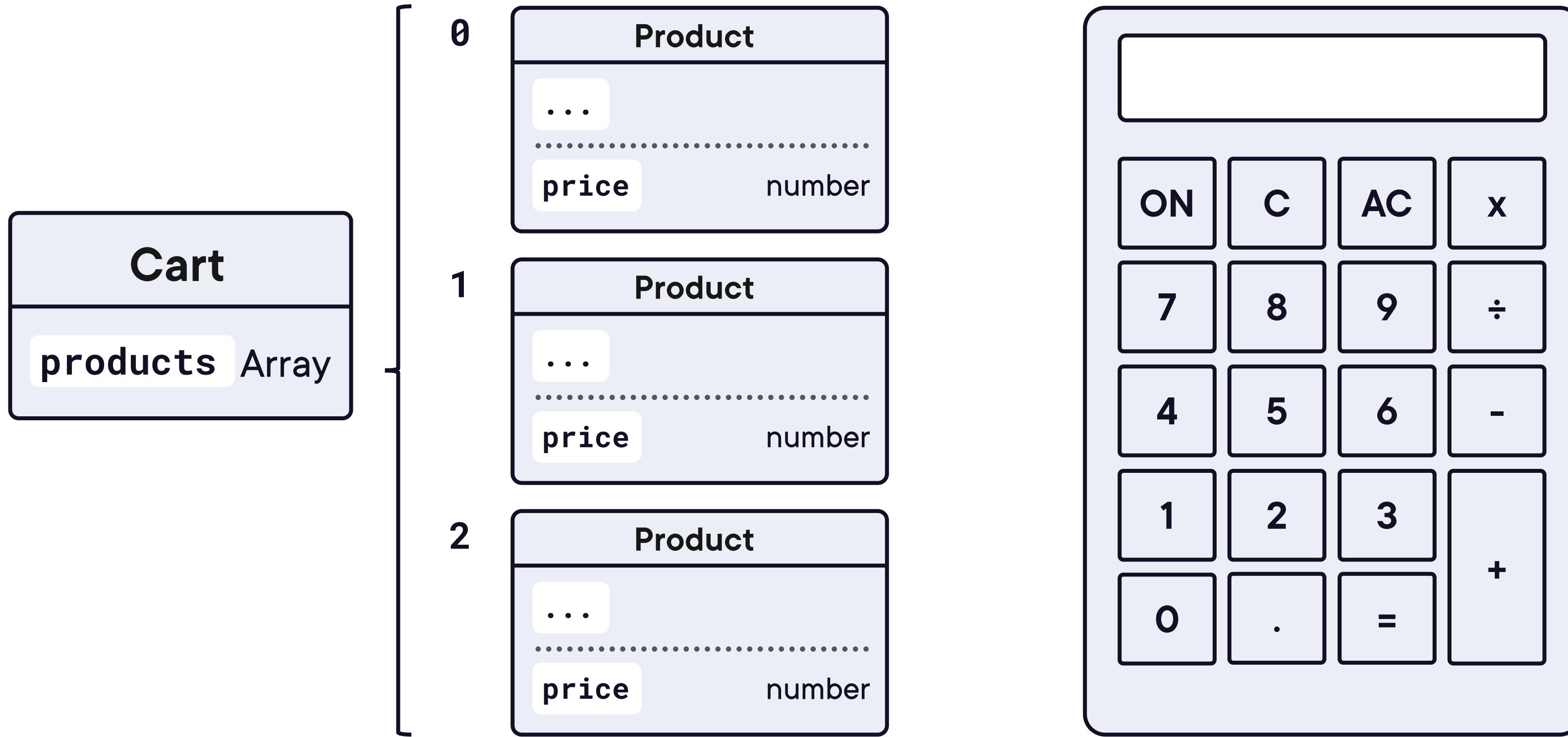
**reduceRight**



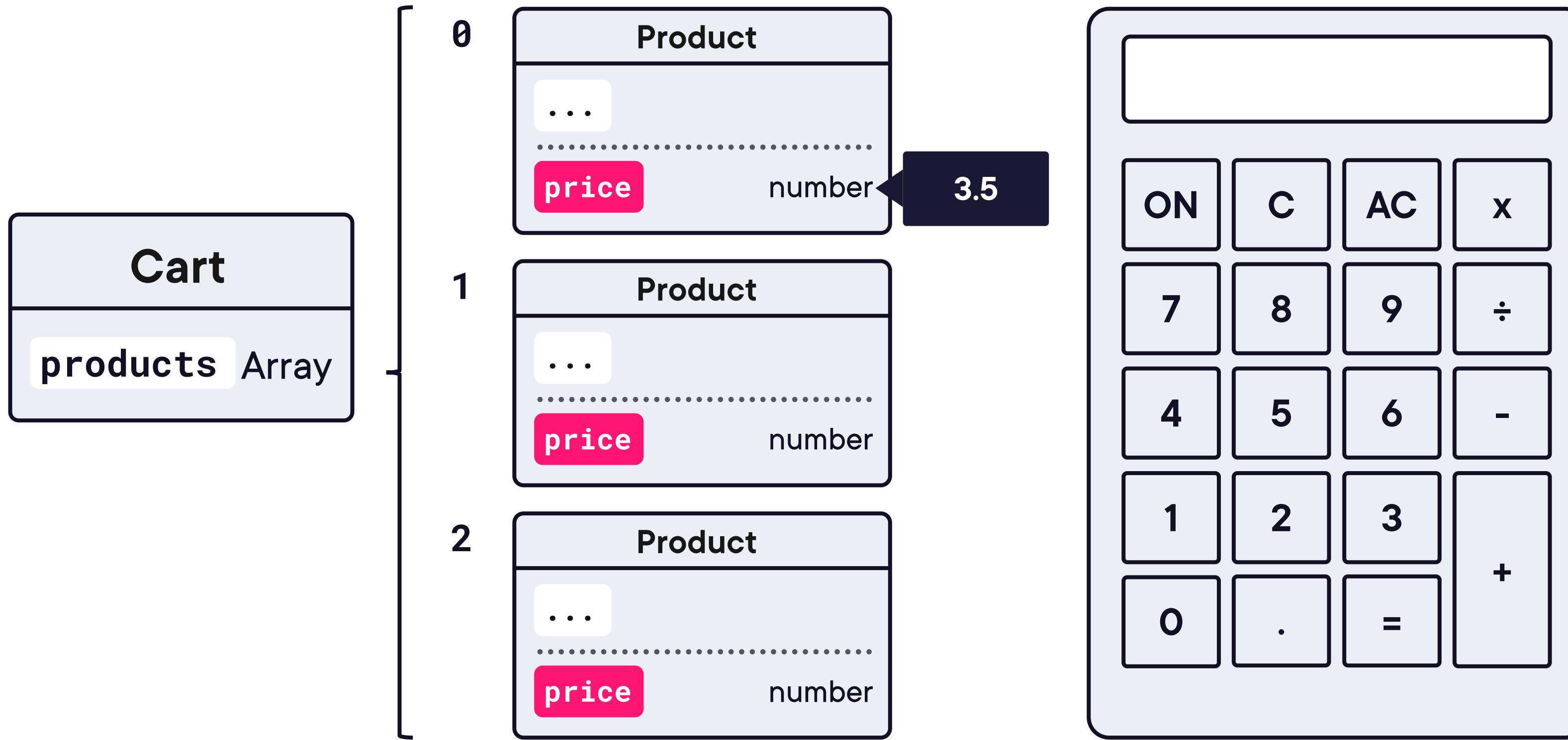
# `toString` Exists on `Object.prototype`



