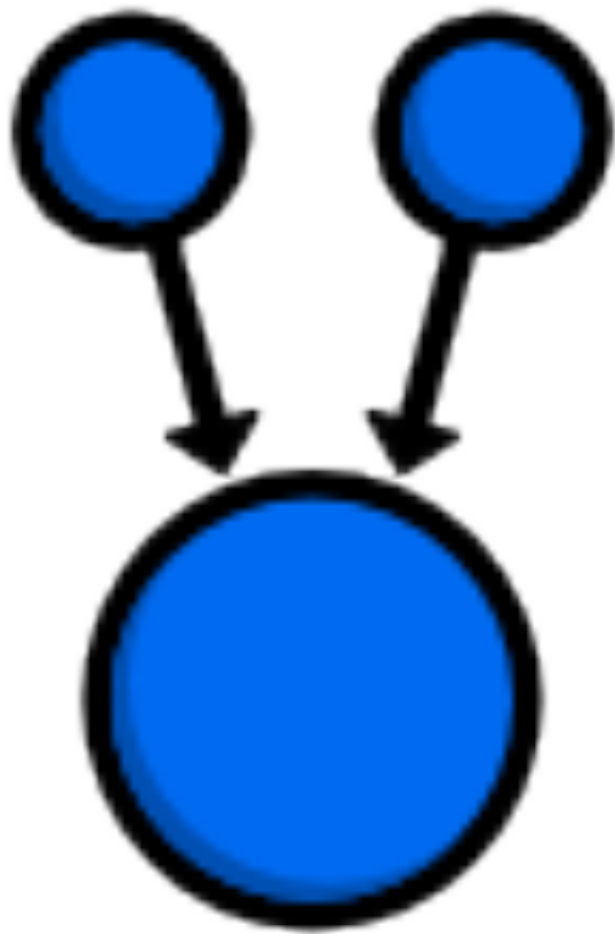
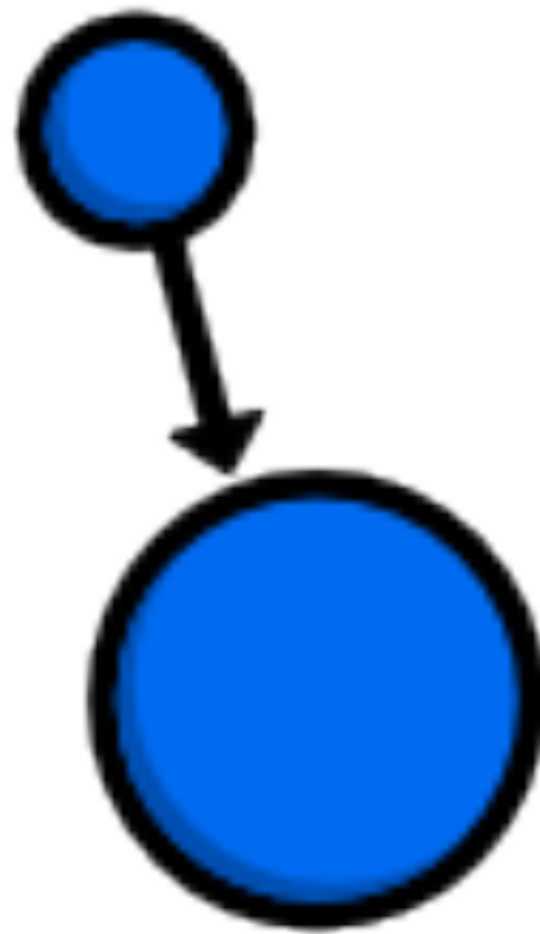


