Building Mobile Applications

Computer Science S-76

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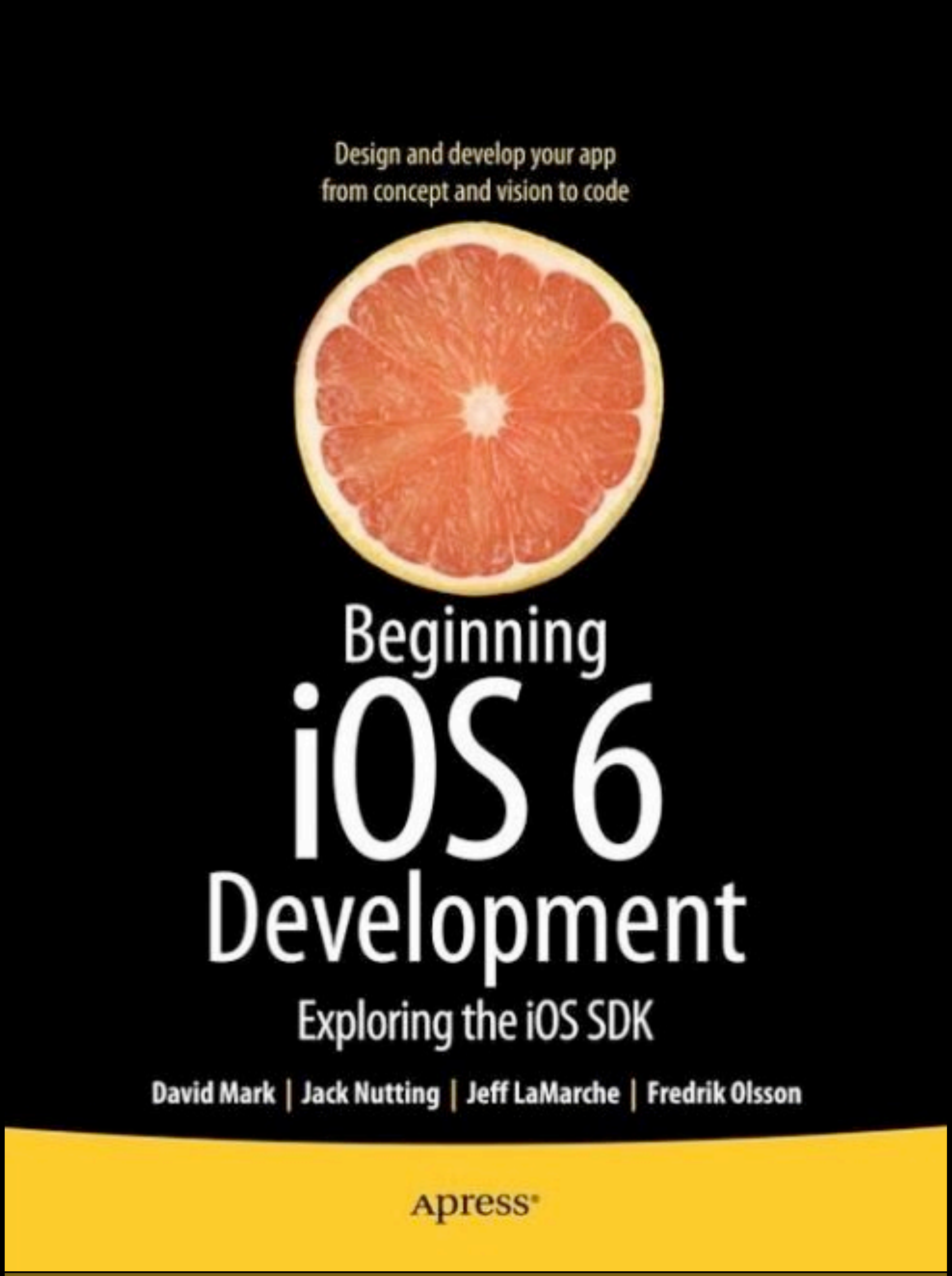


