

Advanced Appearance Customization on iOS

Session 216

Jacob Xiao

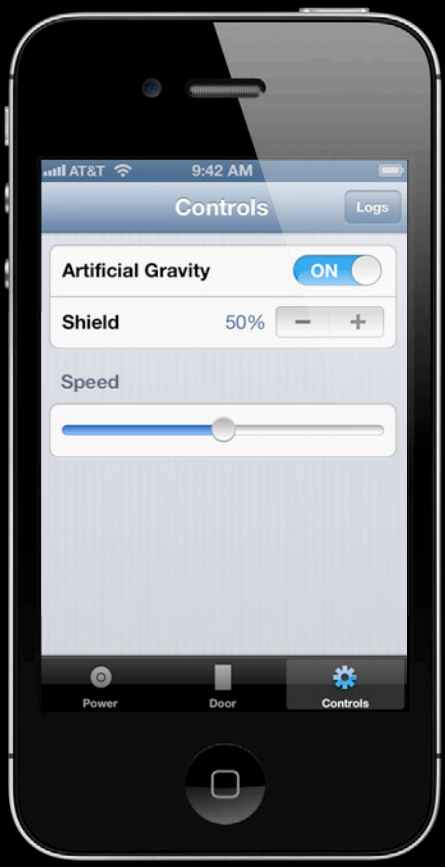
iOS Frameworks Engineer

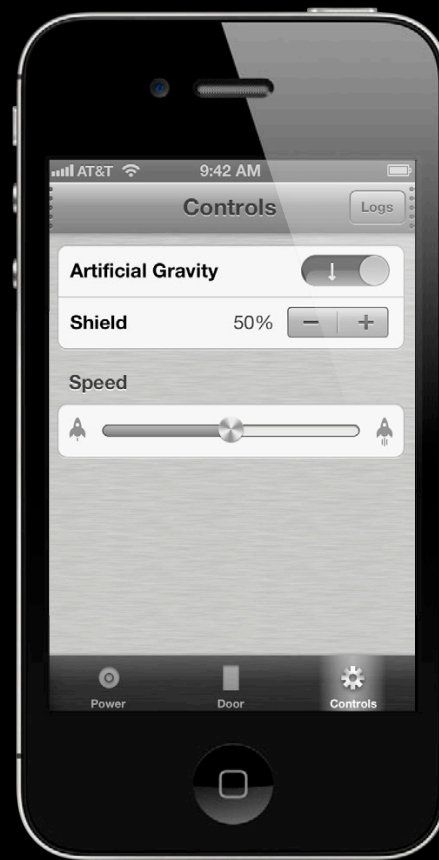
These are confidential sessions—please refrain from streaming, blogging, or taking pictures

What You Will Learn

- General Tips
- Customizing
- Special Guest

Demo







General Tips

General Tips

Artwork

General Tips

Artwork



General Tips

Artwork



star.png

General Tips

Artwork



star.png
32 × 32 px



star@2x.png
64 × 64 px

General Tips

Artwork



star.png
32 × 32 px



star@2x.png
64 × 64 px

```
[UIImage imageNamed:@"star"];
```

General Tips

Artwork



General Tips

Artwork



button~iphone.png
button@2x~iphone.png



button~ipad.png
button@2x~ipad.png

General Tips

Artwork



button~iphone.png
button@2x~iphone.png



button~ipad.png
button@2x~ipad.png

```
[UIImage imageNamed:@"button"];
```

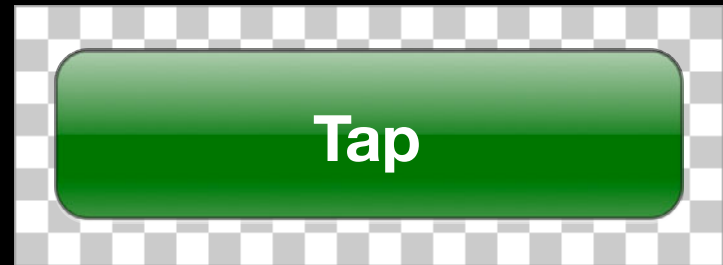
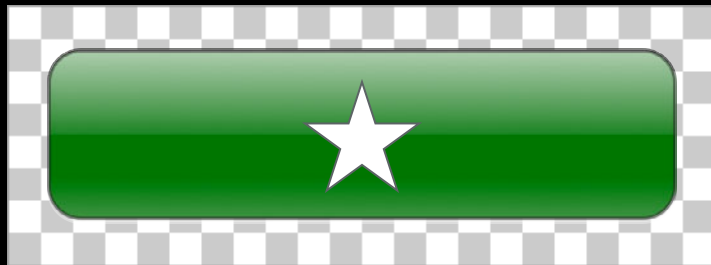
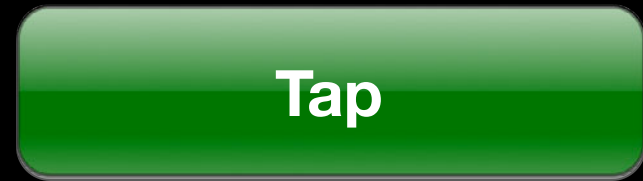
General Tips

Separating



General Tips

Separating

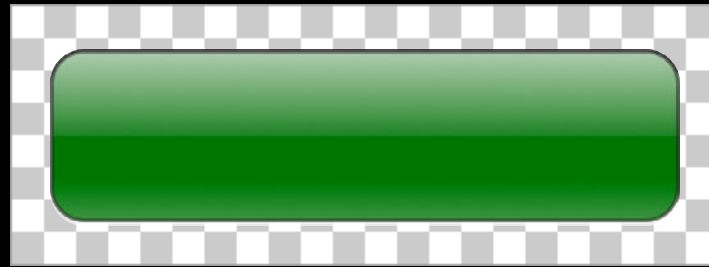


General Tips

Separating



Tap



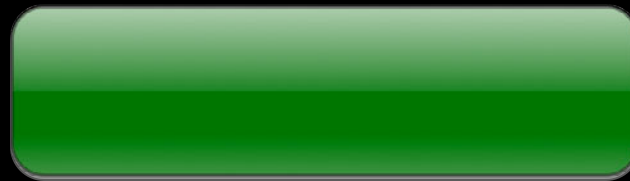
General Tips

Resizable images



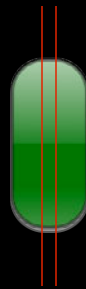
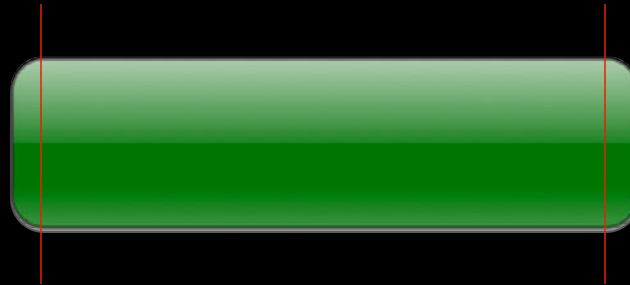
General Tips

Resizable images



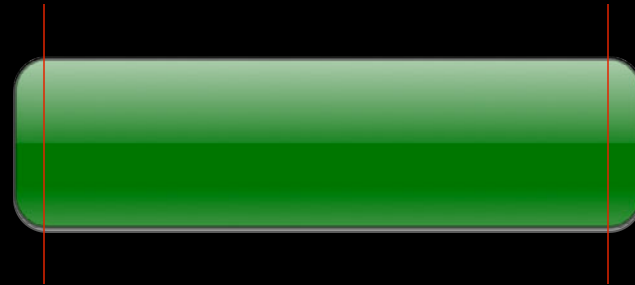
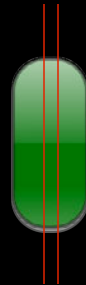
General Tips

Resizable images



General Tips

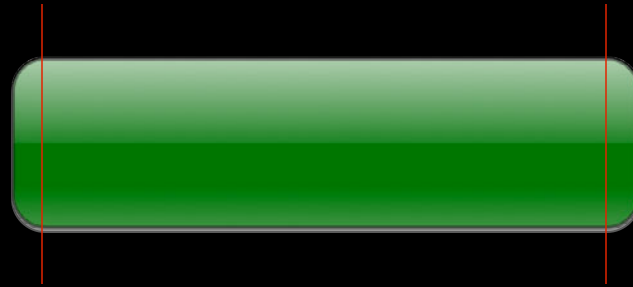
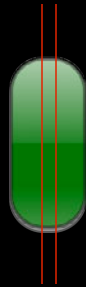
Resizable images



– (UIImage *)resizableImageWithCapInsets:(UIEdgeInsets)capInsets;

General Tips

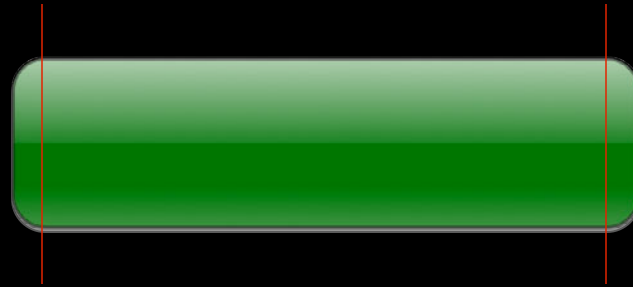
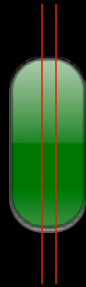
Resizable images



```
- (UIImage *)resizableImageWithCapInsets:(UIEdgeInsets)capInsets;  
UIEdgeInsetsMake(top, left, bottom, right)
```

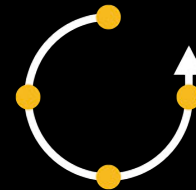
General Tips

Resizable images



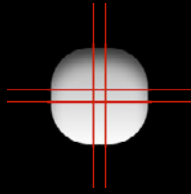
– (UIImage *)resizableImageWithCapInsets:(UIEdgeInsets)capInsets;

UIEdgeInsetsMake(top, left, bottom, right)



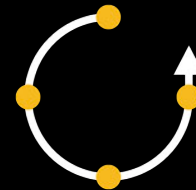
General Tips

Resizable images



– (UIImage *)resizableImageWithCapInsets:(UIEdgeInsets)capInsets;

UIEdgeInsetsMake(top, left, bottom, right)

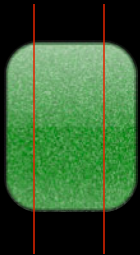


General Tips

Stretching vs. Tiling

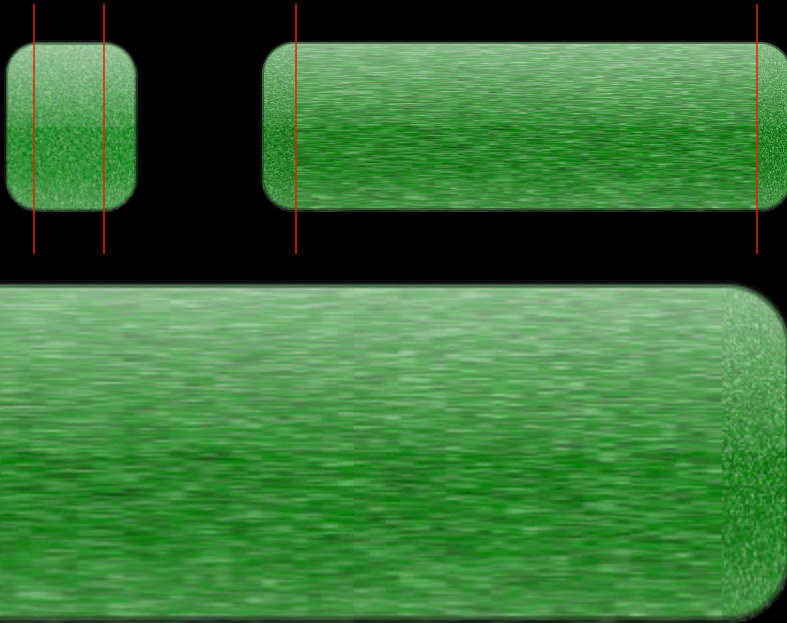
General Tips

Stretching vs. Tiling



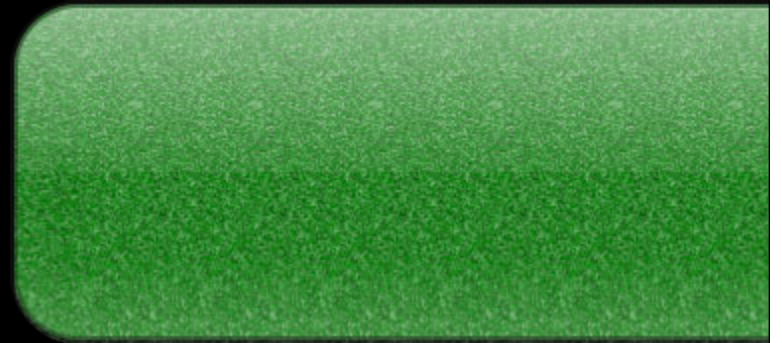
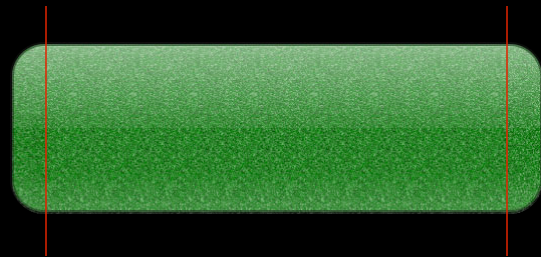
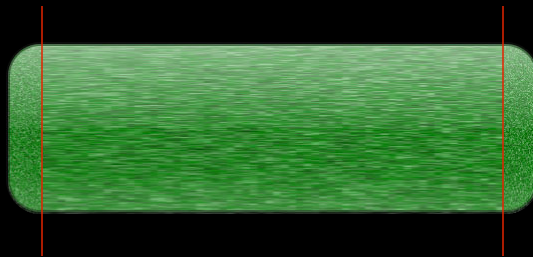
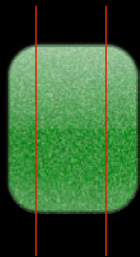
General Tips

Stretching vs. Tiling



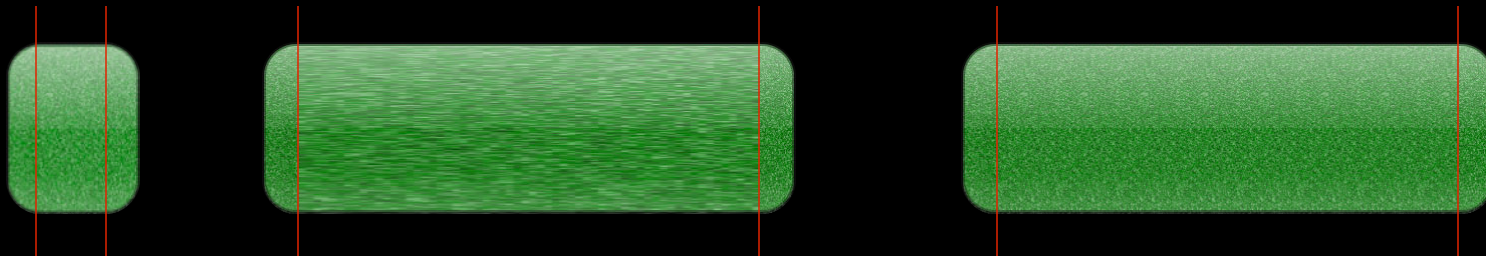
General Tips

Stretching vs. Tiling



General Tips

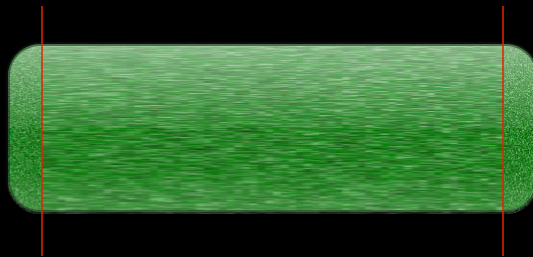
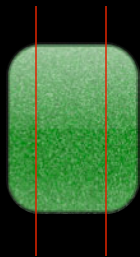
Stretching vs. Tiling



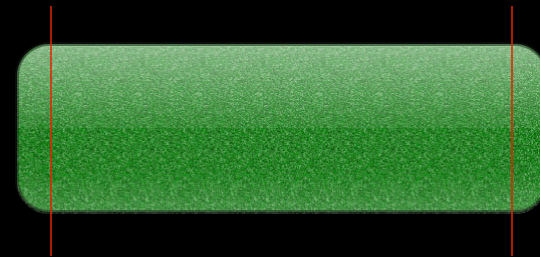
```
- (UIImage *)resizableImageWithCapInsets:(UIEdgeInsets)capInsets;
```

General Tips

Stretching vs. Tiling



`UIImageResizingModeStretch`



`UIImageResizingModeTile`

```
- (UIImage *)resizableImageWithCapInsets:(UIEdgeInsets)capInsets  
    resizeMode:(UIImageResizingMode) resizeMode;
```

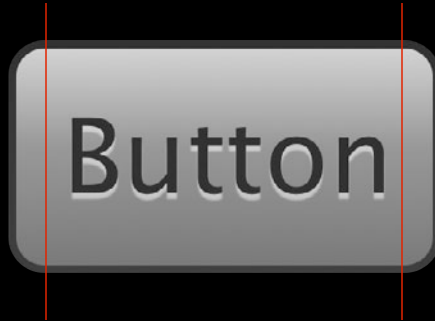
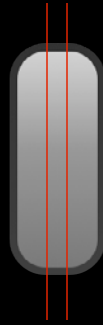
General Tips

