

# UI Automation





@jonathanpenn



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**DESIGNING**  
INTERACTIVE



@jonathanpenn



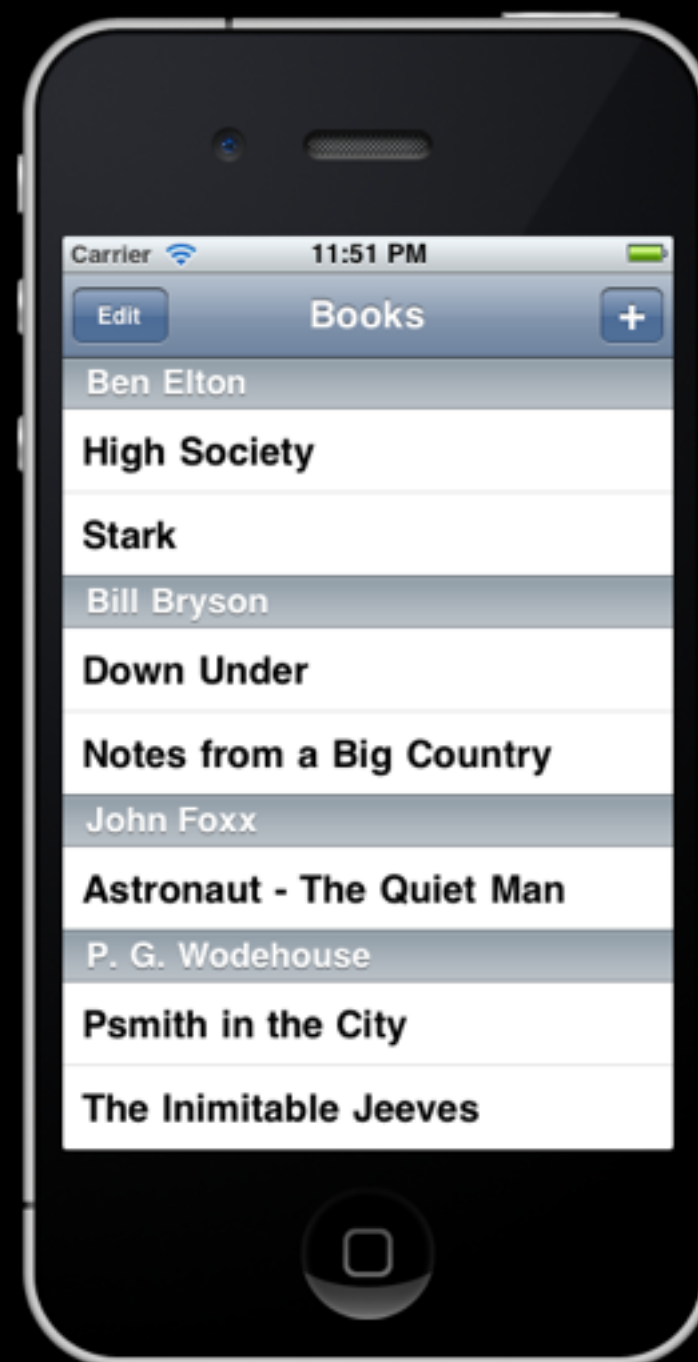
**DESIGNING**  
I N T E R A C T I V E

cocoamanifest.net

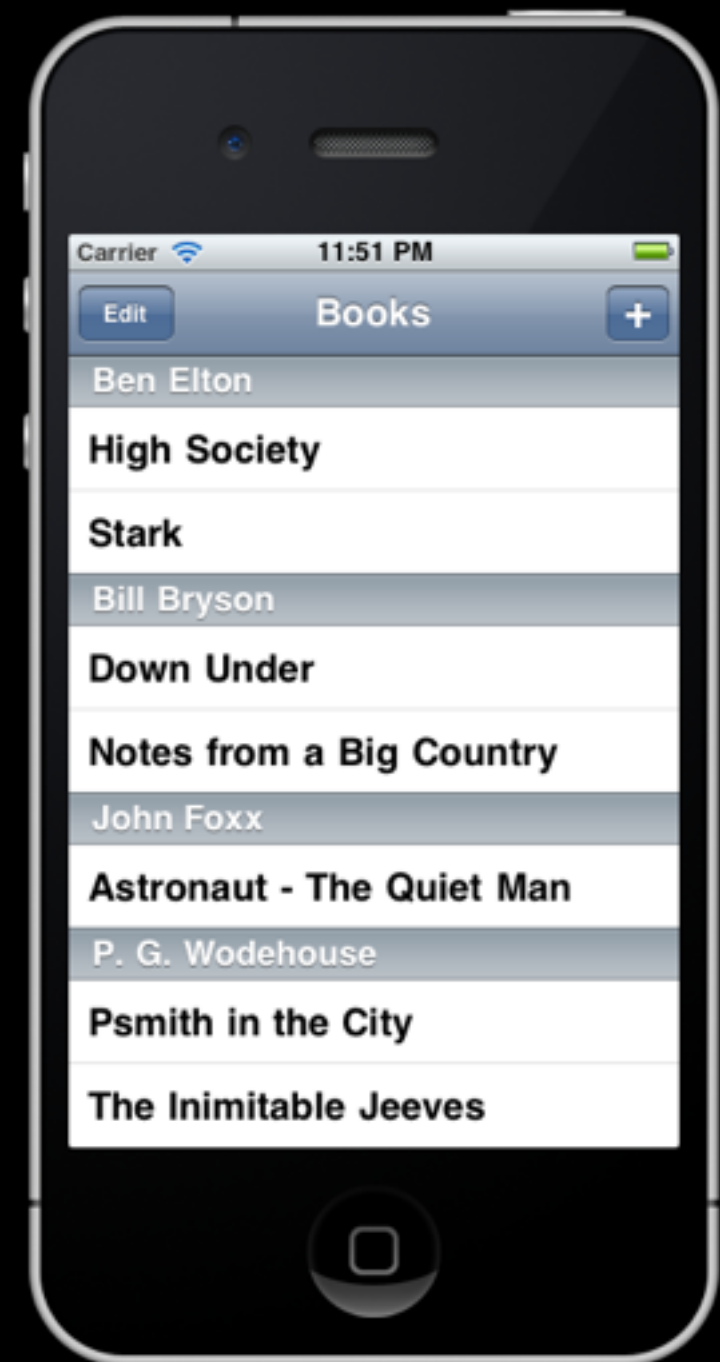
Articles expanding on UI Automation

<http://cocoamanifest.net/features>

First, some theory...