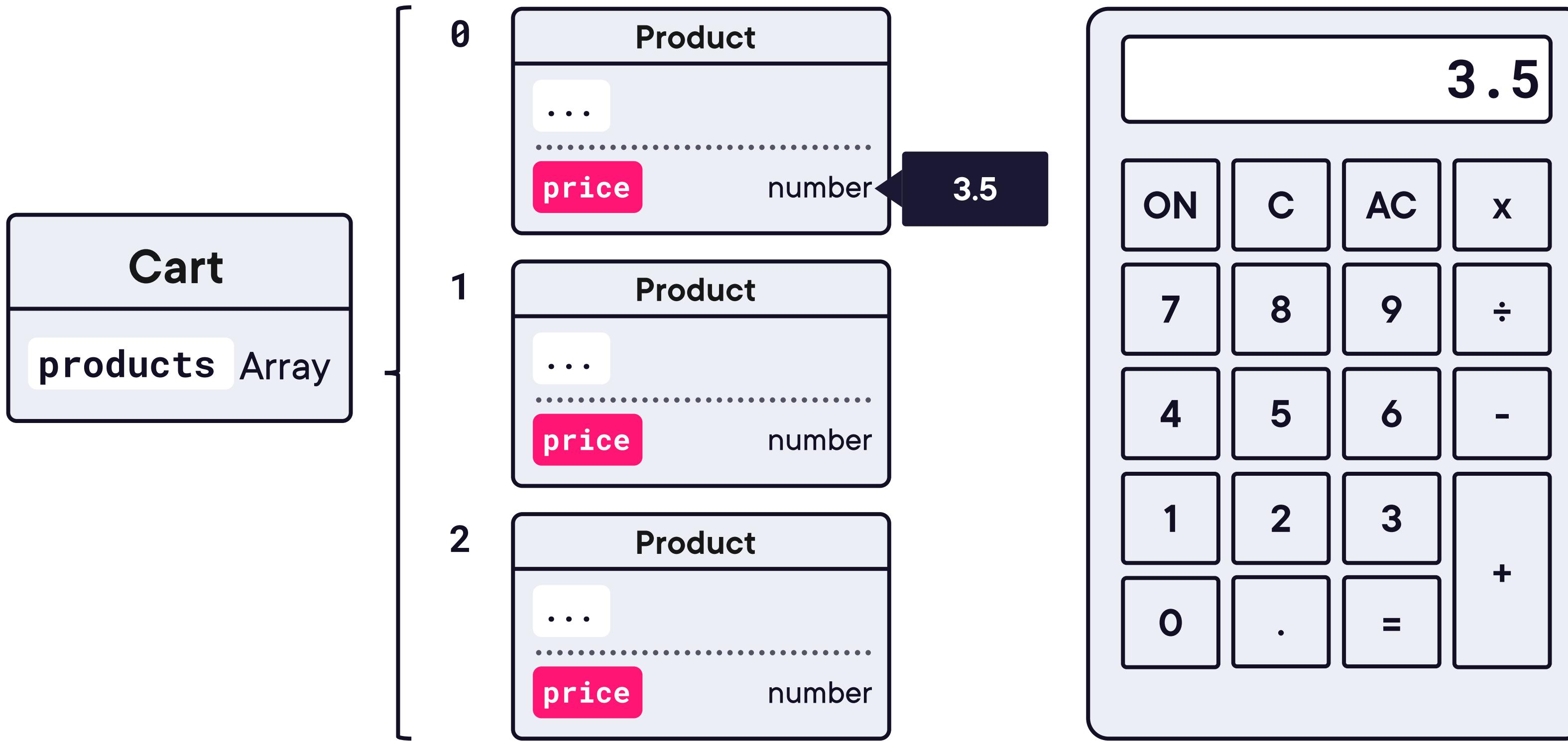
# Calculating the Total Value of Products in a Cart



