Intro to RubyMotion

Creating Native iOS Apps with Ruby

Me:

@markrickert

www.ear-fung.us

Director of Engineering @ Skookum Digital Works
skookum.com

Owner @ Mohawk Apps, LLC
mohawkapps.com

Me:

10+ published apps in the iTunes Store for clients

4 published apps for Mohawk Apps targeting mostly Direct Sales Consultants

- Consistently in the top 100 ranking and grossing apps (Business category) for US and Canada.
- Multiple appearances on Apple's "What's Hot" list.

Winston-Salem Crime Map

https://github.com/markrickert/WSCrime

What Is RubyMotion?

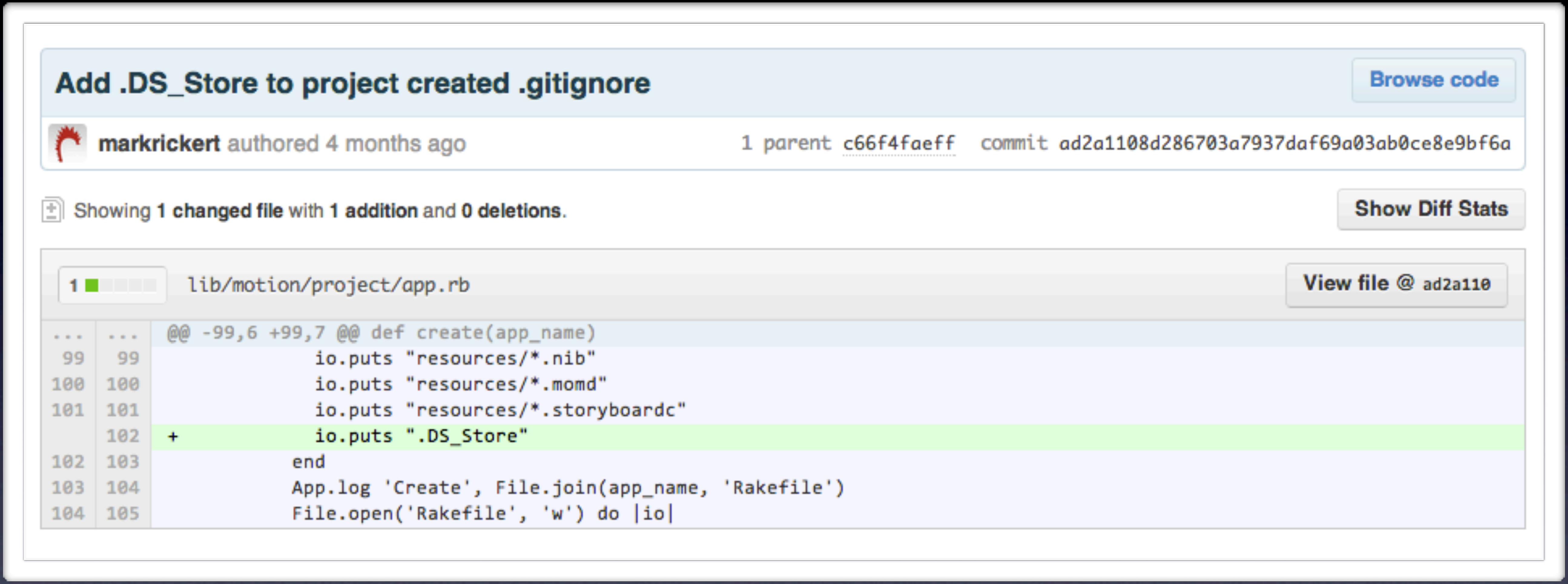
"It lets you quickly develop and test native iOS applications for iPhone or iPad, all using the awesome Ruby language you know and love."

-RubyMotion.com

What Is RubyMotion?