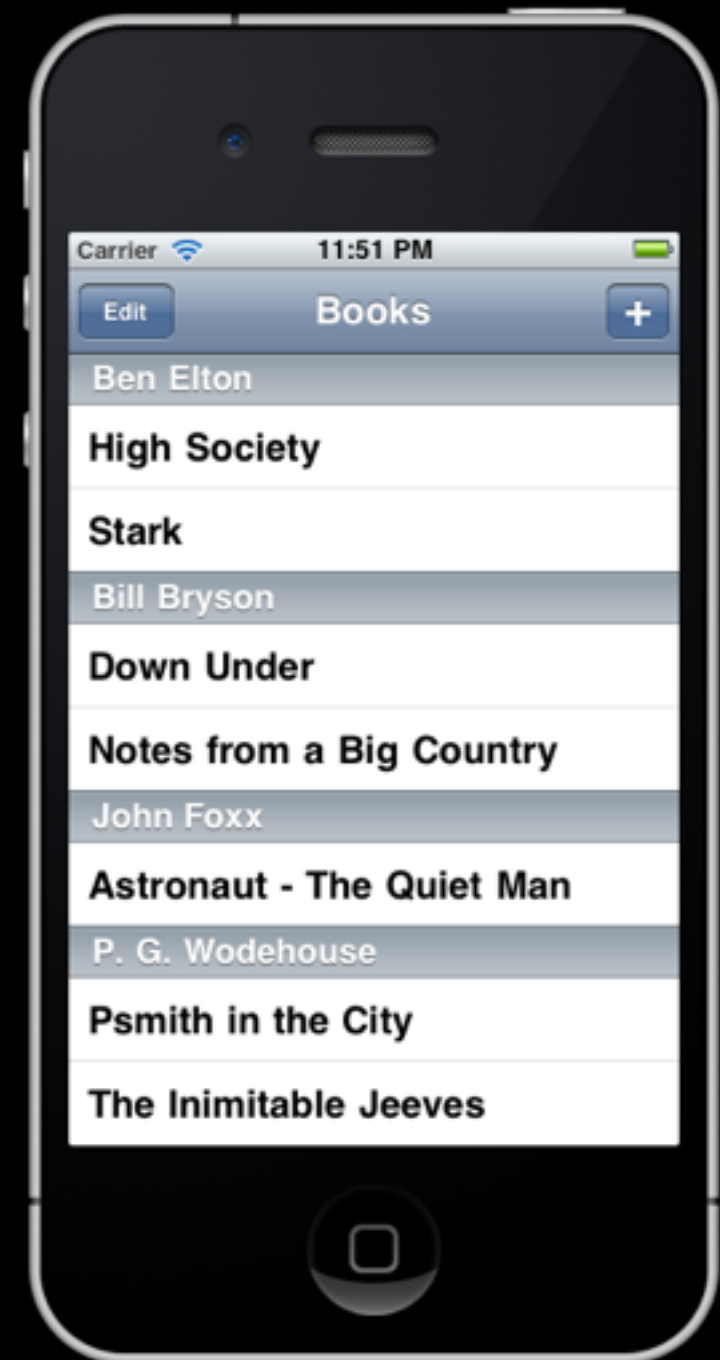


Wired up right?





# Custom controls



Think like a user





What is it?

⏸

⏹

🔄

CoreDataBooks

⌵

🕒

🕒

🕒

00:05:00

⏪

Run 1 of 1

⏩

🖼

🖼

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🔍

Message

»

Target

Inspection Range

View

Search

Instruments

Automation

Automation

Script Log

Script

wip.js

⌵

Edit

☒ Run on Record

Stop Script

Start Script

Script is stopped.

