



MacRuby  
Ruby + ObjC





# COCOA

Apple's Objective-C based programming environment for  
Mac OS X



# COCOA

- frameworks
- APIs
- accompanying runtimes

Goal: **native Mac applications**

# OBJECTIVE-C 2.0

- reflective
- object-oriented
- garbage collection
- 32 and 64-bit support



obj.method parameter

# OBJECTIVE-C 2.0

[ obj method:parameter ] ;



```
friends = []
```

# OBJECTIVE-C 2.0

```
NSMutableArray *friends =  
[ [ NSMutableArray alloc] init];
```



# COCOA

Goal => **native Mac applications** => ObjC



:emo:

# RUBYCOCOA

bridge between  
the Objective-C runtime and MRI

# RUBYCOCOA

No more ObjC code to write :)

# RUBYCOCOA

Write cocoa apps in RUBY :)

# RUBYCOCOA

potentially prohibitive cost :(

# RUBYCOCOA

conversion cost :(

# RUBYCOCOA

message forwarding cost :(



# MacRuby





# APPLE'S OPEN SOURCE PROJECT



MacRuby



# NOT A BRIDGE



MacRuby



BUILT ON TOP OF THE  
OBJECTIVE-C RUNTIME



all classes	=> Objective-C
all methods	=> Objective-C
all objects	=> Objective-C



# CoreFoundation



MacRuby



# native CoreFoundation data types



MacRuby



# native threads



# Objective-C Garbage Collector

# CODE EXAMPLE

```
$ macirb
>> friends = []
=> []
>> friends.class
=> NSMutableArray
>> friends << "Juan"
=> ["Juan"]
>> friends << "Denis"
=> ["Juan", "Denis"]
```

```
>> friends << {first_name: "Laurent",
                     last_name: "Sansonetti"}
=> ["Juan", "Denis",
      {:first_name=>"Laurent",
       :last_name=>"Sansonetti"}]
>> friends.length
=> 3
```

```
>> name = "Matt Aimonetti"  
=> "Matt Aimonetti"  
>> name.uppercaseString  
=> "MATT AIMONETTI"  
>> name.upcase  
=> "MATT AIMONETTI"
```

# X-CODE ENVIRONMENT

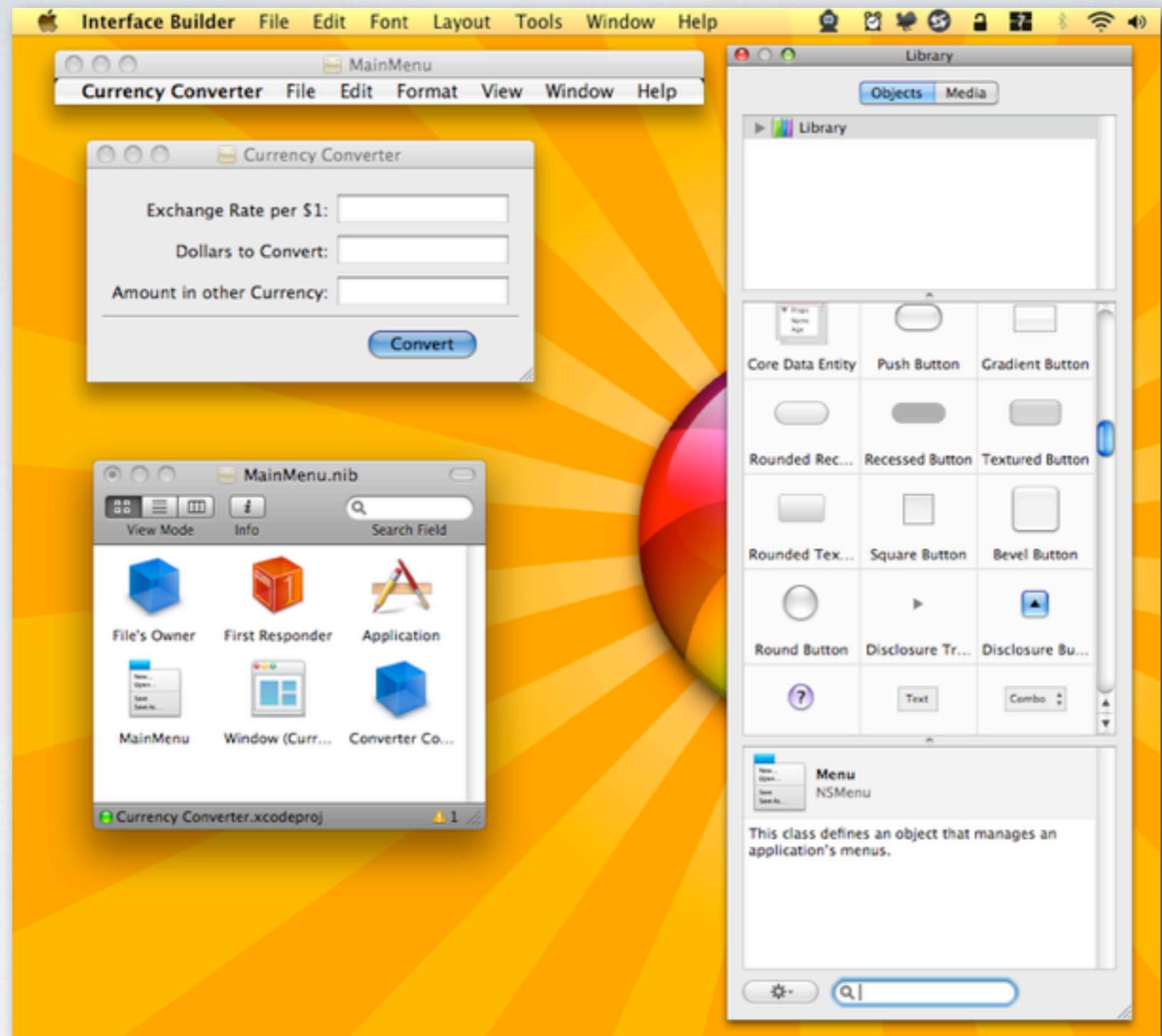


FREE

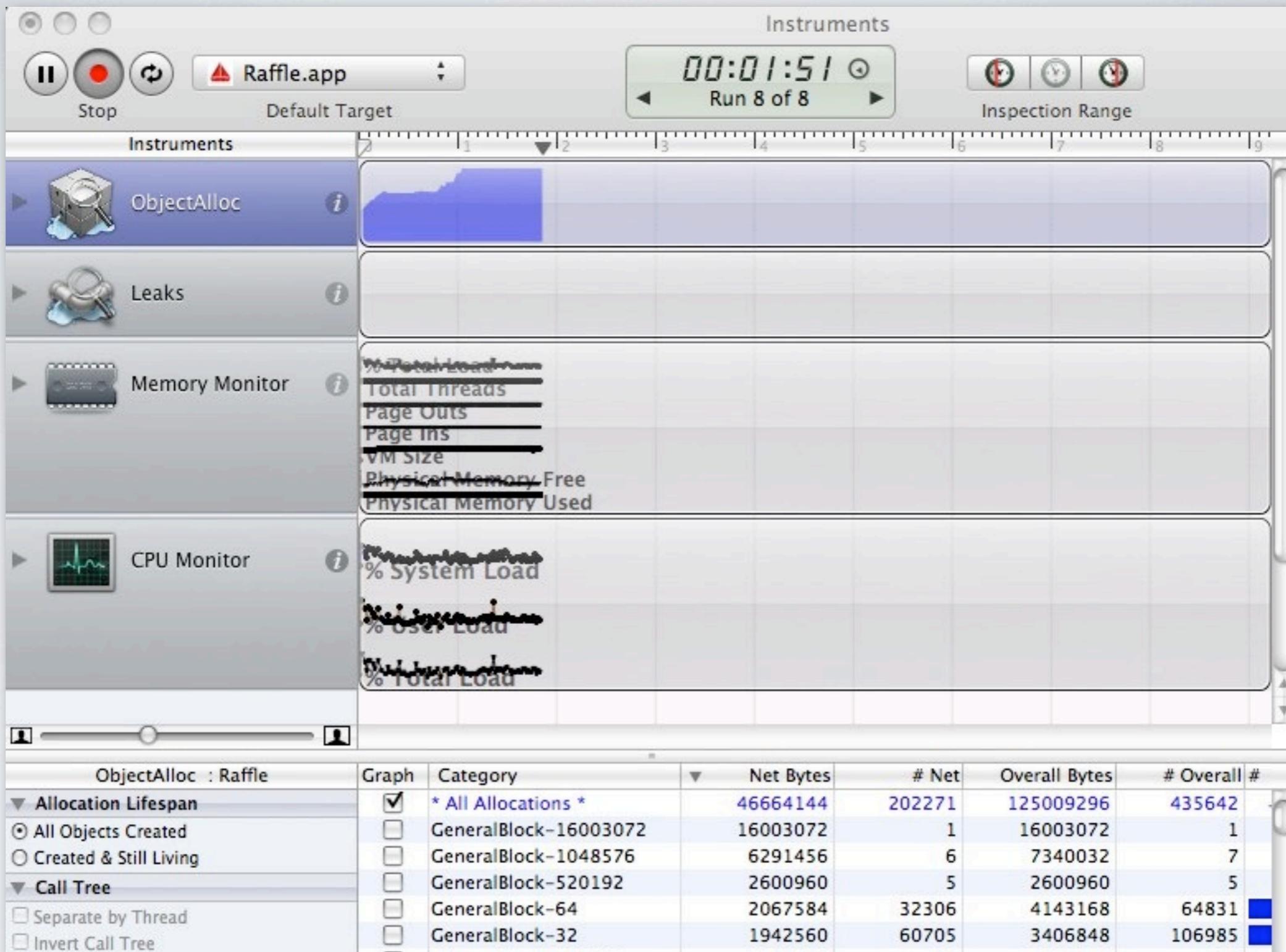
<http://developer.apple.com/TOOLS/xcode/>