- Developed by Belgian company HipByte
- Commercial Product
- Closed source compiler
- Open source build tools: https://github.com/HipByte/RubyMotion

BLOND
PILS



Add .DS_Store to project created .gitignore

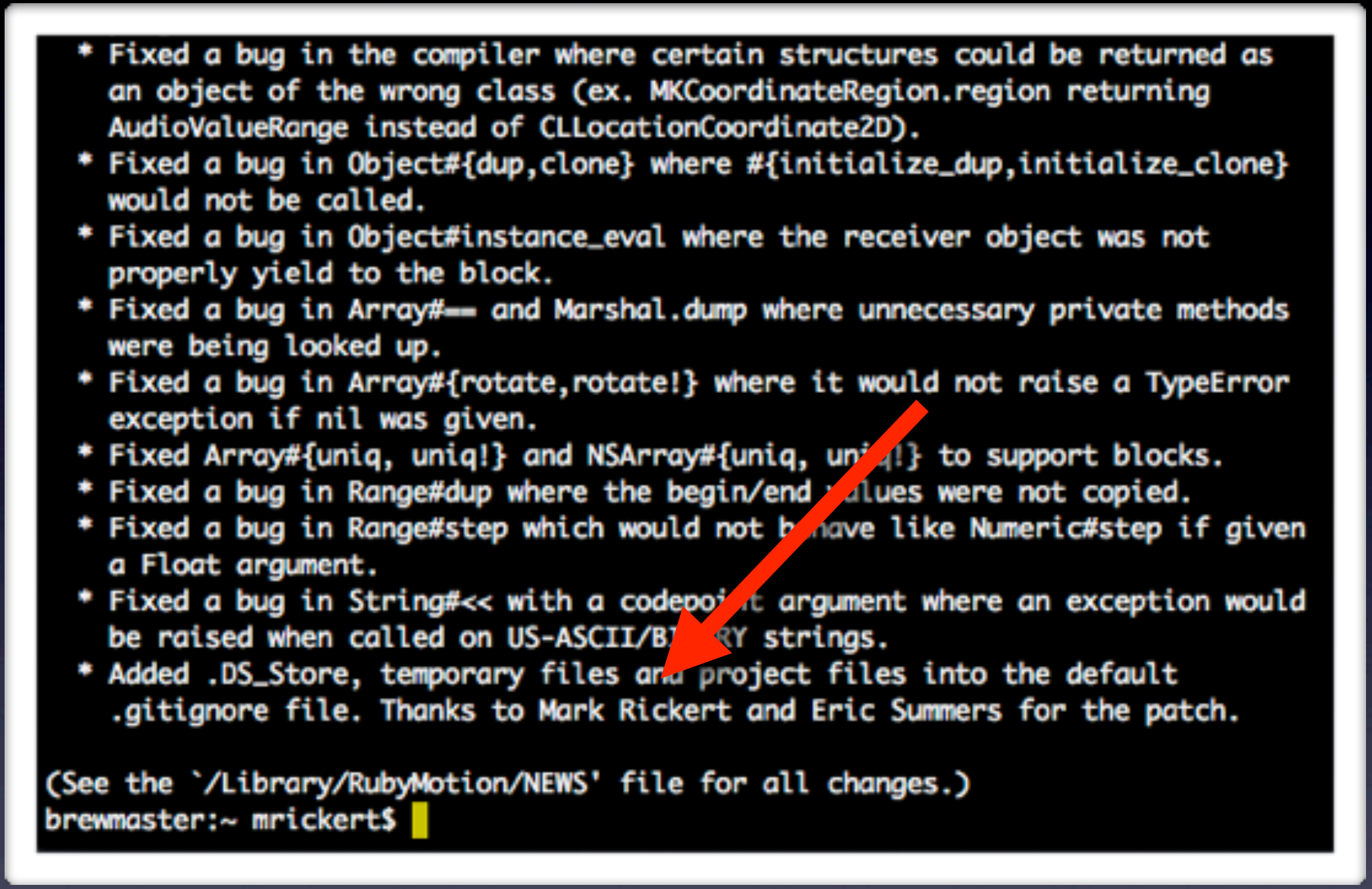
markrickert authored 4 months ago 1 parent c66f4faeff commit ad2a1108d286703a7937daf69a03ab0ce8e9bf6a

Showing **1 changed file** with **1 addition** and **0 deletions**.

lib/motion/project/app.rb

```
@@ -99,6 +99,7 @@ def create(app_name)
              io.puts "resources/*.nib"
              io.puts "resources/*.momd"
              io.puts "resources/*.storyboardc"
+             io.puts ".DS_Store"
            end
            App.log 'Create', File.join(app_name, 'Rakefile')
            File.open('Rakefile', 'w') do |io|
```