Cap widths



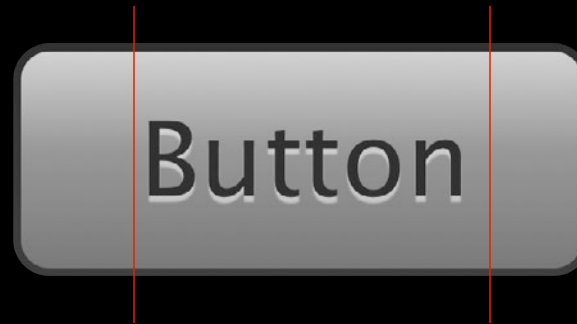
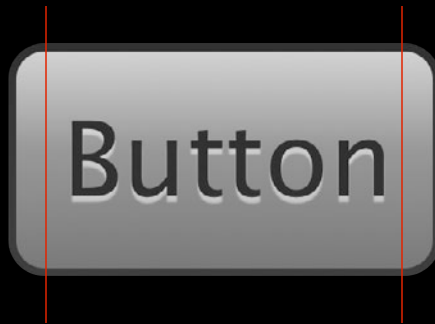
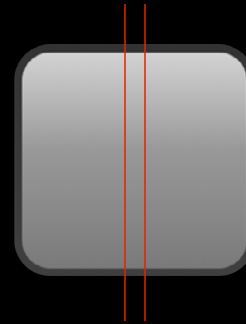
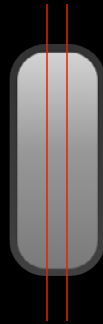
General Tips

Cap widths



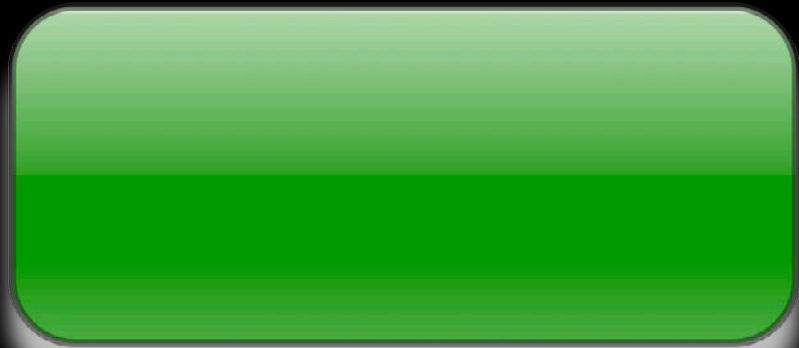
General Tips

Cap widths



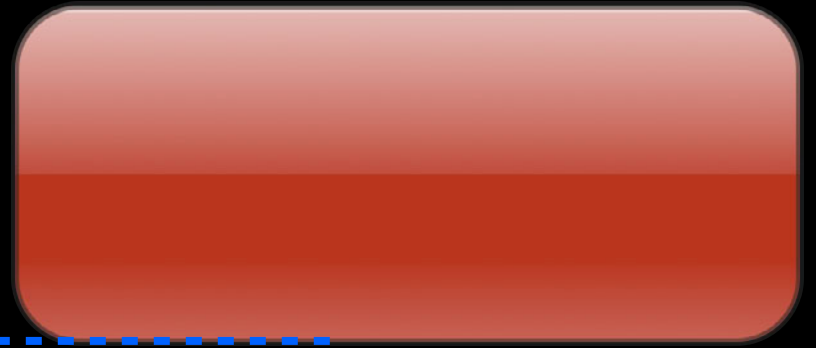
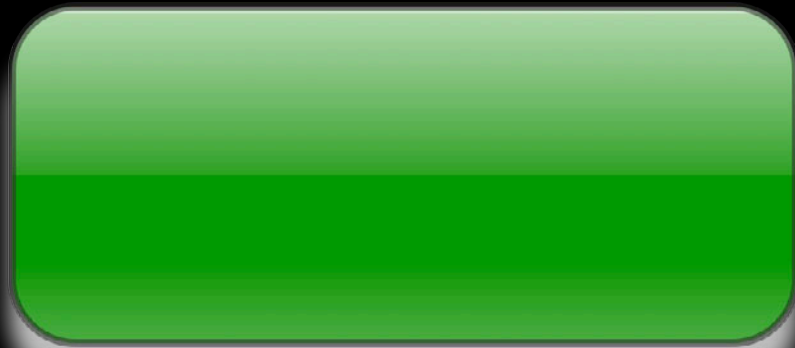
General Tips

Alignment insets



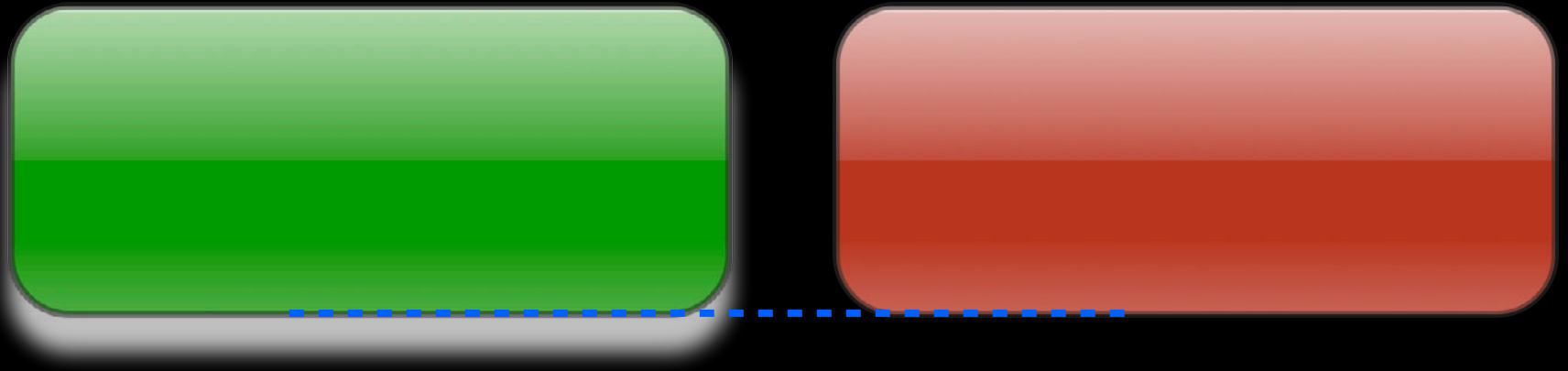
General Tips

Alignment insets



General Tips

Alignment insets



General Tips

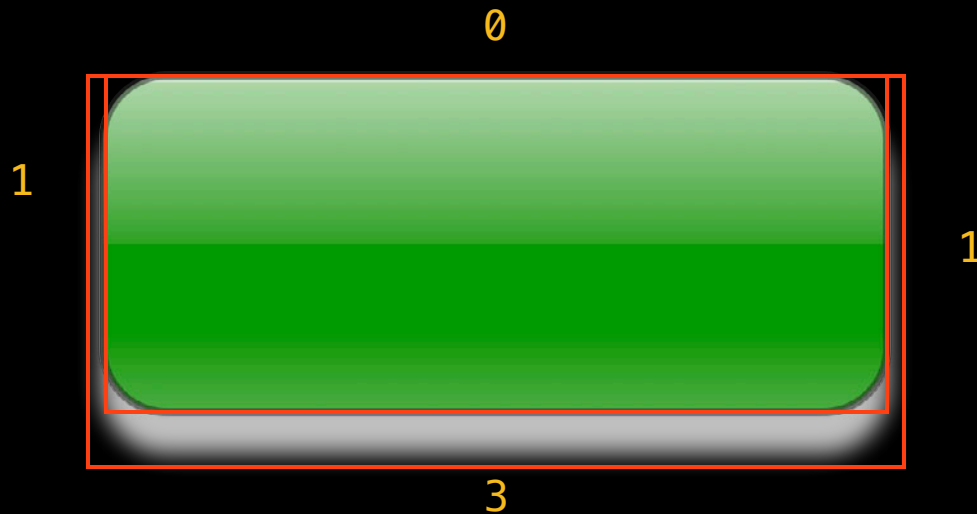
Alignment insets



– (UIImage *)`imageWithAlignmentRectInsets:(UIEdgeInsets)alignmentInsets`

General Tips

Alignment insets



– (UIImage *)`imageWithAlignmentRectInsets:(UIEdgeInsets)alignmentInsets`

`UIEdgeInsetsMake(0, 1, 3, 1)`

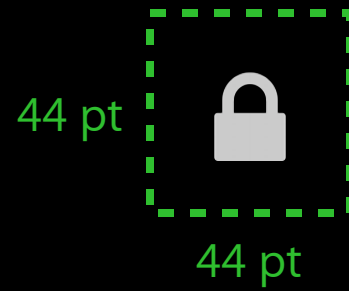
General Tips

Small buttons



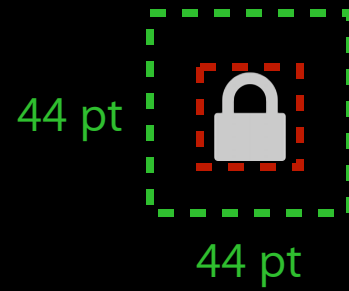
General Tips

Small buttons



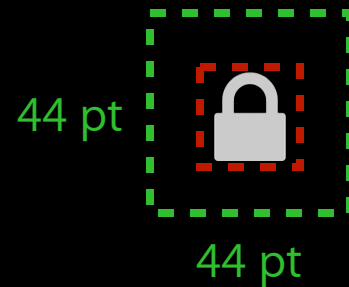
General Tips

Small buttons



General Tips

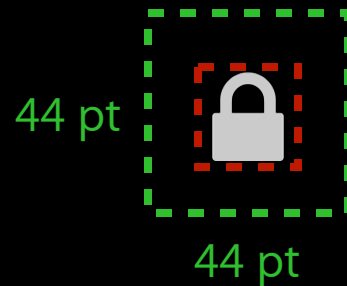
Small buttons



– (BOOL)pointInside:(CGPoint)point withEvent:(UIEvent *)event

General Tips

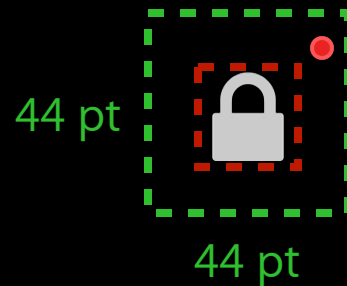
Small buttons



```
- (BOOL)pointInside:(CGPoint)point withEvent:(UIEvent *)event
{
    CGFloat widthDelta = 44.0 - bounds.size.width;
    CGFloat heightDelta = 44.0 - bounds.size.height;
    bounds = CGRectInset(bounds, -0.5 * widthDelta, -0.5 * heightDelta);
    return CGRectContainsPoint(bounds, point);
}
```

General Tips

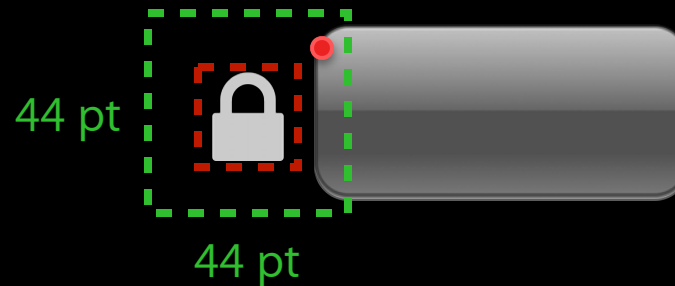
Small buttons



```
- (BOOL)pointInside:(CGPoint)point withEvent:(UIEvent *)event
{
    CGFloat widthDelta = 44.0 - bounds.size.width;
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    bounds = CGRectInset(bounds, -0.5 * widthDelta, -0.5 * heightDelta);
    return CGRectContainsPoint(bounds, point);
}
```

General Tips

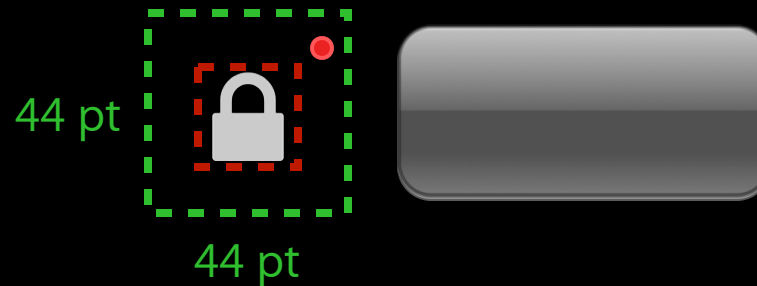
Small buttons



```
- (BOOL)pointInside:(CGPoint)point withEvent:(UIEvent *)event
{
    CGFloat widthDelta = 44.0 - bounds.size.width;
    CGFloat heightDelta = 44.0 - bounds.size.height;
    bounds = CGRectInset(bounds, -0.5 * widthDelta, -0.5 * heightDelta);
    return CGRectContainsPoint(bounds, point);
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```

General Tips

Small buttons



```
- (BOOL)pointInside:(CGPoint)point withEvent:(UIEvent *)event
{
    CGFloat widthDelta = 44.0 - bounds.size.width;
    CGFloat heightDelta = 44.0 - bounds.size.height;
    bounds = CGRectInset(bounds, -0.5 * widthDelta, -0.5 * heightDelta);
    return CGRectContainsPoint(bounds, point);
}
```

General Tips

Use standard controls

- Very customizable
- Standard behavior
- Get improvements

General Tips

Mixing

One

Two

Three

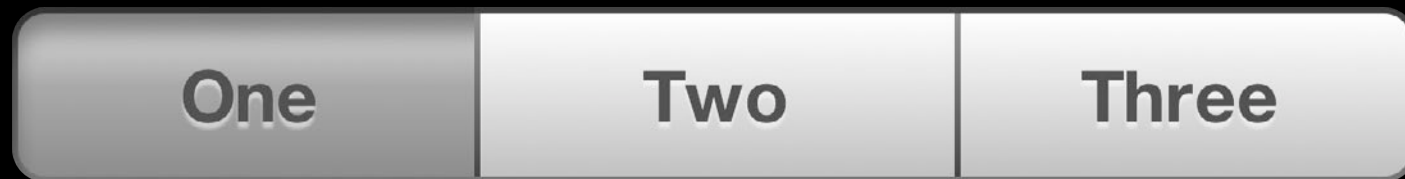
General Tips

Mixing



General Tips

Mixing



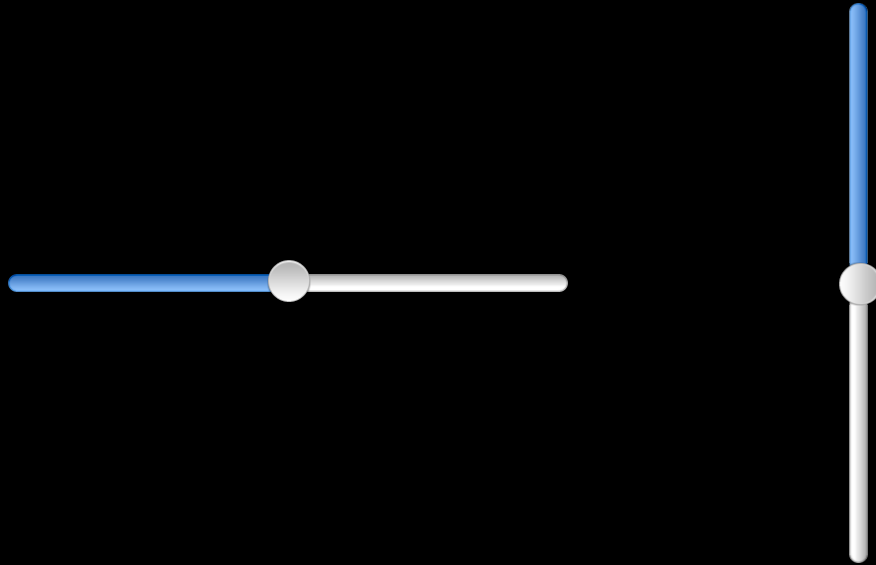
General Tips

Transforms



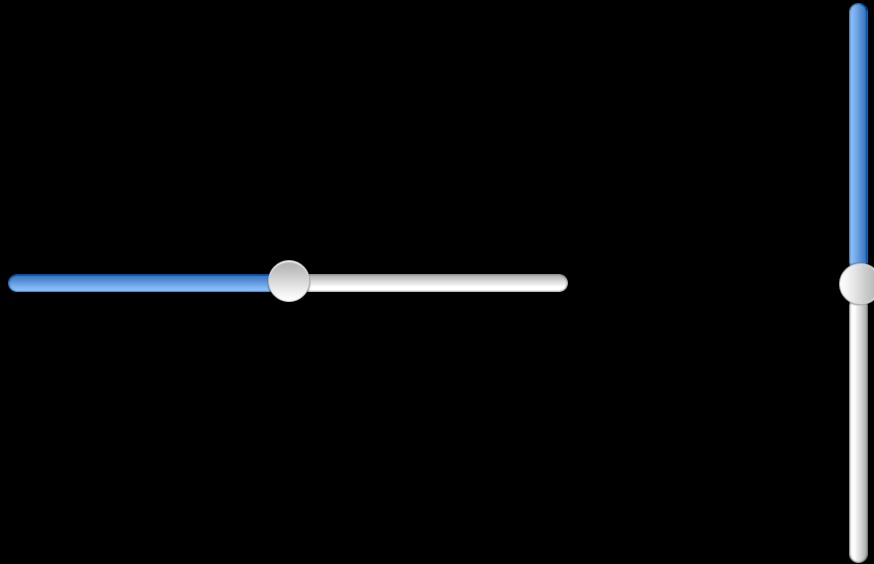
General Tips

Transforms



General Tips

Transforms



