

UI Automation





Jonathan Penn

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Thoughtful. Cautious. Bold. Stubborn. Good looking.

<http://cocoamanifest.net>



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Navel Labs



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Navel Labs

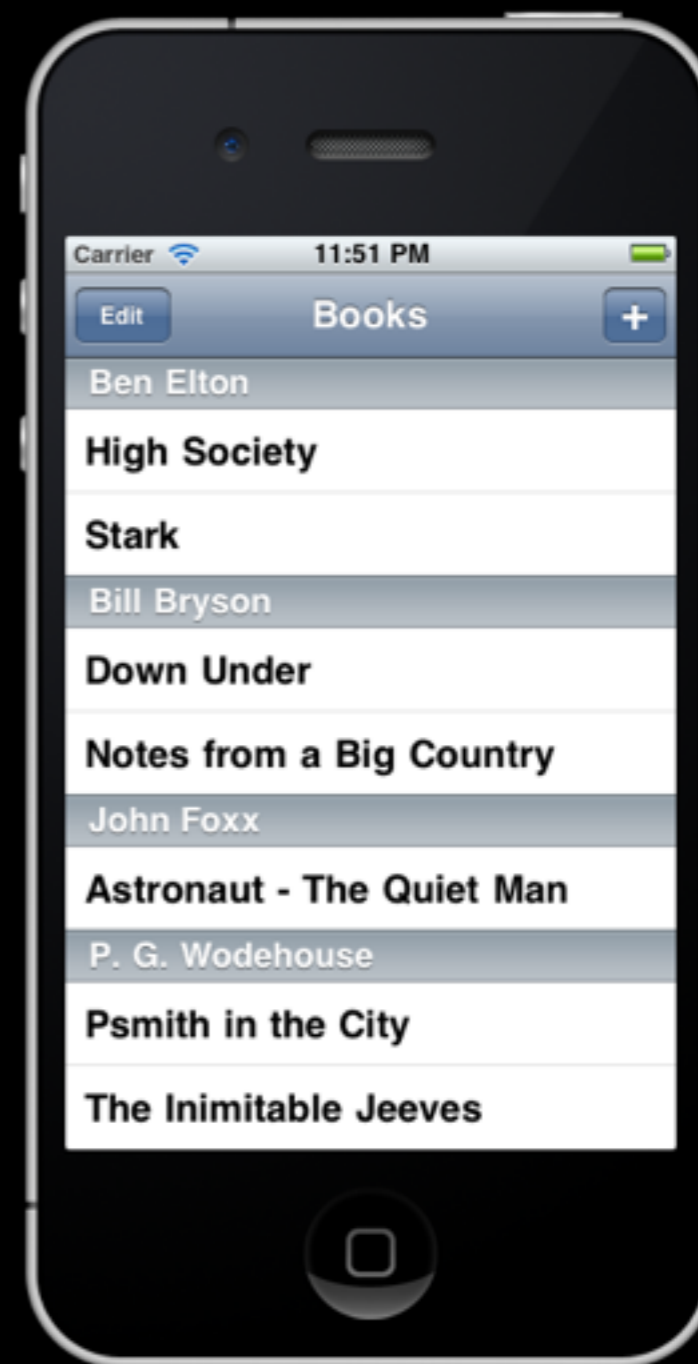
cocoamanifest.net

Articles expanding on UI Automation

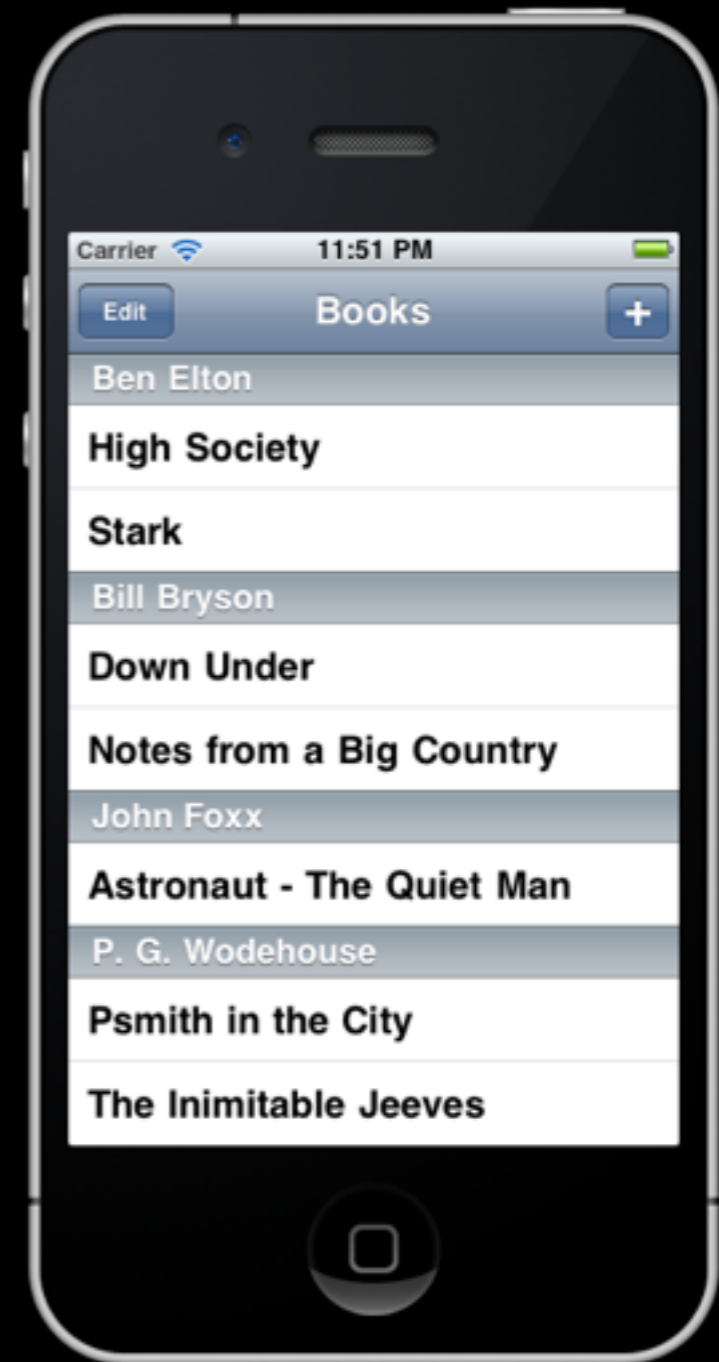
cocoamanifest.net/features.html

First, some theory...