Support Open Source Software!
Any Contribution is a GOOD Contribution...



```
 * Fixed a bug in the compiler where certain structures could be returned as
   an object of the wrong class (ex. MKCoordinateRegion.region returning
   AudioValueRange instead of CLLocationCoordinate2D).
 * Fixed a bug in Object#{dup,clone} where #{initialize_dup,initialize_clone}
   would not be called.
 * Fixed a bug in Object#instance_eval where the receiver object was not
   properly yield to the block.
 * Fixed a bug in Array#== and Marshal.dump where unnecessary private methods
   were being looked up.
 * Fixed a bug in Array#{rotate,rotate!} where it would not raise a TypeError
   exception if nil was given.
 * Fixed Array#{uniq, uniq!} and NSArray#{uniq, uniq!} to support blocks.
 * Fixed a bug in Range#dup where the begin/end values were not copied.
 * Fixed a bug in Range#step which would not behave like Numeric#step if given
   a Float argument.
 * Fixed a bug in String#<< with a codepoint argument where an exception would
   be raised when called on US-ASCII/BINARY strings.
 * Added .DS_Store, temporary files and project files into the default
   .gitignore file. Thanks to Mark Rickert and Eric Summers for the patch.

(See the `/Library/RubyMotion/NEWS' file for all changes.)
brewmaster:~ mrickert$ 
```

You might even get a shout-out in the release notes!

Pros:

- Its Ruby
- Editor Agnostic
- Lots of "Wrapper" gems
- Fast (bytecode)
- Interactive Console

- Easy to test
- Growing Community
- Frequent updates
- On-device debugging
- Extensive documentation