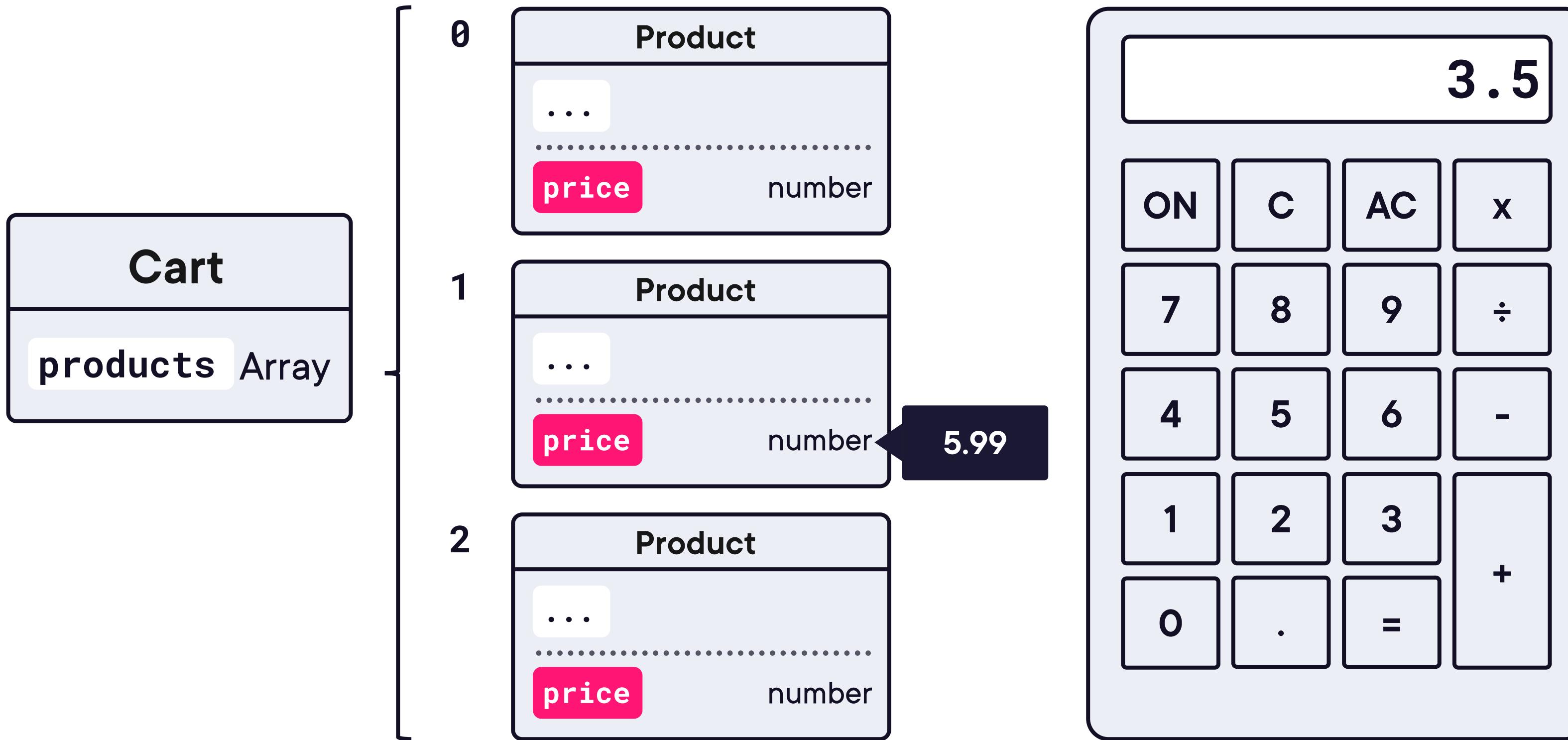
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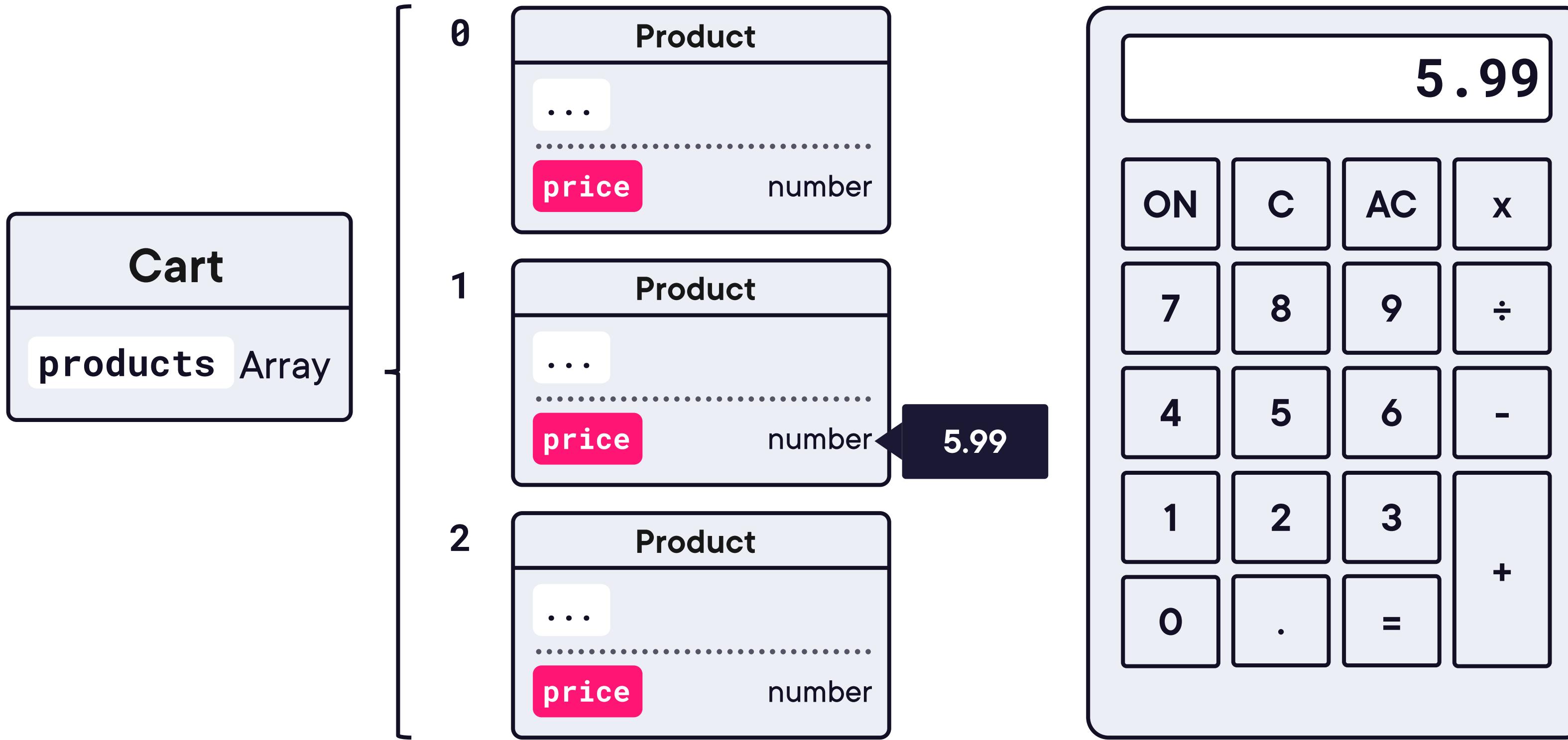
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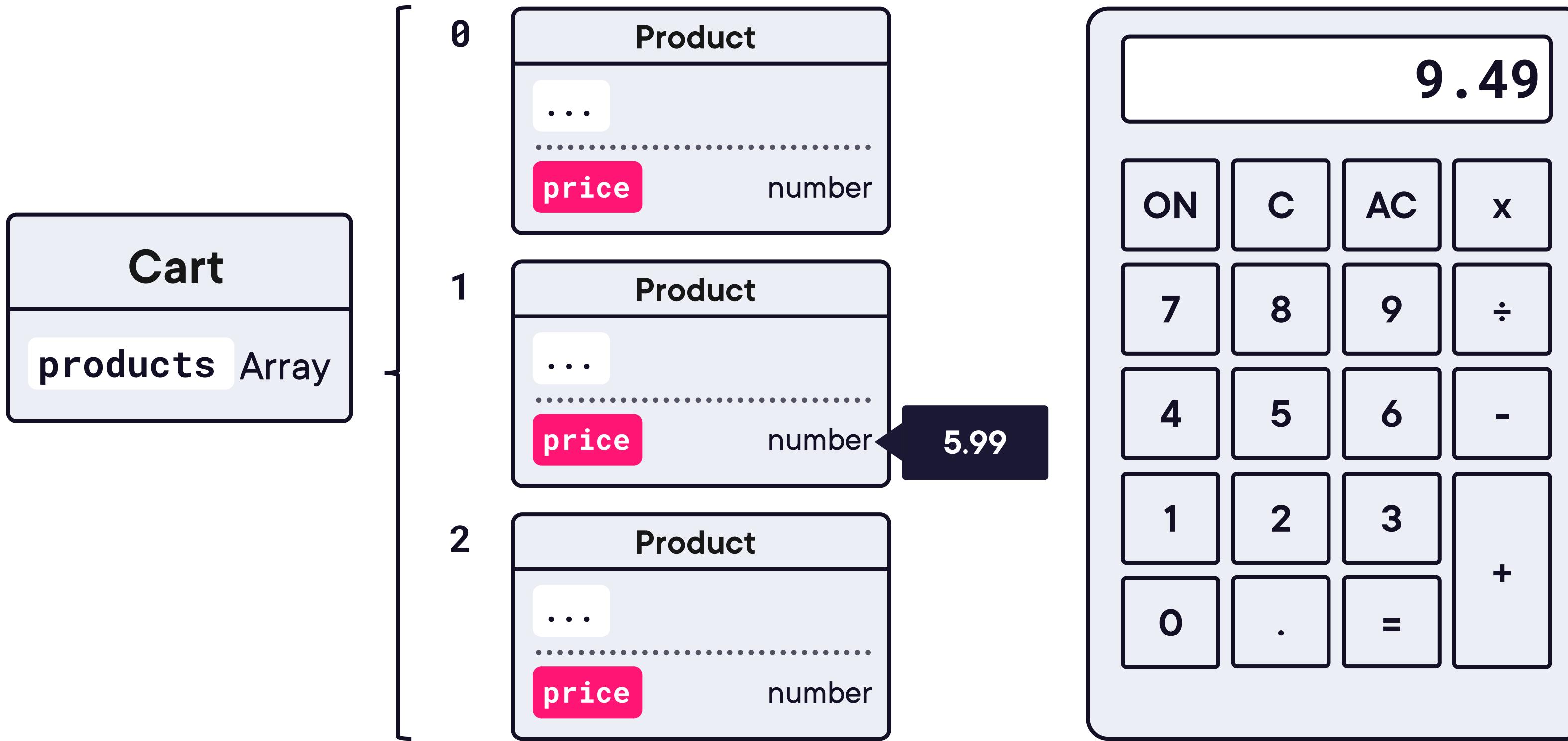