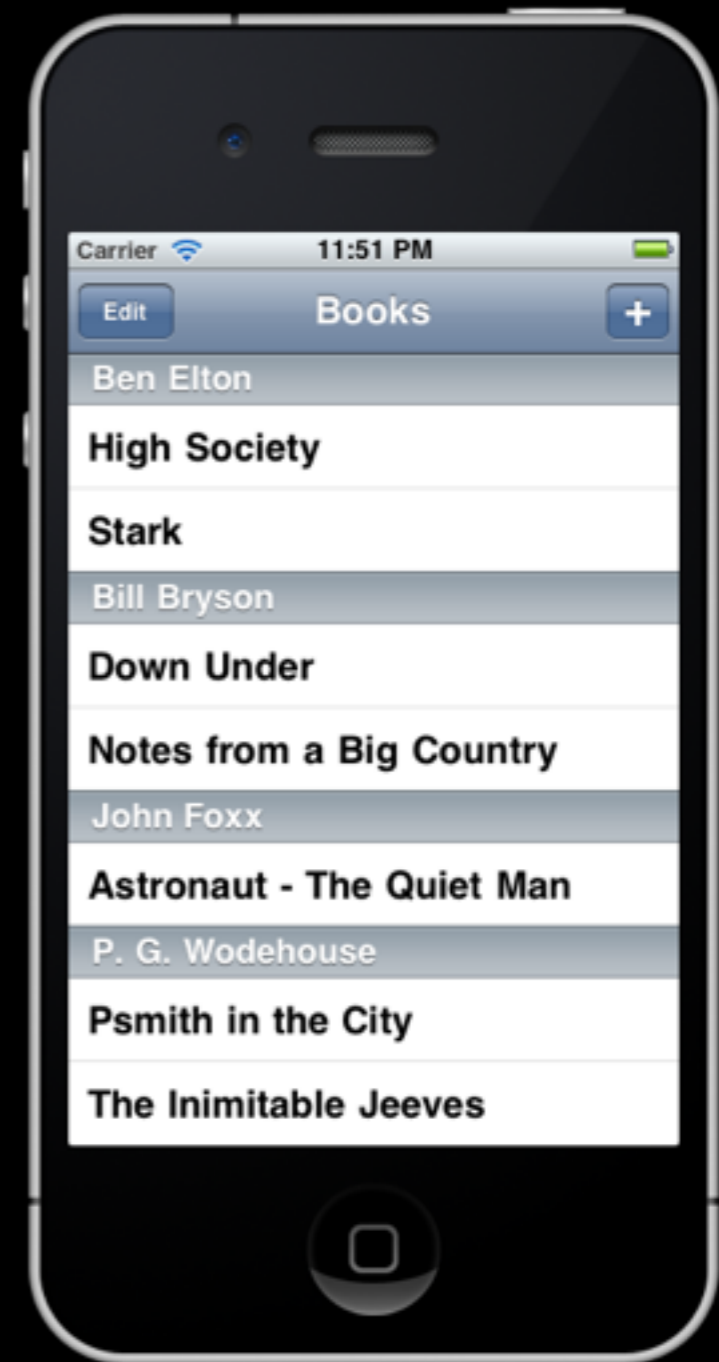
Edge cases



Wired up right?



Custom controls



Think like a user



What is it?

Instruments1

CoreDataBooks

00:05:00

Run 1 of 1

Message

Stop Target Inspection Range View Search

Instruments

Automation

04:00

Automation

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...

Script Log

| 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:27}} |
| 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 Borker value:(null) rect:{{x:0, y:179}, {width:320, height:27}} |

Instruments1

CoreDataBooks

00:05:00 Run 1 of 1

Instruments

Automation

Automation

Script

wip.js Edit

Run on Record

Stop Script Start Script

Script is stopped.