```
[view setTransform:CGAffineTransformMakeRotation(0.5 * M_PI)];
```

General Tips

Tint color



General Tips

Tint color



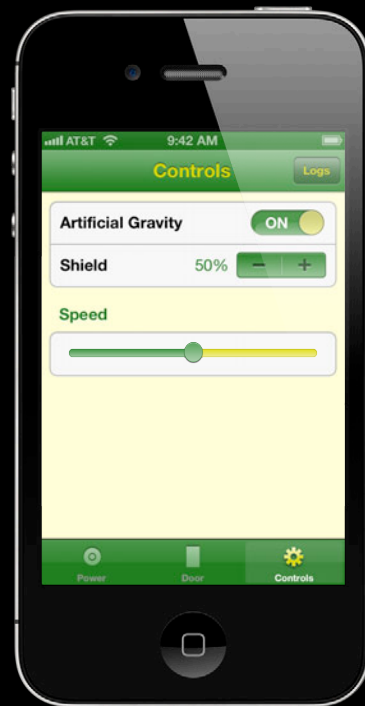
General Tips

Tint color



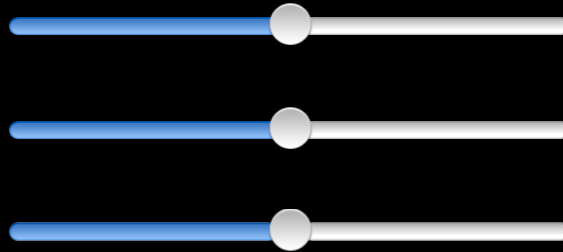
General Tips

Tint color



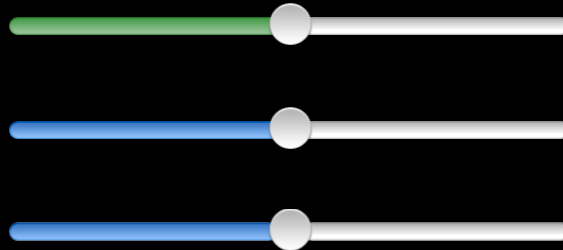
General Tips

Appearance proxy



General Tips

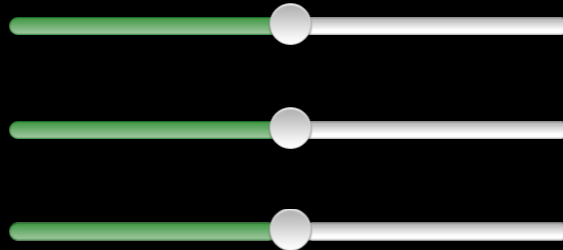
Appearance proxy



```
[slider setMinimumTrackTintColor:color];
```

General Tips

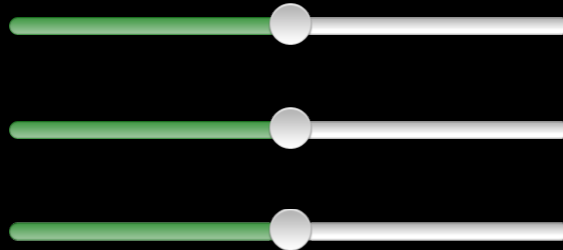
Appearance proxy



```
[slider setMinimumTrackTintColor:color];
```

General Tips

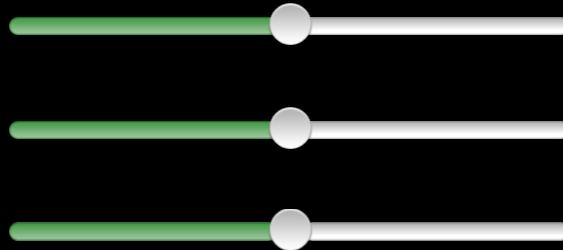
Appearance proxy



```
[[UISlider appearance] setMinimumTrackTintColor:color];
```

General Tips

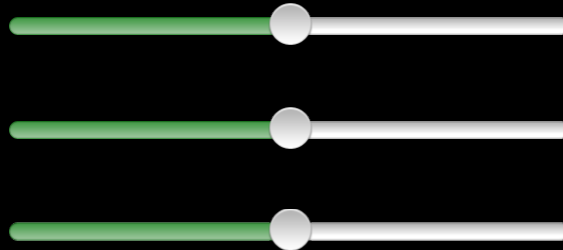
Appearance proxy



