iOS 程式設計

音訊應用

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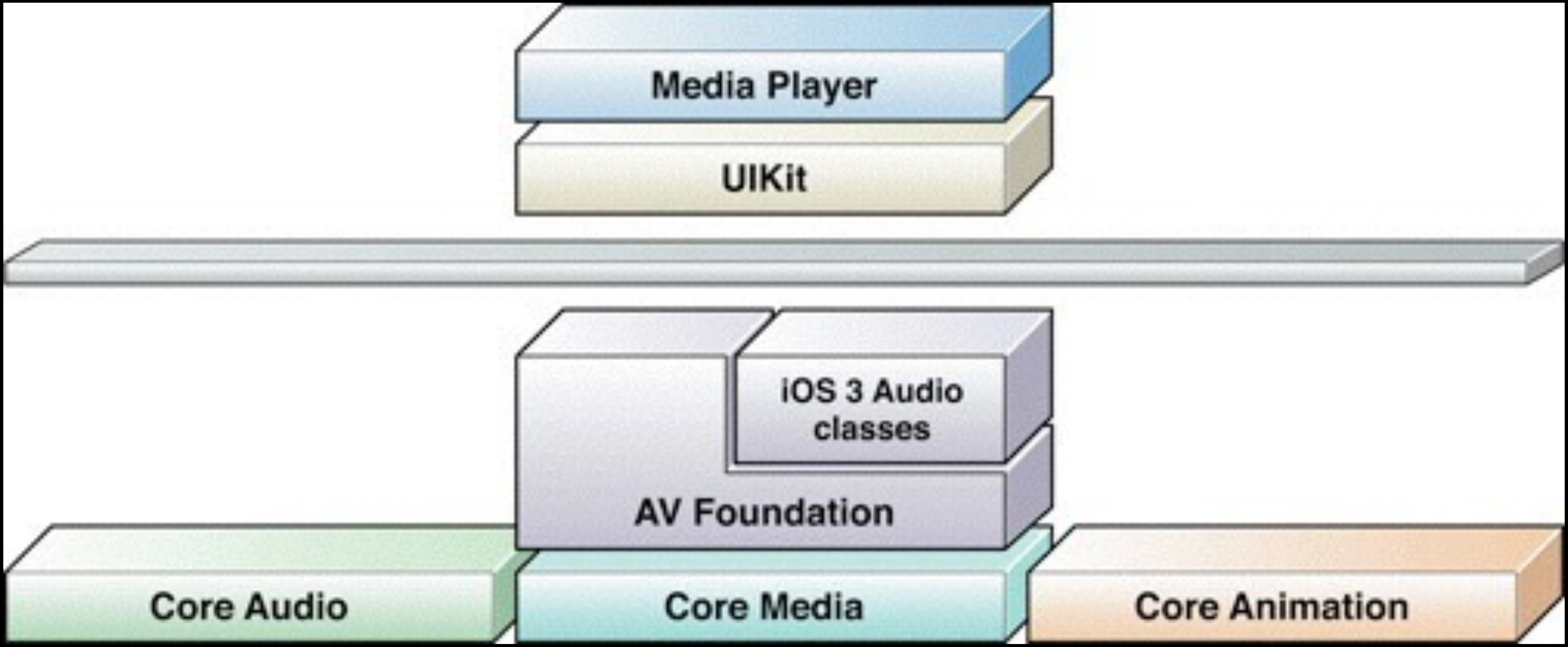
AV Foundation Programming Guide Introduction (1/)

AV Foundation is one of several frameworks that you can use to play and create time-based audiovisual media. It provides an Objective-C interface you use to work on a detailed level with time-based audiovisual data. For example, you can use it to examine, create, edit, or reencode media files. You can also get input streams from devices and manipulate video during realtime capture and playback.

http://developer.apple.com/library/IOs/#documentation/AudioVideo/Conceptual/AVFoundationPG/Articles/00_Introduction.html#//apple_ref/doc/uid/TP40010188-CH1-SW3

AV Foundation Programming Guide Introduction (2/)



http://developer.apple.com/library/IOs/#documentation/AudioVideo/Conceptual/AVFoundationPG/Articles/00_Introduction.html#//apple_ref/doc/uid/TP40010188-CH1-SW3

AV Foundation Programming Guide Introduction (3/)

You should typically use the highest-level abstraction available that allows you to perform the tasks you want. For example, in iOS:

- If you simply want to play movies, you can use the Media Player Framework (MPMoviePlayerController or MPMoviePlayerViewController), or for web-based media you could use a UIWebView object.
- To record video when you need only minimal control over format, use the UIKit framework (UIImagePickerController).

http://developer.apple.com/library/IOs/#documentation/AudioVideo/Conceptual/AVFoundationPG/Articles/00_Introduction.html#//apple_ref/doc/uid/TP40010188-CH1-SW3

AV Foundation Programming Guide Introduction (4/)

Note, however, that some of the primitive data structures that you use in AV Foundation—including time-related data structures and opaque objects to carry and describe media data—are declared in the Core Media framework.

http://developer.apple.com/library/IOs/#documentation/AudioVideo/Conceptual/AVFoundationPG/Articles/00_Introduction.html#//apple_ref/doc/uid/TP40010188-CH1-SW3

AV Foundation Programming Guide Introduction (5/)

AV Foundation is available in iOS 4 and later, and OS X 10.7 and later. This document describes AV Foundation as introduced in iOS 4.0. To learn about changes and additions to the framework in subsequent versions, you should also read the appropriate release notes:

- AV Foundation Release Notes describe changes made for iOS 5.
- AV Foundation Release Notes (iOS 4.3) describe changes made for iOS 4.3 and included in OS X 10.7.

http://developer.apple.com/library/IOs/#documentation/AudioVideo/Conceptual/AVFoundationPG/Articles/00_Introduction.html#//apple_ref/doc/uid/TP40010188-CH1-SW3

AV Foundation Programming Guide Introduction (6/)

AV Foundation is an advanced Cocoa framework. To use it effectively, you must have:

- A solid understanding of fundamental Cocoa development tools and techniques
- A basic grasp of blocks
- A basic understanding of key-value coding and key-value observing
- For playback, a basic understanding of Core Animation (see Core Animation Programming Guide)