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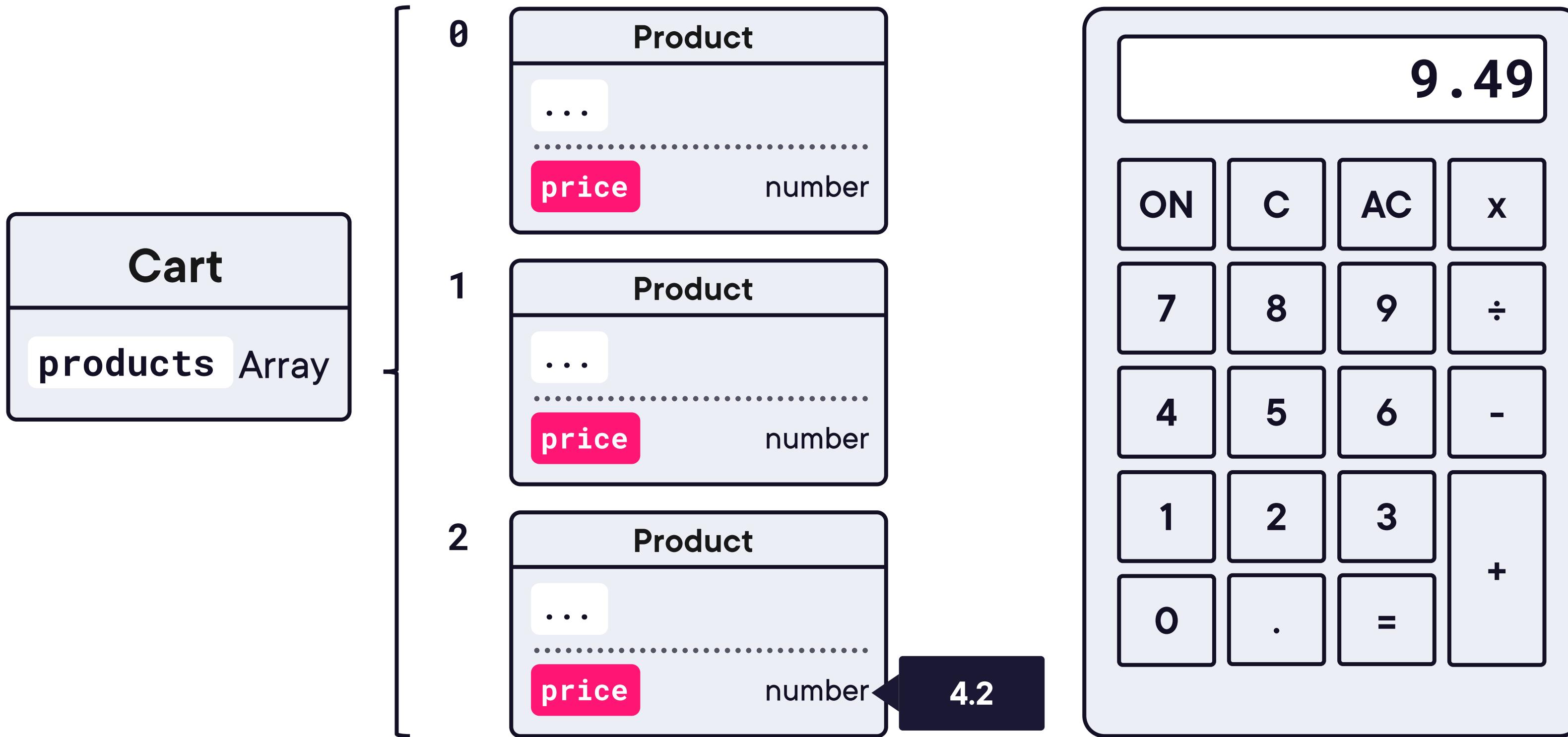
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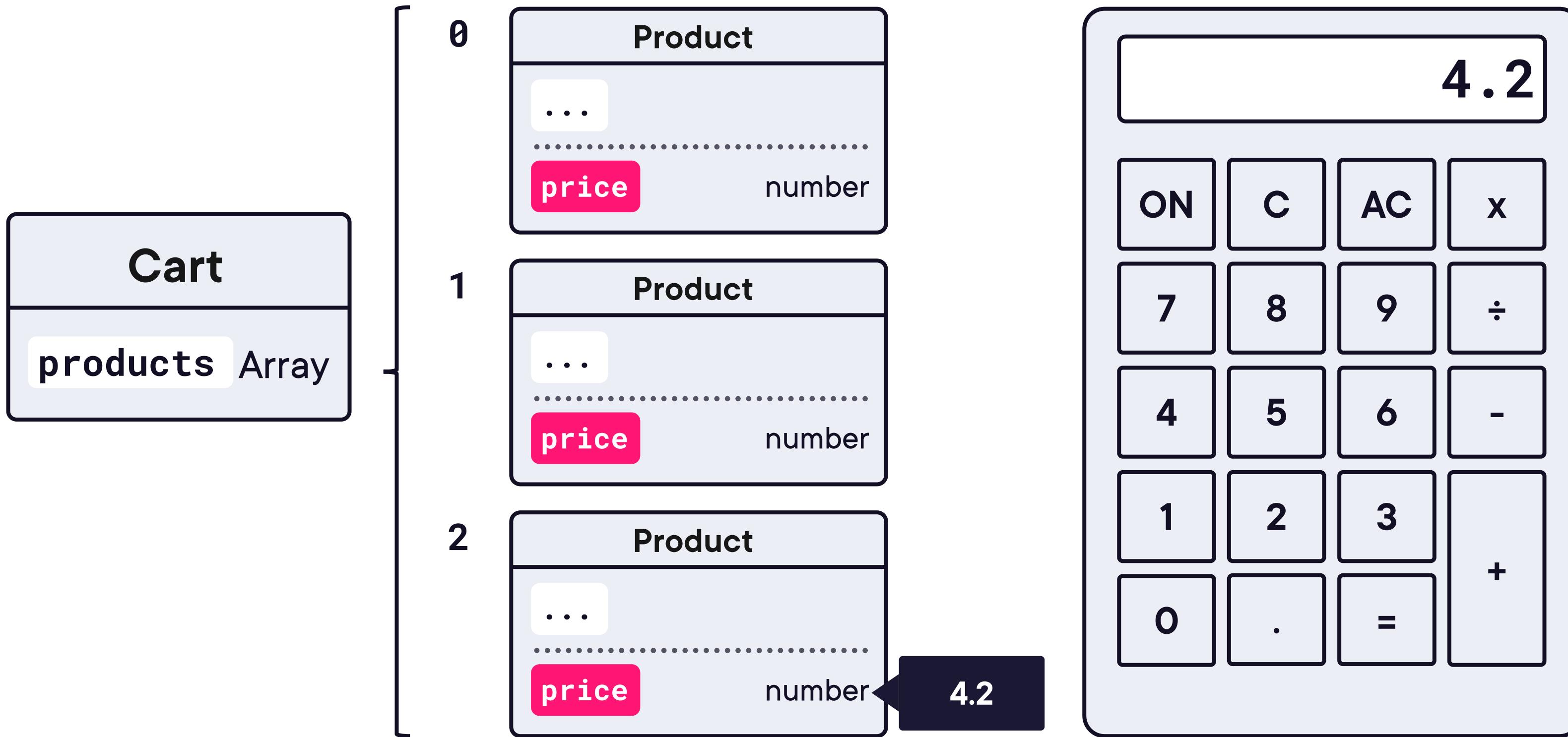
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