```
UISlider *sliderAppearance = [UISlider appearance];  
[sliderAppearance setMinimumTrackTintColor:color];
```

General Tips

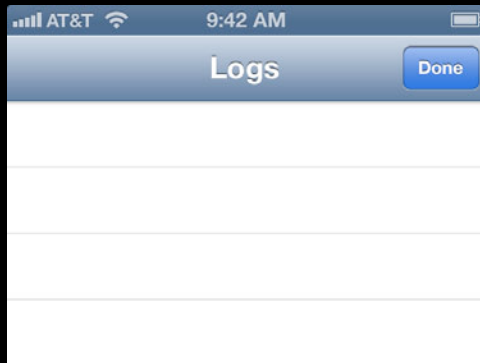
Appearance proxy



See "Customizing the Appearance of UIKit Controls" from WWDC 2011

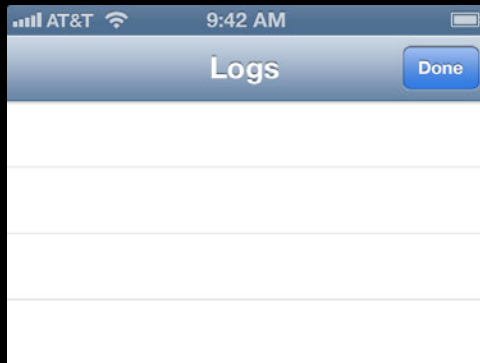
General Tips

Tinted status bar



General Tips

Tinted status bar

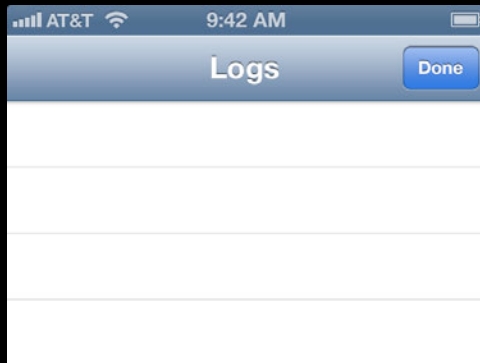


The blue status bar is
freaking me out.
Someone file a radar!

-random Twitter comment

General Tips

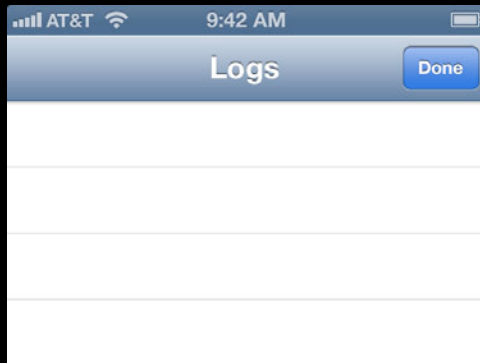
Tinted status bar



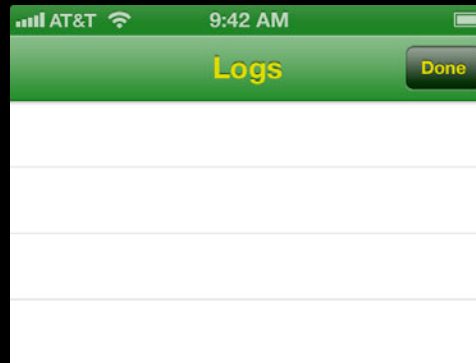
Default

General Tips

Tinted status bar



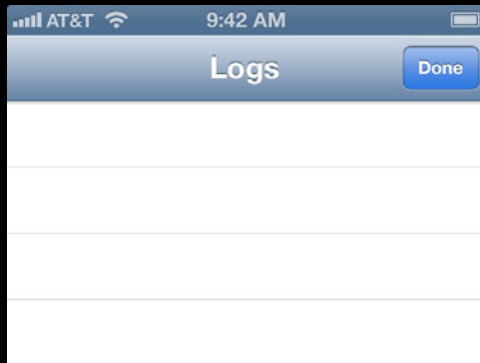
Default



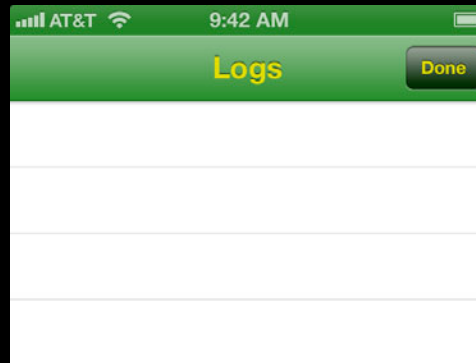
Tint Color

General Tips

Tinted status bar



Default



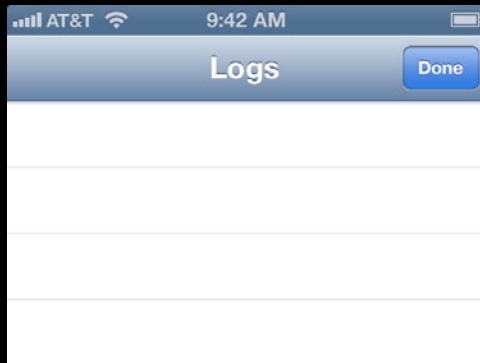
Tint Color



Custom

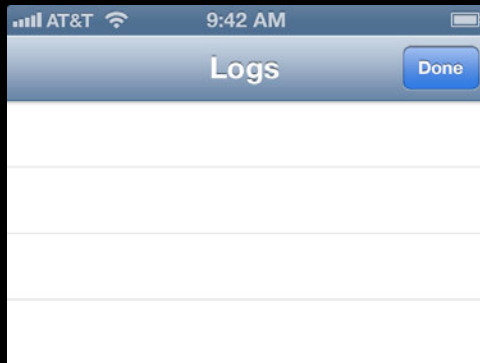
General Tips

Tinted status bar



General Tips

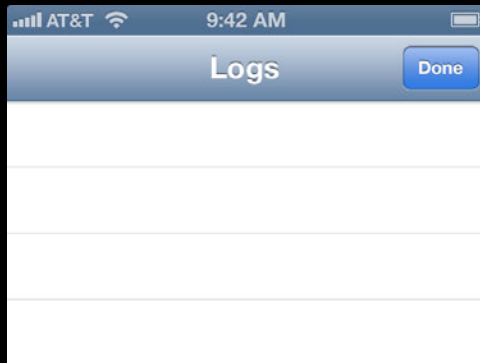
Tinted status bar



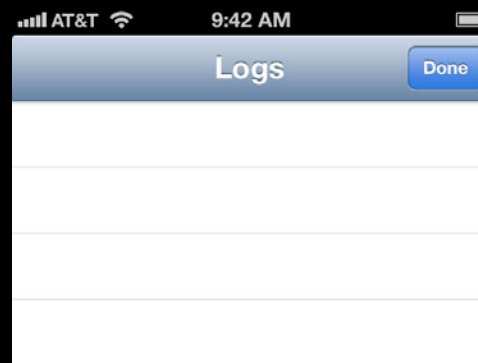
`UIStatusBarStyleDefault`

General Tips

Tinted status bar



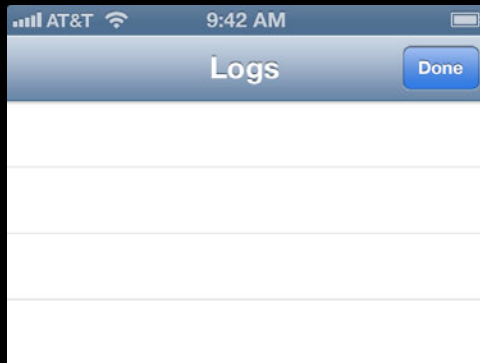
`UIStatusBarStyleDefault`



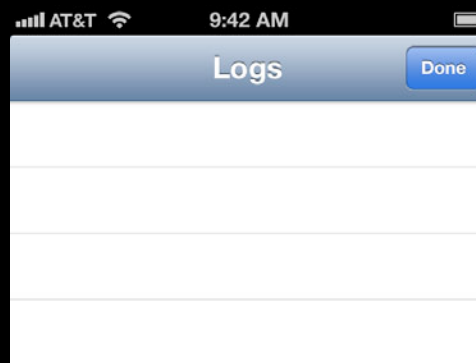
`UIStatusBarStyleBlackOpaque`

General Tips

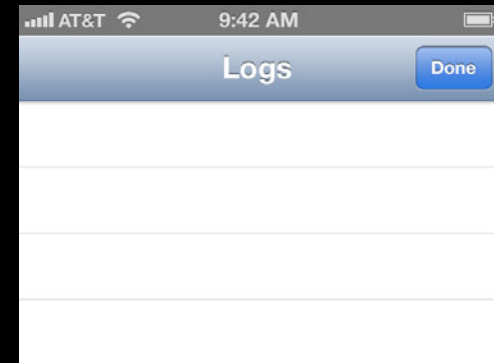
Tinted status bar



UIStatusBarStyleDefault



UIStatusBarStyleBlackOpaque



UIStatusBarStyleBlackTranslucent

General Tips

UIStatusBarTintColorParameters

Info.plist

General Tips

UIStatusBarTintColorParameters

Info.plist

▼ UIStatusBarTintColorParameters ▲ Dictionary ▲ (1 item)

General Tips

UIStatusBarTintColorParameters

Info.plist

▼ UIStatusBarTintColorParameters	↕	Dictionary	↕ (1 item)
▼ UINavigationController		Dictionary	(3 items)

General Tips

UIStatusBarTintColorParameters

Info.plist

▼ UIStatusBarTintColorParameters	Dictionary	(1 item)
▼ UINavigationController	Dictionary	(3 items)
Style	String	UIBarStyleDefault

General Tips

UIStatusBarTintColorParameters

Info.plist

▼ UIStatusBarTintColorParameters	Dictionary	(1 item)
▼ UINavigationController	Dictionary	(3 items)
Style	String	UIBarStyleDefault
Translucent	Boolean	NO

General Tips

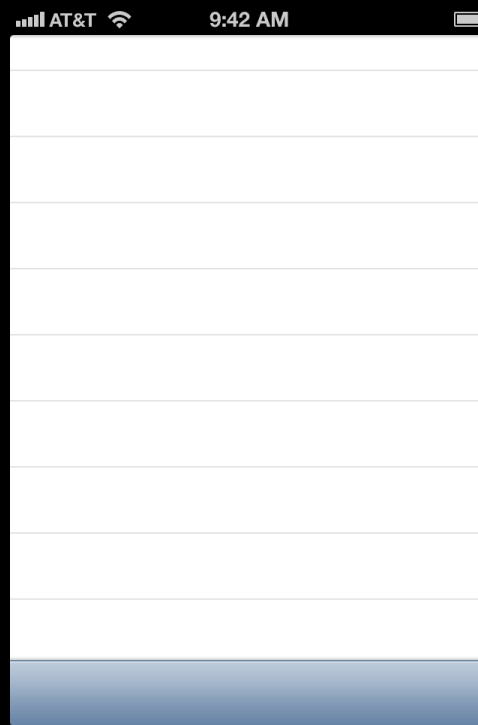
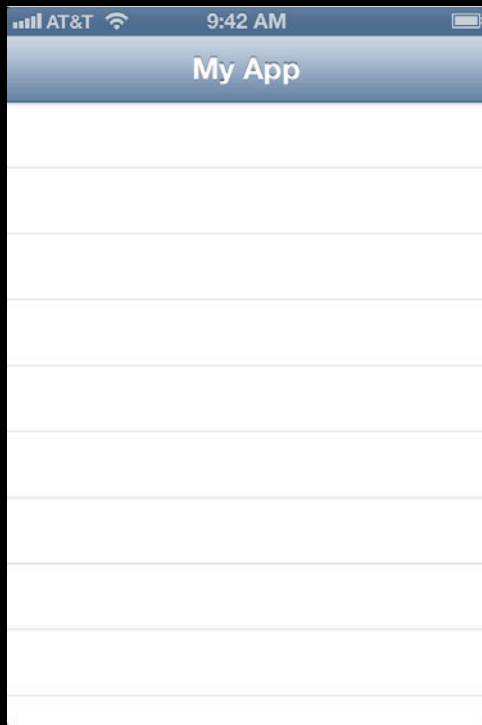
UIStatusBarTintColorParameters

Info.plist

▼ UIStatusBarTintColorParameters	Dictionary	(1 item)
▼ UINavigationController	Dictionary	(3 items)
Style	String	UIBarStyleDefault
Translucent	Boolean	NO
▼TintColor	Dictionary	(3 items)
Red	Number	0.11
Green	Number	0.44
Blue	Number	0.09

General Tips

Shadows

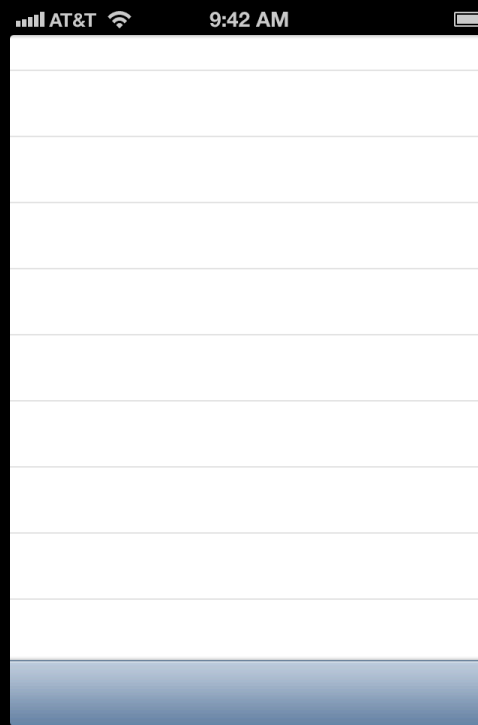
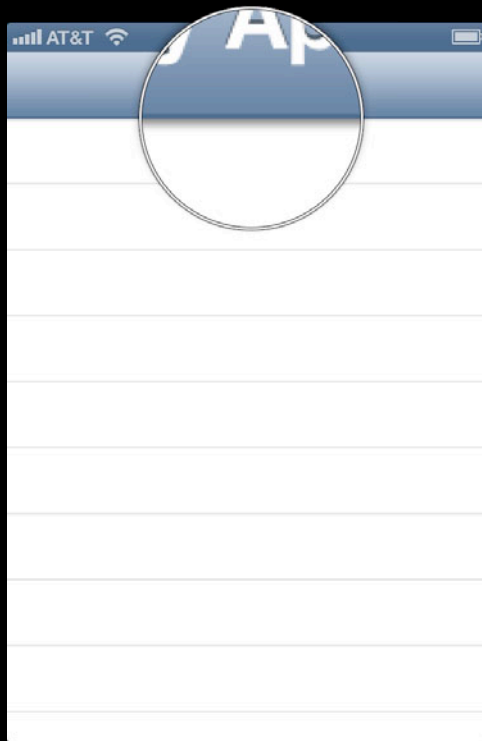


General Tips

Shadows



UINavigationController

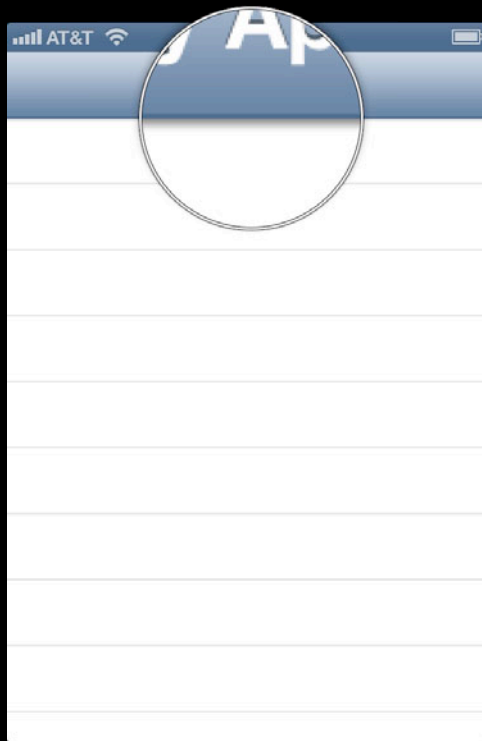


General Tips

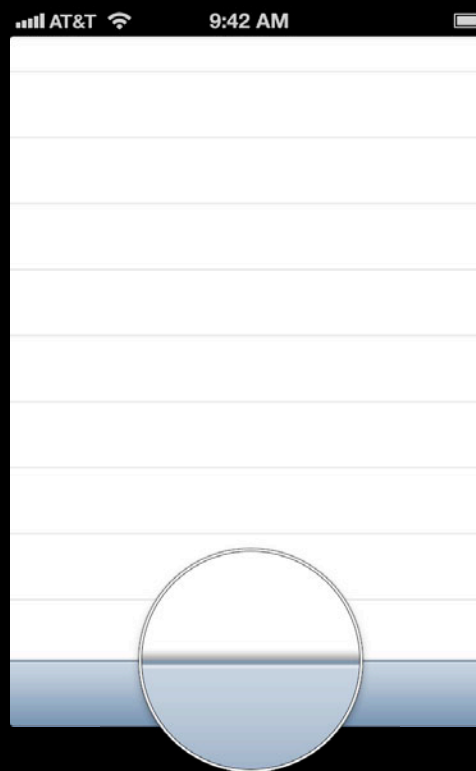
Shadows



UINavigationController



UIToolbar

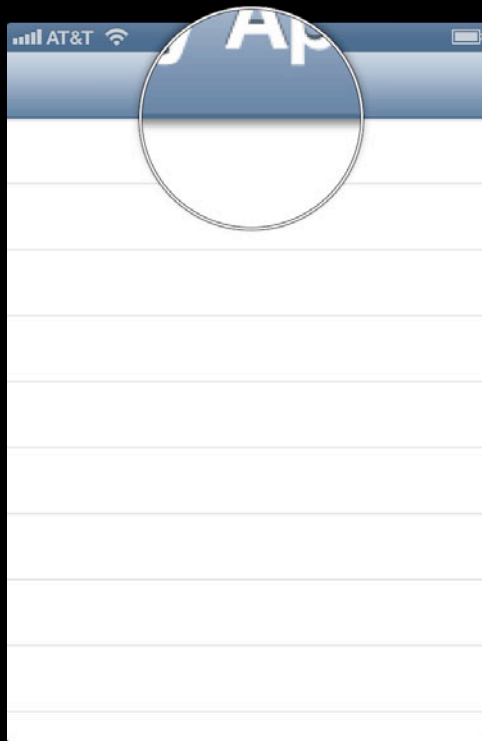


General Tips

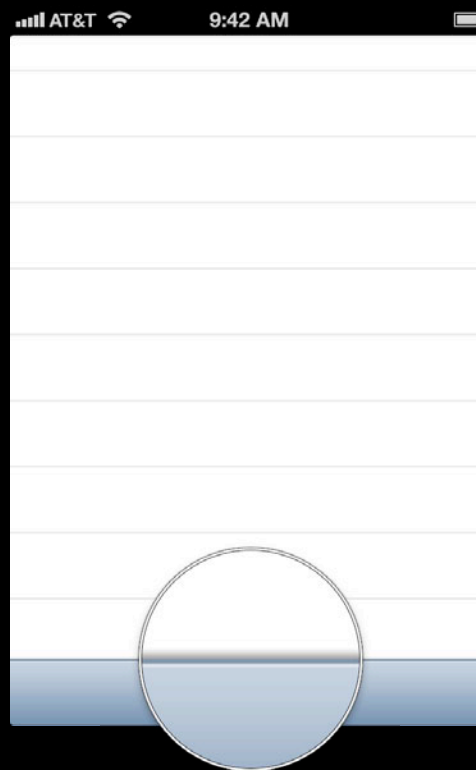
Shadows



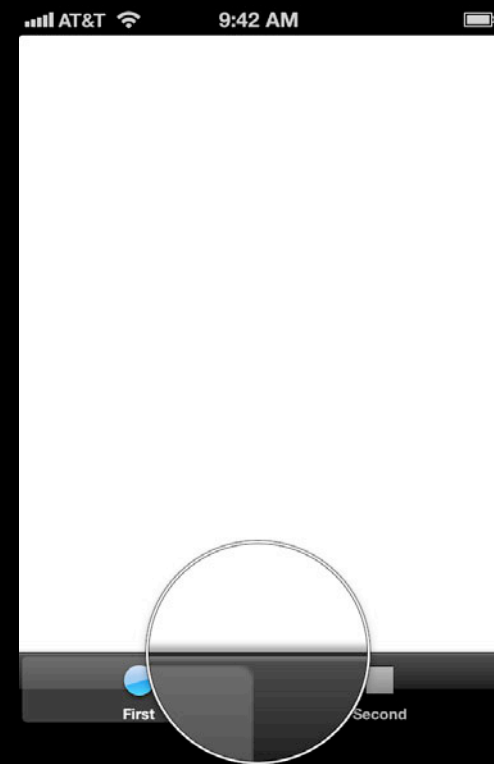
UINavigationController



UIToolbar

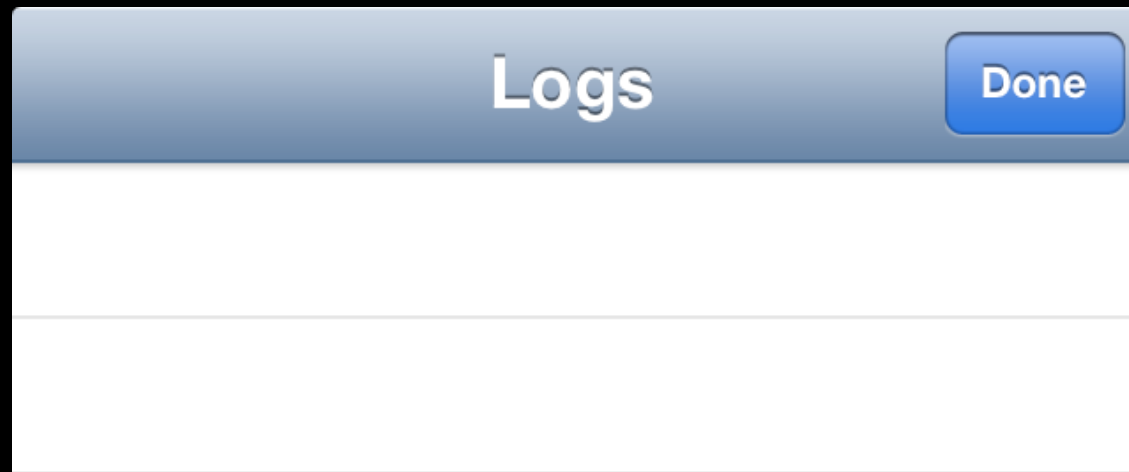


UITabBar



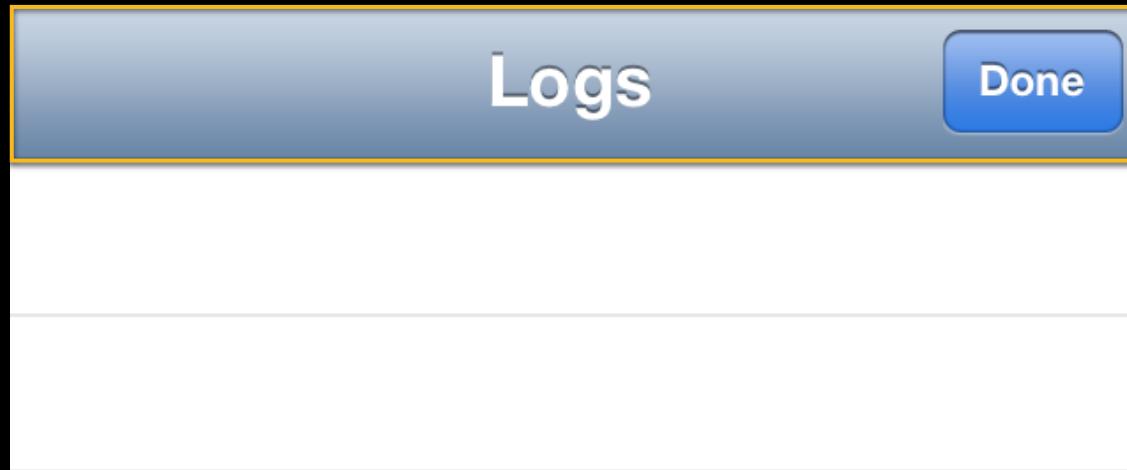
General Tips

Shadows



General Tips

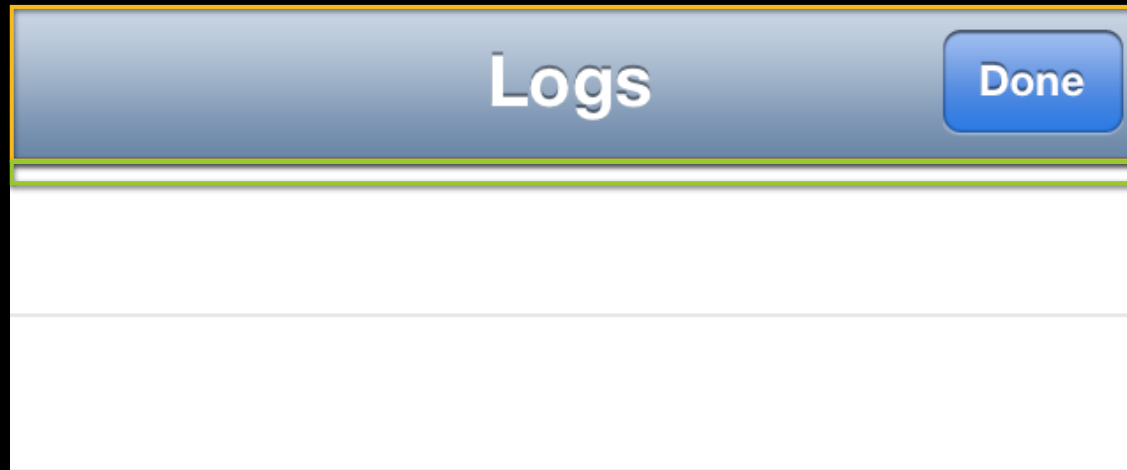
Shadows



Navigation Bar's
Bounds

General Tips

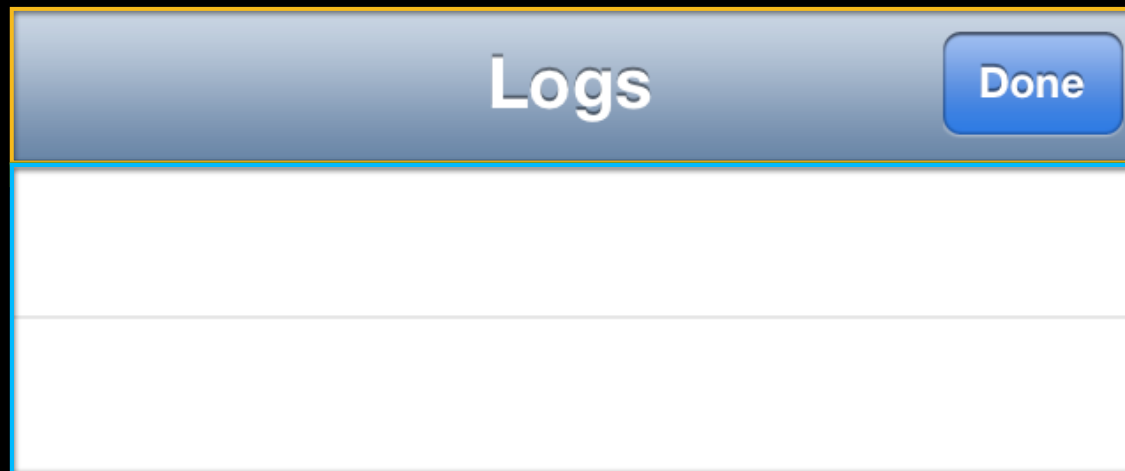
Shadows



Navigation Bar's
Bounds
Shadow

General Tips

Shadows



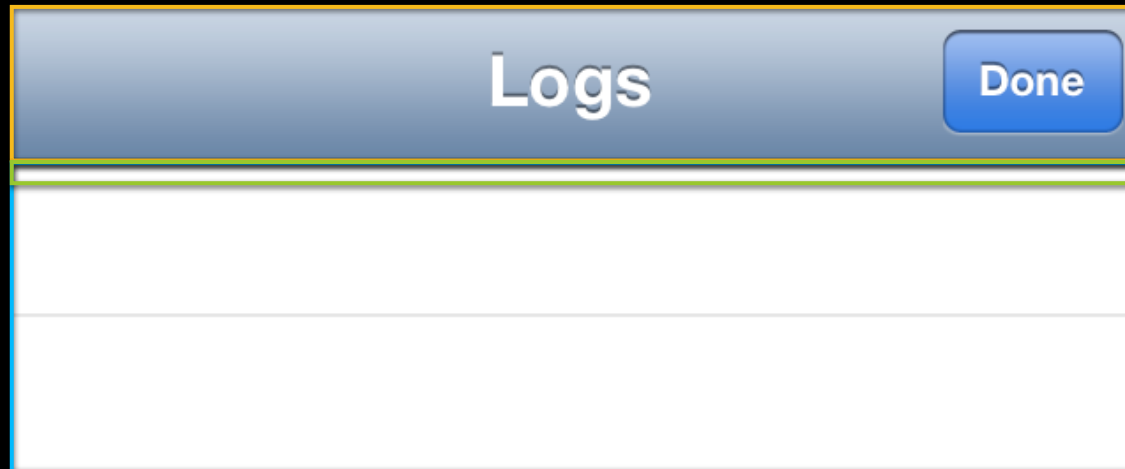
Navigation Bar's
Bounds

Shadow

Content

General Tips

Shadows



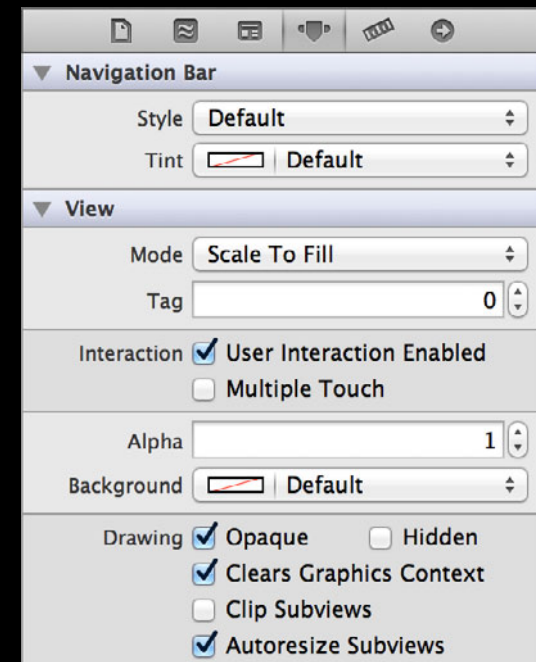
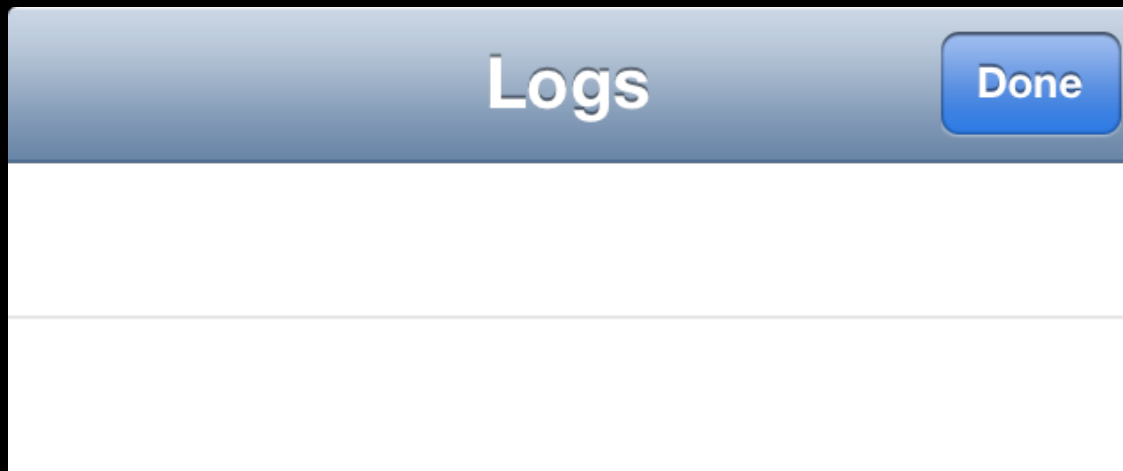
Navigation Bar's
Bounds

Shadow

Content

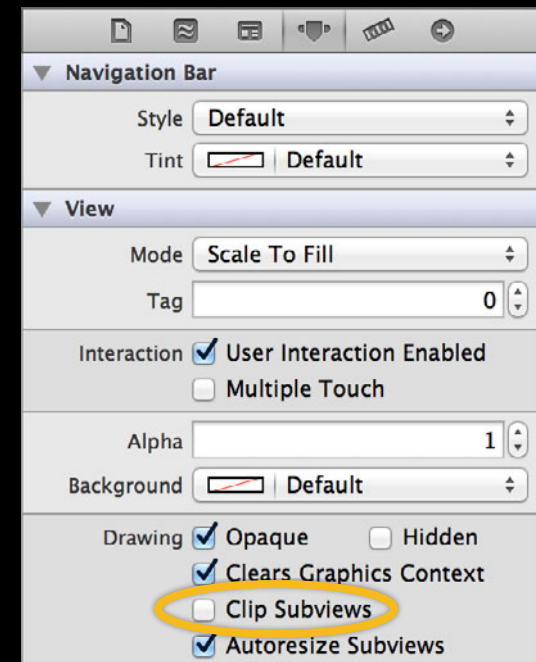
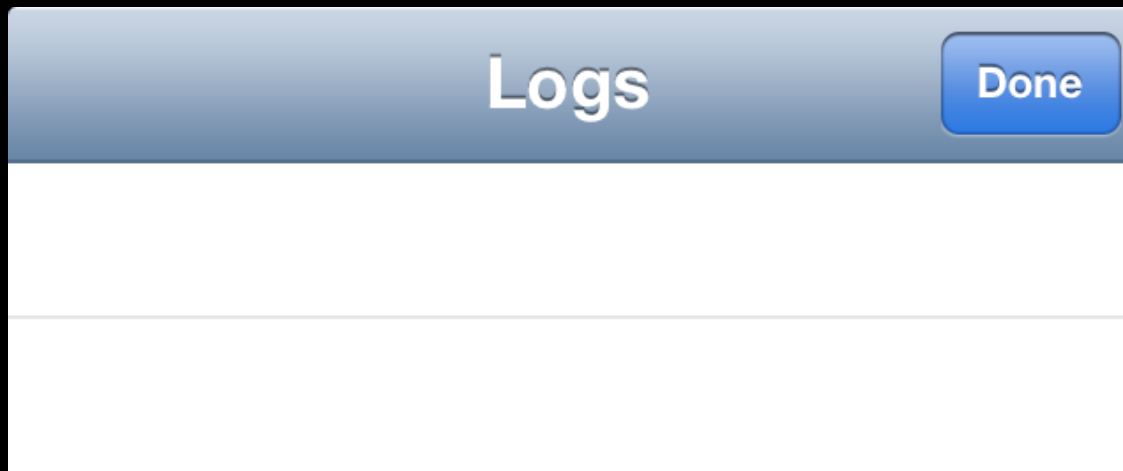
General Tips

Shadows



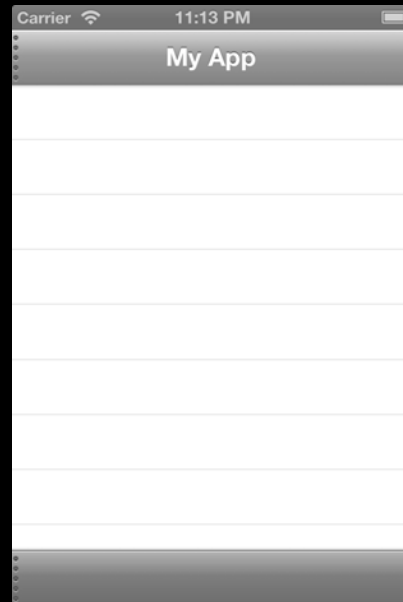
General Tips

Shadows



General Tips

UINavigationController

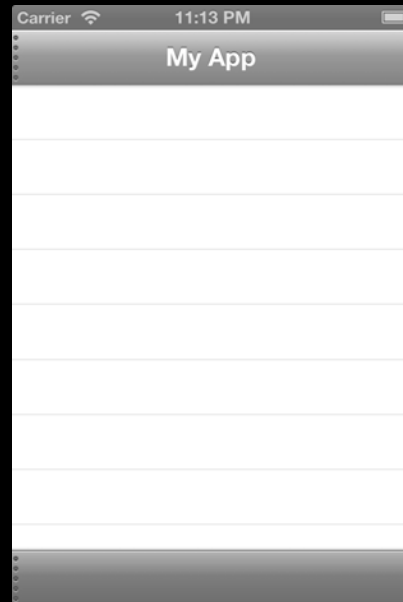


General Tips

UINavigationController