# WELL DOCUMENTED

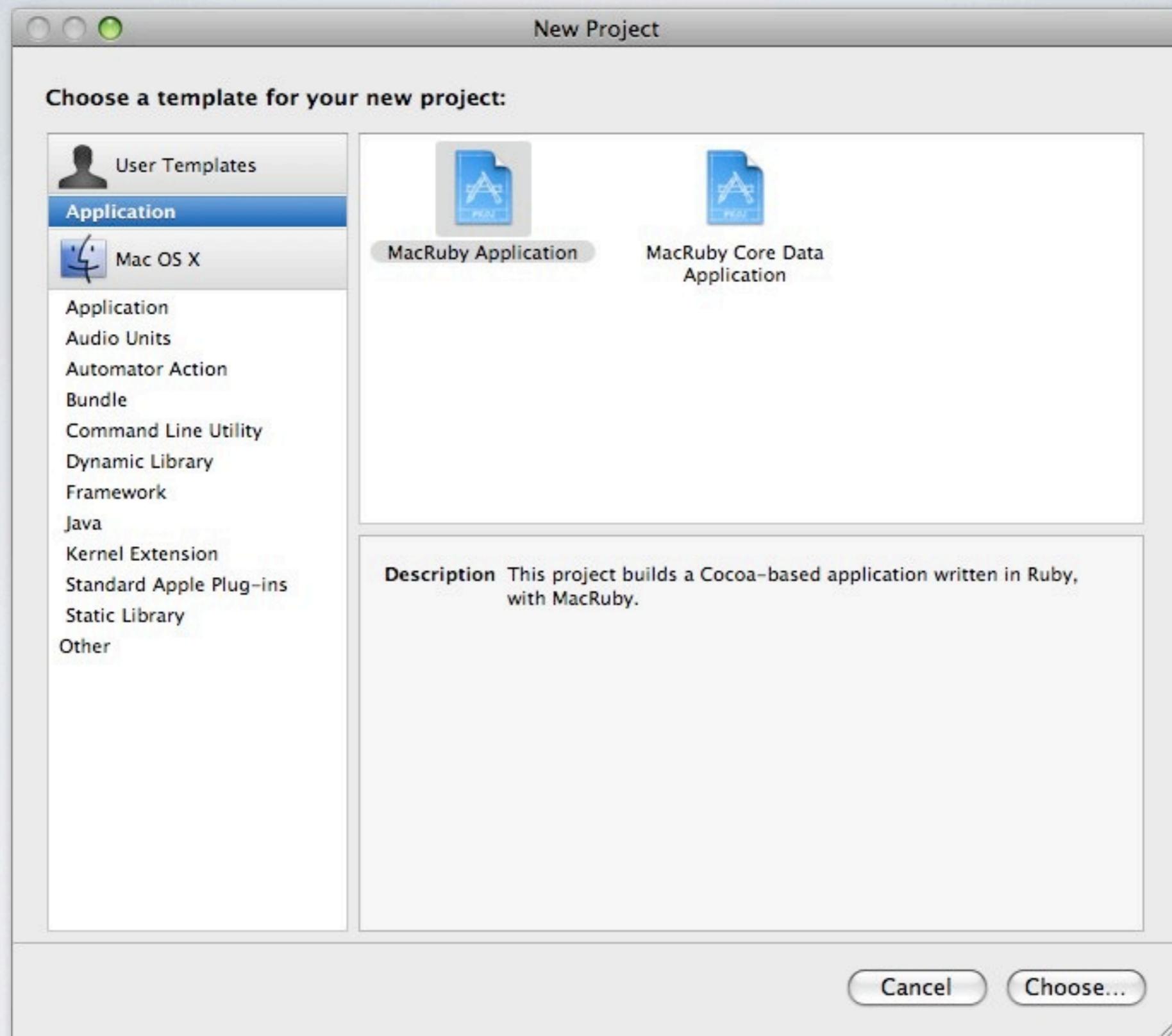
<http://developer.apple.com/index.html>



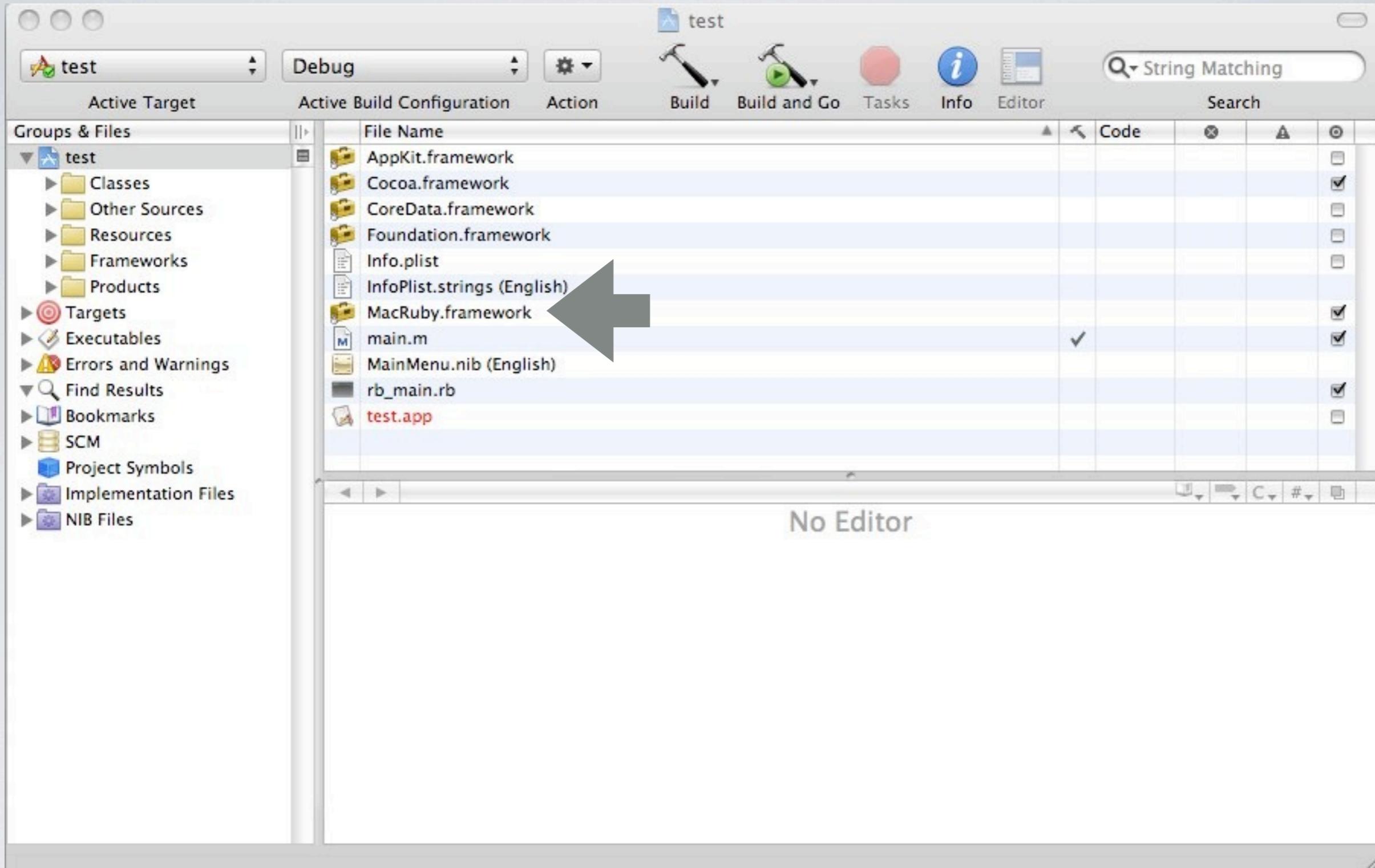
# WELL DONE



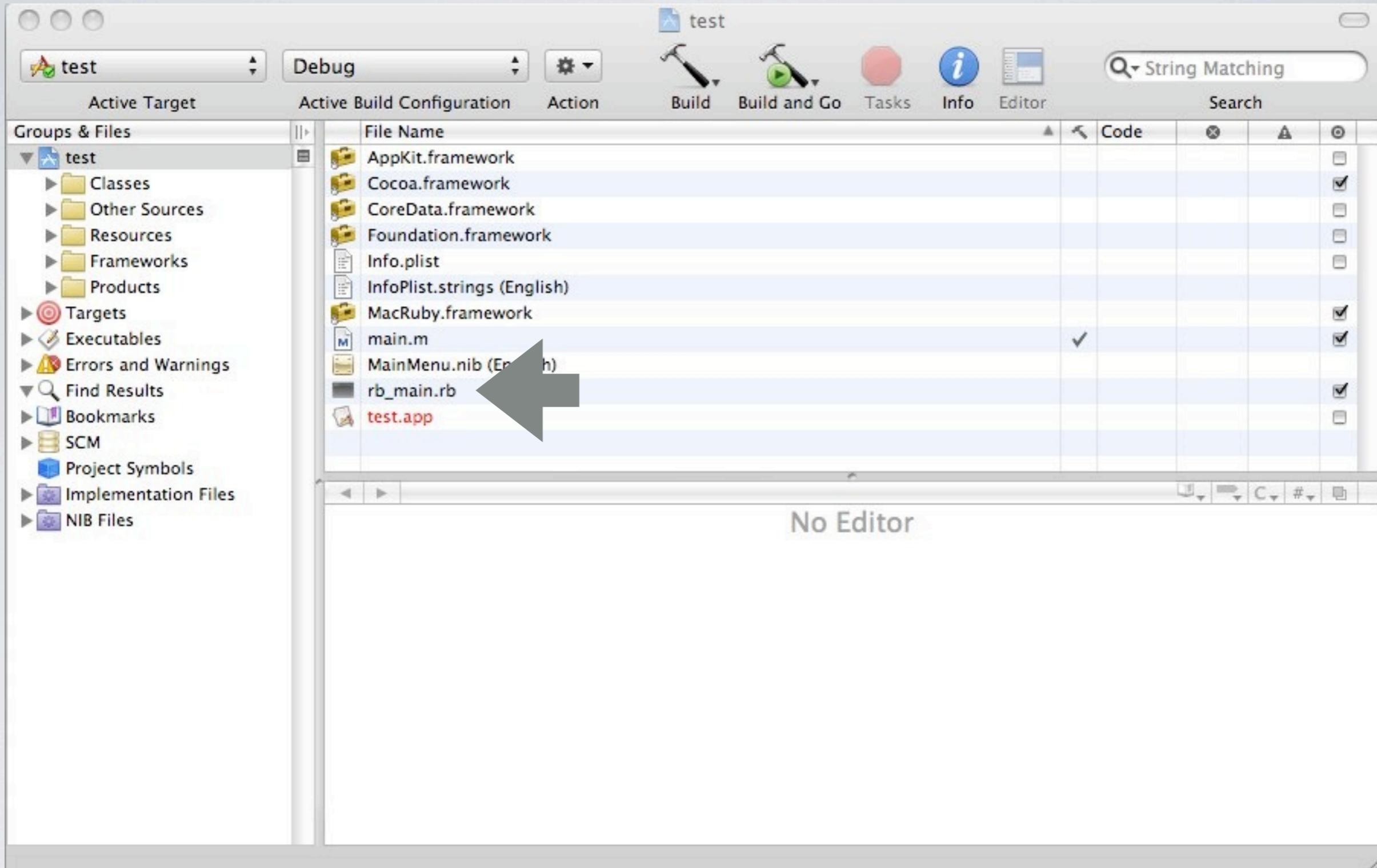
# GREAT TOOLS



# NEW PROJECT



# MacRuby.framework

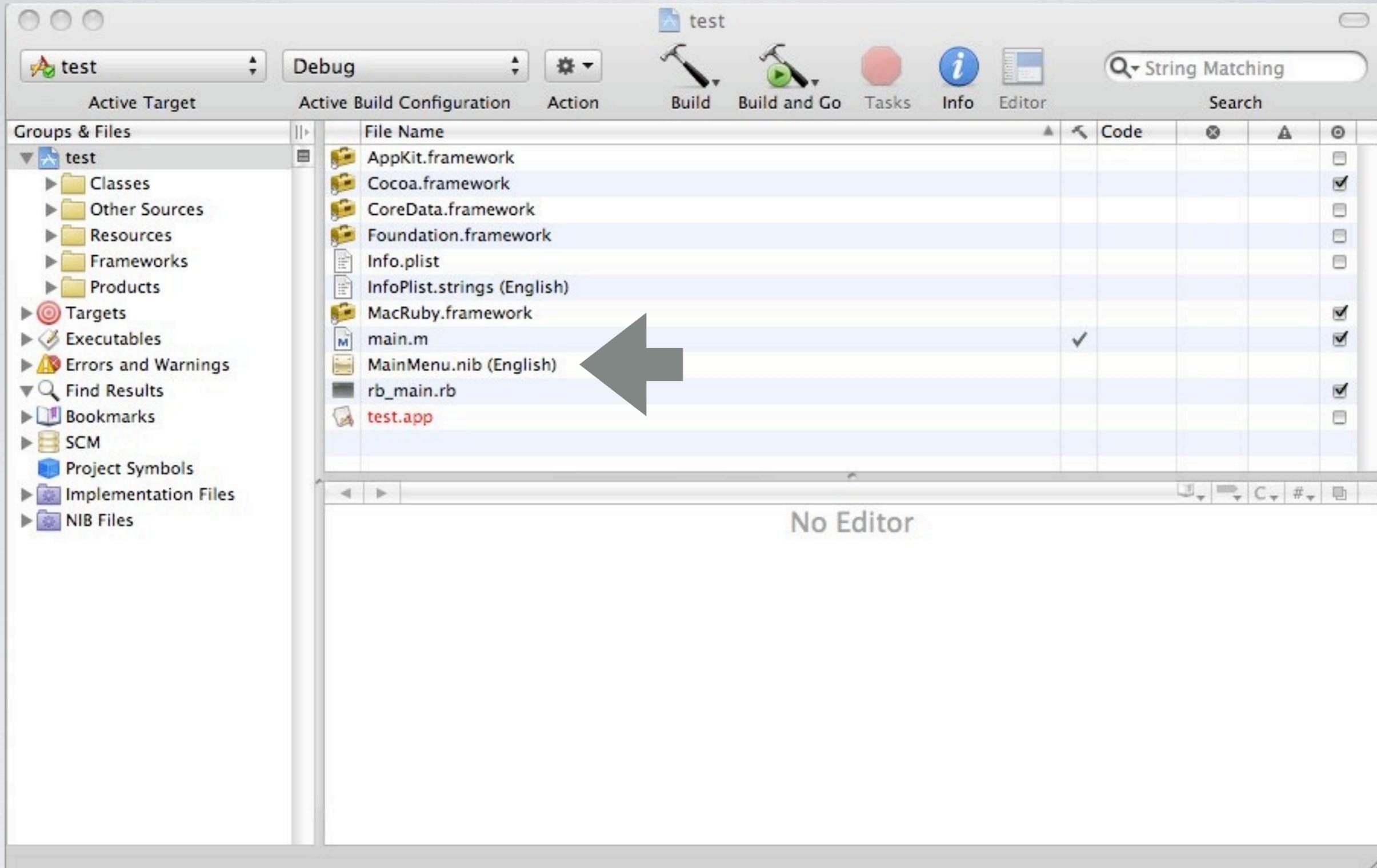


