



巨匠線上真人

iOS行動程式基礎開發上架

# Swift：自動記憶體管理

# 本堂教學重點

1. ARC實作
2. 類別實體間的互相參考
3. 使用weak解決互相參考
4. 使用Unowned解決互相參考

# 1.ARC實作

- `class Person {`
- `let name: String`
- `init(name: String) {`
- `self.name = name`
- `print("\(name) is being initialized")`
- `}`
- `deinit {`
- `print("\(name) is being deinitialized")`
- `}`
- `}`
- 

- `var reference1: Person?`
- `var reference2: Person?`
- `var reference3: Person?`

- `reference1 = Person(name: "John Appleseed")`
- `// Prints "John Appleseed is being initialized"`

- `reference2 = reference1`
- `reference3 = reference1`
- `reference1 = nil`
- `reference2 = nil`
- `reference3 = nil`
- `// Prints "John Appleseed is being deinitialized"`

## 2.類別實體間的互相參考

```
• class Person {  
•     let name: String  
•     init(name: String) { self.name = name }  
•     var apartment: Apartment?  
•     deinit { print("\(name) is being deinitialized") }  
• }  
  
• class Apartment {  
•     let unit: String  
•     init(unit: String) { self.unit = unit }  
•     var tenant: Person?  
•     deinit { print("Apartment \(unit) is being deinitialized") }  
• }  
•
```

## 2.類別實體間的互相參考

- `var john: Person?`
- `var unit4A: Apartment?`
- `john = Person(name: "John Appleseed")`
- `unit4A = Apartment(unit: "4A")`
  
- `john!.apartment = unit4A`
- `unit4A!.tenant = john`
  
- `john = nil`
- `unit4A = nil`

### 3.使用weak解決互相參考

```
• class Person {  
•     let name: String  
•     init(name: String) { self.name = name }  
•     var apartment: Apartment?  
•     deinit { print("\(name) is being deinitialized") }  
• }  
  
• class Apartment {  
•     let unit: String  
•     init(unit: String) { self.unit = unit }  
•     weak var tenant: Person?  
•     deinit { print("Apartment \(unit) is being deinitialized") }  
• }  
•
```

### 3.使用weak解決互相參考

- `var john: Person?`
- `var unit4A: Apartment?`
  
- `john = Person(name: "John Appleseed")`
- `unit4A = Apartment(unit: "4A")`
  
- `john!.apartment = unit4A`
- `unit4A!.tenant = john`
  
- `john = nil`
- `// Prints "John Appleseed is being deinitialized"`
  
- `unit4A = nil`
- `// Prints "Apartment 4A is being deinitialized"`

## 4.使用Unowned解決互相參考

```
• class Customer {  
•     let name: String  
•     var card: CreditCard?  
•     init(name: String) {  
•         self.name = name  
•     }  
•     deinit { print("\(name) is being deinitialized") }  
• }  
  
• class CreditCard {  
•     let number: UInt64  
•     unowned let customer: Customer  
•     init(number: UInt64, customer: Customer) {  
•         self.number = number  
•         self.customer = customer  
•     }  
•     deinit { print("Card #\(number) is being deinitialized") }  
• }  
•
```



## 4.使用Unowned解決互相參考

- `john = Customer(name: "John Appleseed")`
- `john!.card = CreditCard(number: 1234_5678_9012_3456, customer: john!)`
  
- `john = nil`
- `// Prints "John Appleseed is being deinitialized"`
- `// Prints "Card #1234567890123456 is being deinitialized"`