```
- (instancetype)initWithNavigationBarClass:(Class)navigationBarClass  
toolbarClass:(Class)toolbarClass
```

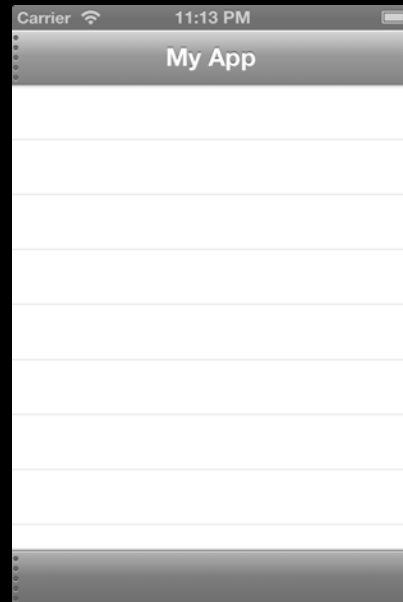


General Tips

UINavigationController



```
- (instancetype)initWithNavigationBarClass:(Class)navigationBarClass  
toolbarClass:(Class)toolbarClass  
NS_AVAILABLE_IOS(5_0);
```



Customizing

Customizing

UIButton



Customizing

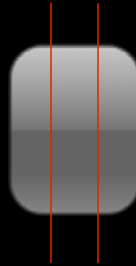
UIButton



Activate

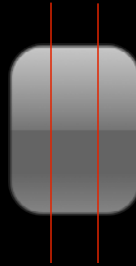


Customizing UIButton



Activate

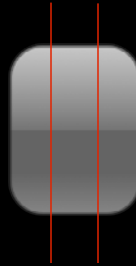
Customizing UIButton



Activate

```
- (void) setBackgroundImage: (UIImage *) backgroundImage  
    forState: (UIControlState) state;
```

Customizing UIButton



Activate

- (void) **setBackgroundImage:** (UIImage *)backgroundImage
 forState: (UIControlState)state;
- (void) **setImage:** (UIImage *)backgroundImage
 forState: (UIControlState)state;
- (void) **setTitle:** (UIImage *)backgroundImage
 forState: (UIControlState)state;



Customizing UIControlState

Customizing UIControlState




UIControlStateNormal







Customizing UIControlState

UIControlStateNormal	
UIControlStateHighlighted	






Customizing UIControlState

<code>UIControlStateNormal</code>	
<code>UIControlStateHighlighted</code>	
<code>UIControlStateDisabled</code>	

Customizing UIControlState

<code>UIControlStateNormal</code>	
<code>UIControlStateHighlighted</code>	
<code>UIControlStateDisabled</code>	
<code>UIControlStateSelected</code>	

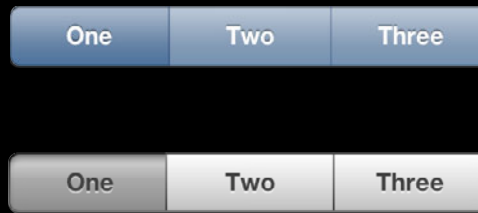
Customizing UIControlState

<code>UIControlStateNormal</code>	
<code>UIControlStateHighlighted</code>	
<code>UIControlStateDisabled</code>	
<code>UIControlStateSelected</code>	
<code>UIControlStateHighlighted UIControlStateSelected</code>	

Customizing UISegmentedControl



Customizing UISegmentedControl



Customizing UISegmentedControl



backgroundImageForState:barMetrics:
`UIControlStateSelected`



backgroundImageForState:barMetrics:
`UIControlStateNormal`

Customizing UISegmentedControl



```
backgroundImageForState:barMetrics:  
    UIControlStateSelected
```



```
backgroundImageForState:barMetrics:  
    UIControlStateNormal
```

```
dividerImageForLeftSegmentState:rightSegmentState:barMetrics:
```

Customizing UIStepper



Customizing UIStepper



Customizing UIStepper



`decrementImageForState:`

`incrementImageForState:`



Customizing UIStepper



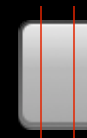
`decrementImageForState:`



`incrementImageForState:`

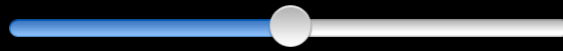


`dividerImageForLeftSegmentState:rightSegmentState:`

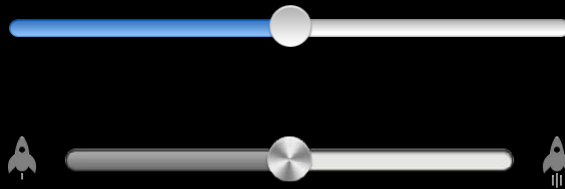


`backgroundImageForState:`

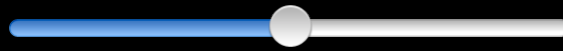
Customizing UISlider



Customizing UISlider



Customizing UISlider



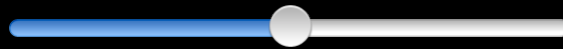
`minimumValueImage`



`maximumValueImage`



Customizing UISlider



`minimumValueImage`



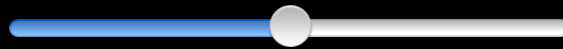
`thumbImageForState:`



`maximumValueImage`



Customizing UISlider



`minimumValueImage`



`thumbImageForState:`



`maximumValueImage`



`minimumTrackImageForState:`

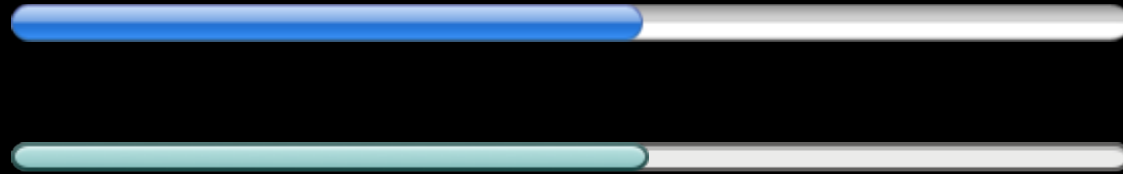


`maximumTrackImageForState:`

Customizing UIProgressView



Customizing UIProgressView



Customizing UIProgressView



trackImage



Customizing UIProgressView



trackImage



progressImage



Customizing UIProgressView



trackImage



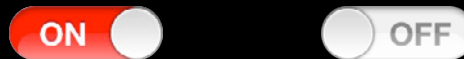
progressImage



Customizing UISwitch

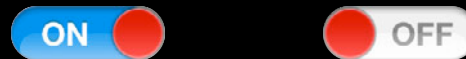


Customizing UISwitch



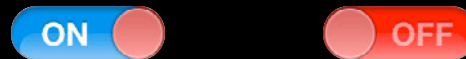
```
[switch setOnTintColor:[UIColor redColor]];
```

Customizing UISwitch



```
[switch setThumbTintColor:[UIColor redColor]];
```

Customizing UISwitch



```
[switch setTintColor:[UIColor redColor]];
```

Customizing UISwitch

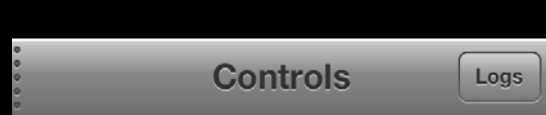


```
[switch setOnImage:onImage];  
[switch setOffImage:offImage];
```


Customizing UINavigationController



Customizing UINavigationController



Customizing UINavigationController



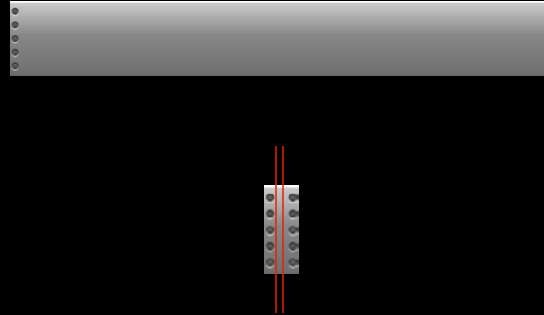
Customizing UINavigationController



Customizing UINavigationController

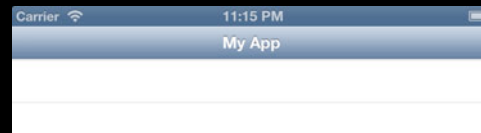
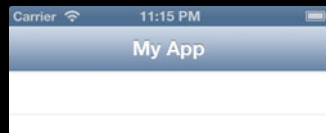


Customizing UINavigationController