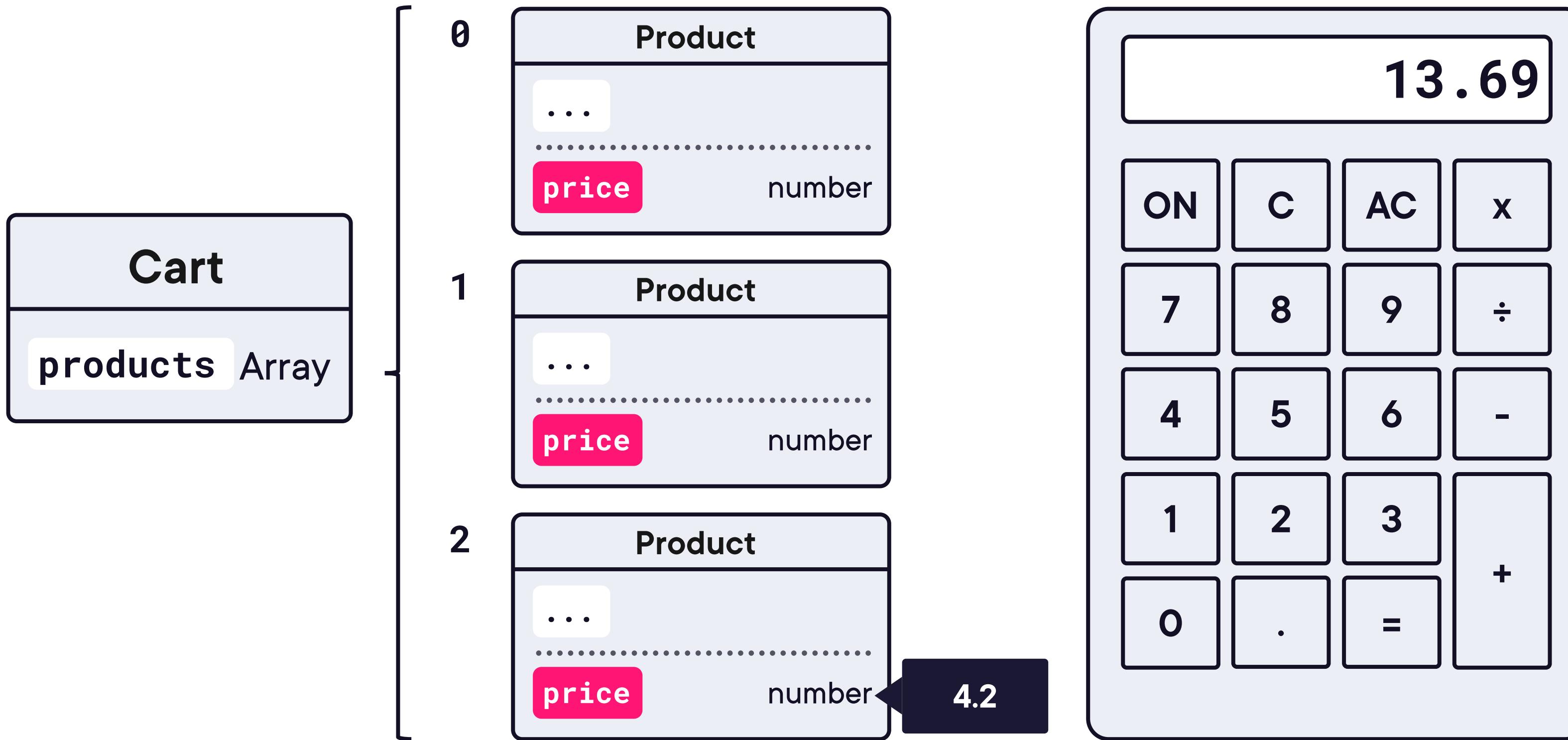
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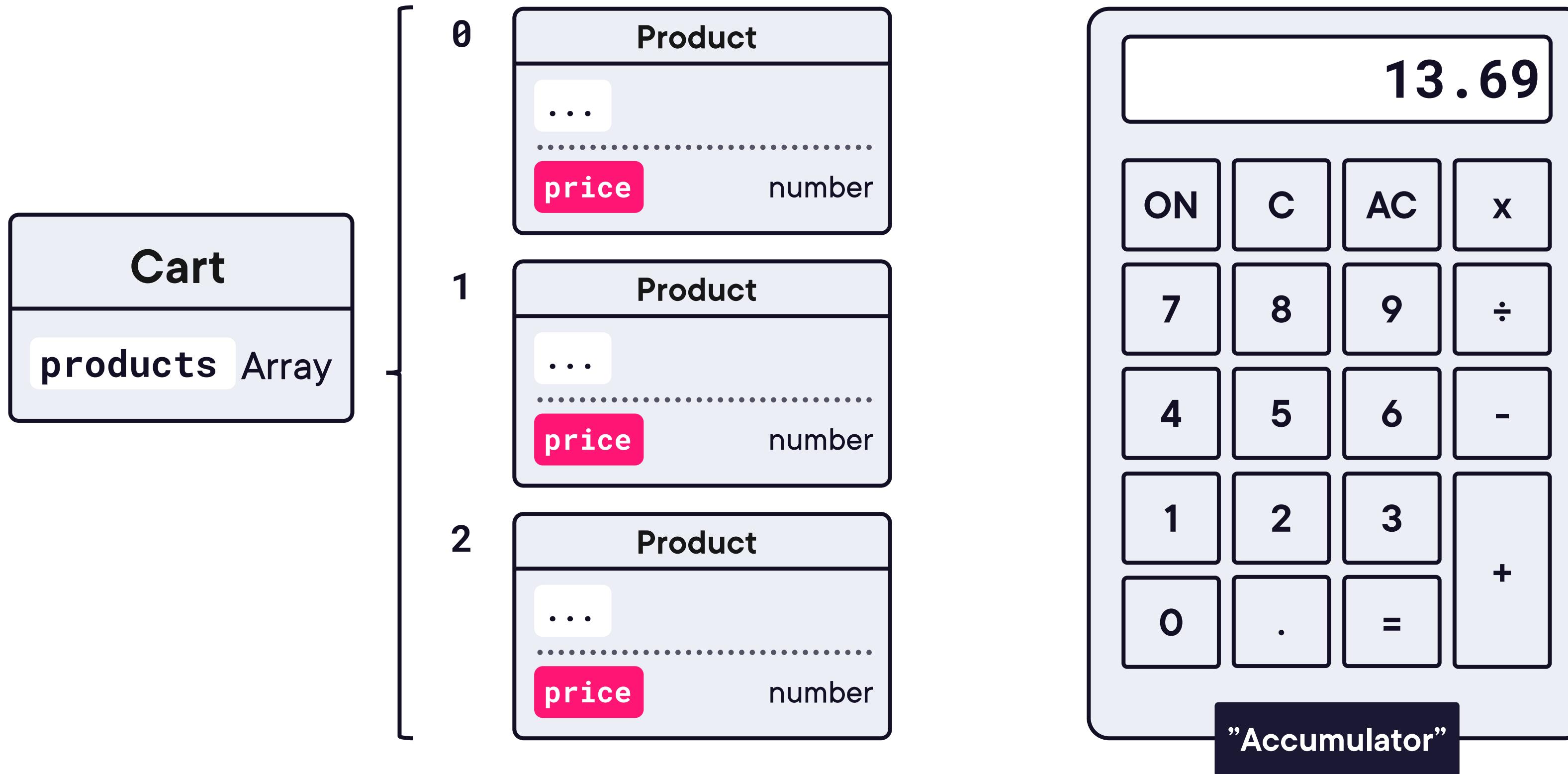
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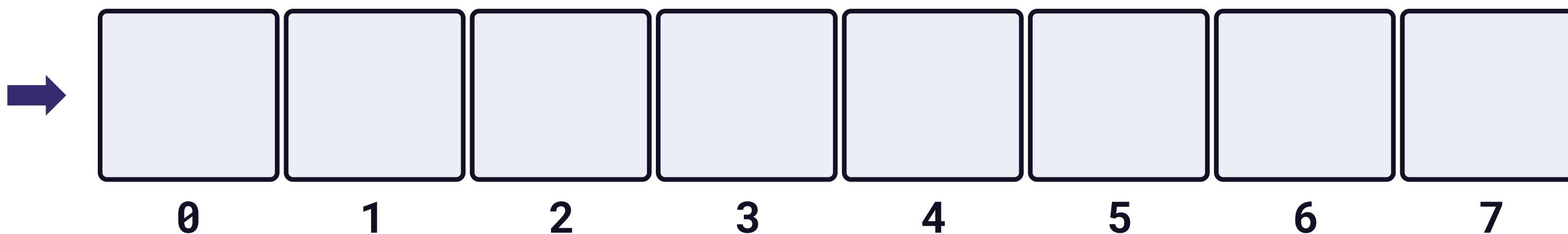