# rb\_main.rb

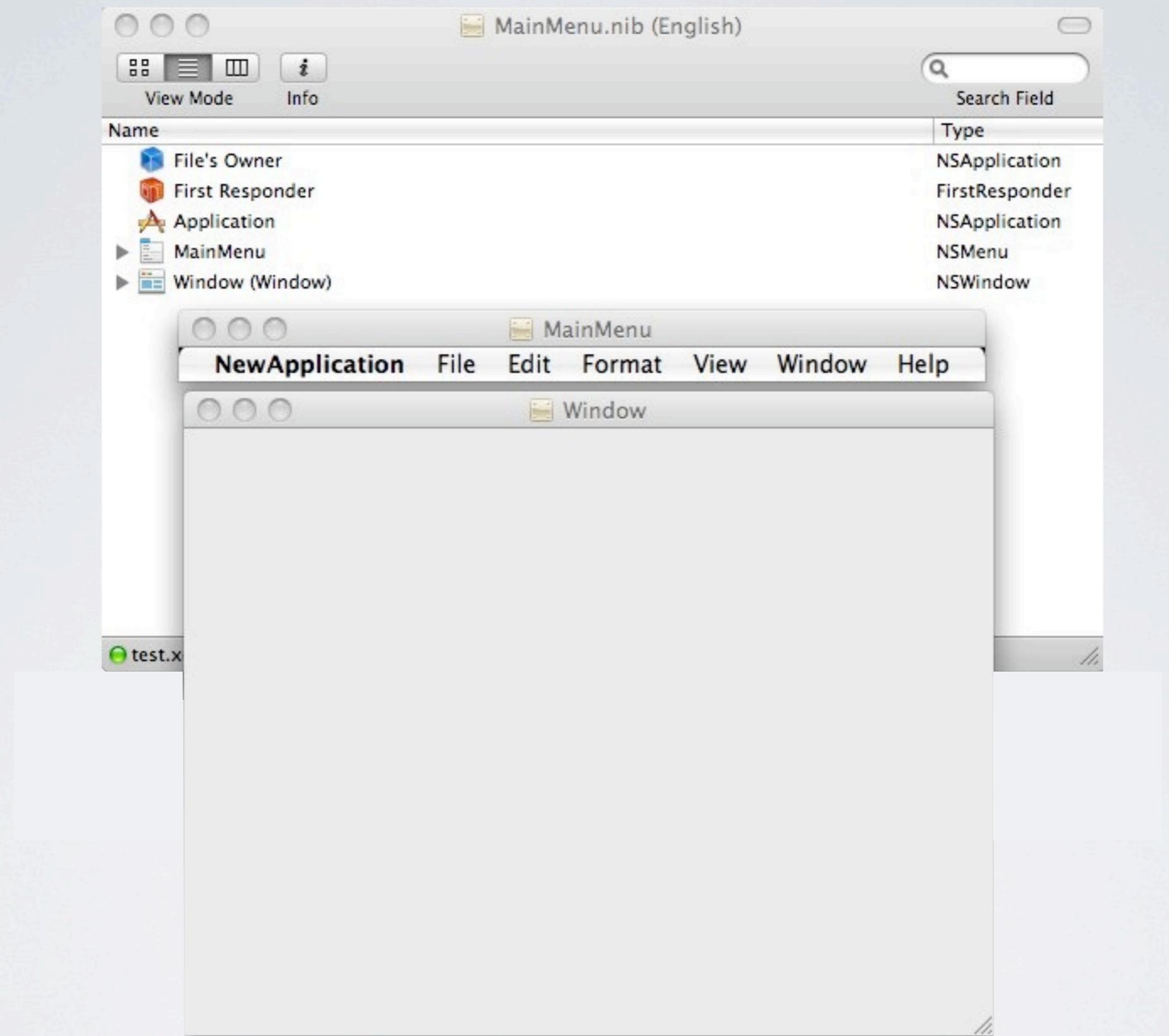
```
# Loading the Cocoa framework. If you need to load more
frameworks, you can
# do that here too.
framework 'Cocoa'

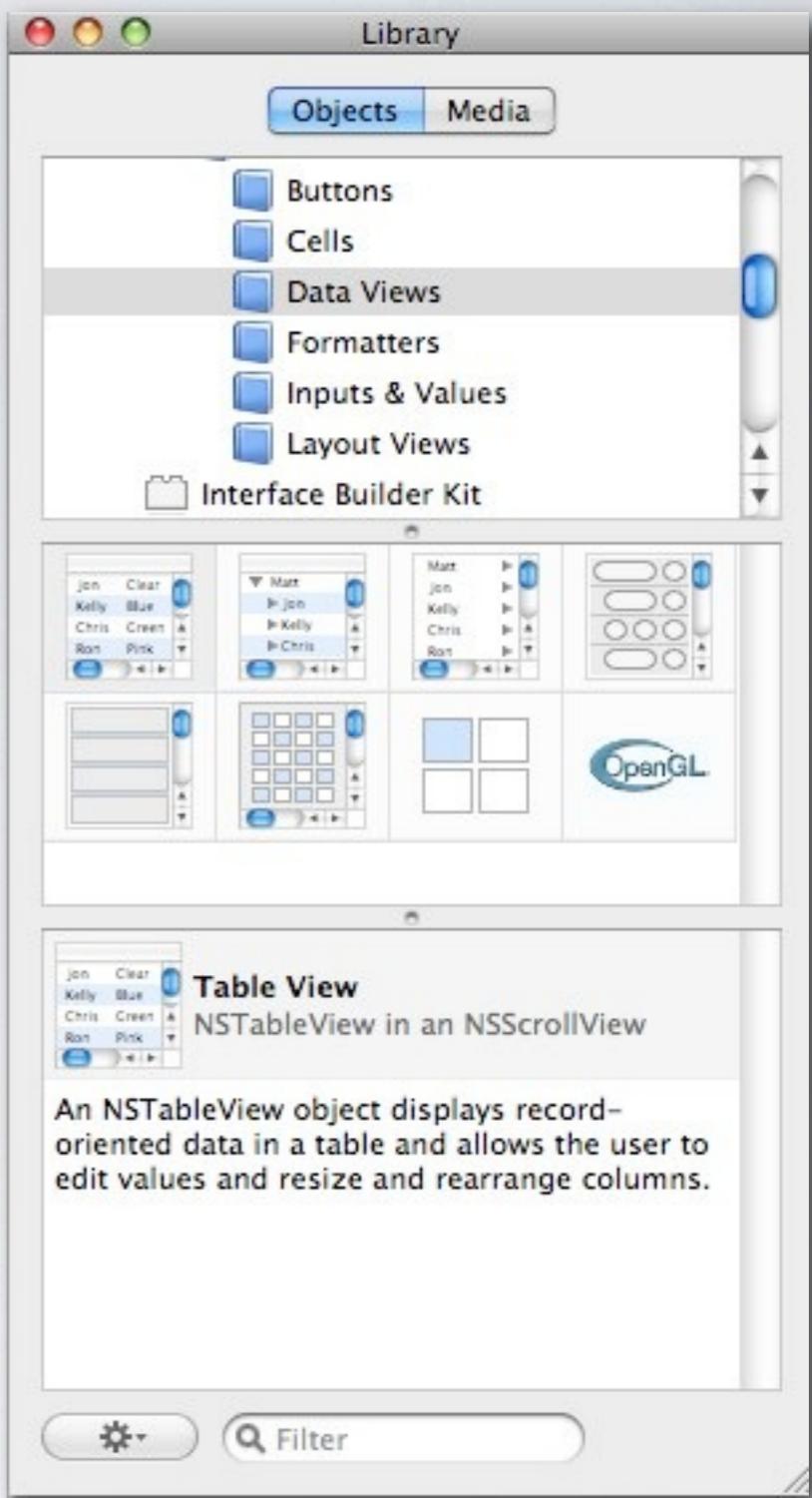
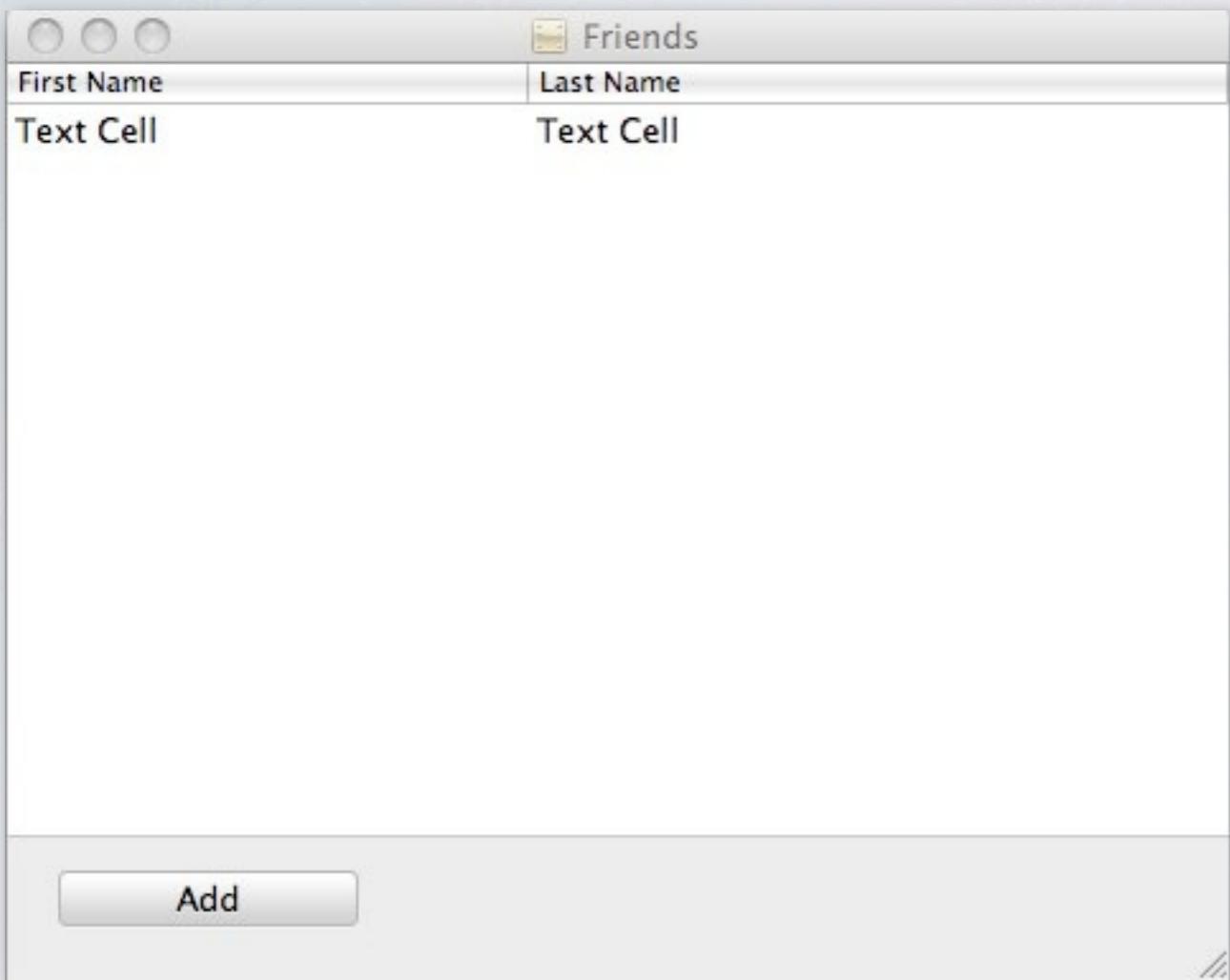
# Loading all the Ruby project files.
dir_path =
    NSBundle.mainBundle.resourcePath.fileSystemRepresentation
Dir.entries(dir_path).each do |path|
  if path != File.basename(__FILE__) and path[-3..-1] == '.rb'
    require(path)
  end
end

# Starting the Cocoa main loop.
NSApplicationMain(0, nil)
```