Gerenciamento de Memória

Contagem de referências



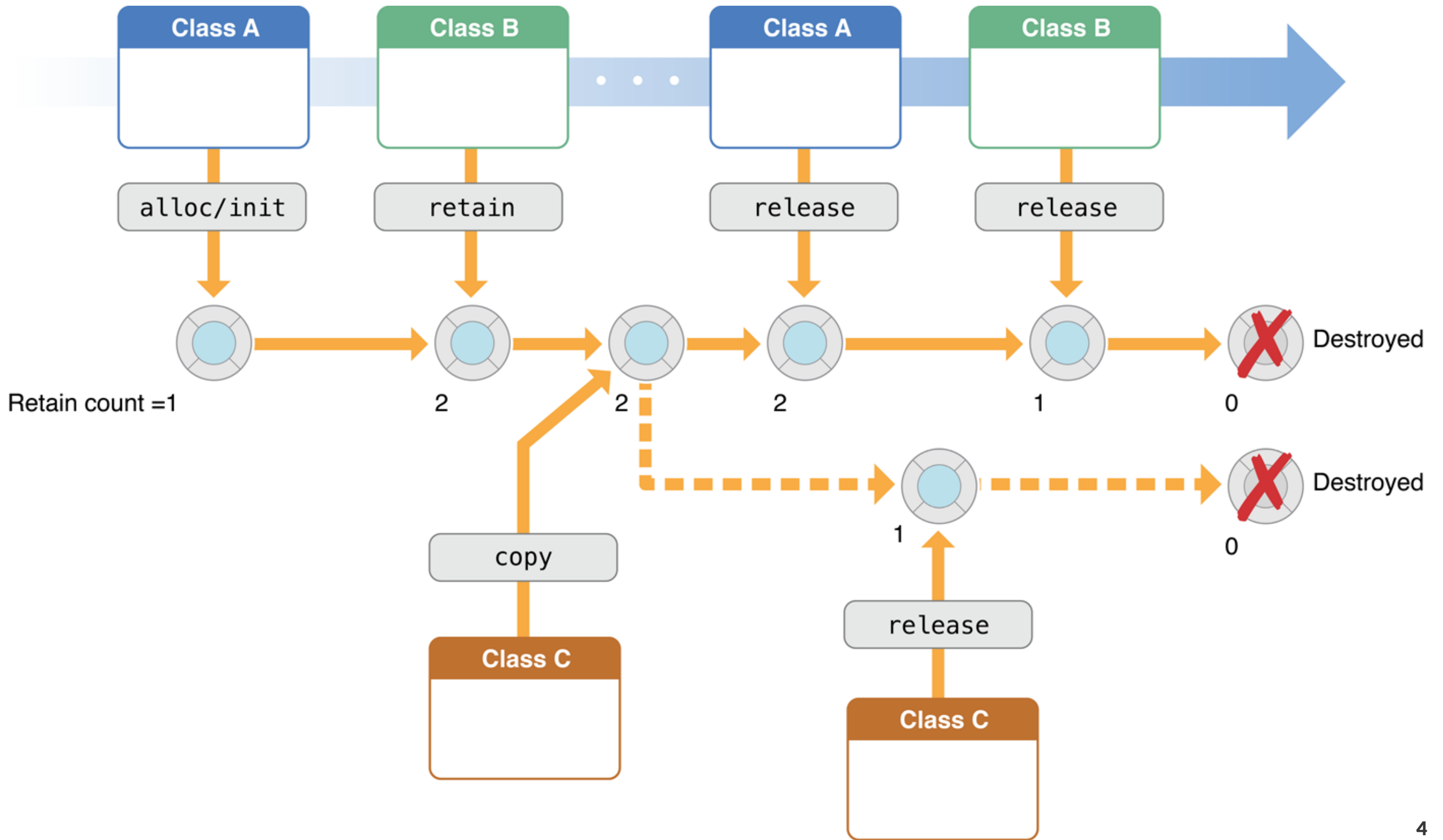
Reference
Count: 2



Reference
Count: 1



Reference
Count: 0



<http://whentouseretaincount.com>

Never

There's pretty much never a good reason to use `-retainCount`. Here's a short and mildly abusive explanation why.

What about when I need to x?

No.