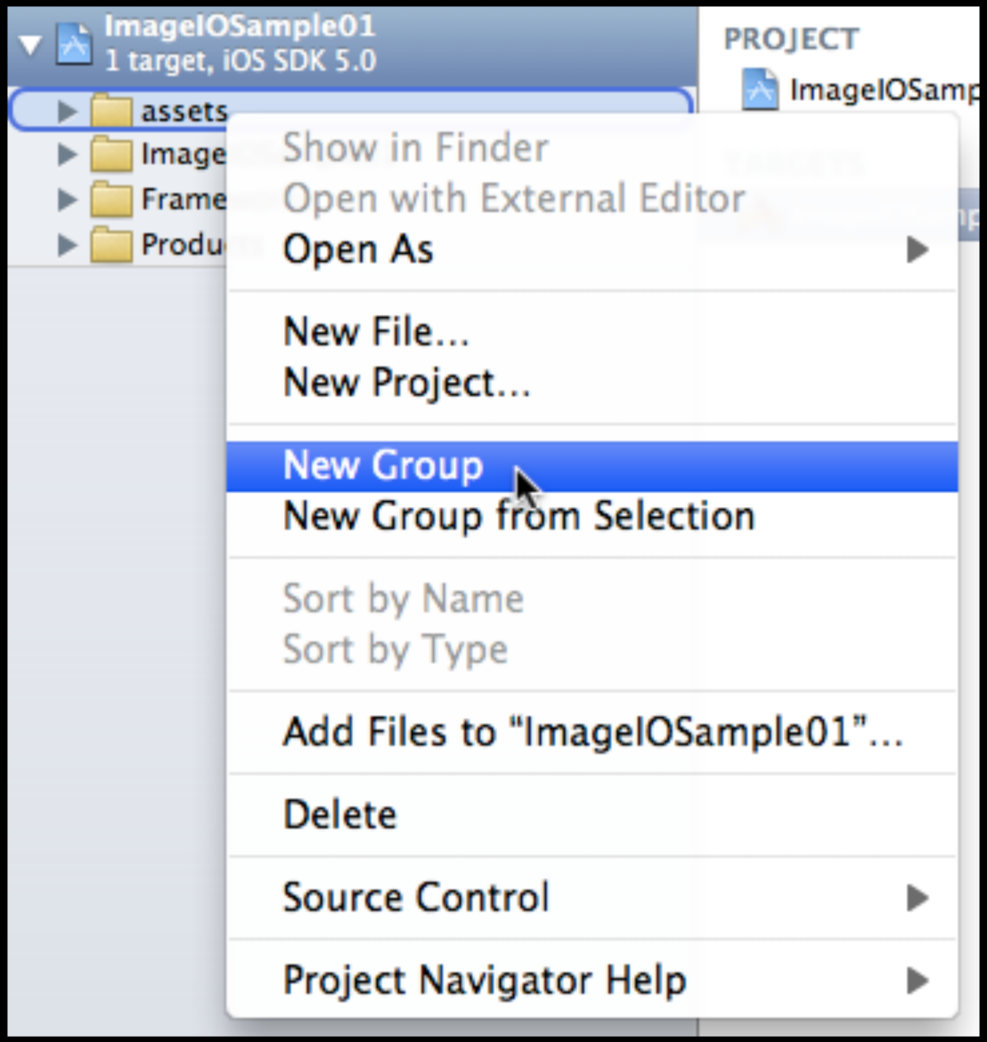
http://developer.apple.com/library/IOs/#documentation/AudioVideo/Conceptual/AVFoundationPG/Articles/00_Introduction.html#//apple_ref/doc/uid/TP40010188-CH1-SW3

MediaSample01(1/13)

1. 建置一個View-based 的專案，名稱『MediaSample01』。
2. 從Targets > Build Phases > Link Binary With Libaries加入AVFoundation Framework。

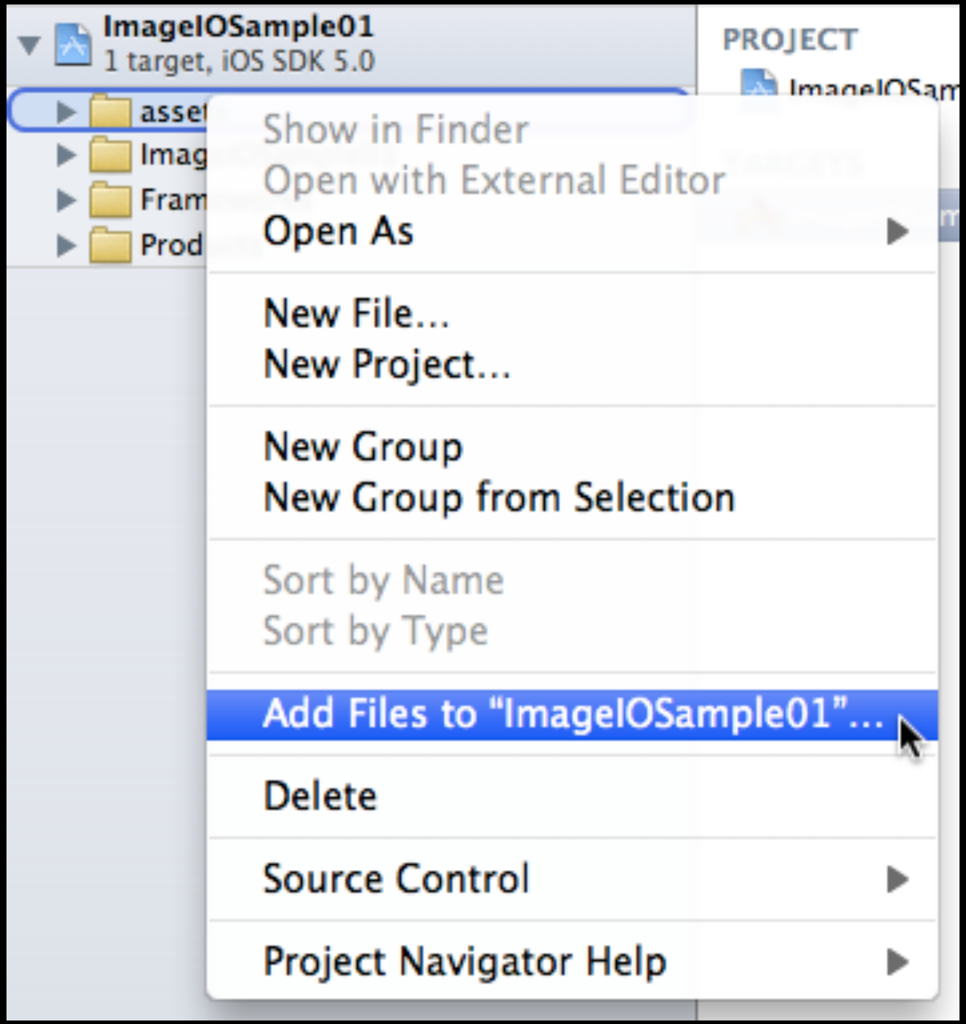
MediaSample01(2/13)