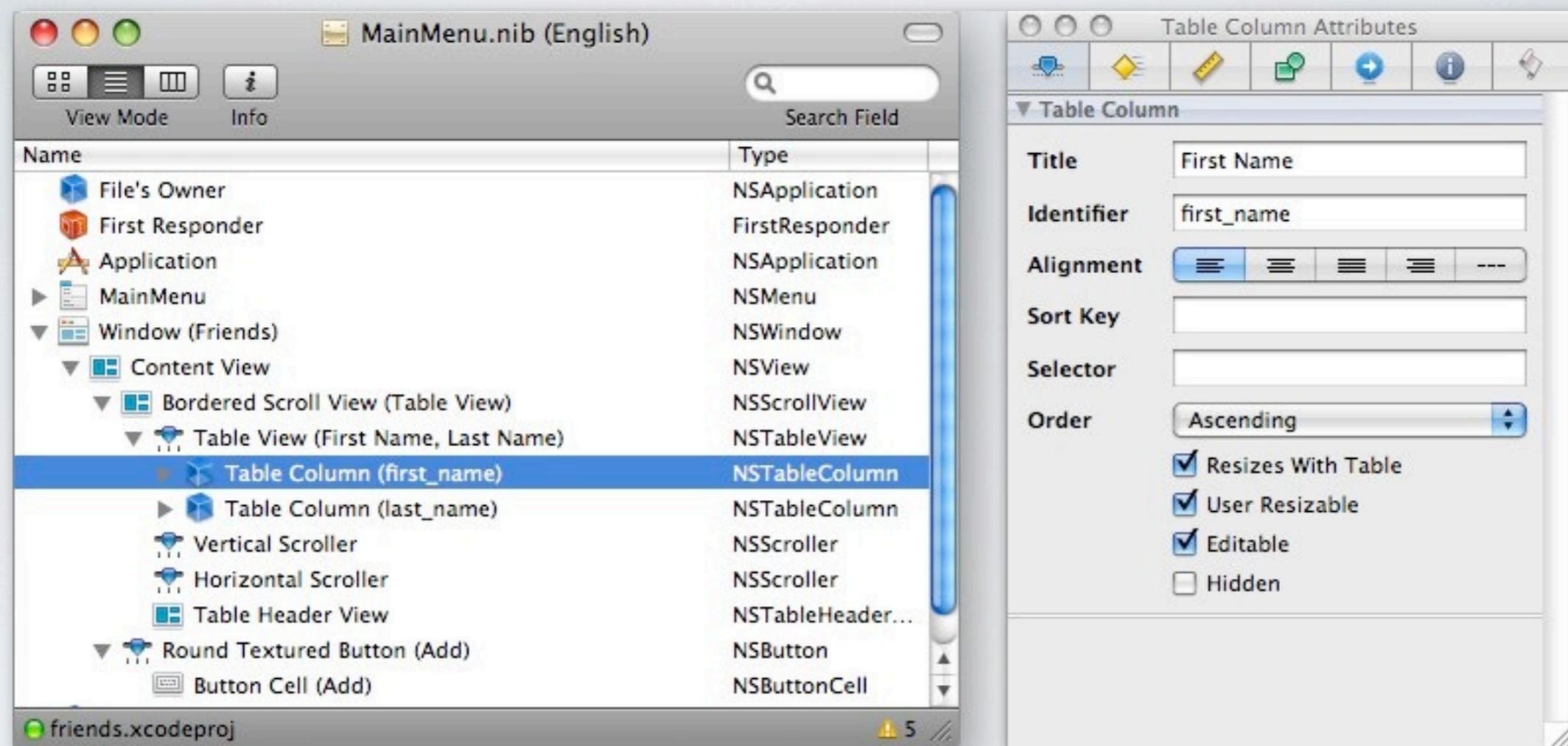


# MainMenu.nib

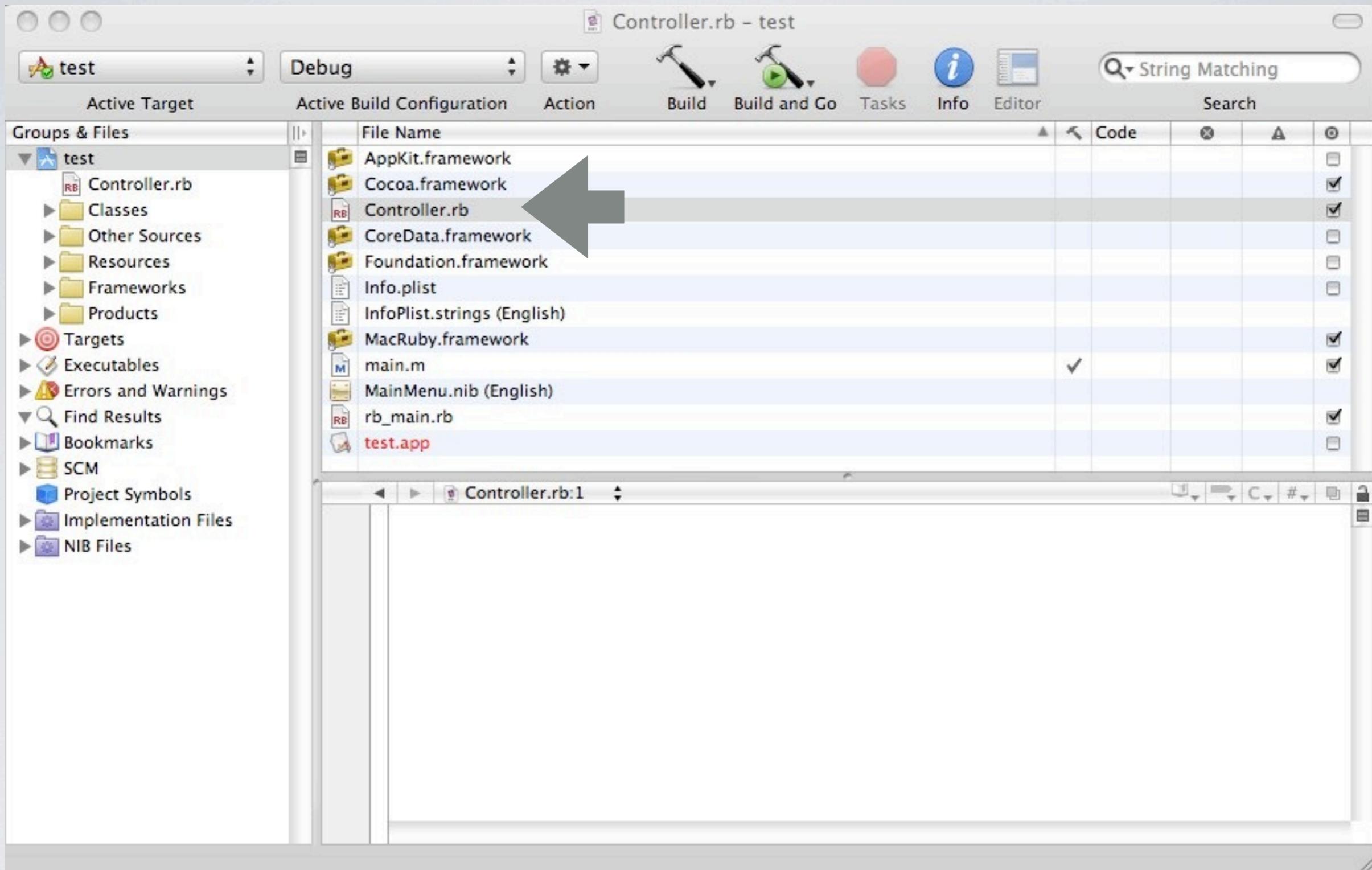




# V of MVC



# PREPARE BINDINGS



# C of MVC

```
class Controller
attr_writer :friendsTableView

def awakeFromNib
end

def numberOfRowsInTableView(view)
end

def tableView(view, objectValueForTableColumn:column,
              row:index)
end

def tableView(view, setObjectValue:object,
              forTableColumn:column, row:index)
end

def addFriend(sender)
end

end
```

```
class Controller  
  attr_writer :friendsTableView  
end
```

ivar = outlet

```
class Controller
```

```
def awakeFromNib
```

```