Screenshot

Take Screenshot Now

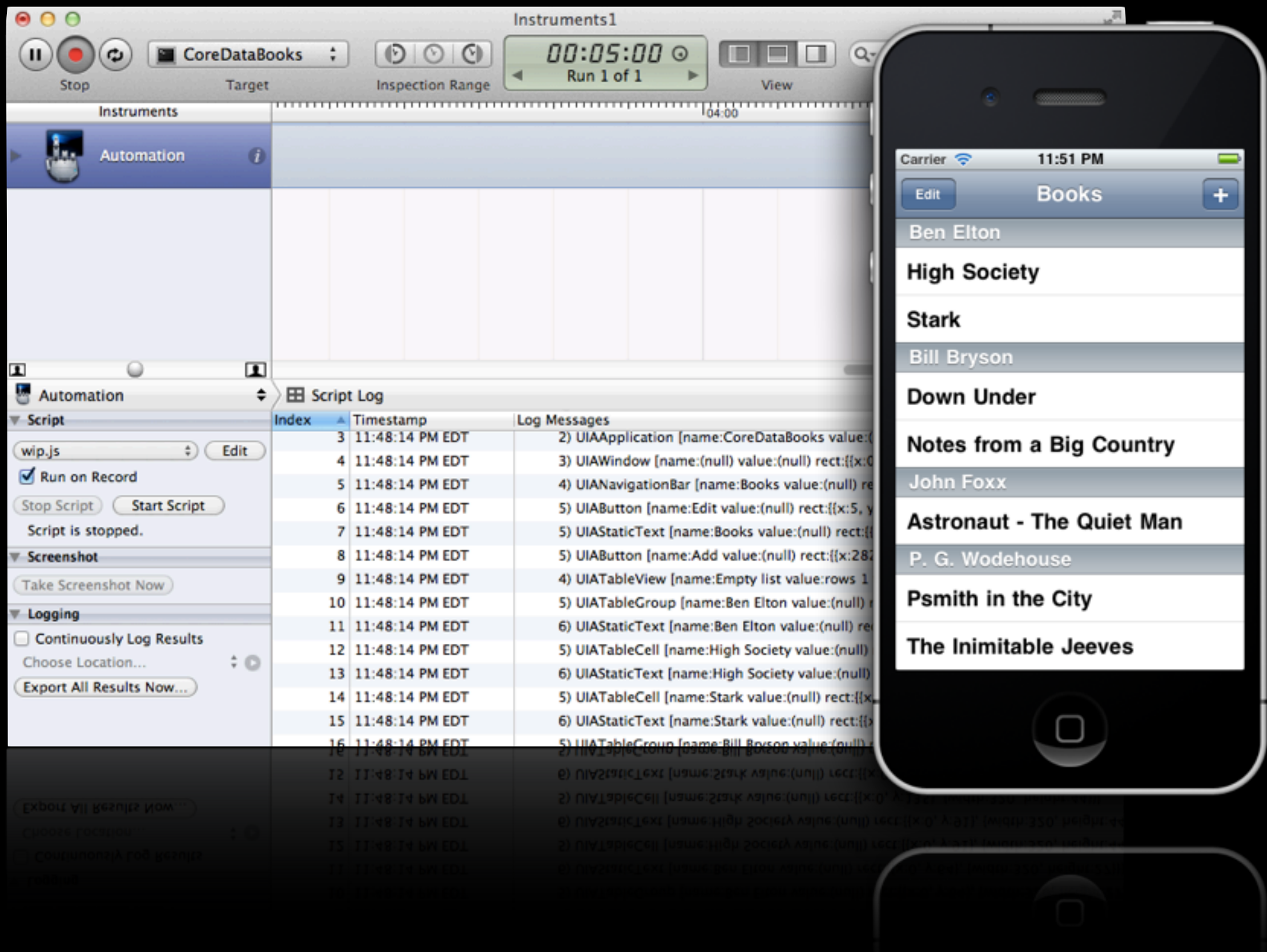
Logging

☐ Continuously Log Results

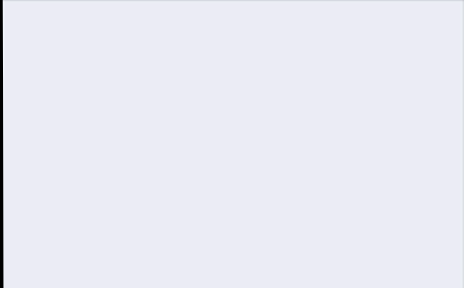
Choose Location...

Export All Results Now...

Index	Timestamp	Log Messages
3	11:48:14 PM EDT	2) UIApplication [name:CoreDataBooks value:(null) rect:{{x:0, y:20}, {width:320, height:480}}
4	11:48:14 PM EDT	3) UIWindow [name:(null) value:(null) rect:{{x:0, y:0}, {width:320, height:480}}
5	11:48:14 PM EDT	4) UINavigationController [name:Books value:(null) rect:{{x:0, y:20}, {width:320, height:44}}
6	11:48:14 PM EDT	5) UIButton [name>Edit value:(null) rect:{{x:5, y:27}, {width:50, height:30}}
7	11:48:14 PM EDT	5) UILabel [name:Books value:(null) rect:{{x:129, y:28}, {width:63, height:27}}
8	11:48:14 PM EDT	5) UIButton [name:Add value:(null) rect:{{x:282, y:27}, {width:33, height:30}}
9	11:48:14 PM EDT	4) UITableView [name:Empty list value:rows 1 to 7 of 11 rect:{{x:0, y:64}, {width:320, height:44}}
10	11:48:14 PM EDT	5) UITableViewGroup [name:Ben Elton value:(null) rect:{{x:0, y:64}, {width:320, height:27}}
11	11:48:14 PM EDT	6) UILabel [name:Ben Elton value:(null) rect:{{x:0, y:64}, {width:320, height:27}}
12	11:48:14 PM EDT	5) UITableViewCell [name:High Society value:(null) rect:{{x:0, y:91}, {width:320, height:44}}
13	11:48:14 PM EDT	6) UILabel [name:High Society value:(null) rect:{{x:0, y:91}, {width:320, height:44}}