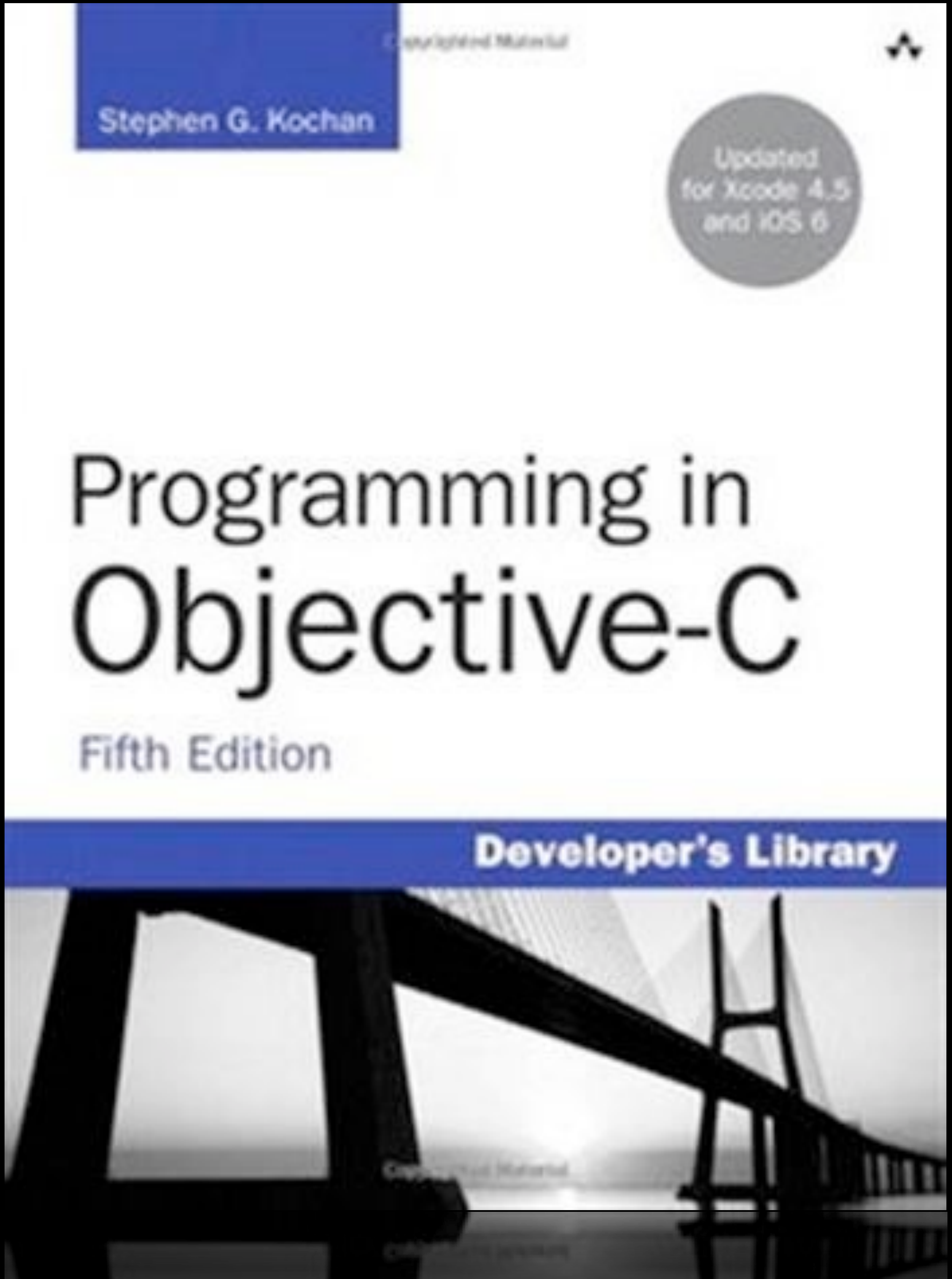
Design and develop your app
from concept and vision to code