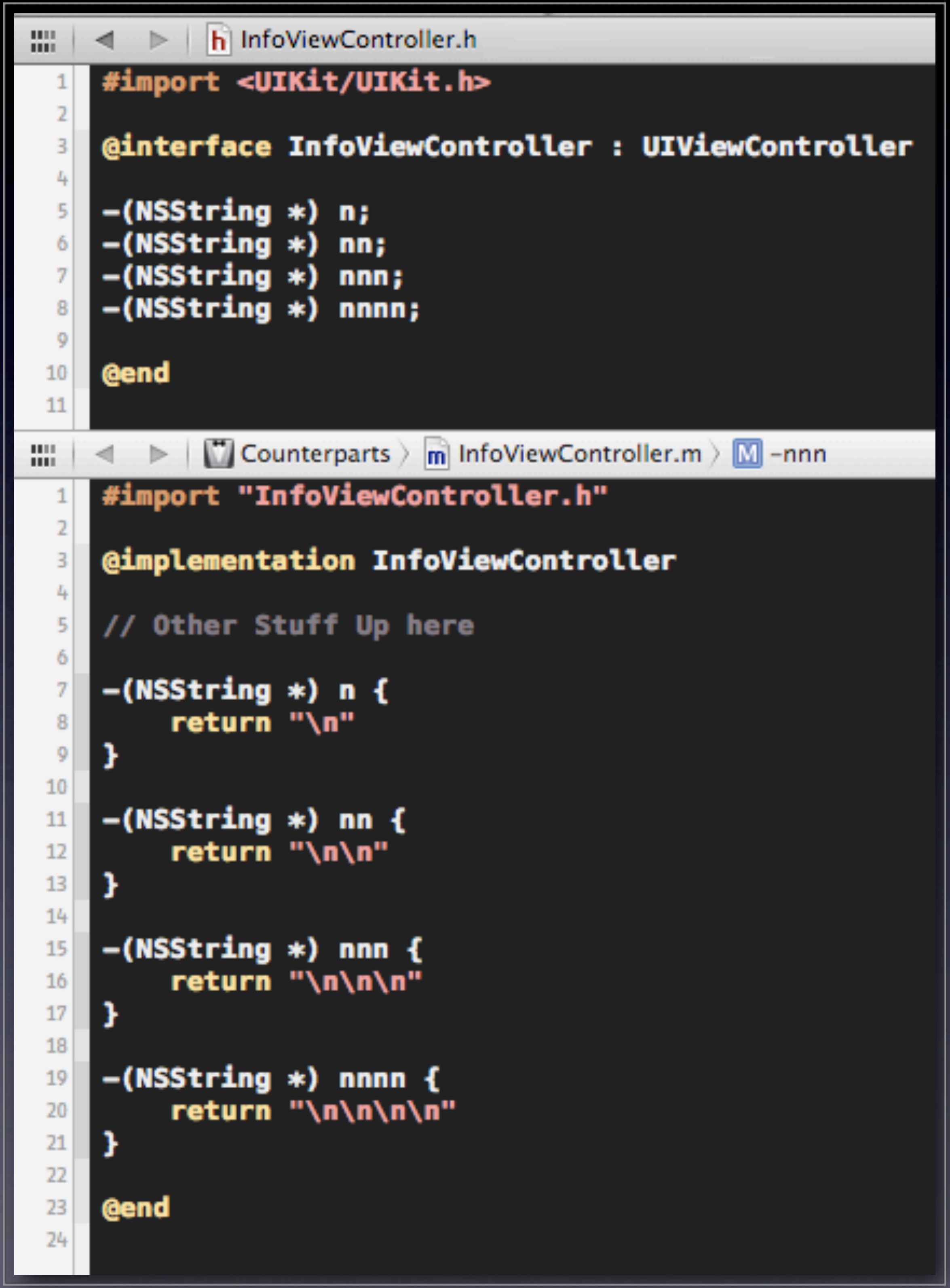
Cons

- Cost - $199 (but not for you...)
- Most iOS tutorials are in Objective-C
- Doesn’t play well with Interface Builder
- Future maintainability?

1,000 Foot View:

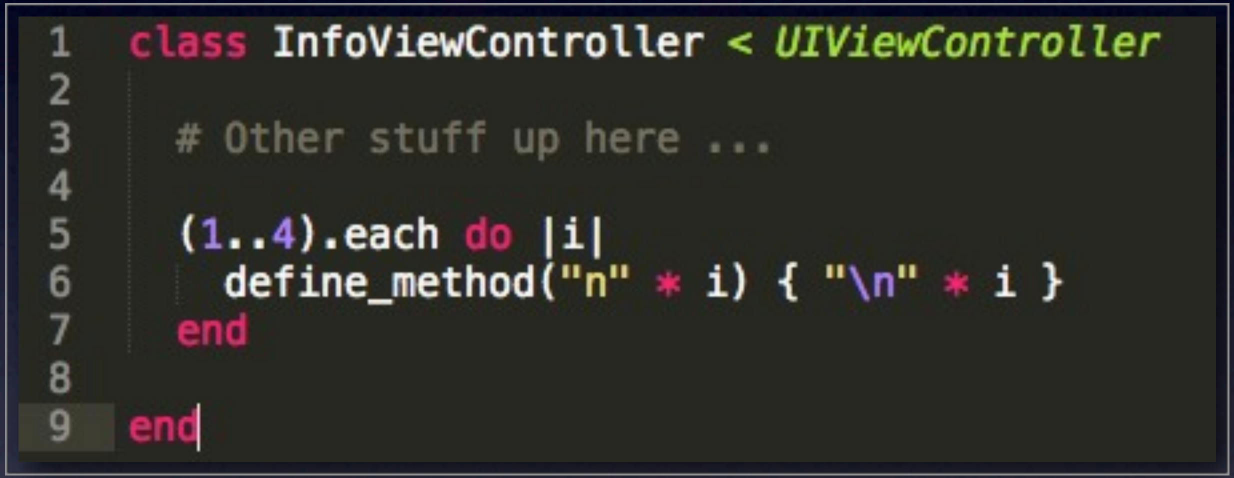
- Apps are completely native
- Apps are 100% App Store compliant
- Works seamlessly with cocoapods
- Integrates seamlessly with TestFlight.com
- BYOTE (Bring Your Own Text Editor)
- No reliance on XCode or InterfaceBuilder (other than it must be installed)
- Automatic memory management

Metaprogramming FTW!



```
#import <UIKit/UIKit.h>

@interface InfoViewController : UIViewController

-(NSString *) n;
-(NSString *) nn;
-(NSString *) nnn;
-(NSString *) nnnn;

@end

```

```
#import "InfoViewController.h"

@implementation InfoViewController

// Other Stuff Up here

-(NSString *) n {
    return "\n"
}

-(NSString *) nn {
    return "\n\n"
}

-(NSString *) nnn {
    return "\n\n\n"
}

-(NSString *) nnnn {
    return "\n\n\n\n"
}

@end

