Building Mobile Applications

Computer Science S-76

Rob Bowden
rob@cs.harvard.edu

Design and develop your app
from concept and vision to code

Beginning iOS 6 Development

Exploring the iOS SDK

David Mark | Jack Nutting | Jeff LaMarche | Fredrik Olsson

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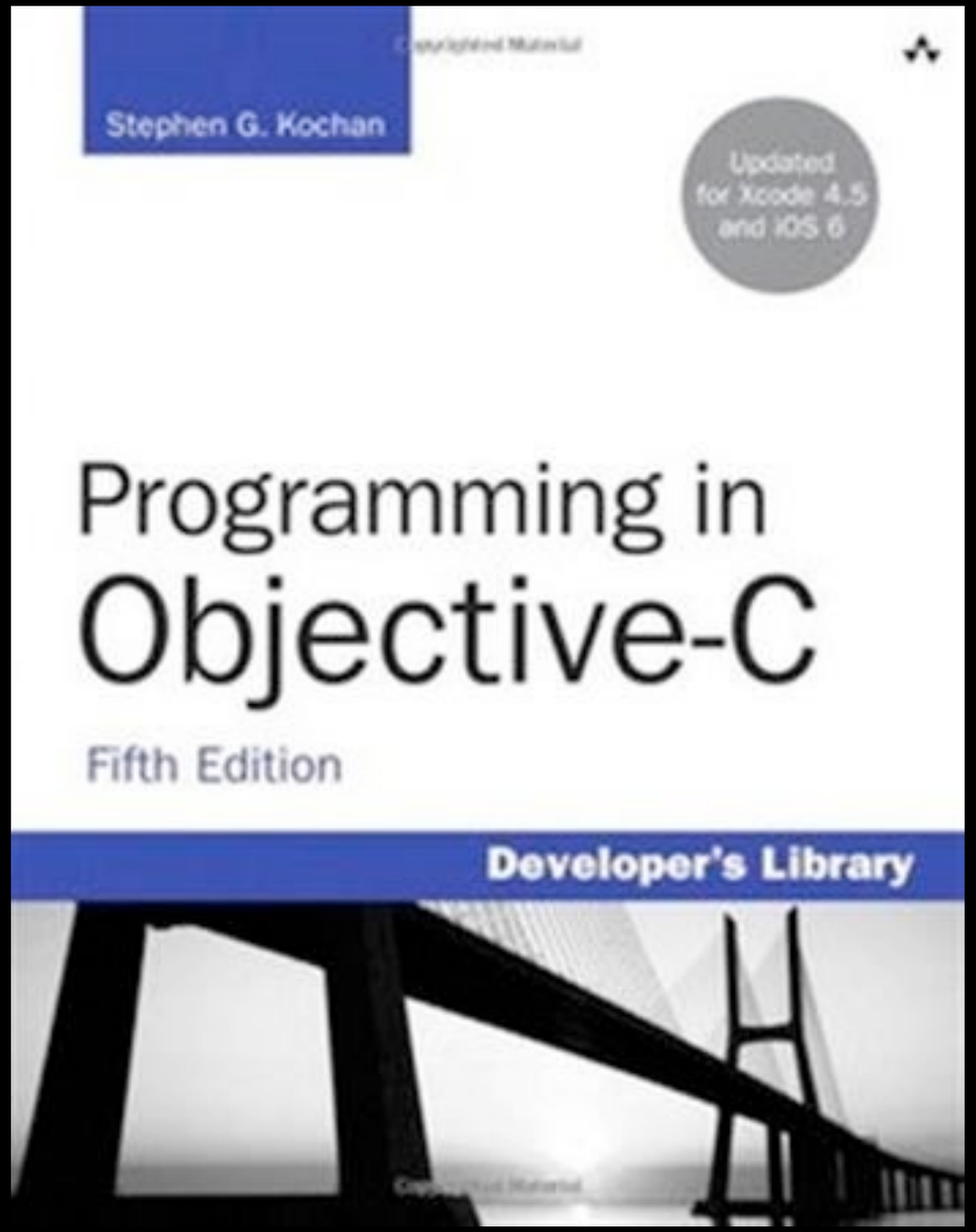
Stephen G. Kochan
Updated for Xcode 4.5 and iOS 6
Programming in Objective-C
Fifth Edition
Developer's Library

http://www.apeth.com/iOSBook/

C

```c
#include <stdio.h>

int main(int argc, const char * argv[])
{
    printf("Hello, World!\n");
    return 0;
}
```

statements

```
printf("Hello, World!\n");
```

variables

```
int n;
```

Primitive Data Types

```
char
double
float
int
long
unsigned int
...
```

printf

%s

%d

%lu

%lld

%f

...