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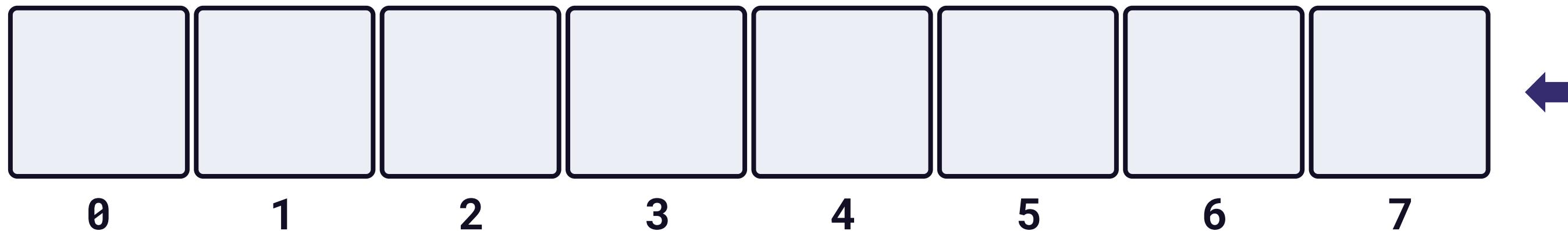


# reduce vs. reduceRight

reduce



reduceRight



**Up Next:**

# **Searching Through Arrays**

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# Functions for Searching Through Arrays