end
```

```
end
```

called when instantiated by nib

```
class Controller

def awakeFromNib
  @friends = []
  @friendsTableView.dataSource = self
end

end
```

set the NSTableView data source

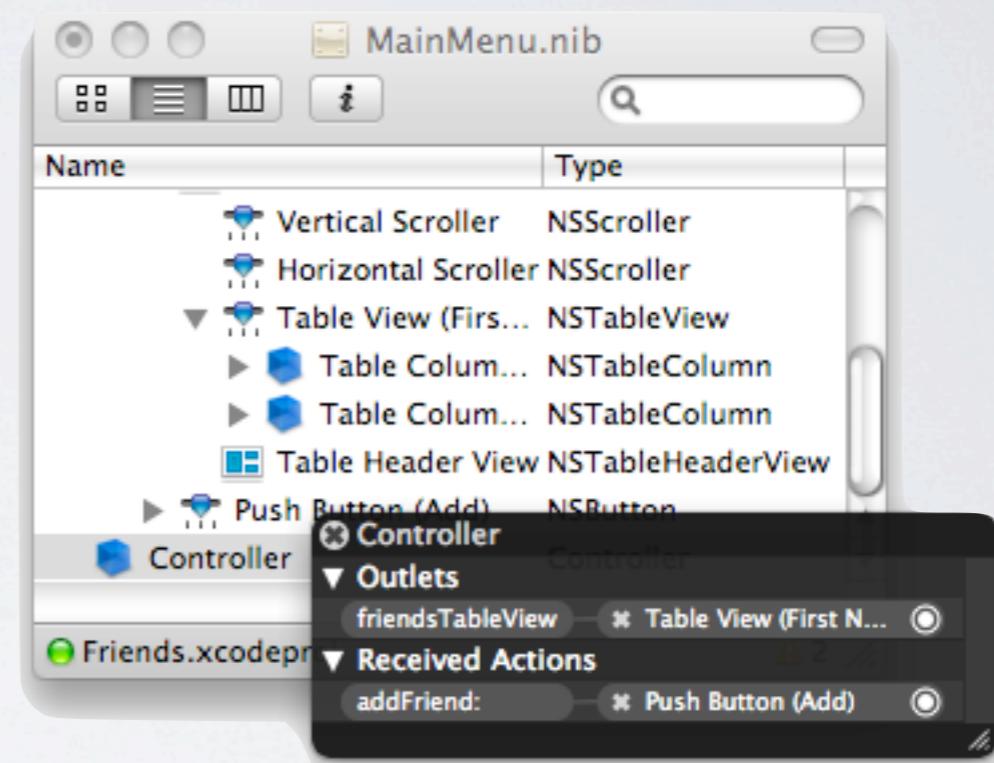
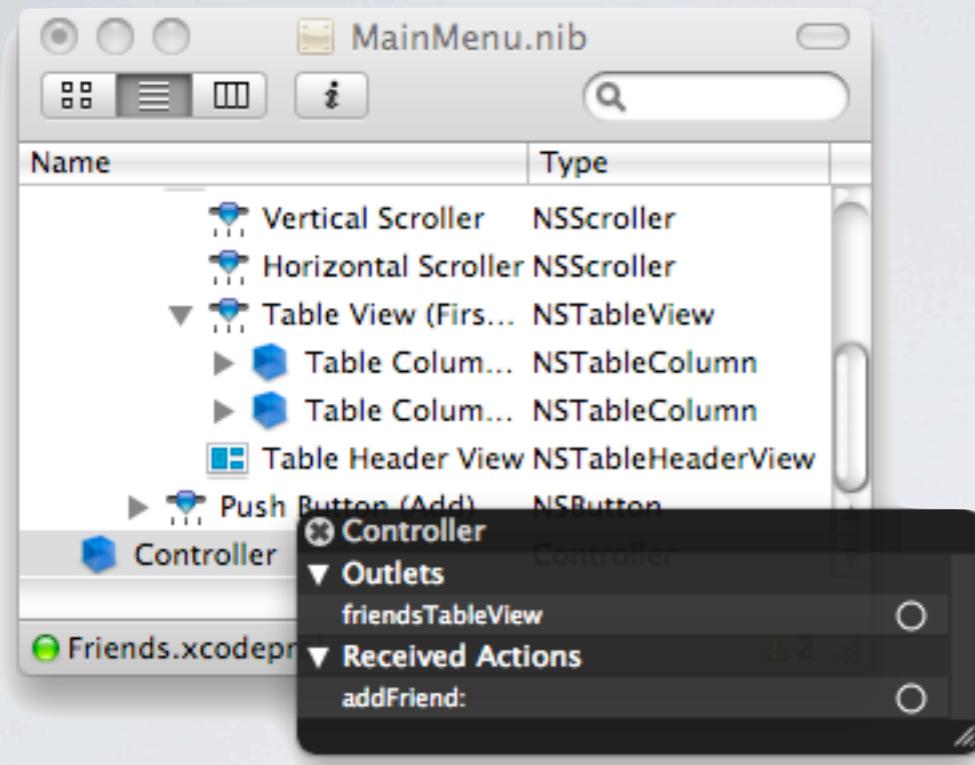
```
class Controller
```

```
def addFriend(sender)
```

```
end
```

```
end
```

button action



bind the UI with the Controller

# NSTableDataSource informal protocol

```
def numberOfRowsInTableView(view)  
end
```

NSTableDataSource protocol

```
def tableView( view,  
    objectValueForTableColumn:column,  
row:index )  
end
```