Boolean Expressions

! > >= == <= < && ||

Conditions

`if  else`

Loops

```
for (initialization; condition; increment) {
    statements
}
```

```
while (condition) {
    statements
}
```

```
do {
    statements
} while (condition);
```

Casting

( )

Pointers

```
char *

double *

float *

int *

long *

char **
```

Pointers

`*` and `&`

struct

enum

Arrays

[ ]

Memory Management

`malloc  free`

Objective-C

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

int main(int argc, const char * argv[]){
     @autoreleasepool {
         NSLog(@"Hello, World!");
     }
     return 0;
}
```

username — bash — 80×24
mac:~ username$

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Xcode

Xcode provides everything developers need to create great applications for Mac, iPhone, and iPad. Xcode 4 has been streamlined to help you write better apps. It has unified user interface design, coding, testing, and debugging all within a single window. The Xcode IDE analyzes the details of your project to identify mistakes in both syntax and logic, it can ev...

...More

Installed

What's New in Version 4.6.3

• Fixes an issue where debugging in the iOS Simulator could hang on OS X 10.8.4.

...

...More

Apple Web Site

Xcode Support

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Information

Category: Developer Tools
Updated: Jun 13, 2013
Version: 4.6.3
Price: Free
Size: 1.65 GB
Language: English
Seller: Apple Inc.
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Rated 4+
Requirements:
OS X 10.7.4 or later

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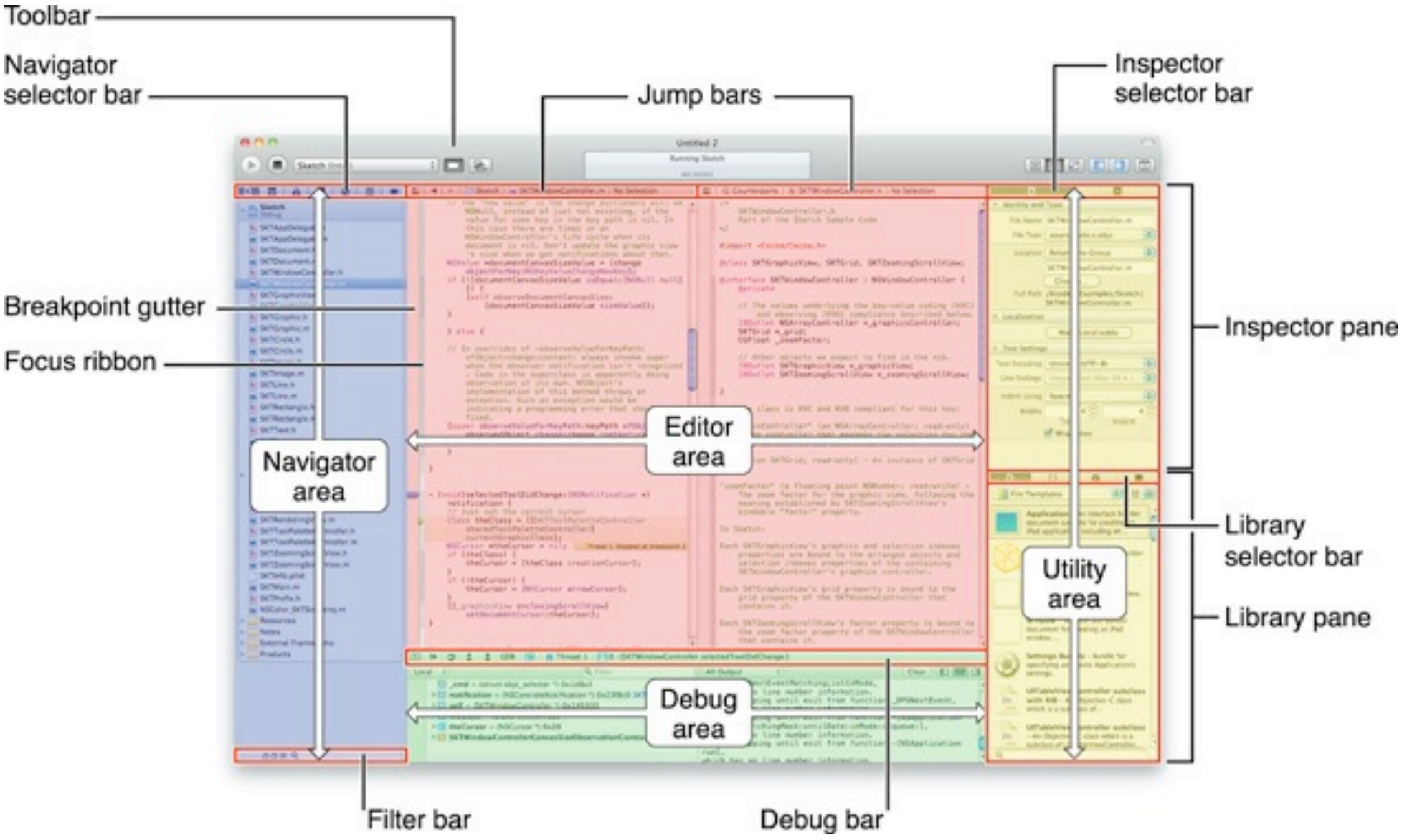
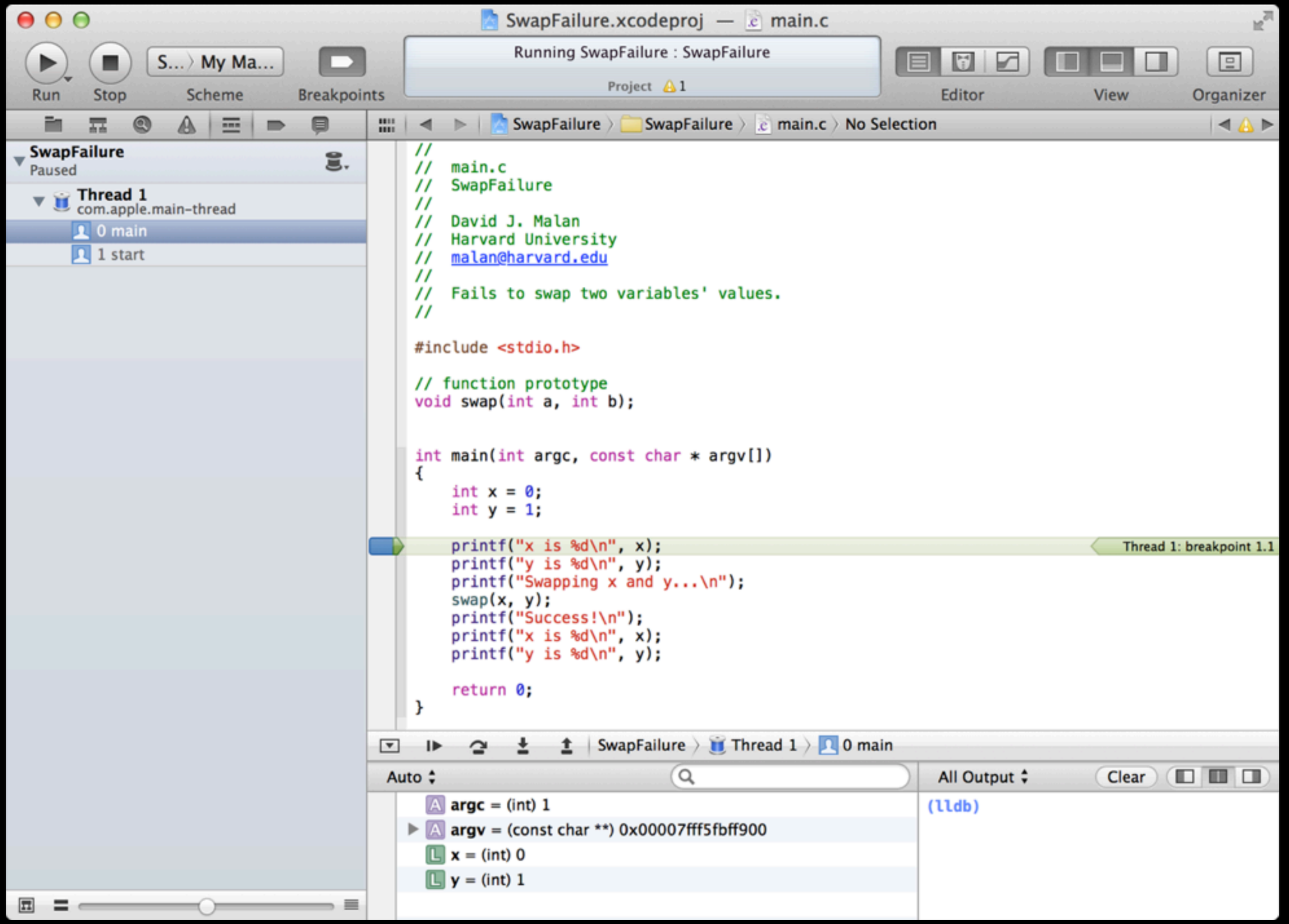

Toolbar
Navigator selector bar
Jump bars
Inspector selector bar
Breakpoint gutter
Focus ribbon
Inspector pane
Editor area
Navigator area
Library selector bar
Utility area
Library pane
Debug area
Filter bar
Debug bar


SwapFailure.xcodeproj — main.c
Run
Stop
S... My Ma...
Scheme
Breakpoints
Running SwapFailure : SwapFailure
Project 1
Editor
View
Organizer
SwapFailure
Paused
Thread 1
com.apple.main-thread
0 main
1 start
SwapFailure SwapFailure main.c No Selection
// main.c // SwapFailure // David J. Malan // Harvard University // malan@harvard.edu // Fails to swap two variables' values. //
#include <stdio.h>
// function prototype
void swap(int a, int b);
int main(int argc, const char * argv[])
{
int x = 0;
int y = 1;
printf("x is %d\n", x);
Thread 1: breakpoint 1.1
printf("y is %d\n", y);
printf("Swapping x and y...\n");
swap(x, y);
printf("Success!\n");
printf("x is %d\n", x);
printf("y is %d\n", y);
return 0;
}
SwapFailure Thread 1 0 main
Auto
All Output
Clear
argc = (int) 1
argv = (const char **) 0x00007fff5fbff900
x = (int) 0
y = (int) 1
(lldb)

iOS Dev Center

https://developer.apple.com/devcenter/ios/

Data Types