14	11:48:14 PM EDT	5) UITableViewCell [name:Stark value:(null) rect:{{x:0, y:135}, {width:320, height:44}}
15	11:48:14 PM EDT	6) UILabel [name:Stark value:(null) rect:{{x:0, y:135}, {width:320, height:44}}
16	11:48:14 PM EDT	5) UITableViewGroup [name:Bill Bixler value:(null) rect:{{x:0, y:179}, {width:320, height:27}}
17	11:48:14 PM EDT	6) UILabel [name:Stark value:(null) rect:{{x:0, y:179}, {width:320, height:27}}
18	11:48:14 PM EDT	5) UITableViewGroup [name:Ben Elton value:(null) rect:{{x:0, y:223}, {width:320, height:27}}
19	11:48:14 PM EDT	6) UILabel [name:High Society value:(null) rect:{{x:0, y:223}, {width:320, height:27}}
20	11:48:14 PM EDT	5) UITableViewCell [name:High Society value:(null) rect:{{x:0, y:267}, {width:320, height:44}}
21	11:48:14 PM EDT	6) UILabel [name:High Society value:(null) rect:{{x:0, y:267}, {width:320, height:44}}
22	11:48:14 PM EDT	5) UITableViewCell [name:Stark value:(null) rect:{{x:0, y:311}, {width:320, height:44}}
23	11:48:14 PM EDT	6) UILabel [name:Stark value:(null) rect:{{x:0, y:311}, {width:320, height:44}}
24	11:48:14 PM EDT	5) UITableViewGroup [name:Bill Bixler value:(null) rect:{{x:0, y:355}, {width:320, height:27}}
25	11:48:14 PM EDT	6) UILabel [name:Stark value:(null) rect:{{x:0, y:355}, {width:320, height:27}}



## Instruments



### Automation

#### Script

wip.js

Run on Record

Stop Script

Start Script

Script is stopped.