NSTableView selector

```
def tableView(view,  
             setObjectValue:object,  
             forTableColumn:column,  
             row:index)  
end
```

NSTableView selector



# Compile



# HOTCOCOA



PURE RUBY SEXINESS

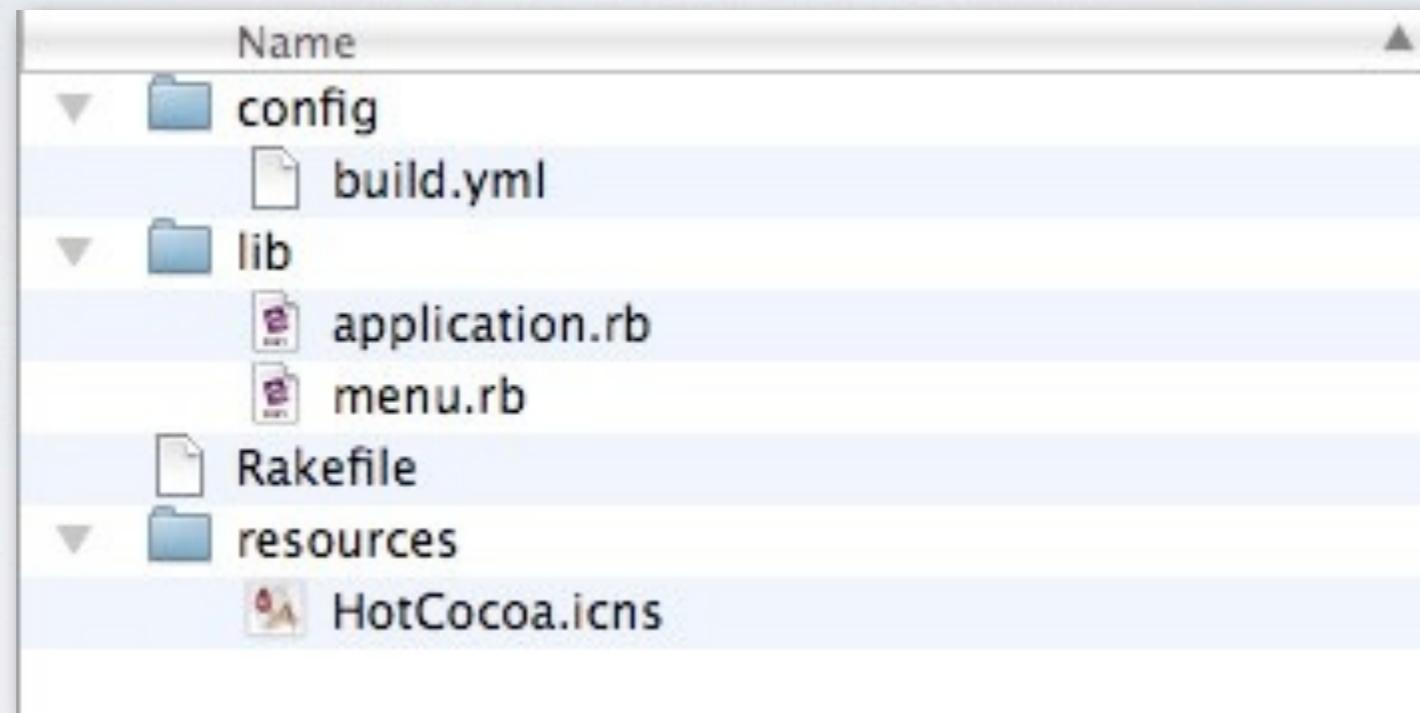


NO X-CODE



# RUBY DSL FOR COCOA

```
$ hotcocoa sdruby
```



```
$ hotcocoa sdruby
```



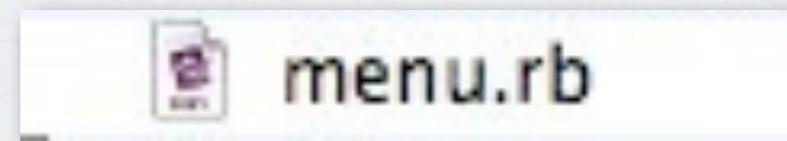
# PROJECT SETTINGS

```
$ hotcocoa sdruby
```



CORE OF THE APP CODE

\$ hotcocoa sdruby



MENU BAR

\$ hotcocoa sdruby



RAKE TASKS

```
$ hotcocoa sdruby
```



# APP RESOURCES

```
def start
  application :name => "Sdruby" do |app|
    app.delegate = self
    window(:frame => [100, 100, 500, 500],
           :title => "SDRuby") do |win|
      win << label(:text => "Hello from HotCocoa",
                    :layout => {:start => false})
      win.will_close { exit }
    end
  end
end
```

# RUBY HELPERS

```
application :name => "Sdruby" do |appl|
end
```

# NSApplication

```
application :name => "Sdruby" do |app|
  app.delegate = self
end
```

set the delegation

```
# file/open  
def on_open(menu)  
end
```

```
# file/new  
def on_new(menu)  
end
```

```
# help menu item  
def on_help(menu)  
end
```

```
# window/zoom  
def on_zoom(menu)  
end
```

```
# window/bring_all_to_front  
def on_bring_all_to_front(menu)  
end
```

set the delegation

```
window(:frame => [100, 100, 500, 500], :title => "SDRuby") do |win|
end
```