But so-and-so said it was a good idea in this case?

Still no.

I used it in some code already and it worked fine!

Did it, by any chance, look like this?

```
while ([a retainCount] > 0) {  
    [a release];  
}
```

Good luck with that. Please let me know which app so I can avoid buying it.

Okay, okay. I get the idea, but why?

Basically it doesn't say what you think it does. Or rather, it does but it's never accurate in any non-trivial case.

For example:

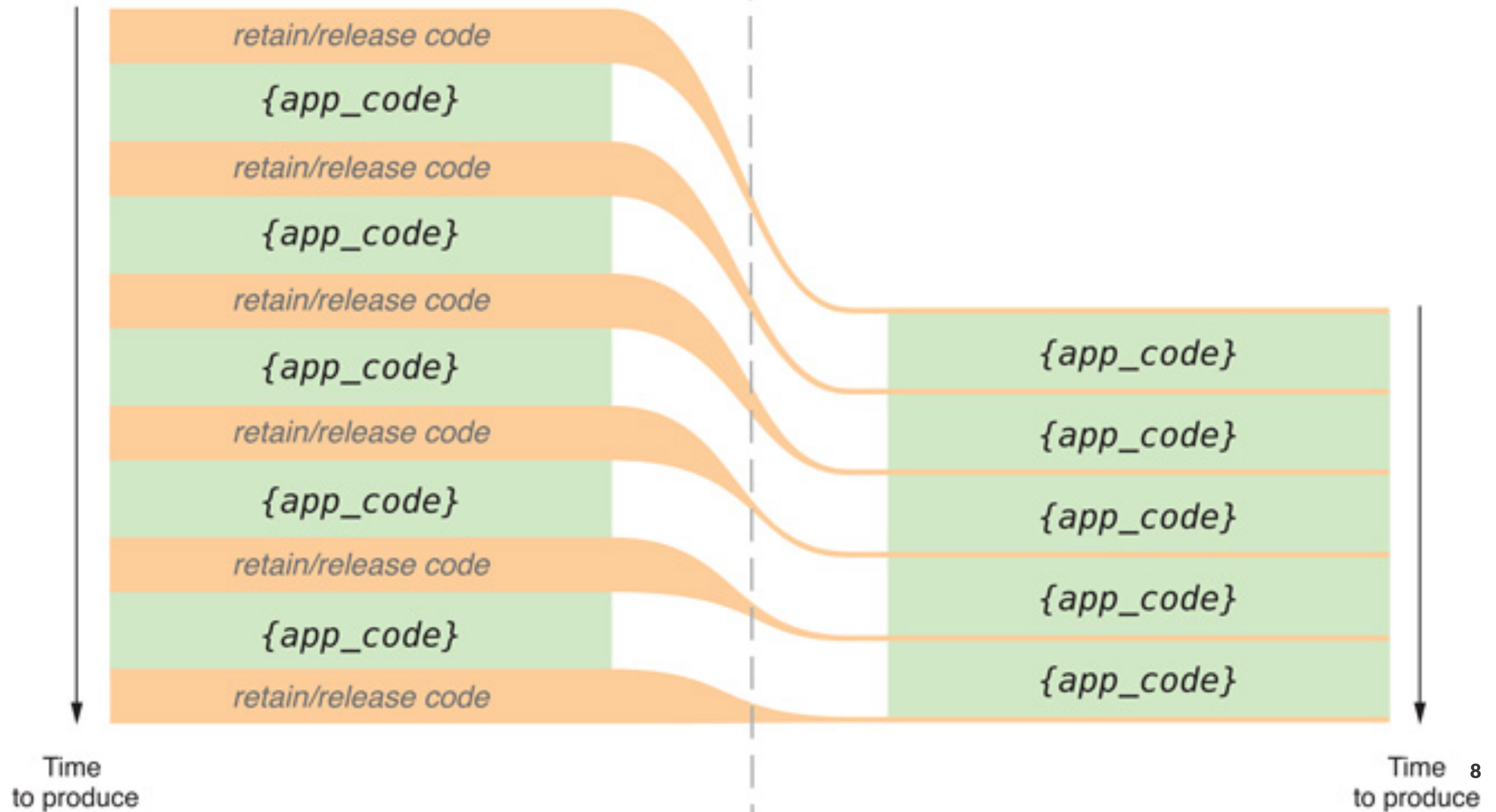
- You'd think that `[NSNumber numberWithInt:1]` would have a retain count of 1. It doesn't. It's 2.
- You'd think that `@ "Foo"` would have a retain count of 1. It doesn't. It's 1152921504606846975.
- You'd think that `[NSString stringWithString:@"Foo"]` would have a retain count of 1. It doesn't. Again, it's 1152921504606846975.