3.在專案檔案列表點選滑鼠右鍵，選擇 New Group 建立 Group 名為 assets。



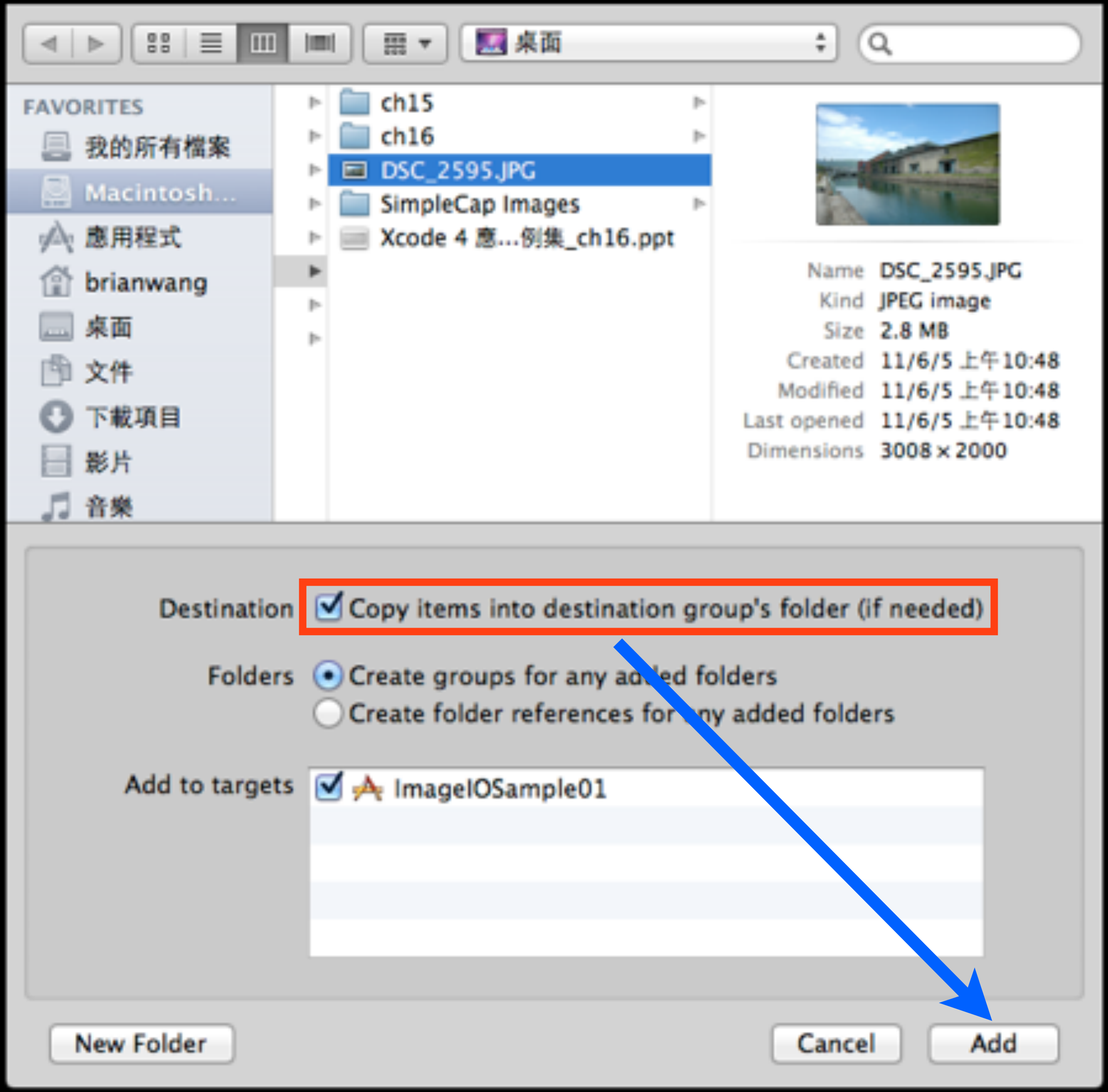
MediaSample01(3/13)

4.點選滑鼠右鍵，選擇 Add File to “MediaSample01”，加入音訊檔案。



MediaSample01(4/13)

5.選擇音訊檔案後，並勾選 Copy items into destination group’s folder後點選 Add 。



Name	DSC_2595.JPG
Kind	JPEG image
Size	2.8 MB
Created	11/6/5 上午10:48
Modified	11/6/5 上午10:48
Last opened	11/6/5 上午10:48
Dimensions	3008 x 2000

