Lecture 3
CS2049: Intermediate iPhone Development
Instructor: Daniel Hauagge
Today’s Lecture

• Tools
  • CocoaPods
• Frameworks
  • Persistence with Realm
• Networking with AlamoFire (maybe)
Today’s App
Outline

1. Create inspection view
2. Create DB models
3. Wire “done” button and add new object to database
4. Create table view
   4.1. Connect to inspection view
   4.2. Notifications
5. Map View
6. Fetch data over network
CocoaPods

• Package manager for Xcode projects
• Use with yours or open source projects
• Downloads and integrates third party projects with your Xcode project
• Webpage: cocoapods.org
Installation

Open your terminal and type:

```bash
[sudo] gem install cocoapods
```
Workflow

1. Navigate to your current project folder in the terminal

2. Type `pod init`

3. Edit the created `Podfile`
   • Add frameworks you want to incorporate

4. Execute `pod install`

5. Open the `.xcworkspace` Xcode project and happy coding
Workflow

• To update linked code run `pod update`
There's more...

- CocoaPods is extensible enabling plugins with more functionality

- Check out deintegrate if you need to remove CocoaPods from a project

- Go go *CocoaPods.org* and explore!
Basic File Syntax

```ruby
target 'App' do
  pod 'Artsy+UIColors'
  pod 'Artsy+UIButtons'

  pod 'FLKAutoLayout'
  pod 'ISO8601DateFormatter', '0.7'
  pod 'AFNetworking', '~> 2.0'
end
```

this is basically Ruby code
Realm

• Mobile database framework
• Easy to use \textit{(no need to write SQL)}
• Fast \textit{(2x to 30x faster than CoreData)}
• Cross platform \textit{(iOS, OS X, Android)}
• 3 Core classes:
  • Object: this is the data you store.
  • Array: list of Object. Used for query results and one-to-many relationships.
  • Realm: the database itself.
Declaring an Object

class Dog: Object {
    dynamic var name = ""
    dynamic var age = 0
}

let mydog = Dog()

mydog.name = "Rex"
print("name of dog: \(mydog.name)\)"
let realm = try! Realm()

try! realm.write {
    realm.add(mydog)
}
let realm = try! Realm()
let r = realm.objects(Dog).filter("age > 8")

// Queries are chainable
let r2 = r.filter("name contains 'rex'")
## Property types

<table>
<thead>
<tr>
<th>Type</th>
<th>Non-optional</th>
<th>Optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bool</td>
<td><code>dynamic var value = false</code></td>
<td><code>let value = RealmOptional&lt;Bool&gt;()</code></td>
</tr>
<tr>
<td>Int</td>
<td><code>dynamic var value = 0</code></td>
<td><code>let value = RealmOptional&lt;Int&gt;()</code></td>
</tr>
<tr>
<td>Float</td>
<td><code>dynamic var value: Float = 0.0</code></td>
<td><code>let value = RealmOptional&lt;Float&gt;()</code></td>
</tr>
<tr>
<td>Double</td>
<td><code>dynamic var value: Double = 0.0</code></td>
<td><code>let value = RealmOptional&lt;Double&gt;()</code></td>
</tr>
<tr>
<td>String</td>
<td><code>dynamic var value = &quot;&quot;</code></td>
<td><code>dynamic var value: String? = nil</code></td>
</tr>
<tr>
<td>Data</td>
<td><code>dynamic var value = NSData()</code></td>
<td><code>dynamic var value: NSData? = nil</code></td>
</tr>
<tr>
<td>Date</td>
<td><code>dynamic var value = NSDate()</code></td>
<td><code>dynamic var value: NSDate? = nil</code></td>
</tr>
<tr>
<td>Object</td>
<td>n/a: must be optional</td>
<td><code>dynamic var value: Class?</code></td>
</tr>
<tr>
<td>List</td>
<td><code>let value = List&lt;Class&gt;</code></td>
<td>n/a: must be non-optional</td>
</tr>
</tbody>
</table>
Topics we didn’t cover

• Relationships
• Migrations
• Storing data or other objects
• Encryption
• In memory database (no persistence)
# Realm vs CoreData

<table>
<thead>
<tr>
<th>Realm</th>
<th>CoreData</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ Fast</td>
<td>+ Undo</td>
</tr>
<tr>
<td>+ Ease of use</td>
<td>+ Automatic Migrations <em>(sort of)</em></td>
</tr>
<tr>
<td>+ Simple multi threading model</td>
<td>+ Fine grained notifications</td>
</tr>
<tr>
<td></td>
<td>+ Better integration with UI classes</td>
</tr>
<tr>
<td></td>
<td>- Complex</td>
</tr>
</tbody>
</table>
# Realm Browser

Available for free on the Mac App Store

<table>
<thead>
<tr>
<th>name</th>
<th>height</th>
<th>birthdate</th>
<th>vaccinated</th>
<th>owner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bibbo Fleabaggins</td>
<td>50.000</td>
<td>Sep 8, 2009, 8:26:57 AM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deputy Dawg</td>
<td>114.000</td>
<td>Jan 26, 2010, 6:58:03 PM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hairy Pawter</td>
<td>114.000</td>
<td>May 13, 2005, 1:36:30 AM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jabba the Mutt</td>
<td>98.000</td>
<td>May 16, 2009, 12:41:32 PM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>McGruff the Crime Dog</td>
<td>86.000</td>
<td>Sep 14, 2009, 9:38:56 PM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nerf Herder</td>
<td>44.000</td>
<td>Feb 23, 2001, 5:34:55 AM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Defense Secretary Waggles</td>
<td>63.000</td>
<td>Jun 8, 2006, 6:03:41 AM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salacious B. Crumb</td>
<td>101.000</td>
<td>Jan 18, 2010, 7:51:19 PM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Earl Yippington III</td>
<td>44.000</td>
<td>Aug 26, 2001, 9:37:30 PM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pickles McPorkchop</td>
<td>71.000</td>
<td>Jan 2, 2008, 6:44:51 PM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sir Yaps-a-lot</td>
<td>128.000</td>
<td>Jun 18, 2004, 11:26:05 PM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rudy Loosebooby</td>
<td>77.000</td>
<td>Oct 9, 2002, 6:09:45 AM</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Madame Barklouder</td>
<td>78.000</td>
<td>Apr 4, 2009, 9:01:06 PM</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Web service

http://169.54.42.86:9000/position