**includes**

**find**

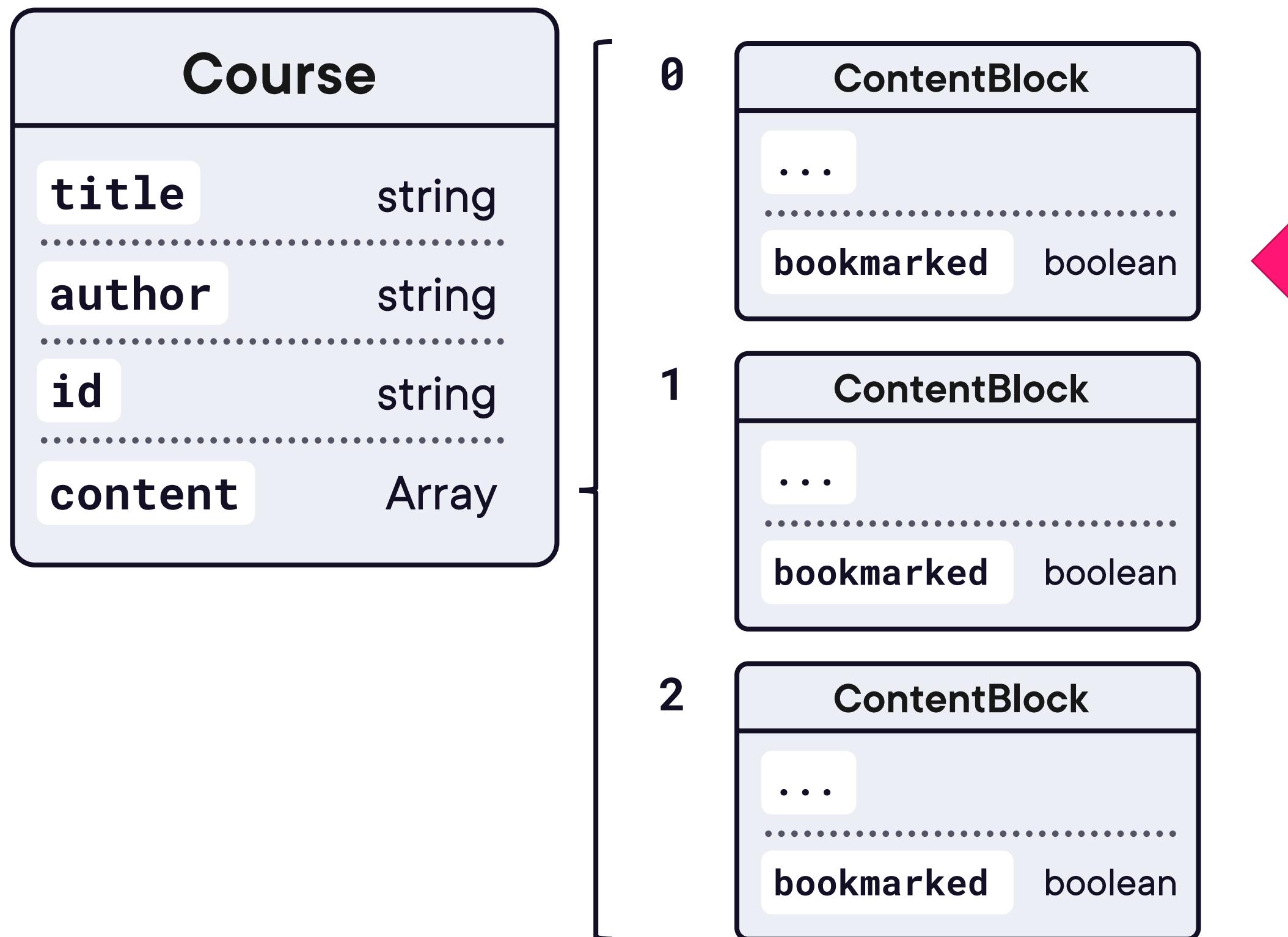
**findIndex**

**findLastIndex**

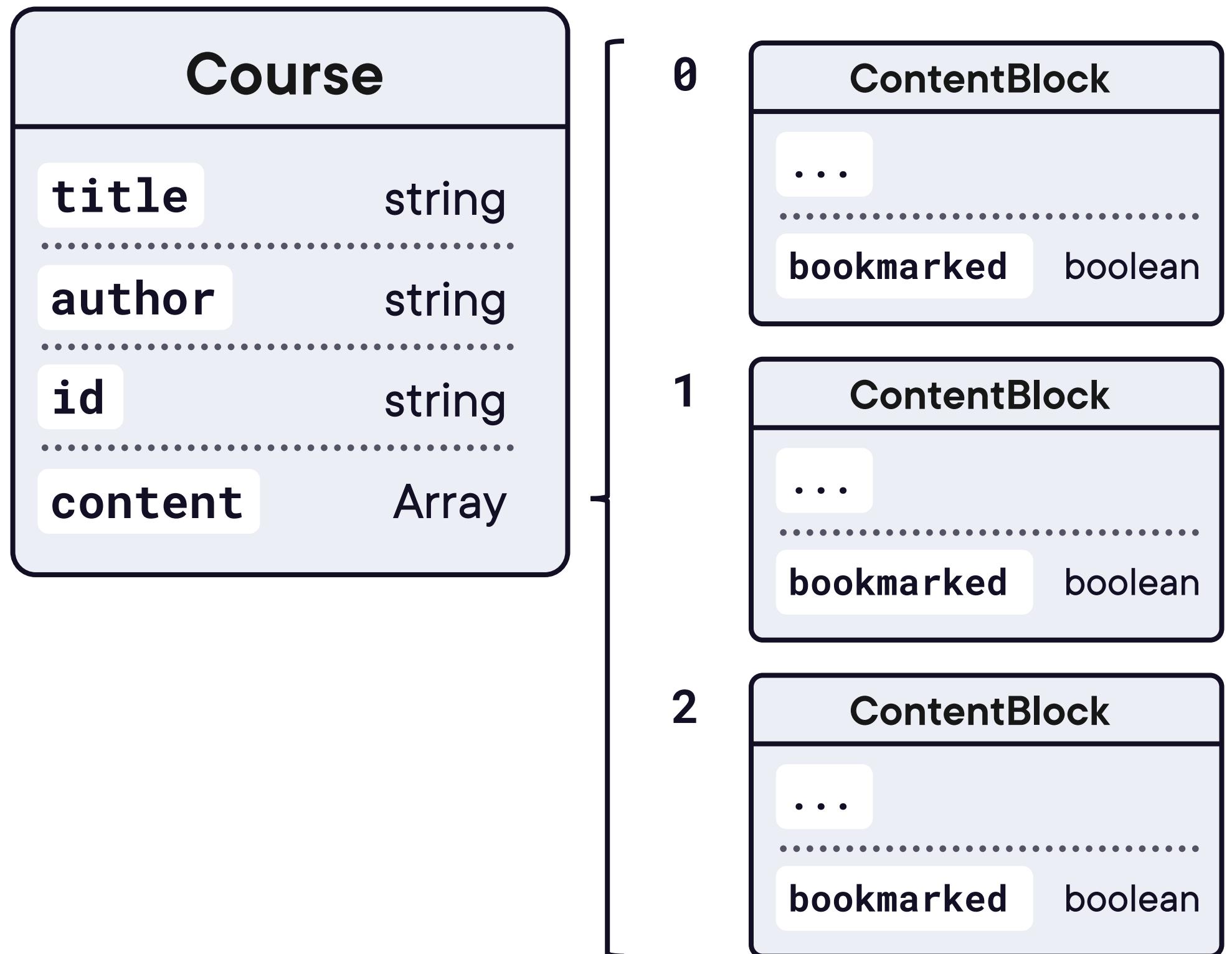
**filter**



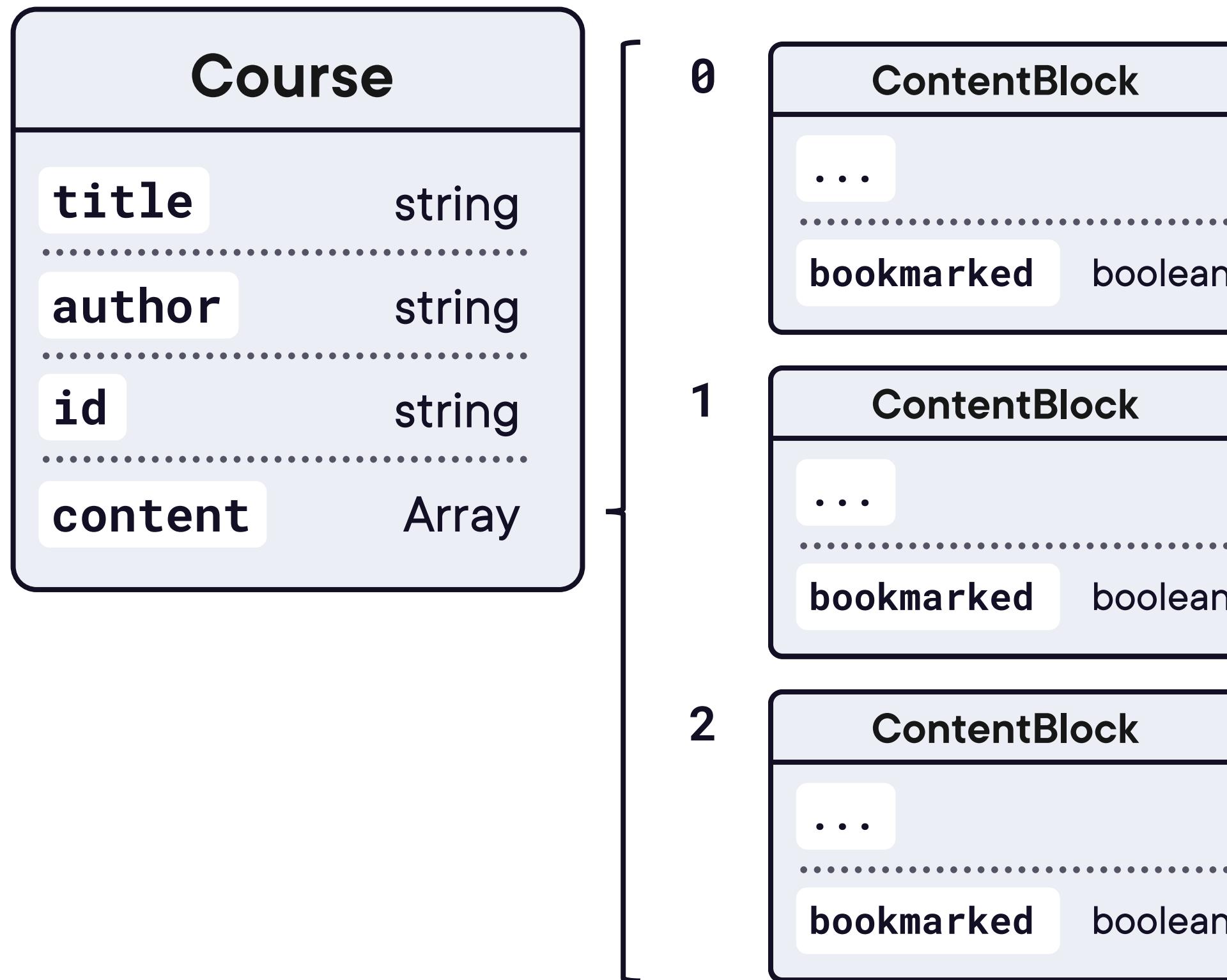
# Find Returns the First Matching Element



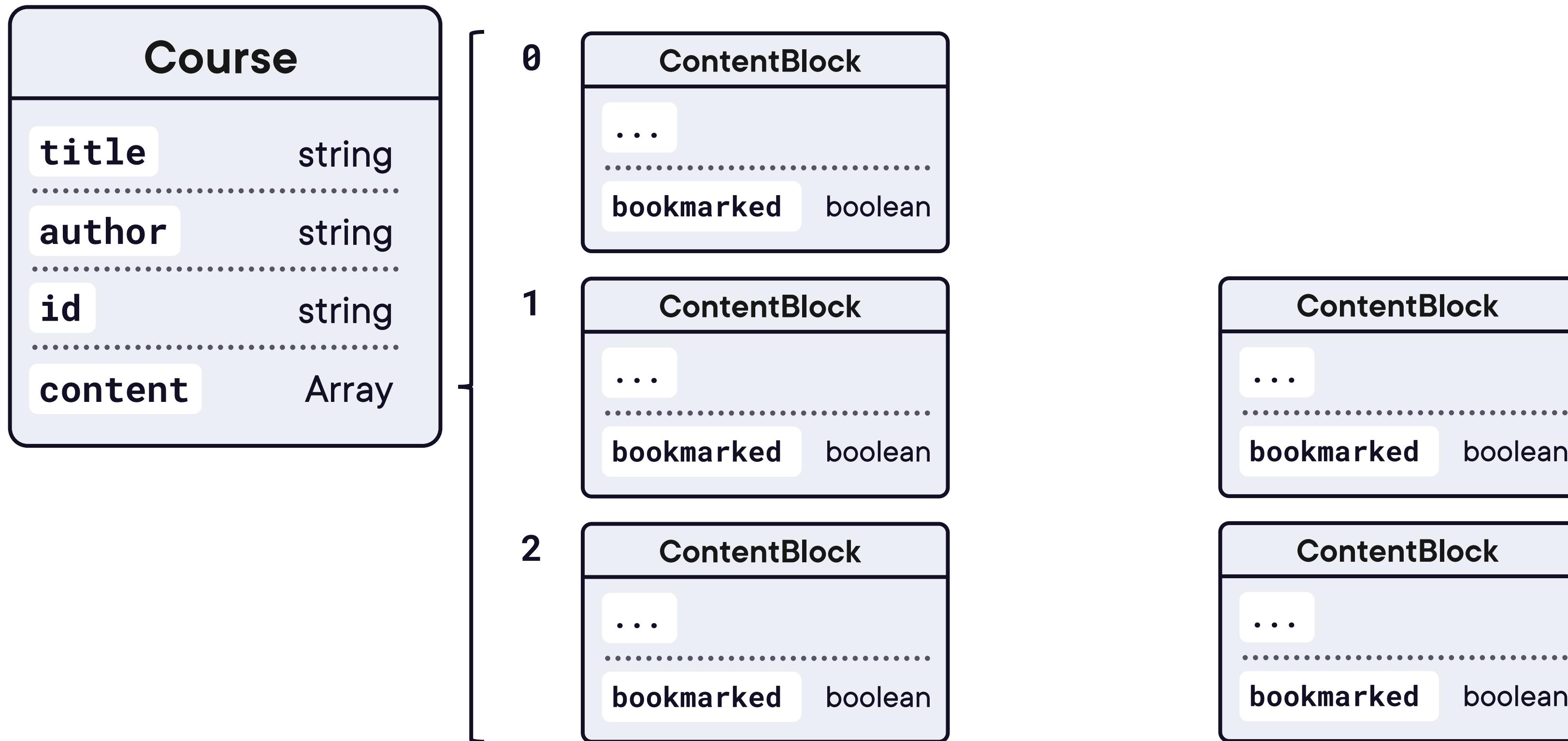
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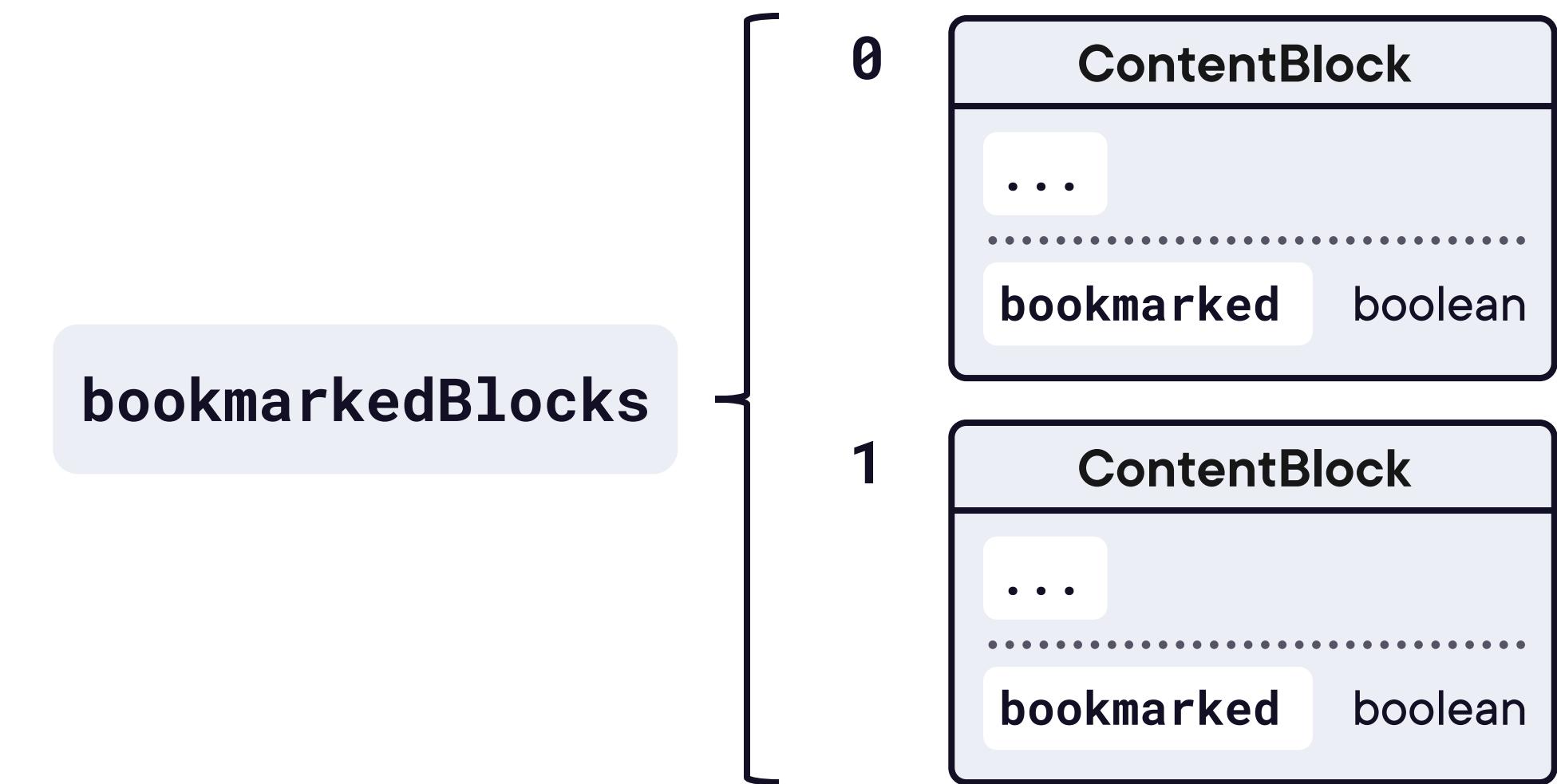
# Filter Returns a Shallow Copy Array of All Matches