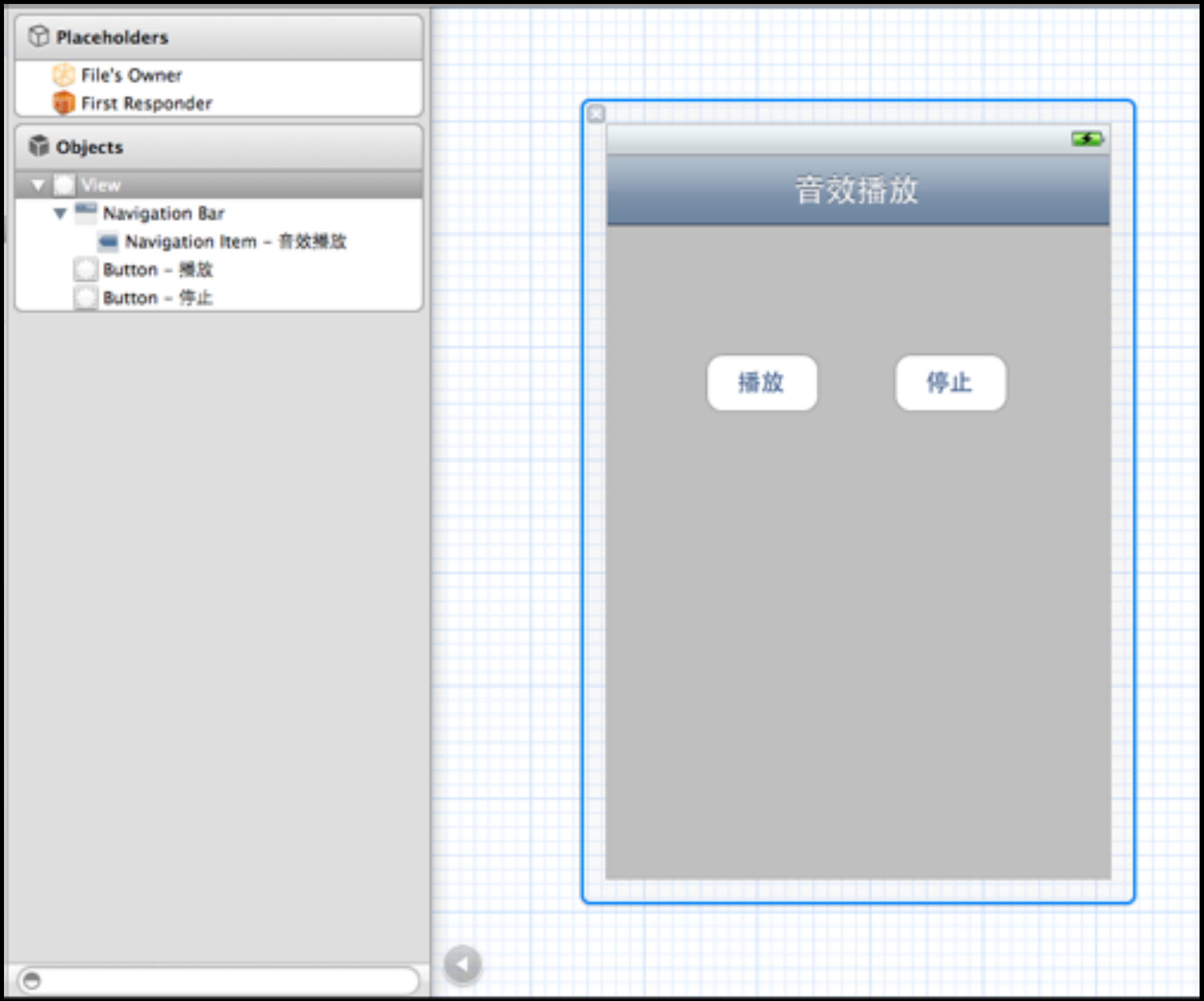
Destination ☑ Copy items into destination group's folder (if needed)

Folders ● Create groups for any added folders
○ Create folder references for any added folders

Add to targets ☑ ImageIOSample01

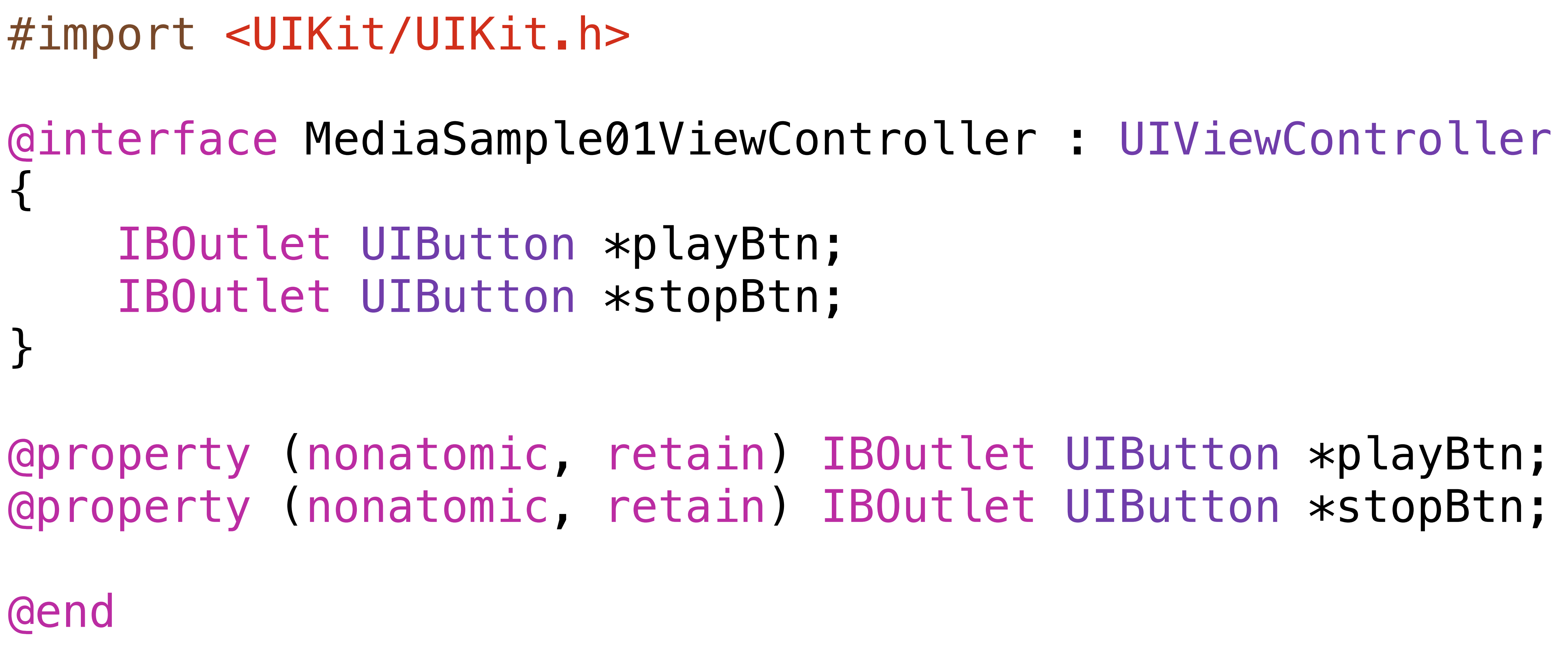
MediaSample01(5/13)