```

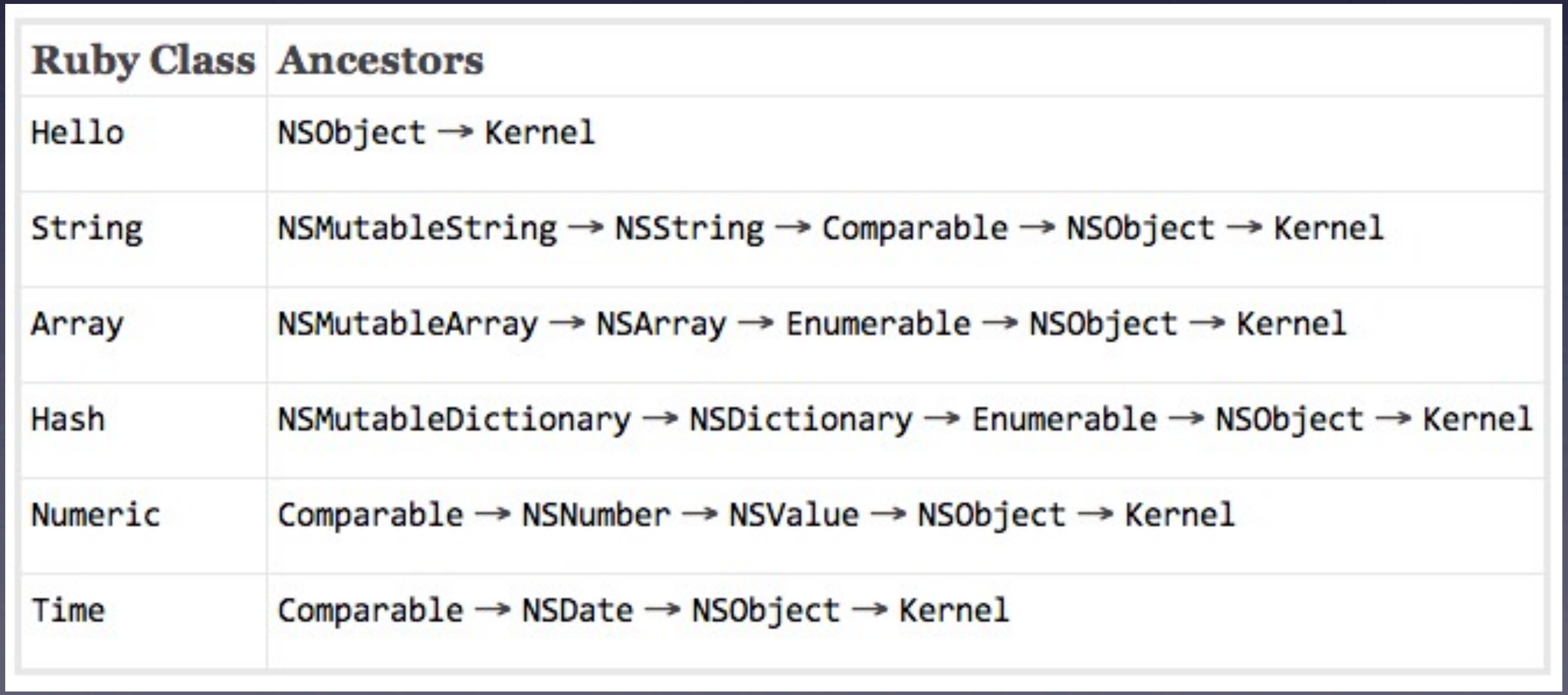


```
class InfoViewController < UIViewController

  # Other stuff up here ...

  (1..4).each do |i|
    define_method("n" * i) { "\n" * i }
  end

end
```

I think I've made my point.

Under the Hood:

- Runs a variant of the Ruby 1.9 runtime
- Built in Ruby classes map 1:1 to Objective-C counterparts