```
BOOL

id (and nil)

...
```

Foundation Data Types

```
NSInteger

NSPoint

NSRect

NSSize

NSUInteger

...
```

Classes and Objects

.h

```
@interface Foo: NSObject {
    // instance variables
}
// declarations of methods
@end
```

.m

```
@implementation Foo

// definitions of methods

@end
```

Instance Variables

```
@protected

@private

@public
```

Class Methods

```
+alloc;
```

Messages

```
Student *student = [Student alloc];
```

Instance Methods

```
- (void)init;


- (int)age;

- (void)setAge:(int)age;
```

Messages

```
[student init];


[student age];

[student setAge:20];
```

Selectors

```
alloc

init


age

setAge:
```

@property

assign
copy
strong
weak

atomic
nonatomic

readonly
readwrite

@synthesize

init... Methods

```
- (id)initWithName:(NSString *)name andAge:(int)age;
```

init... Methods

```
Student *alice = [student initWithName:@"Alice" andAge:20];
```

Collections

```
NSArray
NSMutableArray

NSDictionary
NSMutableDictionary

NSSet
NSMutableSet

...
```

Fast Enumeration

```
for (id foo in bar) {
    // do something with foo
}
```

Categories

```
@interface Foo (Bar)

-(void)baz;

@end
```

Blocks

```
^return_type(type1 arg1, type2 arg2) {
    // implementation
}
```

Protocols

```
@interface Student <NSCopying> {
}

...

@end
```

Protocols

```
@implementation Student

...

-(id)copyWithZone:(NSZone *)zone
{
    Student *s = [Student allocWithZone:zone];
    [s initWithName:_name andAge:_age];
    return s;
}

...

@end
```

NSException

```
@try {
    // try something here
}
@catch (NSException *e) {
   // handle exception here
}
@finally {
    // do something here
}
```

NSError

```
NSError *e = nil;
if ([foo bar:baz error:&e] == nil)
{
    // handle error
}
```

to be continued...