```
[bar setBackgroundImage:img forBarMetrics:UIBarMetricsDefault];
```

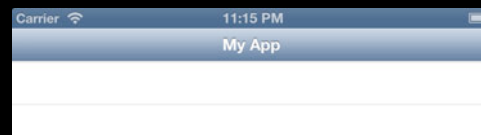
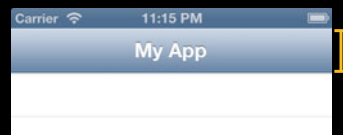
Customizing UIBarMetrics



Customizing UIBarMetrics

UIBarMetricsDefault

44pt

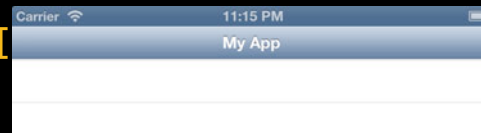
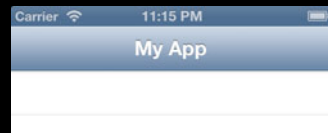


Customizing UIBarMetrics

UIBarMetricsDefault

UIBarMetricsLandscapePhone

44pt



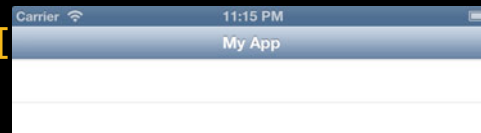
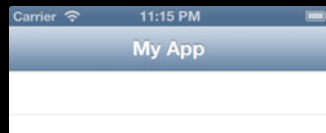
32pt

Customizing UIBarMetrics

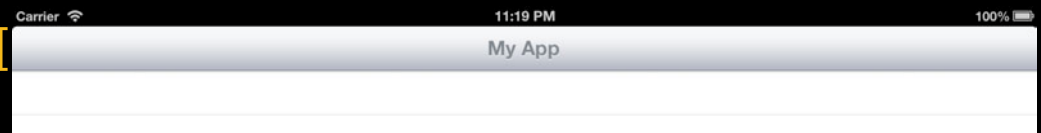
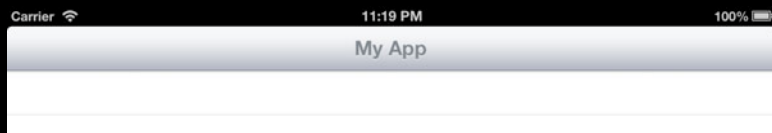
UIBarMetricsDefault

UIBarMetricsLandscapePhone

44pt



32pt

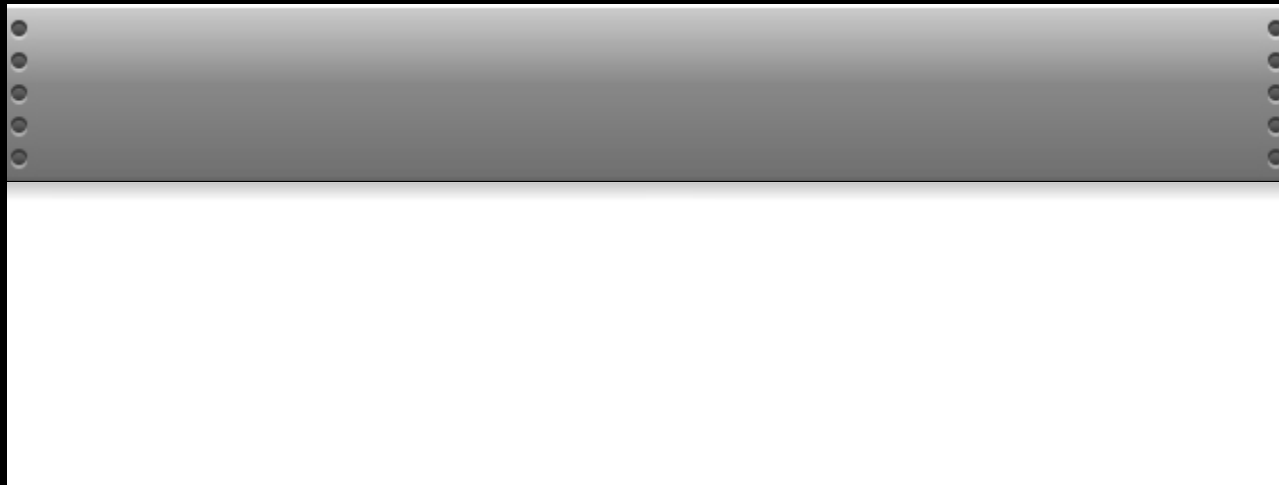


UIBarMetricsDefault

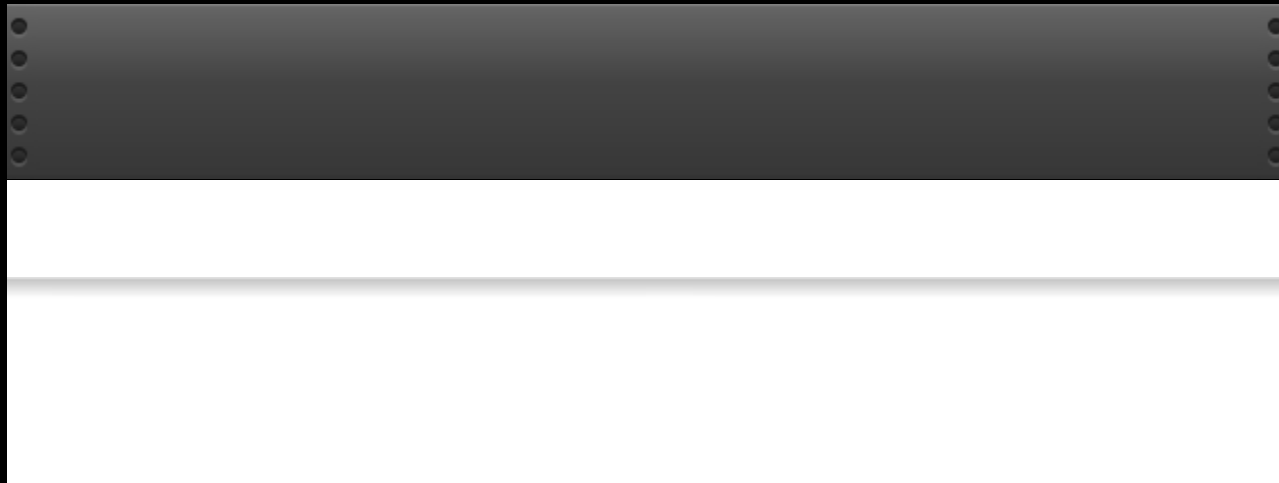
44pt

UIBarMetricsDefault

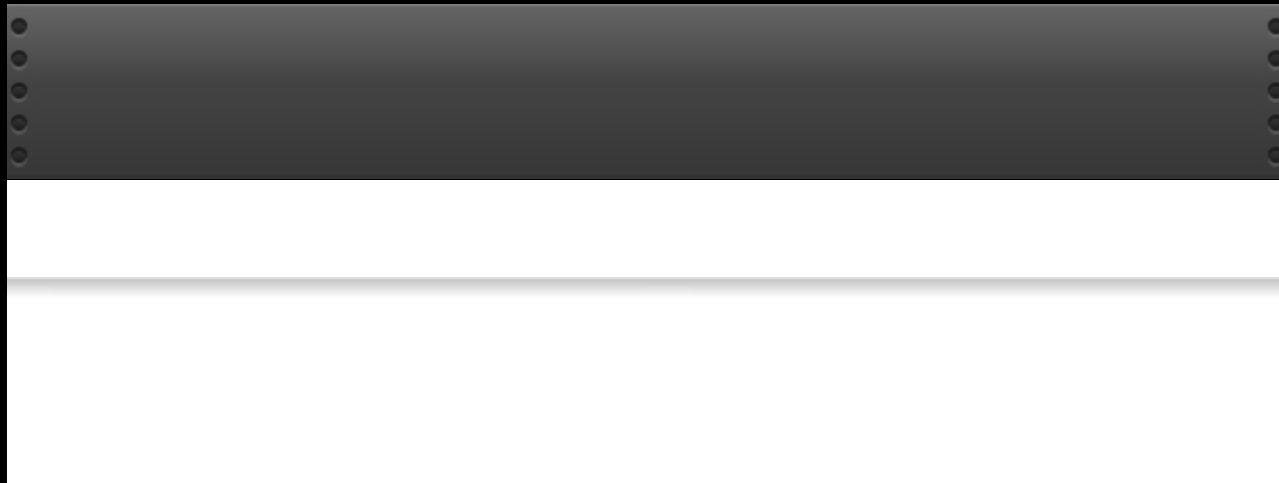
Customizing Shadow



Customizing Shadow

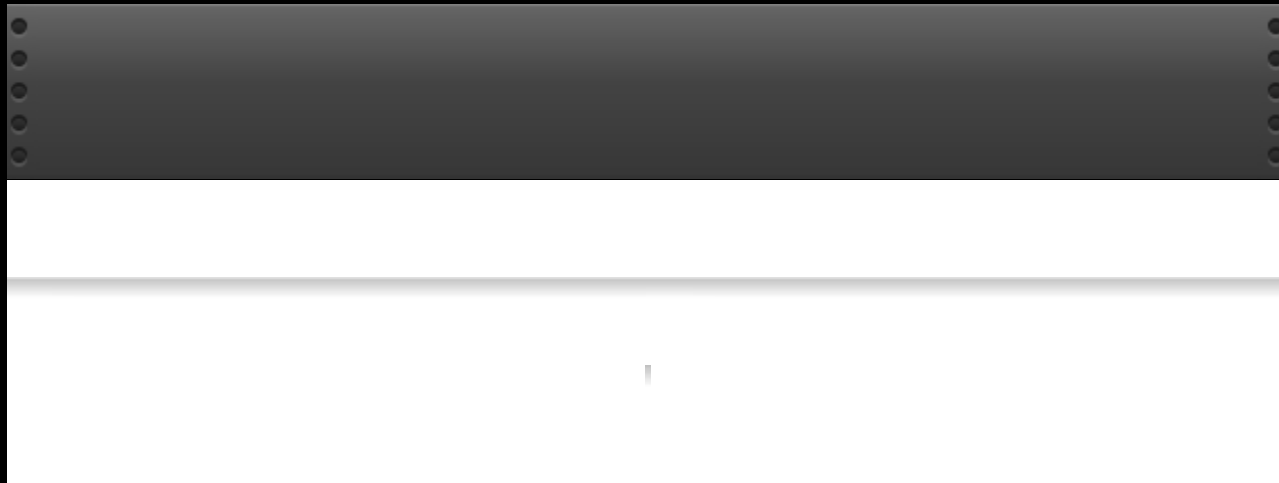


Customizing Shadow



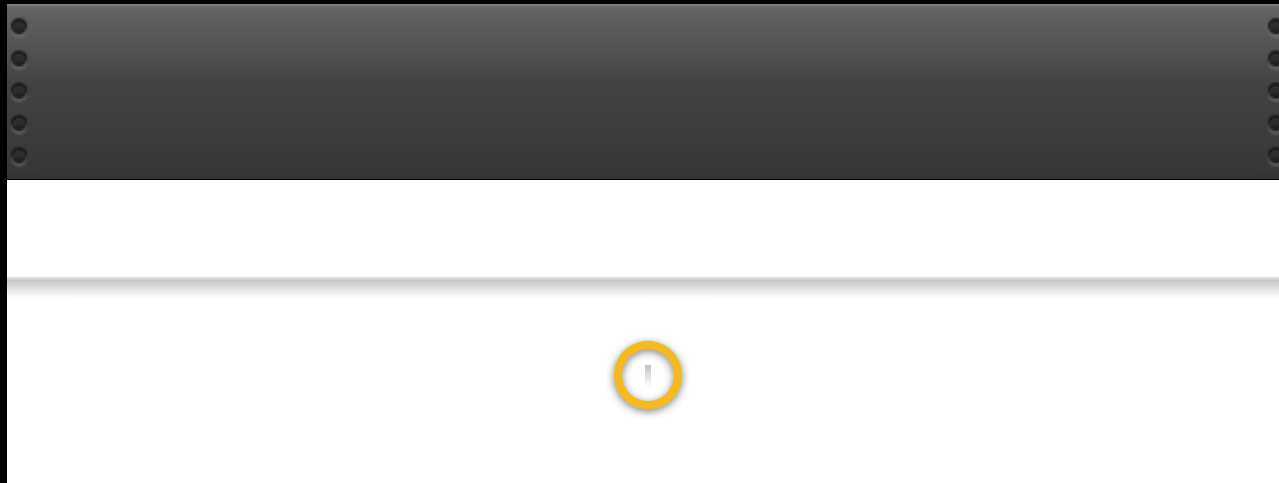
```
[bar setShadowImage:img];
```

Customizing Shadow



```
[bar setBackgroundImage:img];
```

Customizing Shadow



```
[bar setShadowImage:img];
```

Customizing

Title text



Customizing

Title text



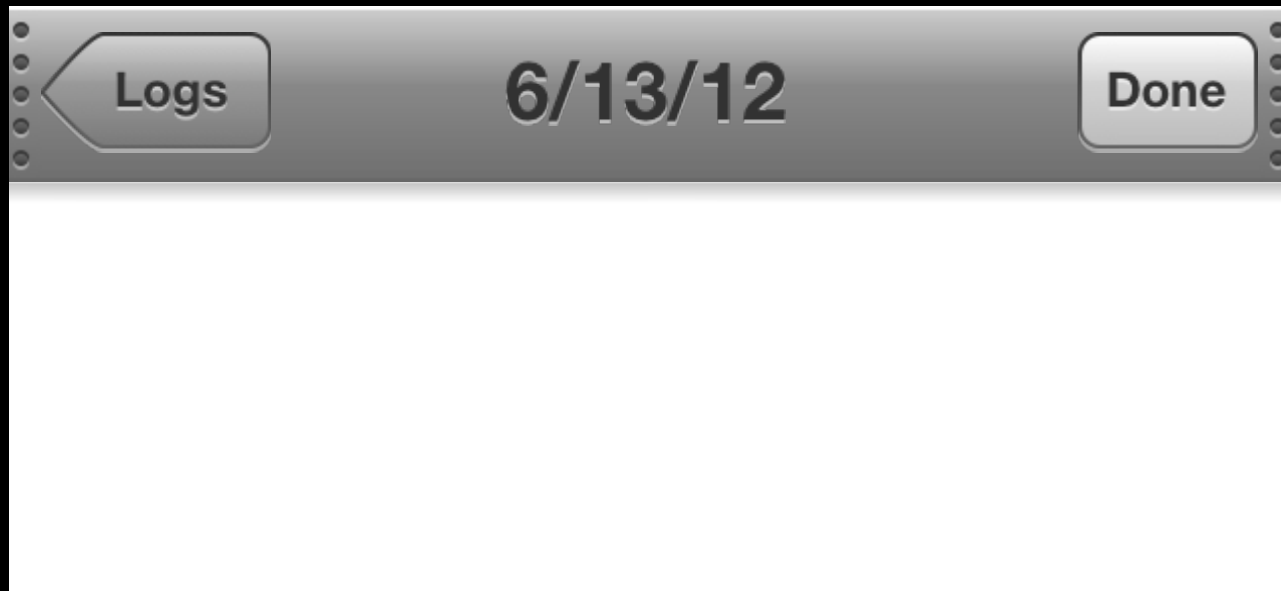
Customizing

Title text

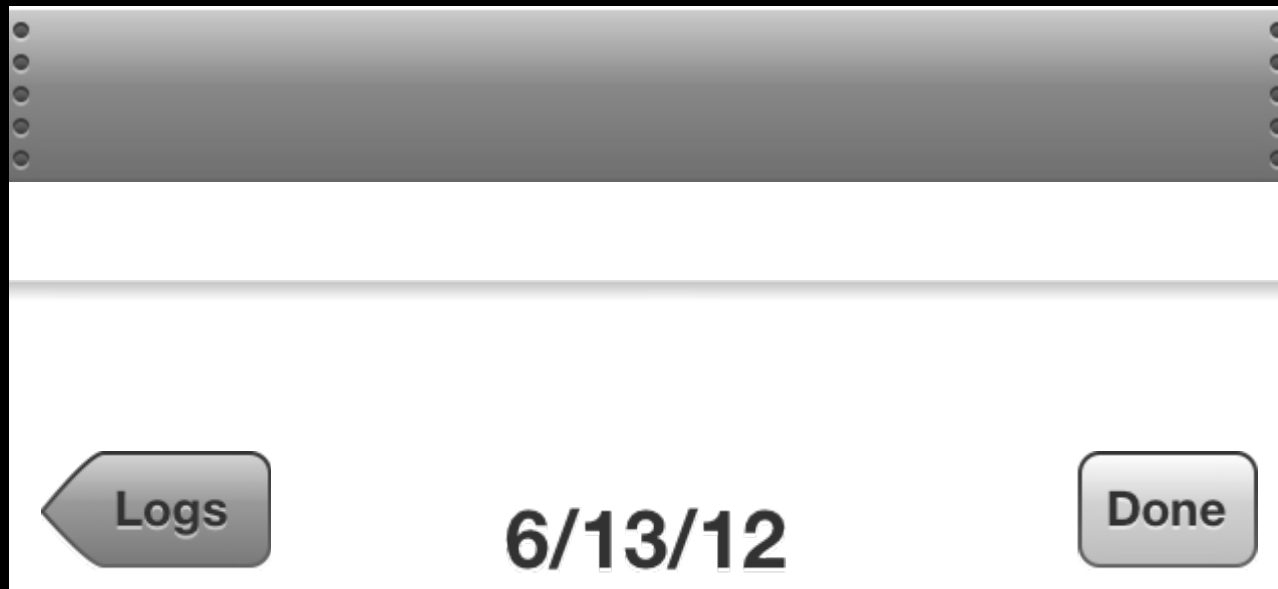