Beginning iOS 6 Development

Exploring the iOS SDK

David Mark | Jack Nutting | Jeff LaMarche | Fredrik Olsson

Apress®



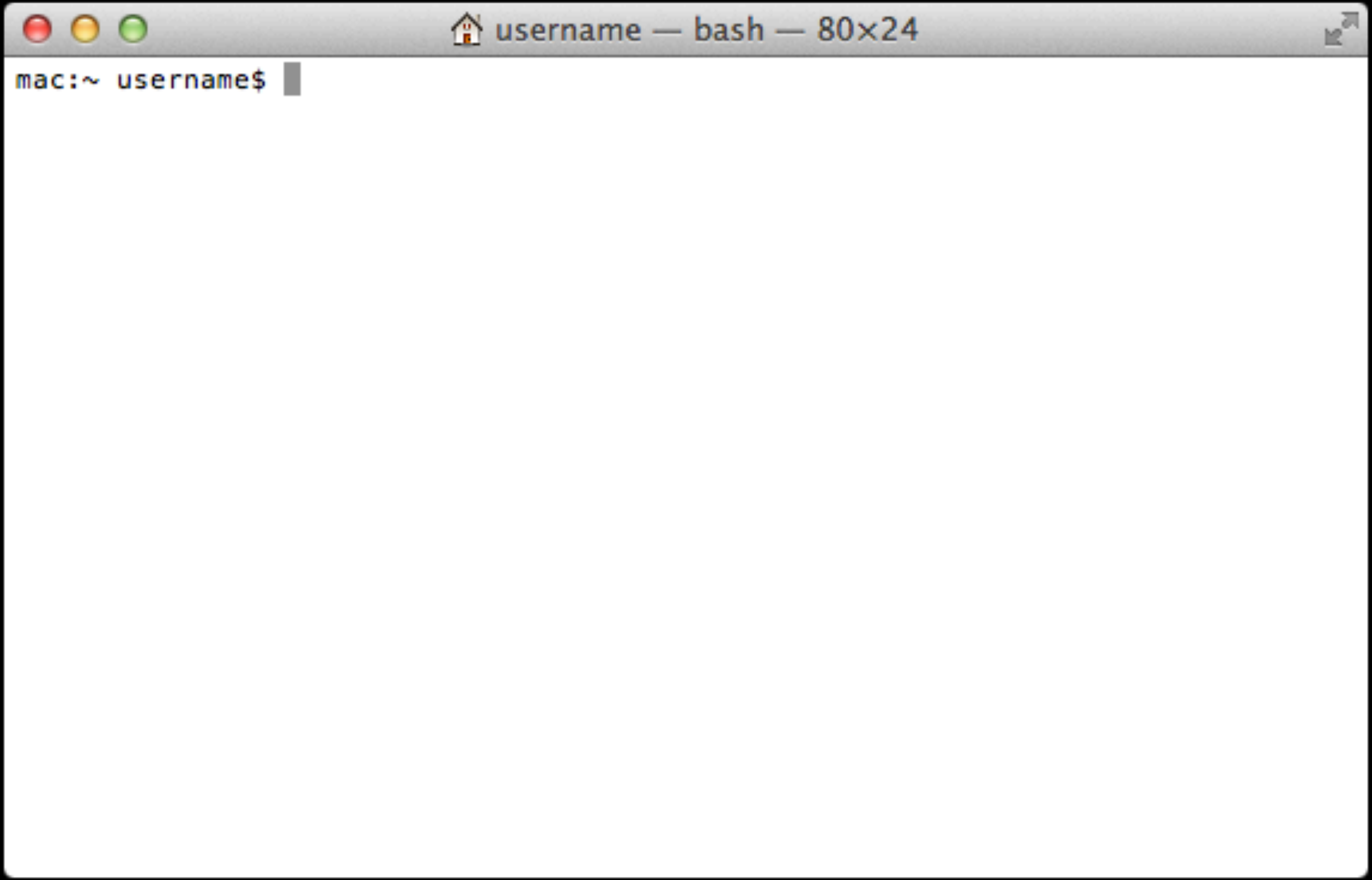
Stephen G. Kochan

Updated for Xcode 4.5 and iOS 6

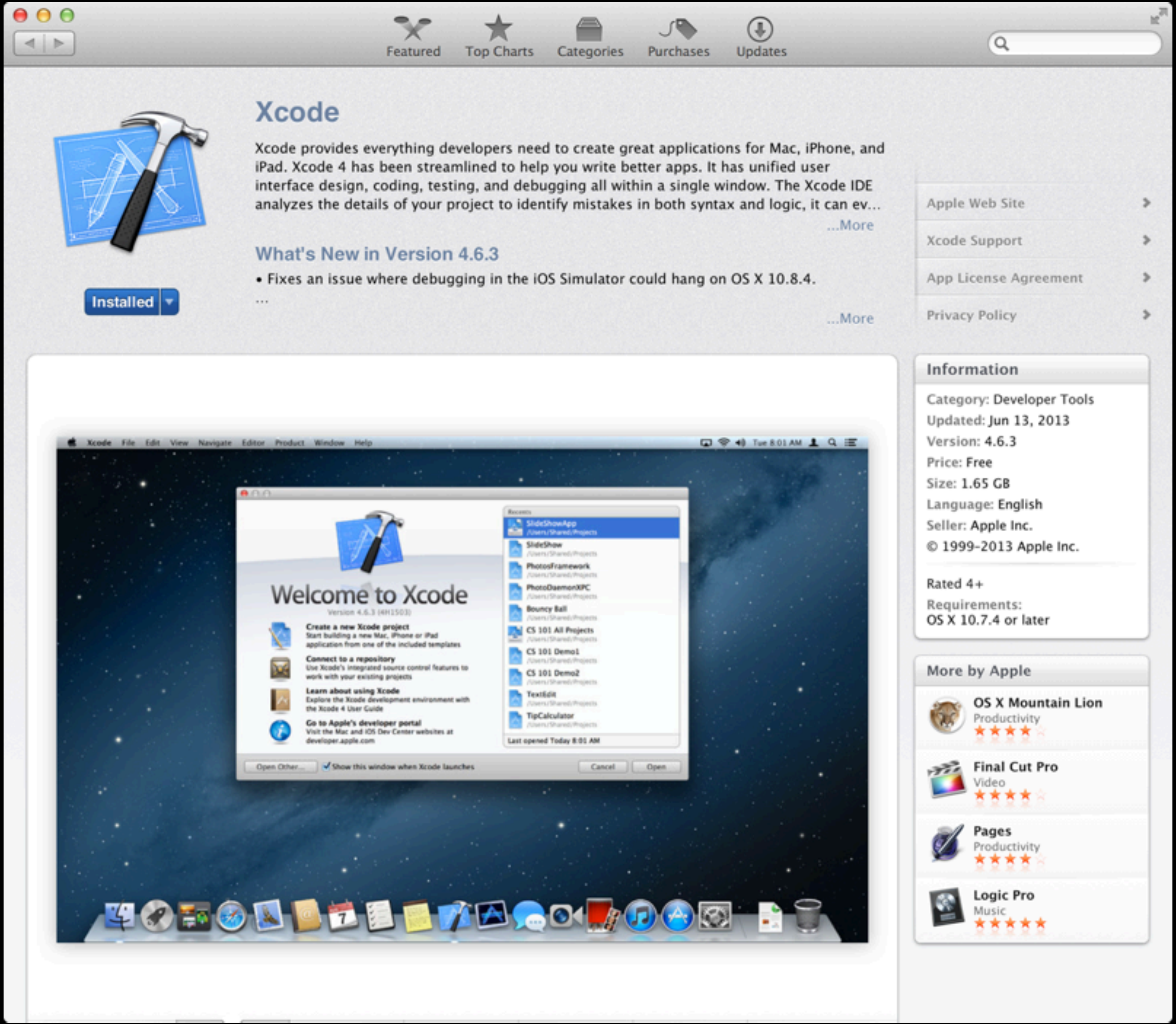
Programming in Objective-C

Fifth Edition

Developer's Library



```
mac:~ username$ 
```



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

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 ›

App License Agreement ›

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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

More by Apple

OS X Mountain Lion	Productivity ★★★★☆
Final Cut Pro	Video ★★★★☆
Pages	Productivity ★★★★☆
Logic Pro	Music ★★★★★

Welcome to Xcode
Version 4.6.3 (4H1503)

Create a new Xcode project
Start building a new Mac, iPhone or iPad application from one of the included templates

Connect to a repository
Use Xcode's integrated source control features to work with your existing projects