(H/T to Dave DeLong for these.)

ARCE

Reference counting manually

Automatic Reference Counting



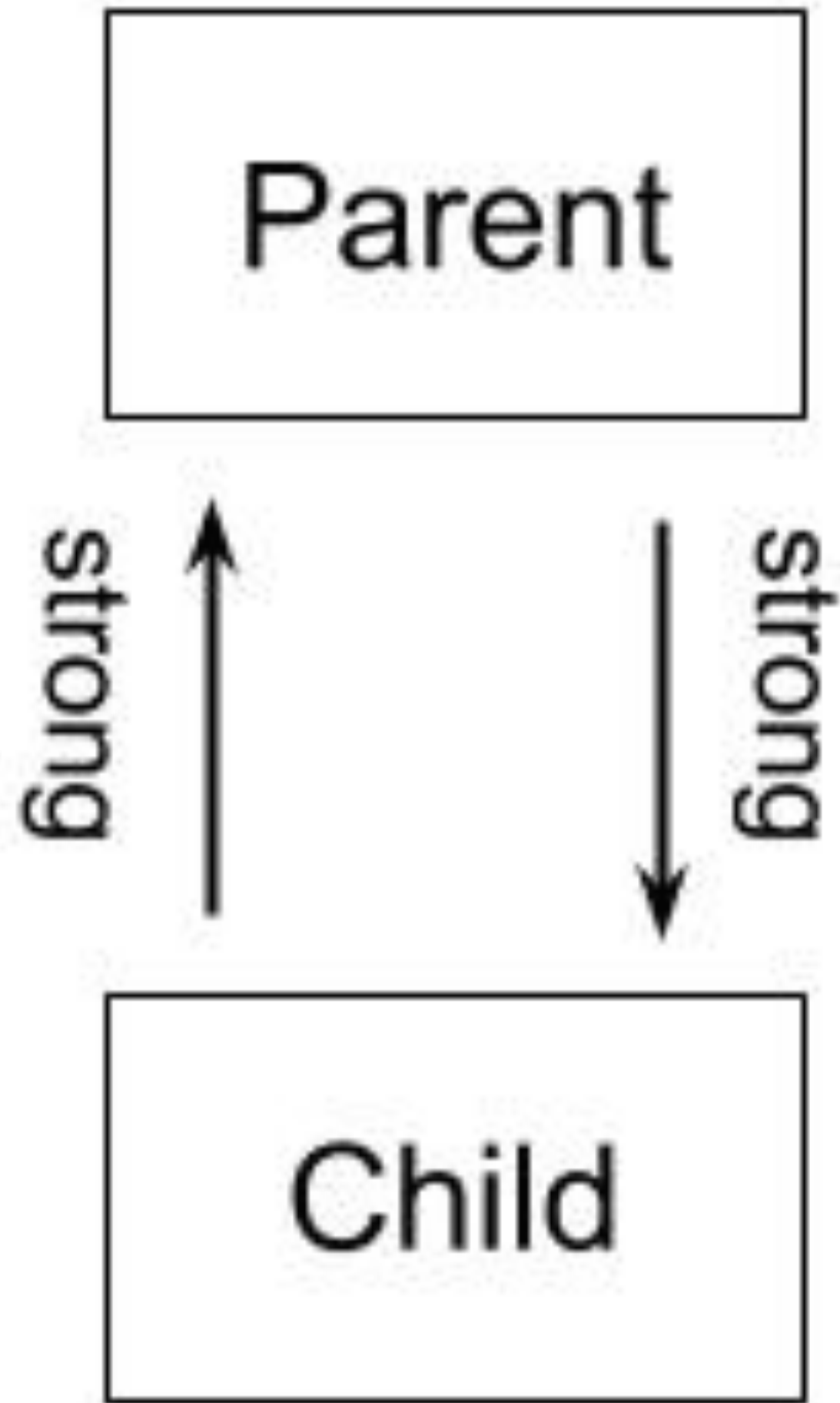
ARC

- Em tempo de compilação
- Única opção em Swift

Reference counting only applies to instances of classes. Structures and enumerations are value types, not reference types, and are not stored and passed by reference.

Mesmo com ARC, podem acontecer
memory leaks!

Referência cíclica



var john

strong

<Person instance>

name: "John Appleseed"

apartment: <Apartment instance>

var number73

strong

<Apartment instance>

number: 73

tenant: <Person instance>

strong

strong

var john

var number73

<Person instance>

name: "John Appleseed"

apartment: **<Apartment instance>**

<Apartment instance>

number: 73

tenant: **<Person instance>**

strong

strong

weak

var john

strong



<Person instance>

name: "John Appleseed"

apartment: <Apartment instance>

var number73

strong



<Apartment instance>

number: 73

tenant: <Person instance>

strong



weak



var john

var number73

strong

<Person instance>

name: "John Appleseed"

apartment: <Apartment instance>

<Apartment instance>

number: 73

tenant: <Person instance>

strong

weak

var john

var number73

<Person instance>

name: "John Appleseed"

apartment: <Apartment instance>

<Apartment instance>

number: 73

tenant: <Person instance>



Variáveis weak têm que ser
Optional, pois são setadas para
nil quando o objeto é desalocado

E se tivermos certeza que a referência sempre terá um valor?

unowned

unowned

- Sempre tem valor (nunca é Optional)
- Crash se acessar depois da instância ter sido desalocada