```
NSDictionary *atts = @{
    UIFontAttributeFont : font,
    UITextAttributeTextColor : textColor,
    UITextAttributeTextShadowColor : shadowColor
};
[bar setTitleTextAttributes:atts];
```

Customizing Navigation bar

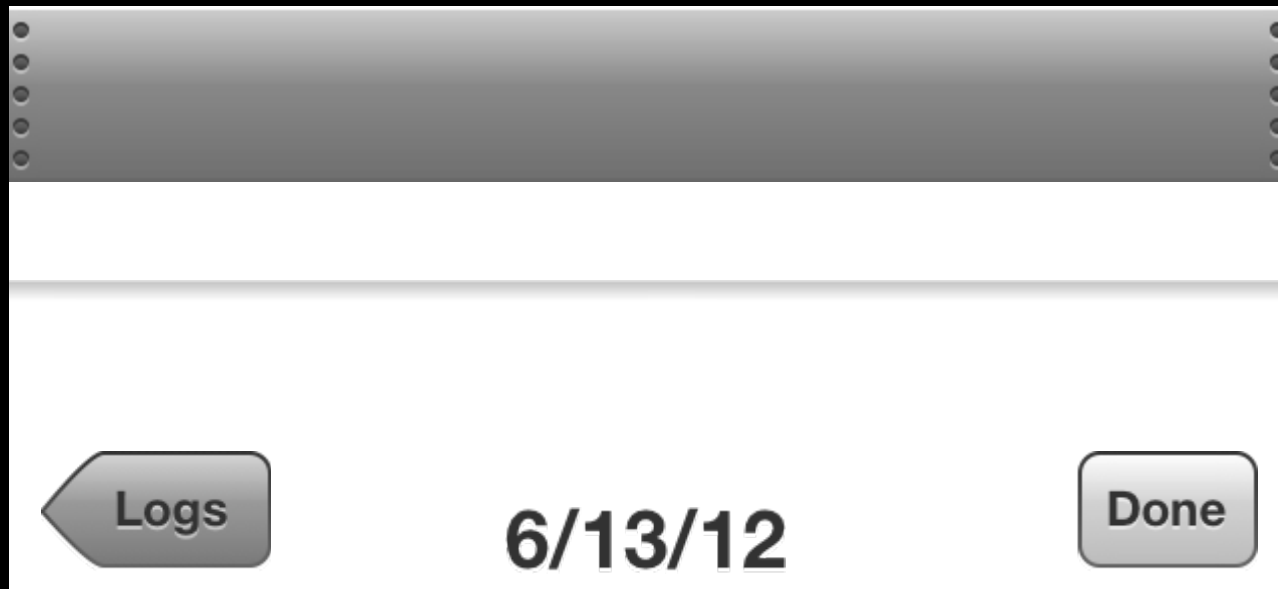


Customizing Navigation bar



Customizing Navigation bar

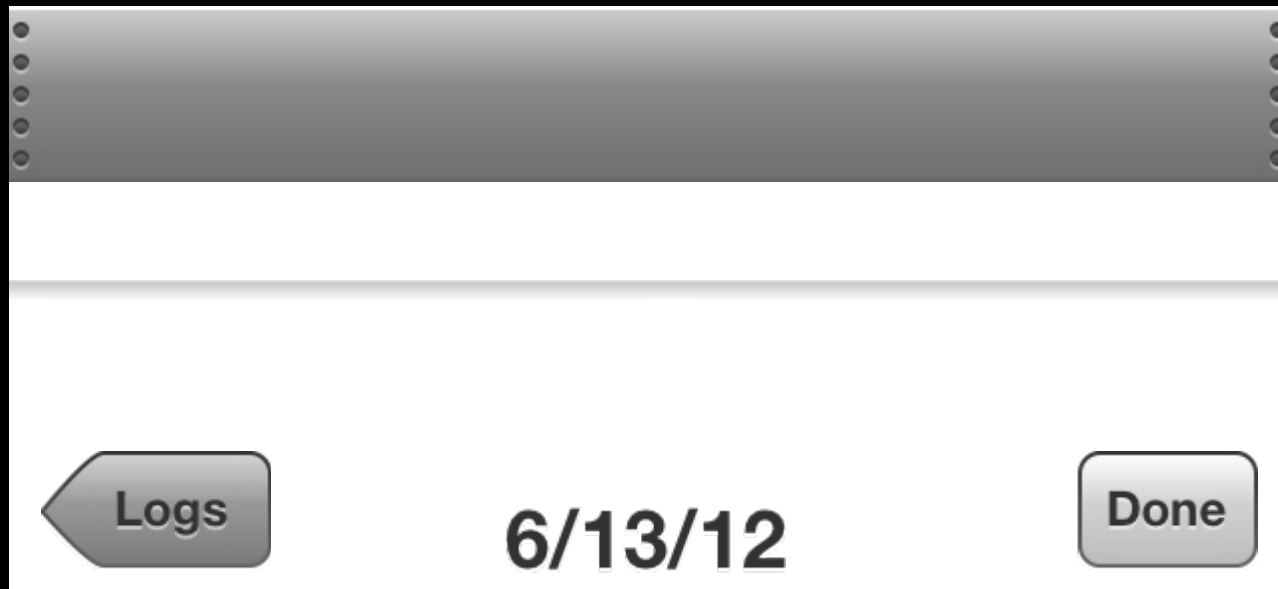
`backgroundImageForBarMetrics:`



Customizing Navigation bar

`backgroundImageForBarMetrics:`

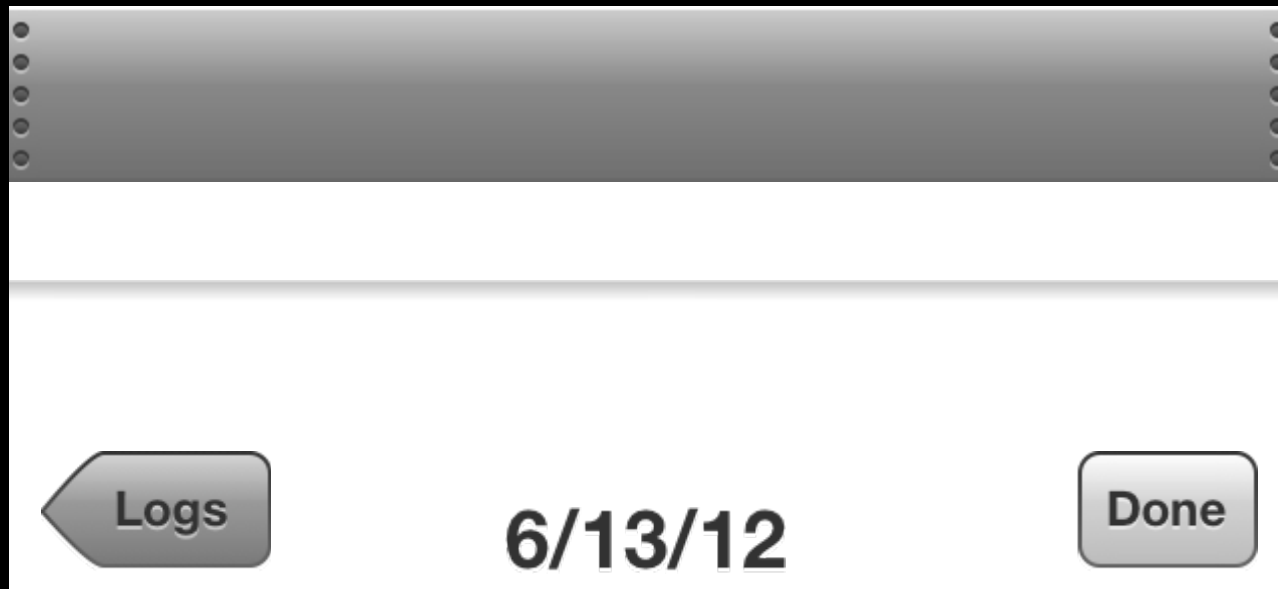
`shadowImage`



Customizing Navigation bar

`backgroundImageForBarMetrics:`

`shadowImage`

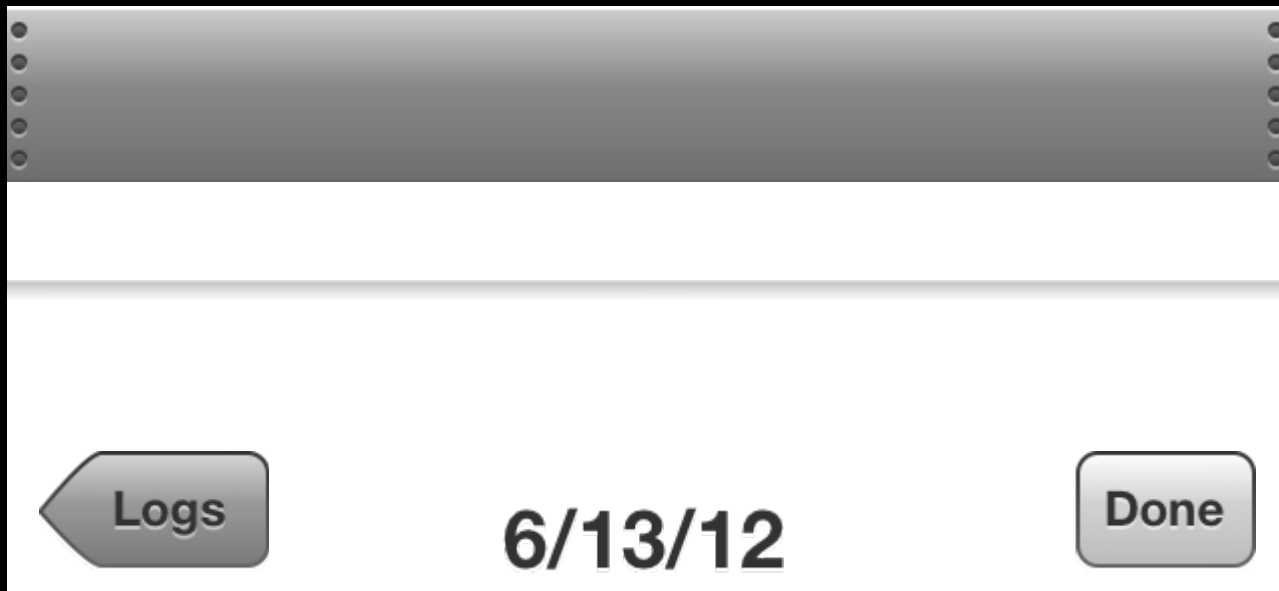


`titleTextAttributes`

Customizing Navigation bar

`backgroundImageForBarMetrics:`

`shadowImage`



`UIBarButtonItem`

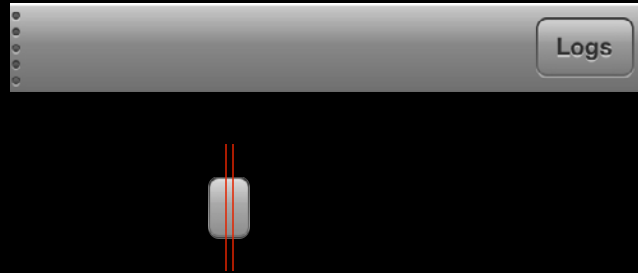
`titleTextAttributes`

`UIBarButtonItem`

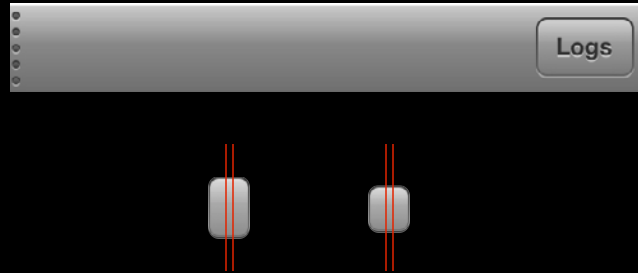
Customizing UIBarButtonItem



Customizing UIBarButtonItem



Customizing UIBarButtonItem



Customizing UIBarButtonItem



30pt  24pt 

Customizing UIBarButtonItem



30pt   24pt

```
[item setBackgroundImage:img forState:UIControlStateNormal  
barMetrics:UIBarMetricsDefault];  
[item setBackgroundImage:img forState:UIControlStateNormal  
barMetrics:UIBarMetricsLandscapePhone];
```

Customizing Done items



UIBarButtonItemStyleBordered



UIBarButtonItemStyleDone

Customizing Done items



UIBarButtonItemStyleBordered



UIBarButtonItemStyleDone

```
[appearance setBackgroundImage:img forState:UIControlStateNormal  
style:UIBarButtonItemStyleBordered barMetrics:UIBarMetricsDefault];  
[appearance setBackgroundImage:doneImg forState:UIControlStateNormal  
style:UIBarButtonItemStyleDone barMetrics:UIBarMetricsDefault];
```

Customizing Back item

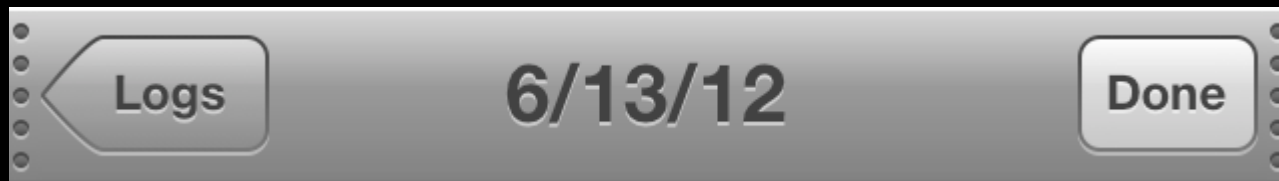


Customizing Back item



```
[item setBackButtonBackgroundImage:img forState:UIControlStateNormal  
barMetrics:UIBarMetricsDefault];
```

Customizing Positioning

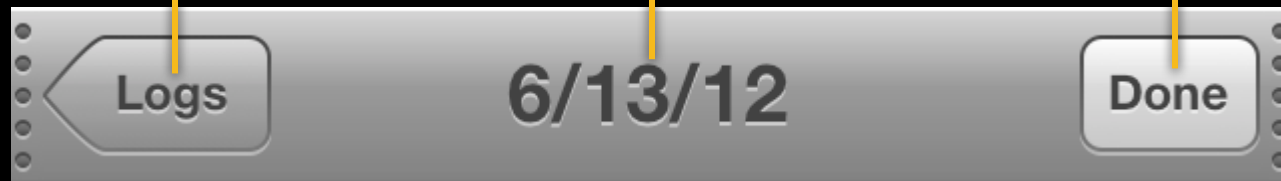


Customizing Positioning

`backButtonTitlePositionAdjustmentForBarMetrics:`

`titleVerticalPositionAdjustmentForBarMetrics:`

`titlePositionAdjustmentForBarMetrics:`

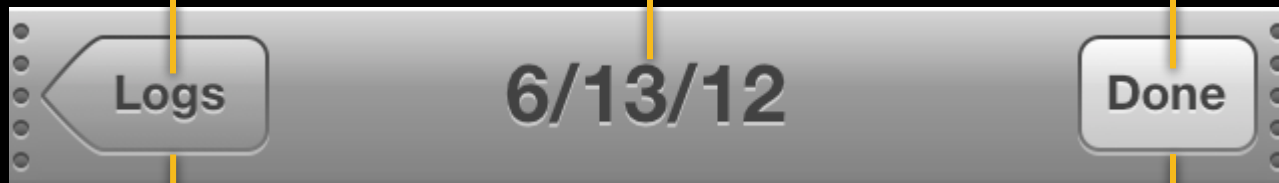


Customizing Positioning

`backButtonTitlePositionAdjustmentForBarMetrics:`

`titleVerticalPositionAdjustmentForBarMetrics:`

`titlePositionAdjustmentForBarMetrics:`



`backgroundVerticalPositionAdjustmentForBarMetrics:`

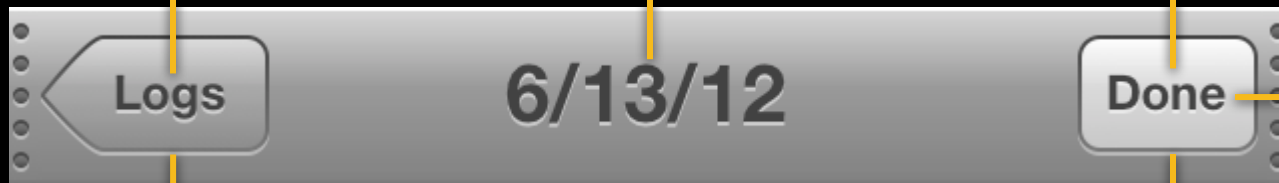
`backButtonBackgroundVerticalPositionAdjustmentForBarMetrics:`

Customizing Positioning

`backButtonTitlePositionAdjustmentForBarMetrics:`

`titleVerticalPositionAdjustmentForBarMetrics:`

`titlePositionAdjustmentForBarMetrics:`



`imageInsets`

`backgroundVerticalPositionAdjustmentForBarMetrics:`

`backButtonBackgroundVerticalPositionAdjustmentForBarMetrics:`

Customizing UIToolbar



Customizing UIToolbar



- (void) setBackgroundImage: (UIImage *) backgroundImage
forToolbarPosition: (UIToolbarPosition) topOrBottom
barMetrics: (UIBarMetrics) barMetrics;
- (void) setShadowImage: (UIImage *) image
forToolbarPosition: (UIToolbarPosition) pos;

Customizing Toolbar items



Customizing Toolbar items

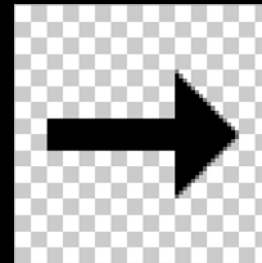


UIBarButtonItemStylePlain

Customizing Toolbar items



UIBarButtonItemStylePlain

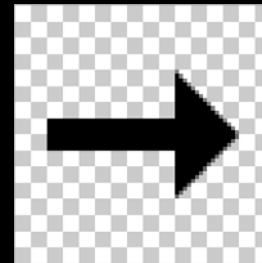


Customizing Toolbar items

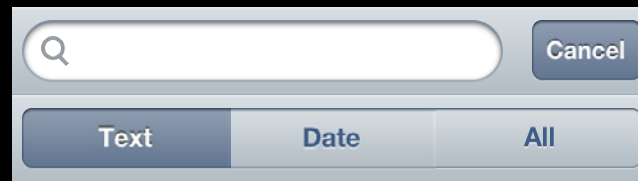


UIBarButtonItemStylePlain