1.在View上加入一個 Navigation Bar 和兩個 Button，並將View的配置完成如下圖所示。



MediaSample01(6/13)

7. 在 MediaSample01ViewController.h 中加入兩個 UIButton 的 Outlet，名稱如下所示並與元件建立參考。

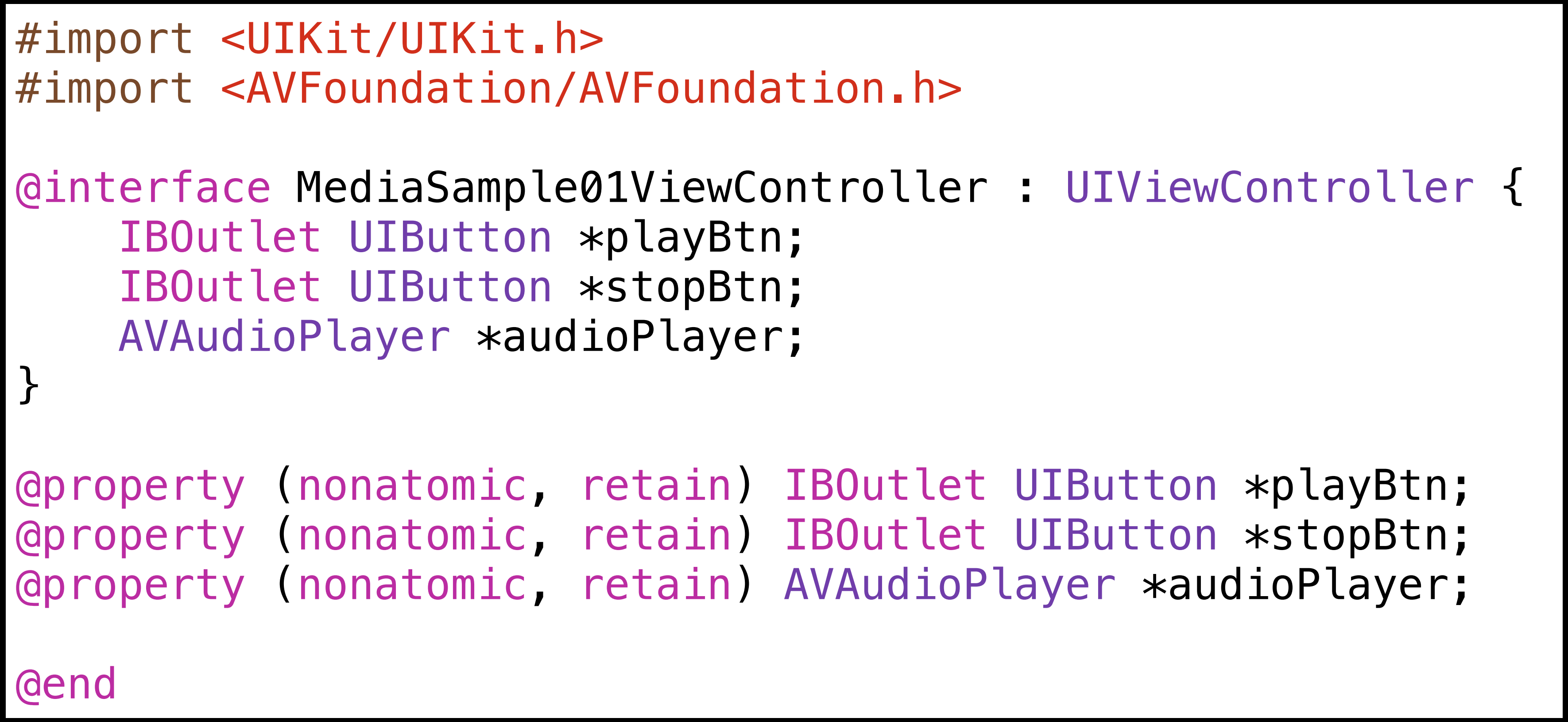


```objc
#import <UIKit/UIKit.h>

@interface MediaSample01ViewController : UIViewController
{
    IBOutlet UIButton *playBtn;
    IBOutlet UIButton *stopBtn;
}

@property (nonatomic, retain) IBOutlet UIButton *playBtn;
@property (nonatomic, retain) IBOutlet UIButton *stopBtn;

@end
```

MediaSample01(7/13)