var john

strong

<Customer instance>

name: "John Appleseed"

card: <CreditCard instance>

<CreditCard instance>

number: 1234_5678_9012_3456

customer: <Customer instance>

strong

unowned

var john

<Customer instance>

name: "John Appleseed"

card: **<CreditCard instance>**

strong

<CreditCard instance>

number: 1234_5678_9012_3456

customer: **<Customer instance>**

unowned

Closures podem capturar referências

Closures são *reference types*

```
class HTMLElement {  
  
    let name: String  
    let text: String?  
  
    lazy var asHTML: () -> String = {  
        if let text = self.text {  
            return "<\(self.name)>\(text)</\\(self.name)>"  
        } else {  
            return "<\(self.name) />"  
        }  
    }  
}
```

var paragraph

strong

<HTMLElement instance>

name: "p"

text: "hello, world"

asHTML: () -> String

strong

() -> String

self.text, **self**.name

strong

```
lazy var asHTML: () -> String = { [unowned self] in  
  
    if let text = self.text {  
        return "<\(self.name)>\(text)</\(\(self.name))>"  
    } else {  
        return "<\(self.name) />"  
    }  
}
```

Não existe chance de **self** ser desalocado antes do closure.

Por isso foi usado **unowned**.

var paragraph

strong

<HTMLElement instance>

name: "p"

text: "hello, world"

asHTML: () -> String

unowned

() -> String

[unowned self]

self.text, **self**.name

strong

Exercício

Verificar se não tem nenhum retain
cycle no app


```
deinit {  
    println("\n(self.dynamicType) deinit")  
}
```

Lembre-se que apenas **classes** podem ser retidas.
enums e structs são sempre copiados.