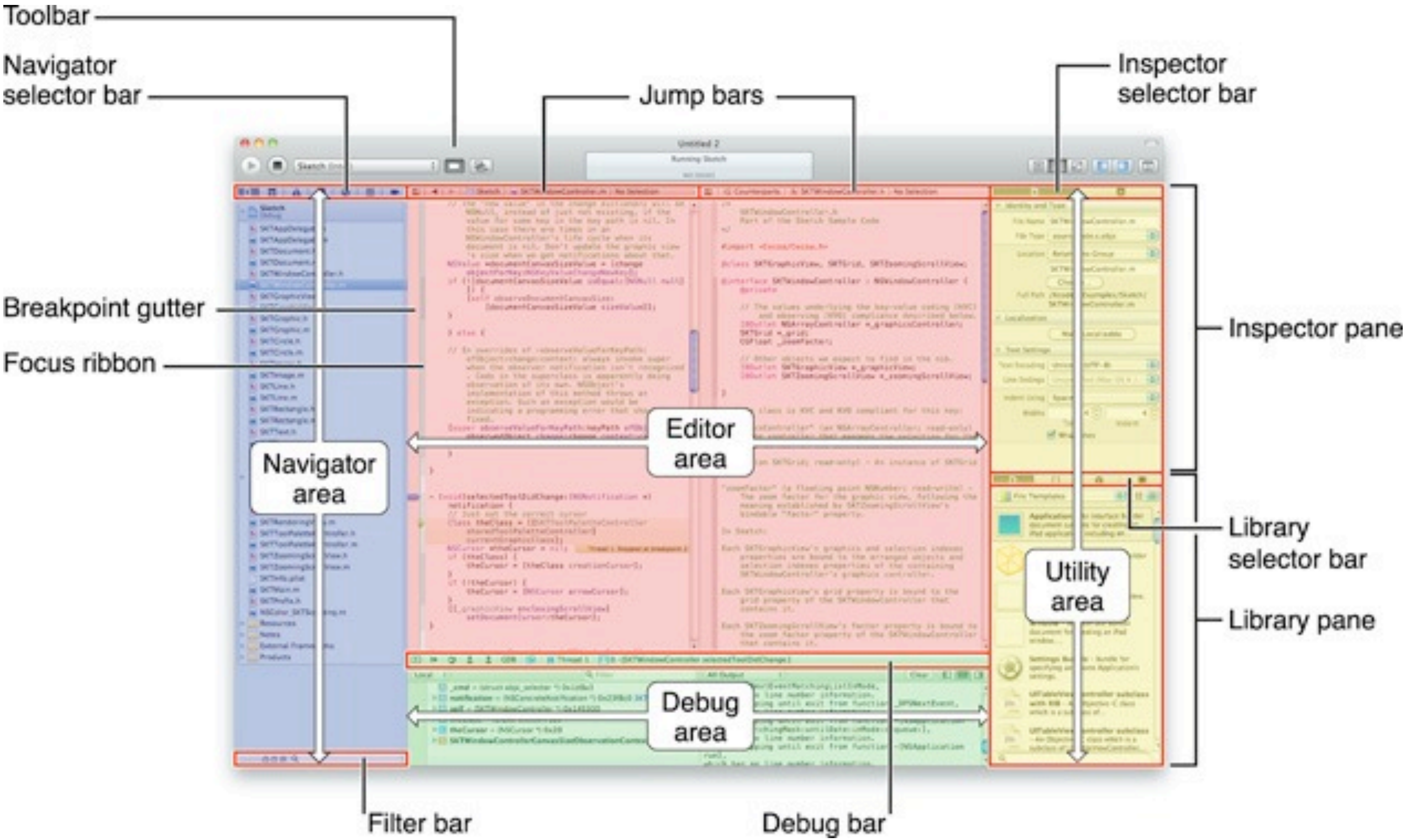
Learn about using Xcode
Explore the Xcode development environment with the Xcode 4 User Guide

Go to Apple's developer portal
Visit the Mac and iOS Dev Center websites at developer.apple.com

Recents
SlideShowApp /Users/Shared/Projects
SlideShow /Users/Shared/Projects
PhotosFramework /Users/Shared/Projects
PhotoDaemonXPC /Users/Shared/Projects
Bouncy Ball /Users/Shared/Projects
CS 101 All Projects /Users/Shared/Projects
CS 101 Demo1 /Users/Shared/Projects
CS 101 Demo2 /Users/Shared/Projects
TextEdit /Users/Shared/Projects
TipCalculator /Users/Shared/Projects