# NSWindow helper

```
label(:text => "Hello from HotCocoa", :layout => {:start => false})
```

# NSTextField helper

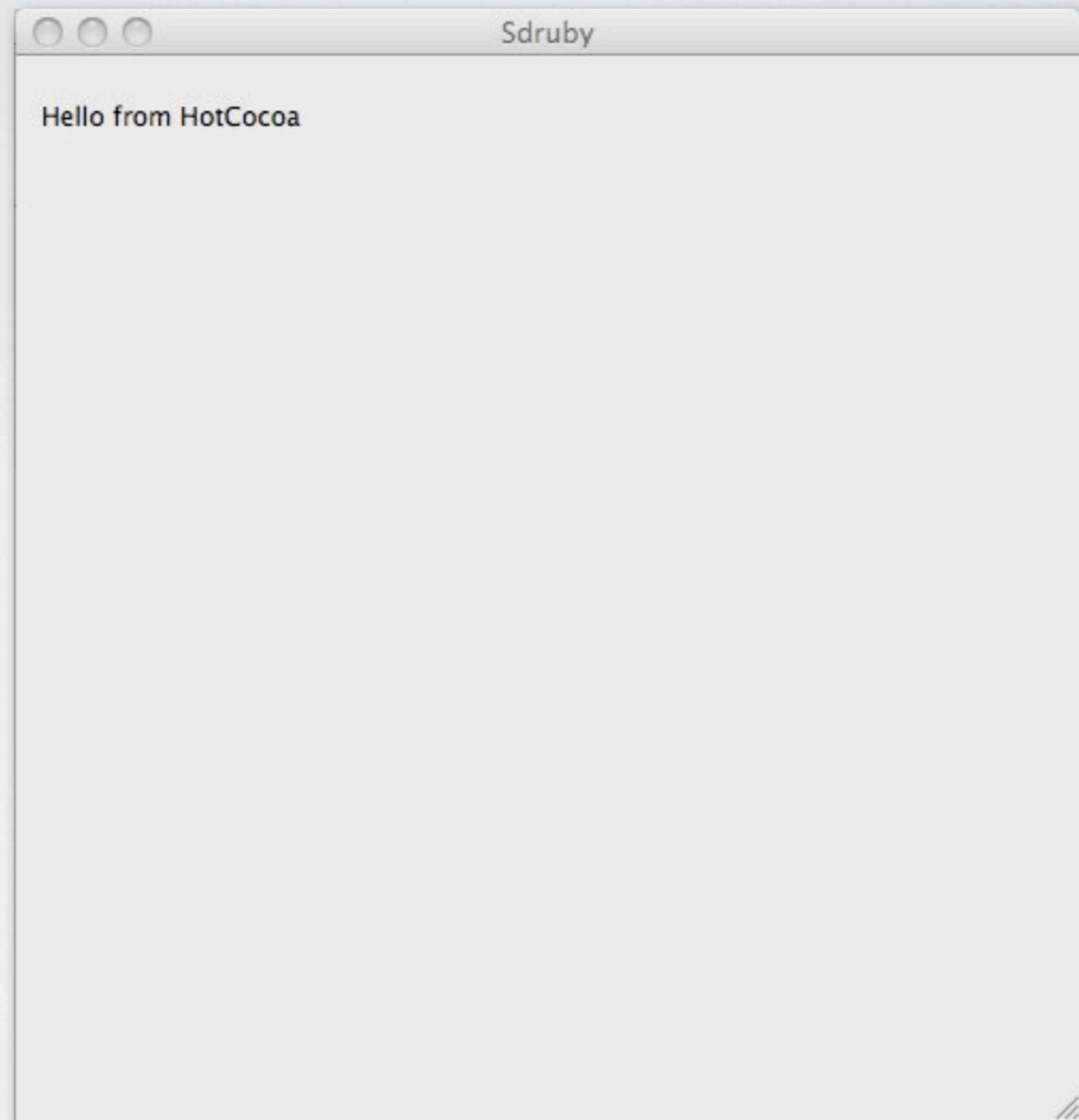
```
win << label(:text => "Hello from HotCocoa")
```

contentView.addSubview helper

```
win.will_close { exit }
```

window callback

# \$ macrake



USE ANY COCOA  
FRAMEWORK



# WEBKIT

framework 'webkit'

```
win << web_view( :layout => { :expand => [ :width, :height ] } ,  
                  :url => "http://sdruby.com" )
```

The screenshot shows a Mac OS X application window titled "Sdruby". The window contains the following content:

Hello from HotCocoa

# SD Ruby

We are San Diego's Ruby community

**Share ideas, code, and your love for Ruby.**

Show off your latest project, a plugin you made, or something you've learned. Open to all skill levels... just show up and join the fun!

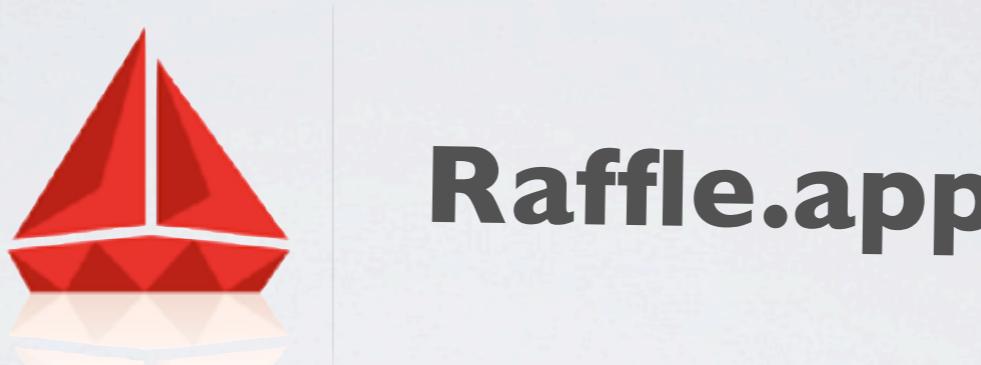
Meetings are held on the first Thursday of each month at UCSD.

**Next meeting:**

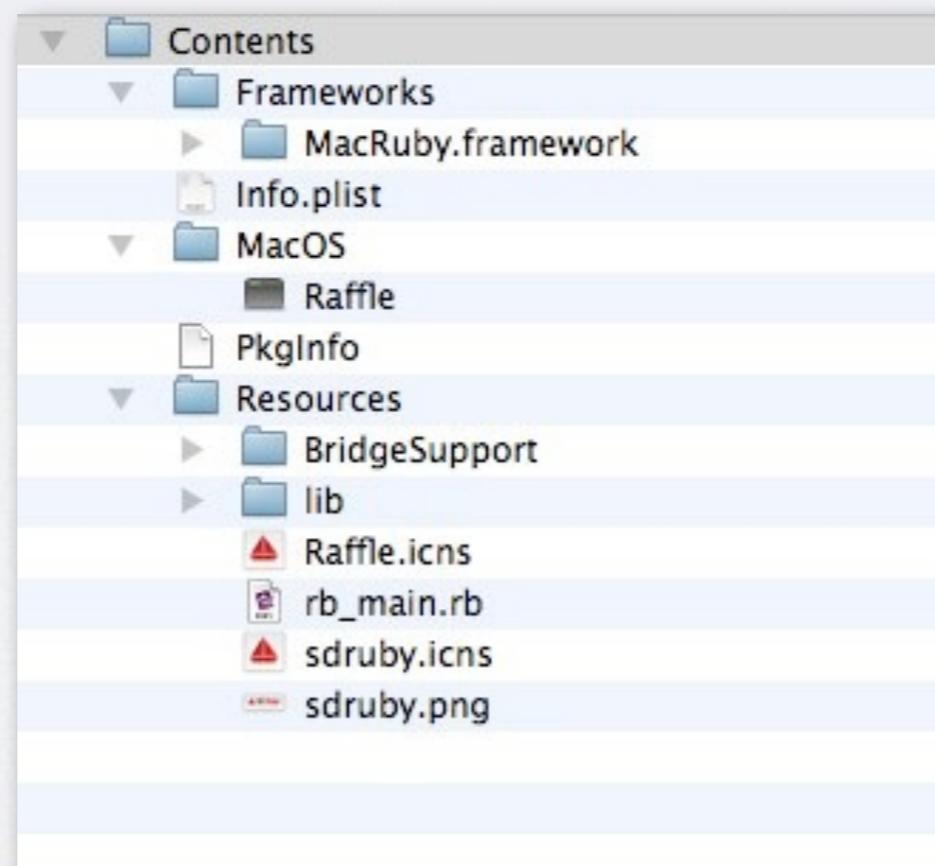
Thursday, February 5  
@ 7:30pm  
UCSD CSE Building  
(map + directions)

[Google Group](#)   [Podcast](#)

# \$ macrake deploy



**Raffle.app**



AND MUCH MORE

# DEMO APPS

SDRuby Raffle



**SD Ruby**

We are San Diego's Ruby community.

## SDRuby Raffle 2009-02-05

First Name:  Last Name:  Email:

**Add**

First Name	Last Name	Email
Matt	Aimonetti	

**About** **Pick A winner** **Add Participants**

# SD RUBY RAFFLE APP

What to do  
with MacRuby?

# WEB APP CLIENT

# REUSE RUBY CODE

# RETHINK DESKTOP APPS

# WEBKIT INTEGRATION

# ¿MacRuby's future?

MUCH BETTER  
PERFORMANCE

NEW VM

# SOURCE OBFUSCATION

# COMPILED CODE

# OPTIMIZATIONS BASED ON THE UNDERLYING OS

SOLID & SUPPORTED WAY TO  
WRITE COCOA APPS

¿MAINSTREAM WAY TO WRITE  
COCOA APPS?

¿IPHONE OUTPUT?

# resources:

<http://www.macruby.org>

<http://tinyurl.com/macruby-getting-started>

<http://macruby.org/trac/wiki/MacRubyTutorial>

<http://github.com/masterkain/macruby>

<http://tinyurl.com/macruby-hillegass>

Props to  
Rich Kilmer  
(hotcocoa)

&

Laurent Sansonetti  
(MacRuby)