# Filter Returns a Shallow Copy Array of All Matches



# Filter Returns a Shallow Copy Array of All Matches



**Up Next:**

# **Map and Functional JavaScript**

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# Map and Functional JavaScript



# Comparison of JavaScript Array Functions

	Called on	Argument	Returns
forEach	array	function	none
filter	array	function	array
sort	array	function	array
some	array	function	boolean
every	array	function	boolean
reduce	array	function	any
map	array	function	array





## **More Information**

### **Fundamentals of Functional Programming in JavaScript**

**Nate Taylor**



**Up Next:**

# **Course Summary**

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# Course Summary



# Overview: Object Modules

## Module 3: Prototypes and Properties

**What is an Object?**

**Creating Objects**

**What is a Prototype?**

**Defining Prototypes**

**Creating Properties**

**Accessing Properties**

**Deleting Properties**

**Protecting Properties**

**Enumerating Properties**

## Module 4: References and Scope

**Reference Types**

**Comparing and Cloning**

**Functions as Properties**

**Scope in Objects**

**Primitive Wrappers**



# Overview: Array Modules

## Module 5: Arrays

Arrays are Objects

Creating Arrays

Identifying Arrays

Accessing Array Elements

Cutting Up Arrays

Putting Together Arrays

Cloning Arrays

Sorting Arrays

Sparse Arrays

Other Array Types

## Module 6: Iteration Deep Dive

Array Iteration

For Loops

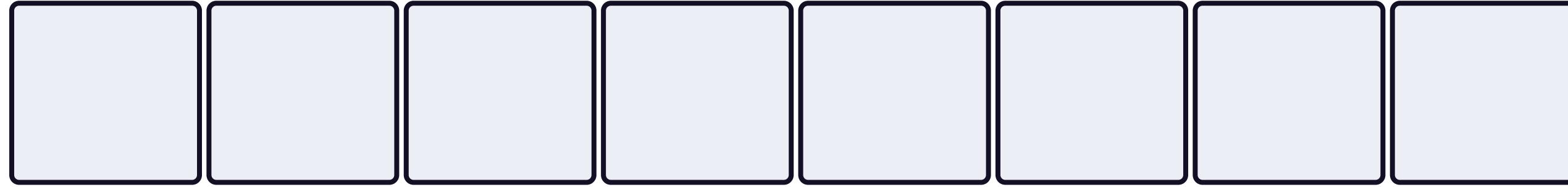
Summarizing Arrays

Searching Through Arrays

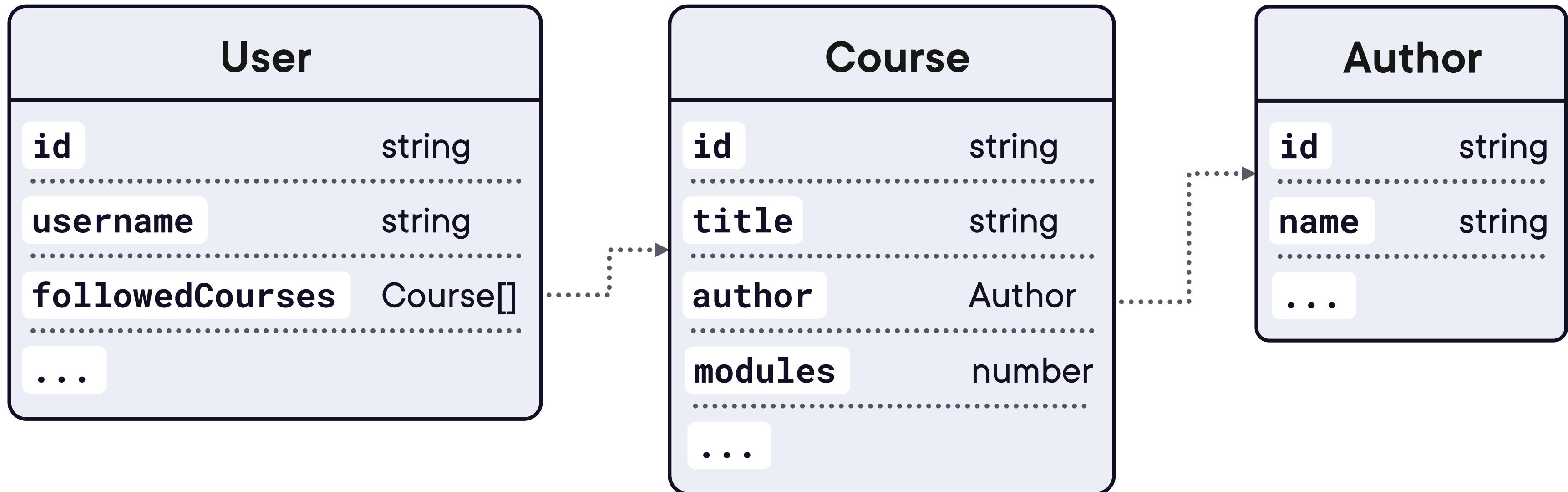
Map and Functional JS



# Splice



# Class Diagram



# Title or Relevant Graphic

Many objects are predefined

Objects link to a prototype

Objects look through the prototype chain



**Up Next:**

## **Defining Prototypes with Object.create()**

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