Last opened Today 8:01 AM

☑ Show this window when Xcode launches


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

iOS Dev Center

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

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
}
```

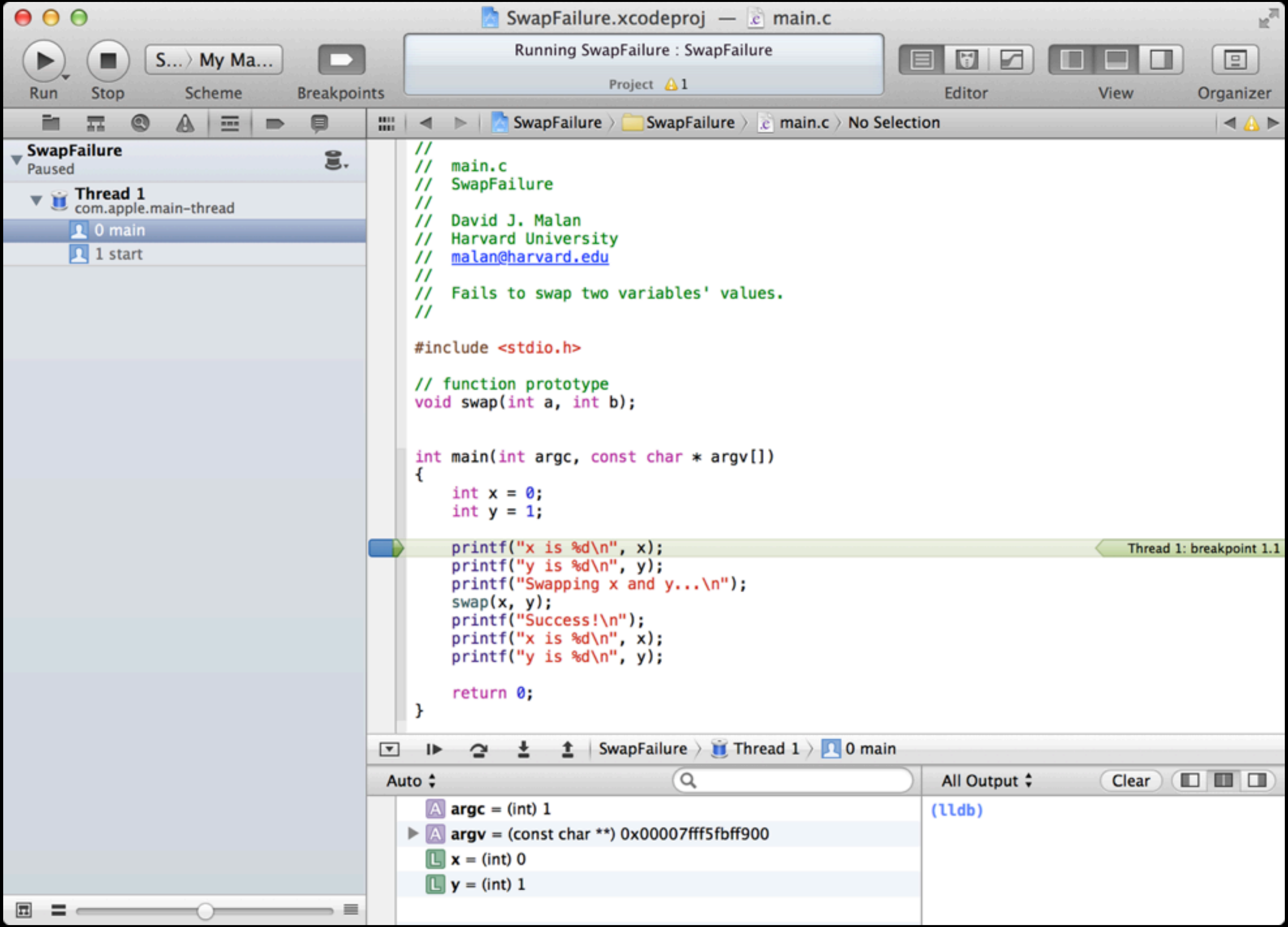
```
do {
    statements
} while (condition);
```

Casting

( )

Pointers

```
char *

double *

float *

int *

long *

...
```



```
//
//  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);
    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;
}
```

```
A argc = (int) 1
A argv = (const char **) 0x00007fff5fbff900
L x = (int) 0
L y = (int) 1
```

```
(lldb)
```

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;
}
```

Data Types

```
BOOL

id

nil

...
```

Foundation Data Types

```
NSInteger

NSPoint

NSRect

NSSize

NSUInteger

...
```

.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

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

init... Methods

```
[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
```

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...