#### Screenshot

Take Screenshot Now

#### Logging

Continuously Log Results

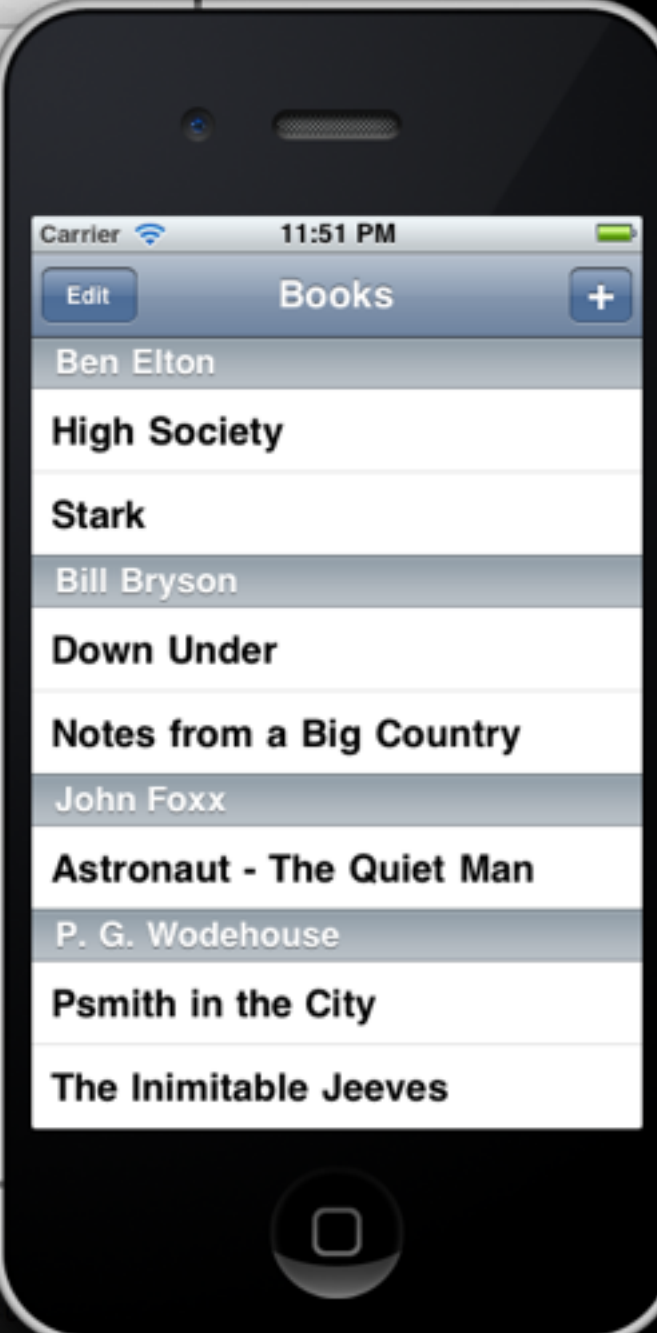
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Export All Results Now...

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6	11:48:14 PM EDT	5) UIButton [name>Edit value:(null) rect:{{x:5, y:35, width:100, height:30}}
7	11:48:14 PM EDT	5) UILabel [name:Books value:(null) rect:{{x:5, y:35, width:100, height:30}}
8	11:48:14 PM EDT	5) UIButton [name:Add value:(null) rect:{{x:280, y:35, width:100, height:30}}
9	11:48:14 PM EDT	4) UITableView [name:Empty list value:rows 1 rect:{{x:0, y:0, width:320, height:480}}
10	11:48:14 PM EDT	5) UITableViewGroup [name:Ben Elton value:(null) rect:{{x:0, y:0, width:320, height:480}}
11	11:48:14 PM EDT	6) UILabel [name:Ben Elton value:(null) rect:{{x:0, y:0, width:320, height:480}}
12	11:48:14 PM EDT	5) UILabel [name:High Society value:(null) rect:{{x:0, y:0, width:320, height:480}}
13	11:48:14 PM EDT	6) UILabel [name:High Society value:(null) rect:{{x:0, y:0, width:320, height:480}}
14	11:48:14 PM EDT	5) UILabel [name:Stark value:(null) rect:{{x:0, y:0, width:320, height:480}}
15	11:48:14 PM EDT	6) UILabel [name:Stark value:(null) rect:{{x:0, y:0, width:320, height:480}}
16	11:48:14 PM EDT	5) UITableViewGroup [name:Bill Bryson value:(null) rect:{{x:0, y:0, width:320, height:480}}