Screenshot

Take Screenshot Now

Logging

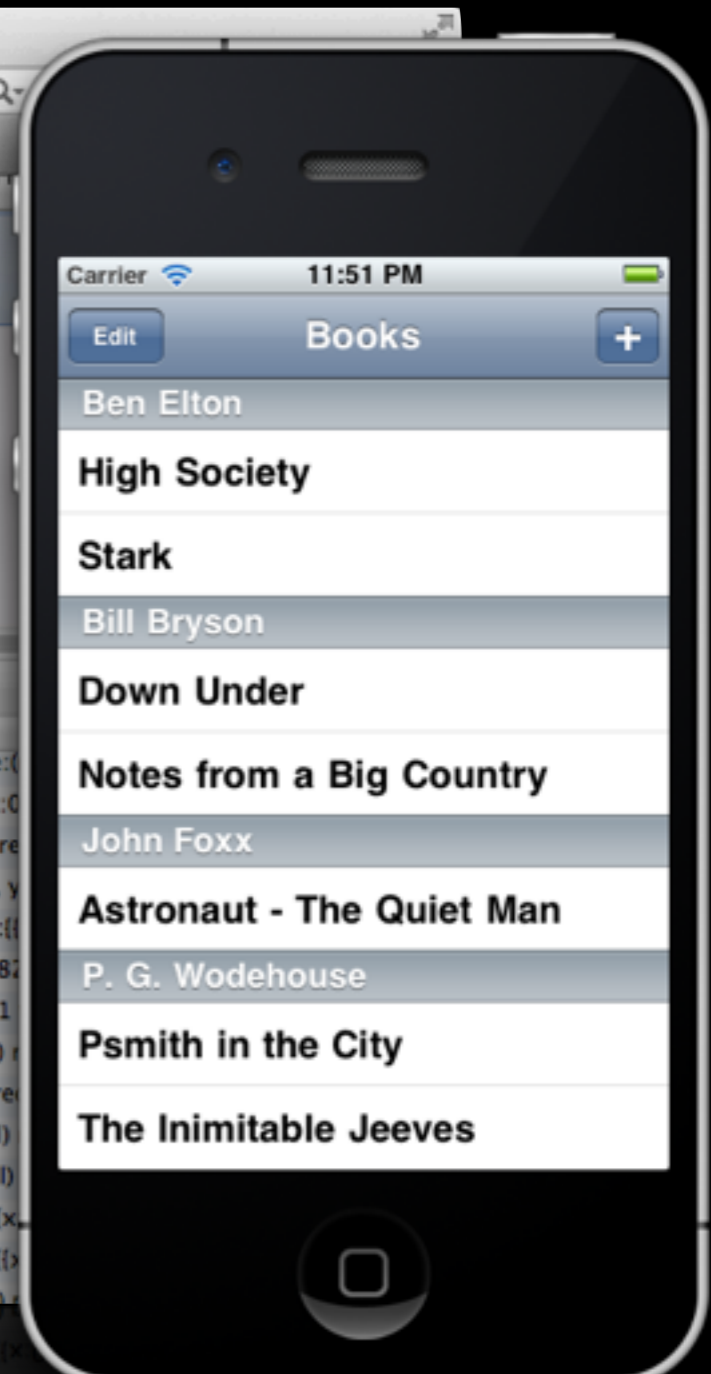
Continuously Log Results

Choose Location...

Export All Results Now...

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}} |
| 6 | 11:48:14 PM EDT | 5) UIButton [name:Edit value:(null) rect:{{x:5, y:5, width:40, height:30}} |
| 7 | 11:48:14 PM EDT | 5) UILabel [name:Books value:(null) rect:{{x:10, y:10, width:200, height:30}} |
| 8 | 11:48:14 PM EDT | 5) UIButton [name:Add value:(null) rect:{{x:280, y:280, width:40, 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) UITableViewCell [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) UITableViewCell [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}} |
| 17 | 11:48:14 PM EDT | 6) UILabel [name:Bill Bryson value:(null) rect:{{x:0, y:0, width:320, height:480}} |
| 18 | 11:48:14 PM EDT | 5) UITableViewGroup [name:Down Under value:(null) rect:{{x:0, y:0, width:320, height:480}} |
| 19 | 11:48:14 PM EDT | 6) UILabel [name:Down Under value:(null) rect:{{x:0, y:0, width:320, height:480}} |
| 20 | 11:48:14 PM EDT | 5) UITableViewGroup [name:Notes from a Big Country value:(null) rect:{{x:0, y:0, width:320, height:480}} |
| 21 | 11:48:14 PM EDT | 6) UILabel [name:Notes from a Big Country value:(null) rect:{{x:0, y:0, width:320, height:480}} |
| 22 | 11:48:14 PM EDT | 5) UITableViewGroup [name:John Foxx value:(null) rect:{{x:0, y:0, width:320, height:480}} |