8.加入 AVFoundation/AVFoundation.h 的 import。

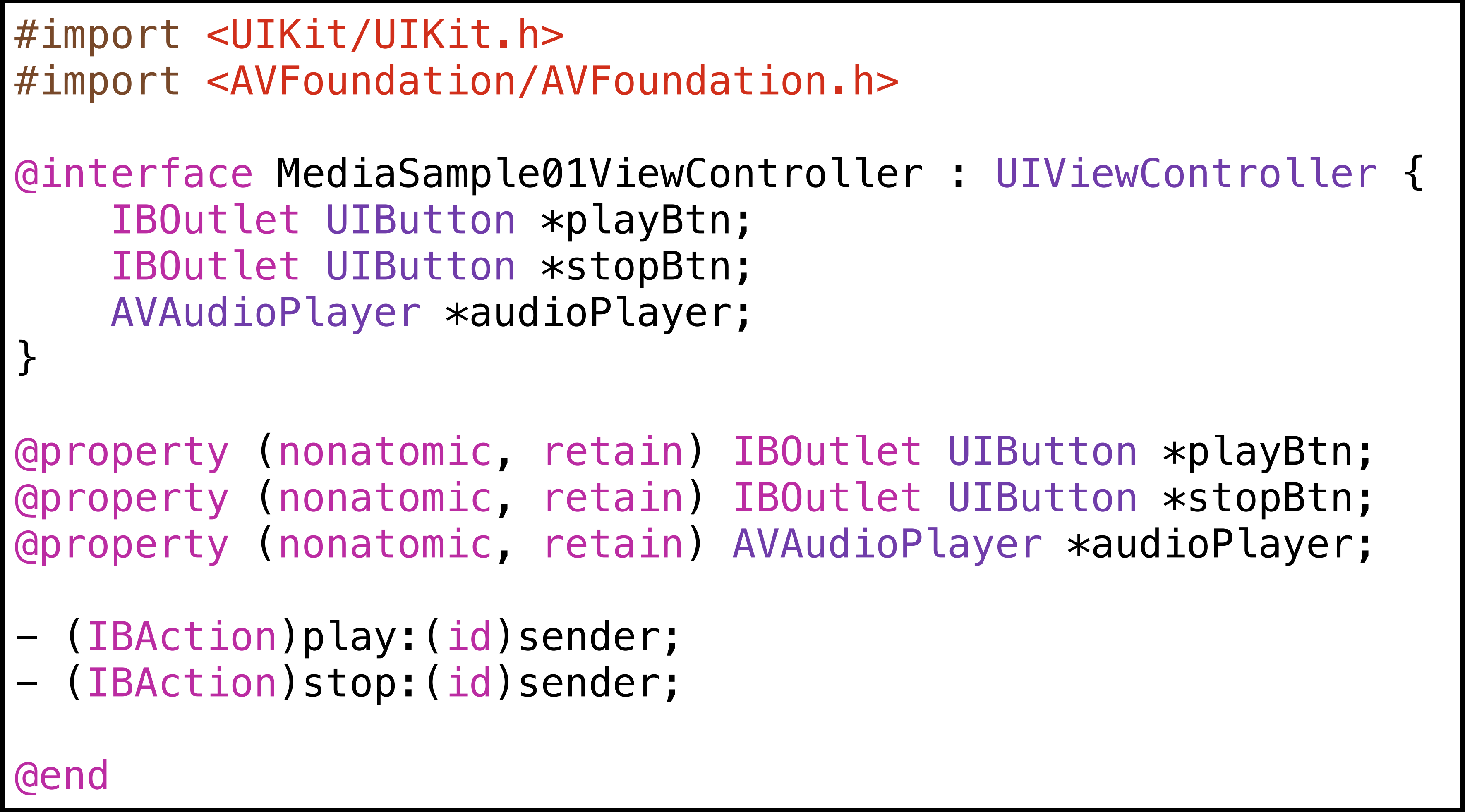
9.新增 AVAudioPlayer 屬性，並加上合成方法。



```
#import <UIKit/UIKit.h>
#import <AVFoundation/AVFoundation.h>

@interface MediaSample01ViewController : UIViewController {
    IBOutlet UIButton *playBtn;
    IBOutlet UIButton *stopBtn;
    AVAudioPlayer *audioPlayer;
}

@property (nonatomic, retain) IBOutlet UIButton *playBtn;
@property (nonatomic, retain) IBOutlet UIButton *stopBtn;
@property (nonatomic, retain) AVAudioPlayer *audioPlayer;

@end
```

MediaSample01(8/13)

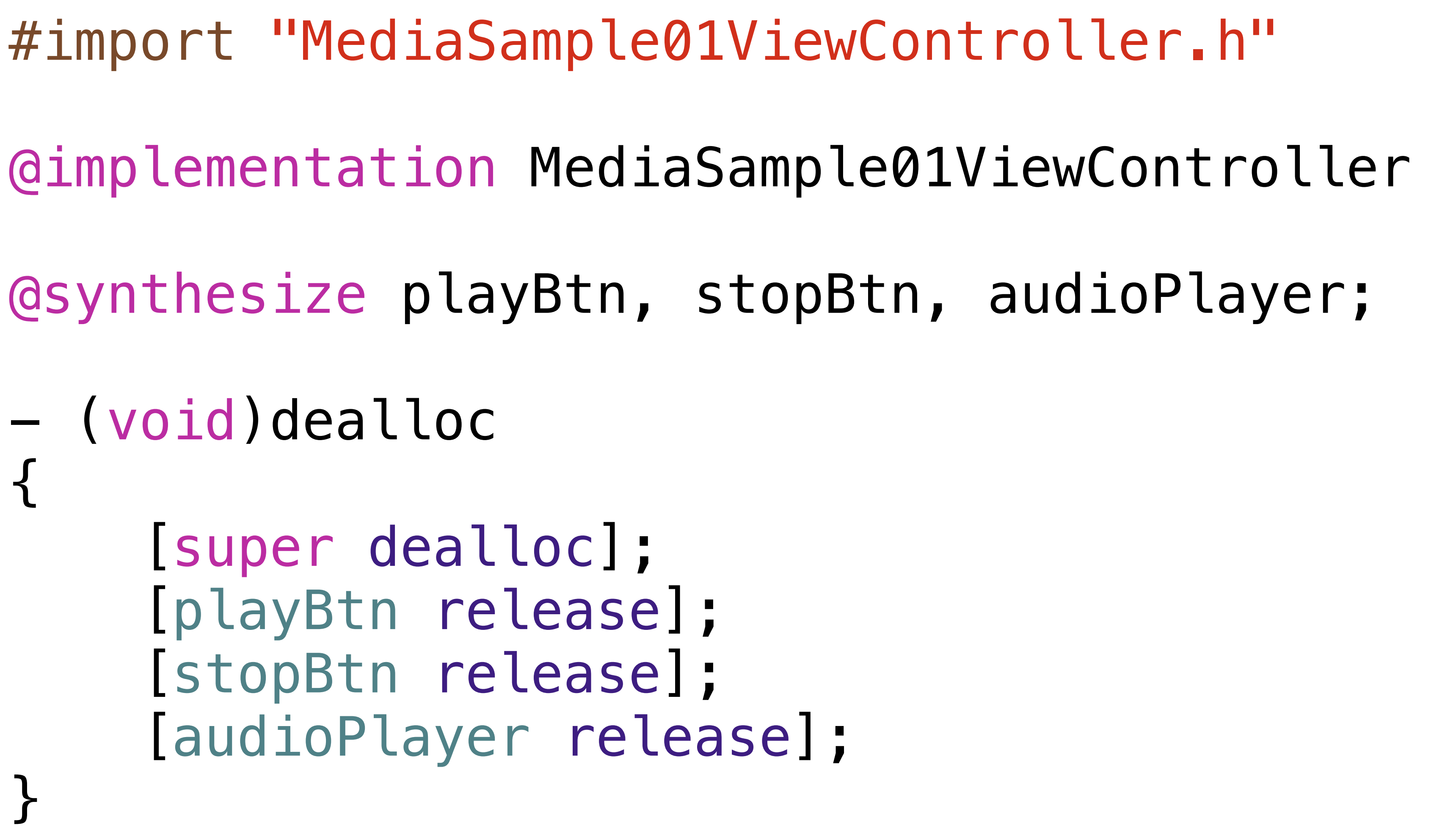
10.新增兩個 IBAction，名稱為『 play 』和『 stop 』與 View 上的 Button 元件的『 Touch Up Inside 』事件建立關聯。



```
#import <UIKit/UIKit.h>
#import <AVFoundation/AVFoundation.h>

@interface MediaSample01ViewController : UIViewController {
    IBOutlet UIButton *playBtn;
    IBOutlet UIButton *stopBtn;
    AVAudioPlayer *audioPlayer;
}

@property (nonatomic, retain) IBOutlet UIButton *playBtn;
@property (nonatomic, retain) IBOutlet UIButton *stopBtn;
@property (nonatomic, retain) AVAudioPlayer *audioPlayer;

- (IBAction)play:(id)sender;
- (IBAction)stop:(id)sender;

@end
```