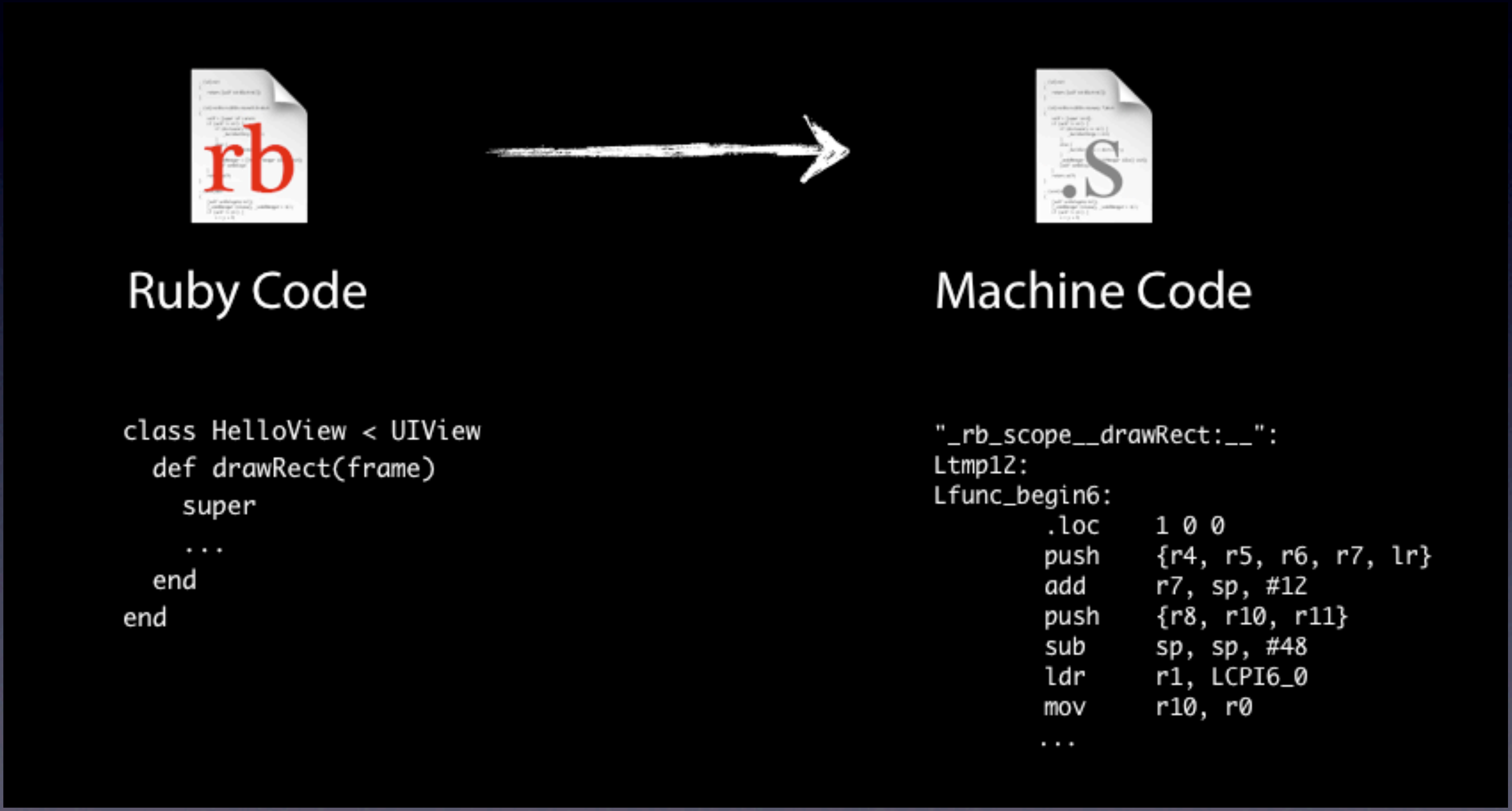


Ruby Class	Ancestors
Hello	NSObject → Kernel
String	NSMutableString → NSString → Comparable → NSObject → Kernel
Array	NSMutableArray → NSArray → Enumerable → NSObject → Kernel
Hash	NSMutableDictionary → NSDictionary → Enumerable → NSObject → Kernel
Numeric	Comparable → NSNumber → NSValue → NSObject → Kernel
Time	Comparable → NSDate → NSObject → Kernel

Under the Hood:

- Implements a variant of the LLVM compiler
  - Statically translates Ruby directly to machine code
  - Source is never present in the compiled app

Under the Hood:



Ruby Code

```
class HelloView < UIView
  def drawRect(frame)
    super
    ...
  end
end
```

Machine Code

```
"_rb_scope__drawRect:__":
Ltmp12:
Lfunc_begin6:
        .loc    1 0 0
        push    {r4, r5, r6, r7, lr}
        add     r7, sp, #12
        push    {r8, r10, r11}
        sub     sp, sp, #48
        ldr     r1, LCPI6_0
        mov     r10, r0
        ...
```

How It’s Different:

- Objective-C

```
[string drawAtPoint:point withFont:font];
```

- RubyMotion

```
string.drawAtPoint(point, withFont:font)
```

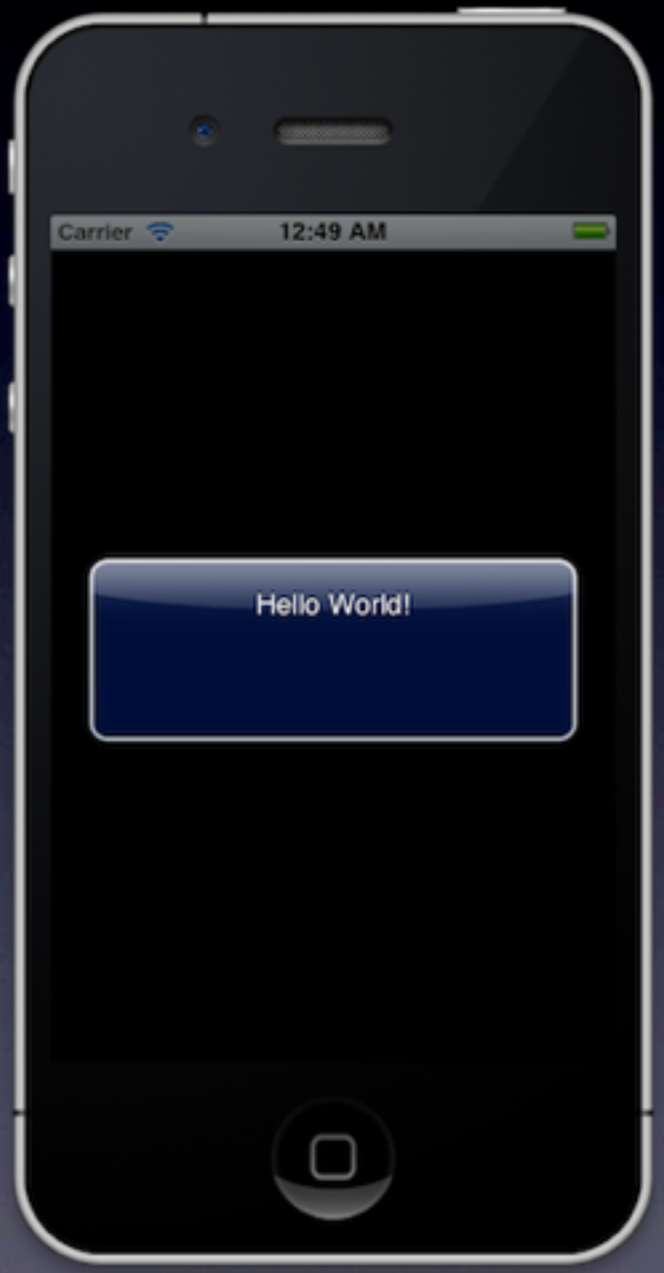
- But it’s just sending an Objective-C Message:

```
string.send(:'drawAtPoint:withFont:', point, font)
```

Requirements:

- Mac running 10.6 or higher
- Xcode & Developer Tools installed
- RubyMotion compiler
  (purchse from rubymotion.com)
- Basic knowledge of Apple APIs and MVC

Official Tutorial App



https://github.com/Skookum/RubyMotionTalk

Well that’s kind of a useless app...

Rake!

- rake || rake simulator
- rake device
  (beyond the scope of this talk)
- rake simulator device_family=ipad
- rake simulator retina=true
- rake clean
- rake spec
- rake archive

Anatomy of a RubyMotion App

/app	All your project classes go here
app_delegate.rb	The main delegate file.
/build	Static compiled files (safe to delete)
/resources	Images & other assets
/spec	Tests live here
.gitignore	Your project is automatically in git
Rakefile	Critical definitions for your app

I Need More Ruby!

- Gemfile / bundler
- rake tasks
- spec files

Demo:

Using Apple APIs

I Need More OBJ-C!

- cocoapods
- xcode projects
- static libraries {*.a,*.h}

*images & resources have to be copied into the /resources directory

Demo:

Wrappers & External Libraries

Testing

- You write tests for your applications... RIGHT?
- MacBacon < Bacon < RSpec
  - Unit Tests
  - Functional Tests (UI Automation)

Demo:

Testing TinyMon

https://github.com/tkadauke/TinyMon/

Questions?

Resources:

- http://www.rubymotion.com/developer-center/
- http://rubymotion-wrappers.com/
- http://bubblewrap.io/
- https://github.com/hipbyte
- https://github.com/rubymotion
- http://rubymotion-tutorial.com/
- http://twitter.com/RubyMotion