| 23 | 11:48:14 PM EDT | 6) UILabel [name:John Foxx value:(null) rect:{{x:0, y:0, width:320, height:480}} |
| 24 | 11:48:14 PM EDT | 5) UITableViewGroup [name:Astronaut - The Quiet Man value:(null) rect:{{x:0, y:0, width:320, height:480}} |
| 25 | 11:48:14 PM EDT | 6) UILabel [name:Astronaut - The Quiet Man value:(null) rect:{{x:0, y:0, width:320, height:480}} |
| 26 | 11:48:14 PM EDT | 5) UITableViewGroup [name:P. G. Wodehouse value:(null) rect:{{x:0, y:0, width:320, height:480}} |
| 27 | 11:48:14 PM EDT | 6) UILabel [name:P. G. Wodehouse value:(null) rect:{{x:0, y:0, width:320, height:480}} |
| 28 | 11:48:14 PM EDT | 5) UITableViewGroup [name:Psmith in the City value:(null) rect:{{x:0, y:0, width:320, height:480}} |
| 29 | 11:48:14 PM EDT | 6) UILabel [name:Psmith in the City value:(null) rect:{{x:0, y:0, width:320, height:480}} |
| 30 | 11:48:14 PM EDT | 5) UITableViewGroup [name:The Inimitable Jeeves value:(null) rect:{{x:0, y:0, width:320, height:480}} |
| 31 | 11:48:14 PM EDT | 6) UILabel [name:The Inimitable Jeeves 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"

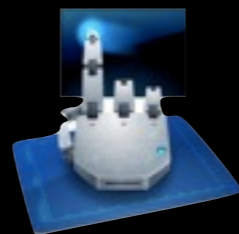
<http://developer.apple.com/library/ios/documentation/DeveloperTools/Reference/UIAutomationRef/>

Also in the installed Xcode documentation

Demo!

(finally)

UI Automation





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Thank You.



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Questions?