MediaSample01(9/13)

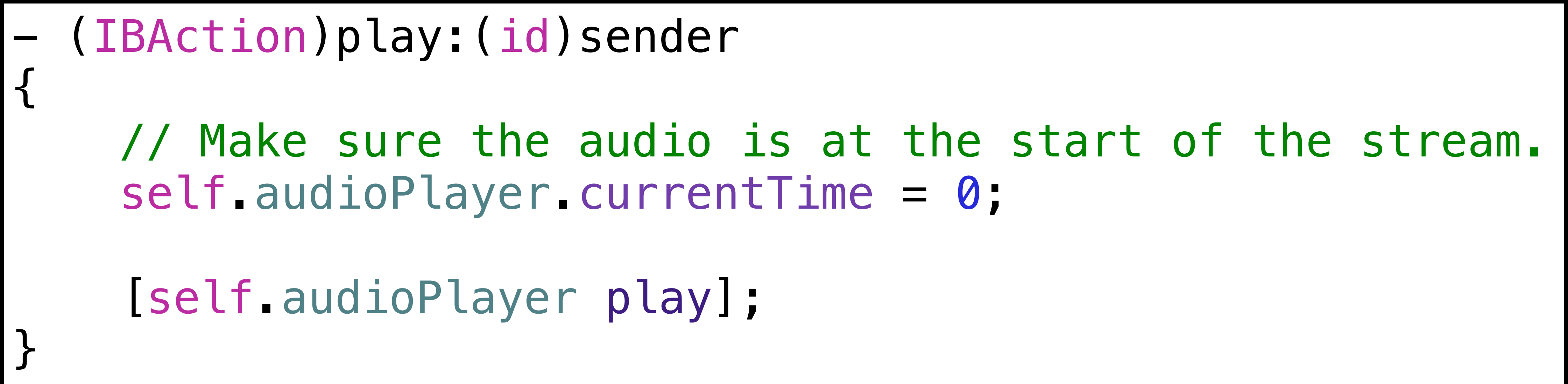
11.在 MediaSample01ViewController.m 中加上 audioPlayer 的 synthesize 和實作 dealloc 方法。



```
#import "MediaSample01ViewController.h"

@implementation MediaSample01ViewController

@synthesize playBtn, stopBtn, audioPlayer;

- (void)dealloc
{
    [super dealloc];
    [playBtn release];
    [stopBtn release];
    [audioPlayer release];
}
```

MediaSample01(10/13)

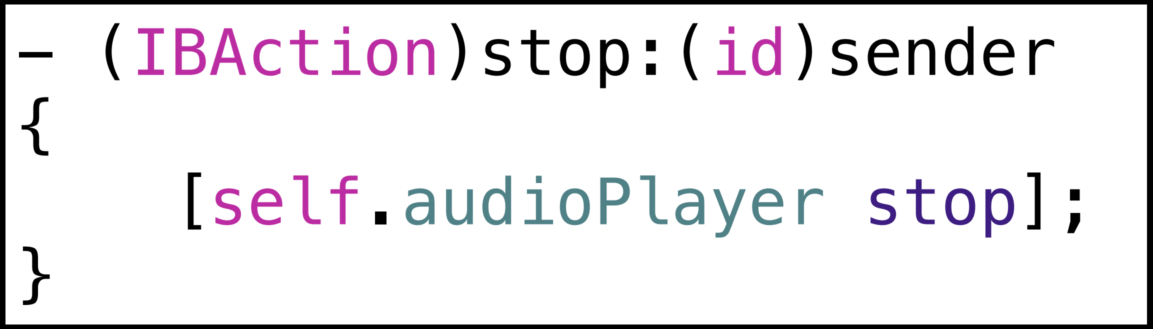
12.實作 play 方法。



```
- (IBAction)play:(id)sender
{
    // Make sure the audio is at the start of the stream.
    self.audioPlayer.currentTime = 0;

    [self.audioPlayer play];
}
```

MediaSample01(11/13)