### Script Log

Index	Timestamp	Log Messages
3	11:48:14 PM EDT	2) UIApplication [name:CoreDataBooks value:(null) rect:{{x:0, y:0, width:320, height:480}}
4	11:48:14 PM EDT	3) UIWindow [name:(null) value:(null) rect:{{x:0, y:0, width:320, height:480}}
5	11:48:14 PM EDT	4) UINavigationController [name:Books value:(null) rect:{{x:0, y:0, width:320, height:480}}
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12	11:48:14 PM EDT	5) UILabel [name:High Society value:(null) rect:{{x:0, y:0, width:320, height:480}}
13	11:48:14 PM EDT	6) UILabel [name:High Society value:(null) rect:{{x:0, y:0, width:320, height:480}}
14	11:48:14 PM EDT	5) UILabel [name:Stark value:(null) rect:{{x:0, y:0, width:320, height:480}}
15	11:48:14 PM EDT	6) UILabel [name:Stark value:(null) rect:{{x:0, y:0, width:320, height:480}}
16	11:48:14 PM EDT	5) UITableViewGroup [name:Bill Bryson value:(null) rect:{{x:0, y:0, width:320, height:480}}



```
window.buttons().firstWithName("Edit").tap();
```

```
window.buttons().firstWithName("Edit").tap();  
    device.shake();
```



```
window.buttons().firstWithName("Edit").tap();  
device.shake();
```



Powered by  
JavaScript!



# JavaScript 101

```
var firstName = "Jonathan";

function fullName()
{
    var lastName = "Penn";
    return firstName + " " + lastname;
}

fullName();    // "Jonathan Penn"
```

```
var firstName = "Jonathan";

var fullName = function()
{
    var lastName = "Penn";
    return firstName + " " + lastname;
}

fullName();    // "Jonathan Penn"
```

```
var array = [1, 2, "c", "all of the above"];  
array[2];    // "c"
```

```
var object = {  
  firstName: "Jonathan",  
  
  getName: function() {  
    return this.firstName;  
  }  
}
```

```
object.firstName;      // or  
object['firstName'];   // returns "value"
```

```
object.getName();      // returns "Jonathan"
```

```
object.lastName = "Penn";  
object['maiden name'] = "n/a";
```





Demo!

(almost)

# UITarget

```
var target = UITarget.localTarget();
```

# UIAElement

```
var element = target.frontMostApp().mainWindow();  
  
element.elements();  
element.buttons();  
element.textFields();  
element.tableViews();  
// ...
```

# UIAElementArray

```
var buttons = element.buttons()  
  
// these return a filtered UIAElementArray  
buttons.withName("Done");  
buttons.withPredicate(...);  
  
// these return a UIAElement  
buttons.firstWithName("Edit");  
buttons["Edit"];  
buttons[0];
```

UITarget

UIAElement

UIAElementArray

Let me Google that for you...

"UI Automation Reference"

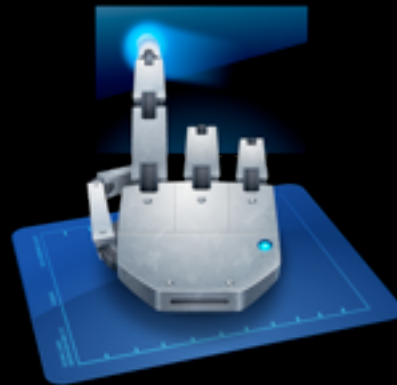
[http://developer.apple.com/library/ios/documentation/  
DeveloperTools/Reference/UIAutomationRef/](http://developer.apple.com/library/ios/documentation/DeveloperTools/Reference/UIAutomationRef/)

Also in the installed Xcode documentation

Demo!

(finally)

# UI Automation









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Thank You.



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Questions?