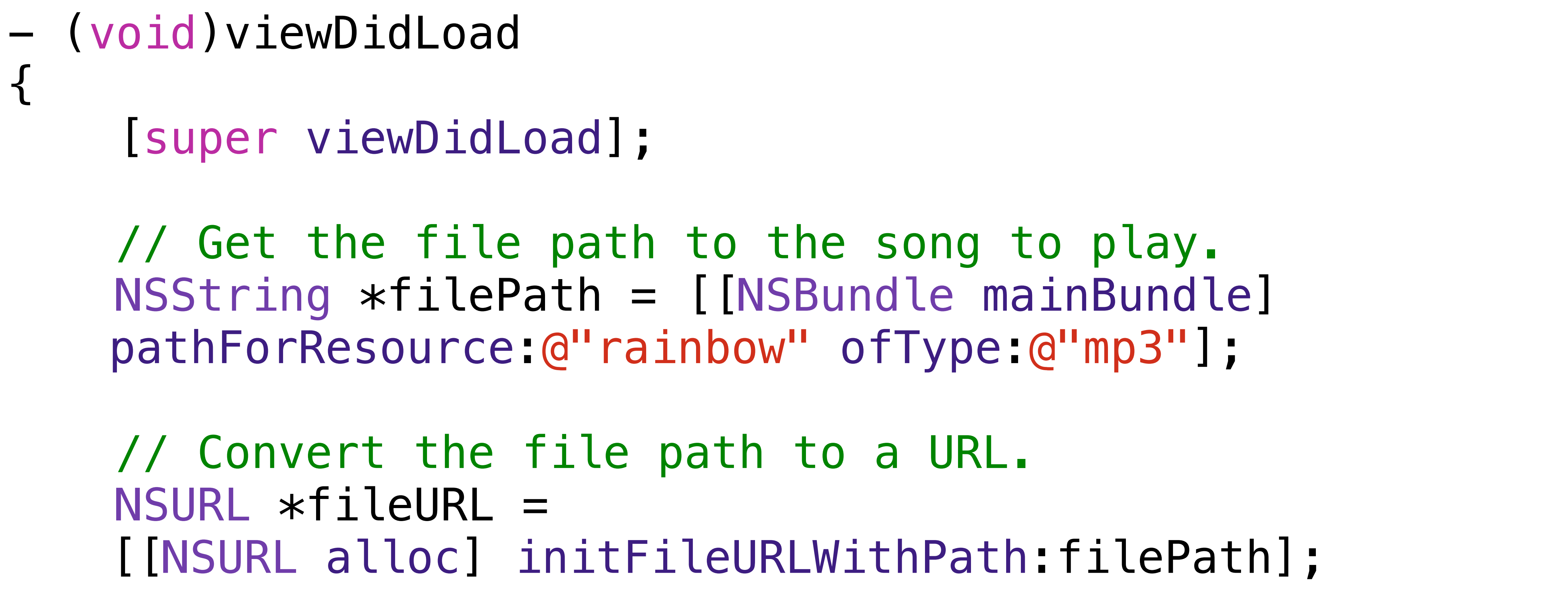
13.實作 stop 方法。



```
- (IBAction)stop:(id)sender
{
    [self.audioPlayer stop];
}
```

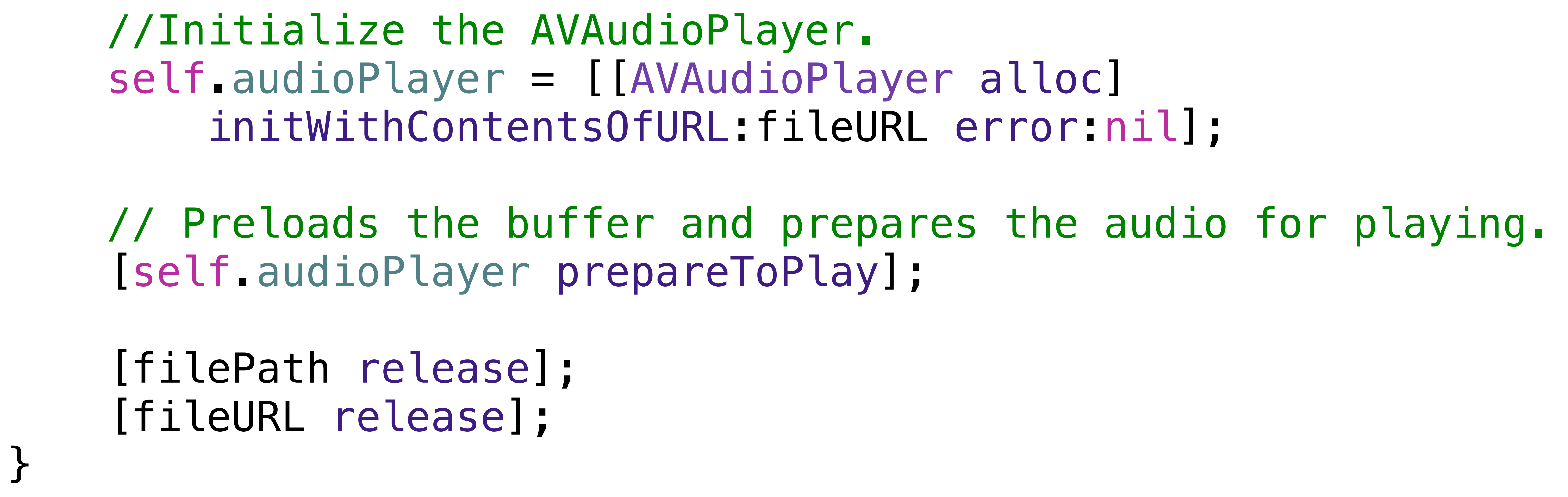
MediaSample01(12/13)

14.在viewDidLoad方法中加入以下程式碼後執行。



```
- (void)viewDidLoad
{
    [super viewDidLoad];

    // Get the file path to the song to play.
    NSString *filePath = [[NSBundle mainBundle]
    pathForResource:@"rainbow" ofType:@"mp3"];

    // Convert the file path to a URL.
    NSURL *fileURL =
    [[NSURL alloc] initFileURLWithPath:filePath];
```

MediaSample01(13/13)



```
    //Initialize the AVAudioPlayer.
    self.audioPlayer = [[AVAudioPlayer alloc]
        initWithContentsOfURL:fileURL error:nil];

    // Preloads the buffer and prepares the audio for playing.
    [self.audioPlayer prepareToPlay];

    [filePath release];
    [fileURL release];
}
```