```
[toolbar setTintColor:greenColor];  
[item setTintColor:yellowColor];
```



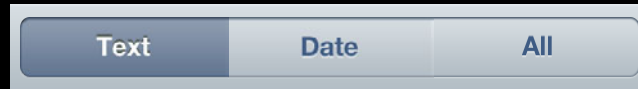
Customizing UISearchBar



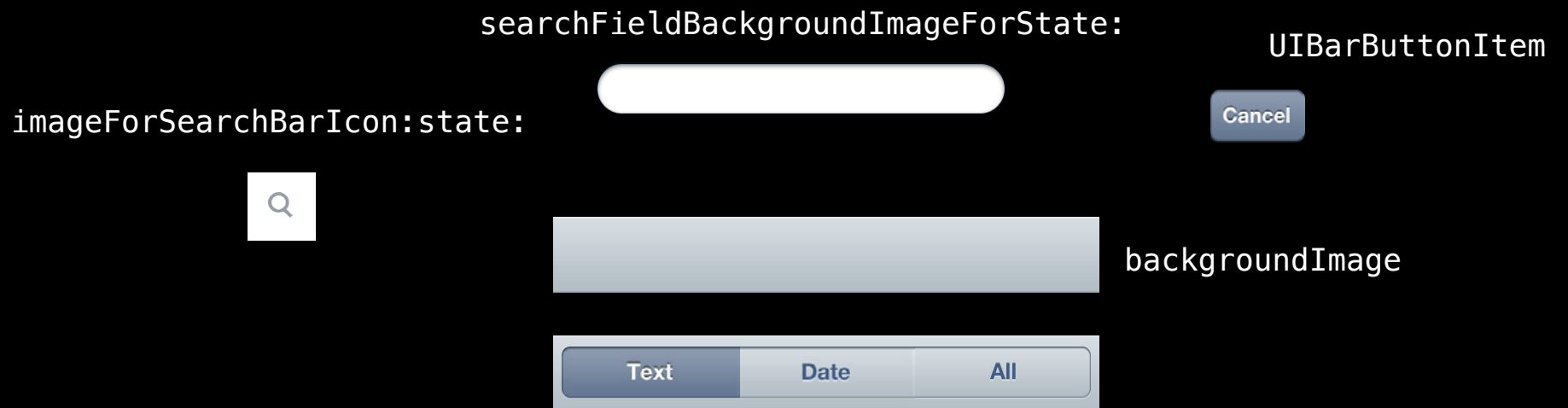
Customizing UISearchBar



Cancel



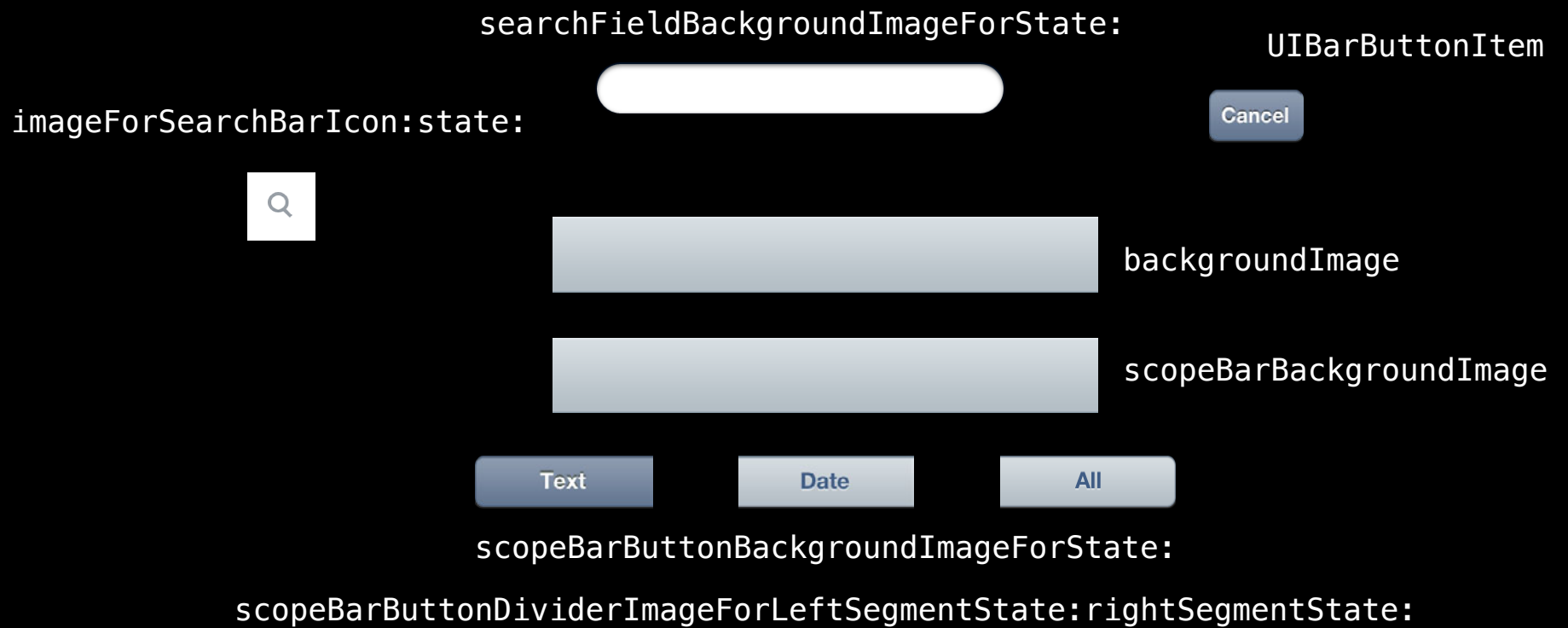
Customizing UISearchBar



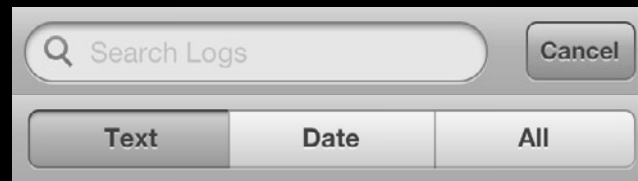
Customizing UISearchBar



Customizing UISearchBar



Customizing UISearchBar



Customizing UITabBar



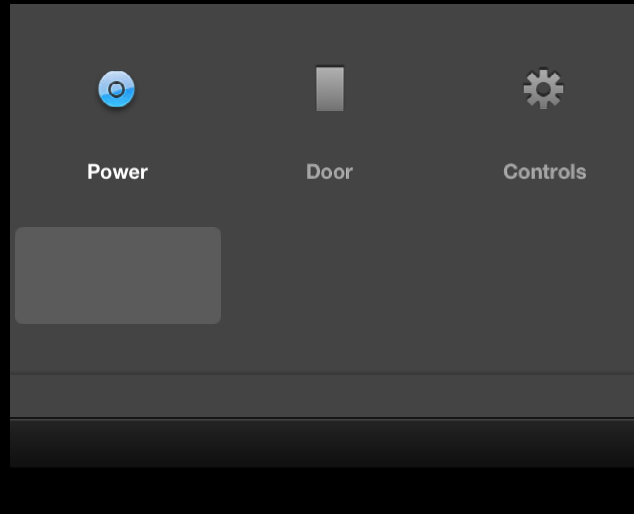
Customizing UITabBar

UITabBar

selectionIndicatorImage

shadowImage

backgroundImage



UITabBarItem

image

title

titleTextAttributesForState:

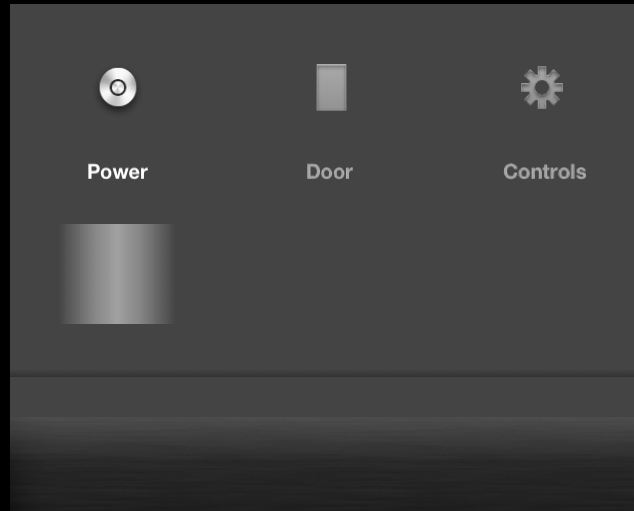
Customizing UITabBar

UITabBar

selectionIndicatorImage

shadowImage

backgroundImage



UITabBarItem

image

title

titleTextAttributesForState:

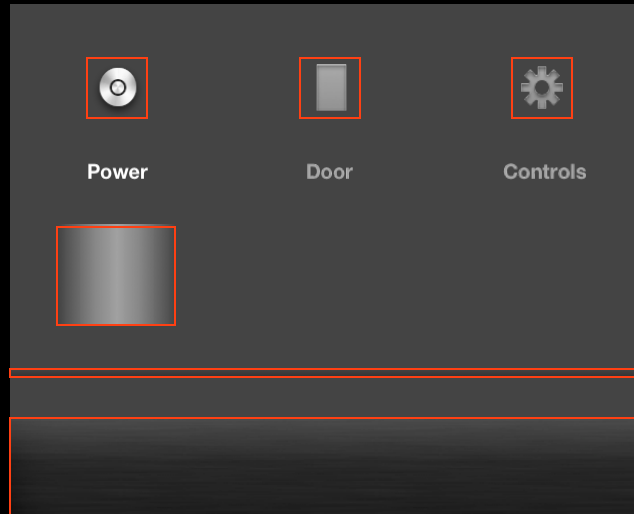
Customizing UITabBar

UITabBar

selectionIndicatorImage

shadowImage

backgroundImage



UITabBarItem

image

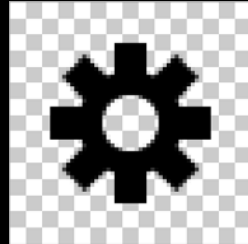
title

titleTextAttributesForState:

Customizing UITabBar

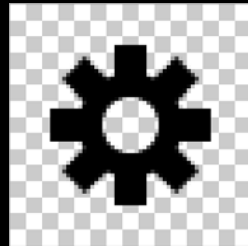


Customizing UITabBarItem



Source

Customizing UITabBarItem

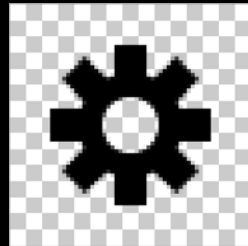


Source



Unselected

Customizing UITabBarItem



Source

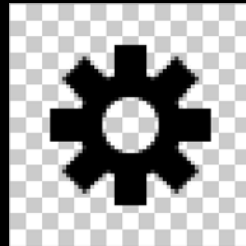


Unselected



Selected

Customizing UITabBarItem



Source



Unselected



Selected

```
[tabBar setTintColor:greenColor];  
[tabBar setSelectedImageTintColor:yellowColor];
```

Customizing UITabBarItem



Unselected



Selected

Customizing UITabBarItem



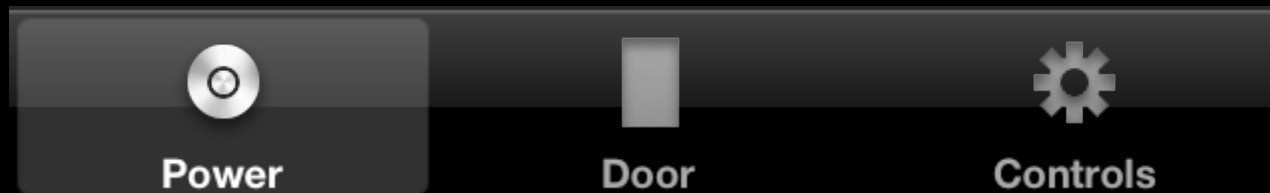
Unselected



Selected

```
[tabBarItem setFinishedSelectedImage:selectedImage  
withFinishedUnselectedImage:unselectedImage];
```

Customizing UITabBarItem



```
[tabBarItem setFinishedSelectedImage:selectedImage  
withFinishedUnselectedImage:unselectedImage];
```

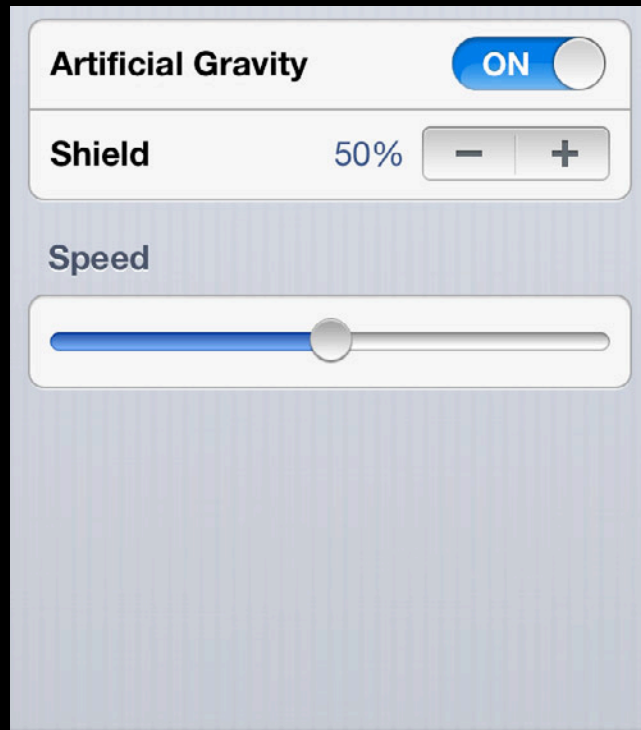
Customizing UITableView



Customizing UITableView



Customizing UITableView

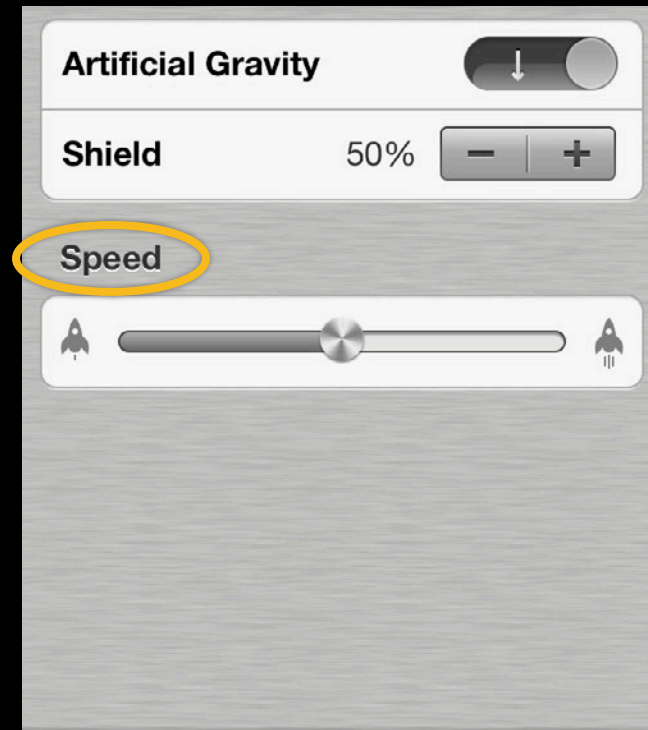


```
[tableView setBackgroundView:customView];
```


Customizing UITableView



Customizing UITableView



Customizing UITableView



UITableViewHeaderFooterView

Customizing UITableView



Demo

Find My Friends

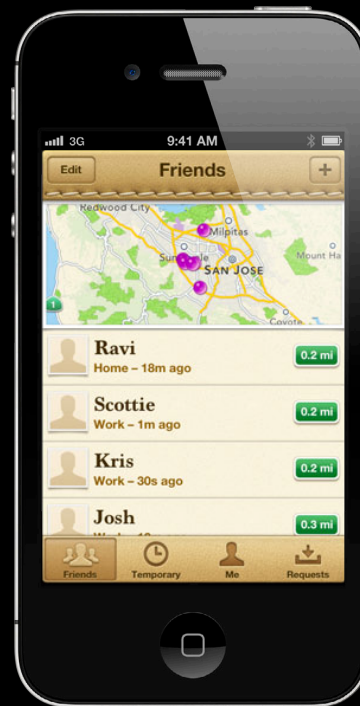
Scott Lopatin
Senior Software Engineer

Overview

- Find My Friends skinned look
- Code organization tips
- Specific UI elements

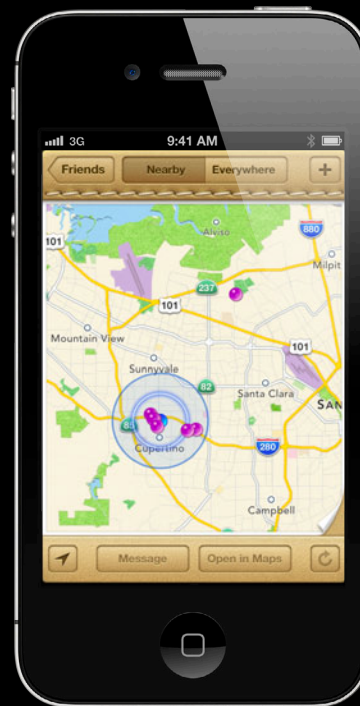
Overview

Find My Friends skinned look



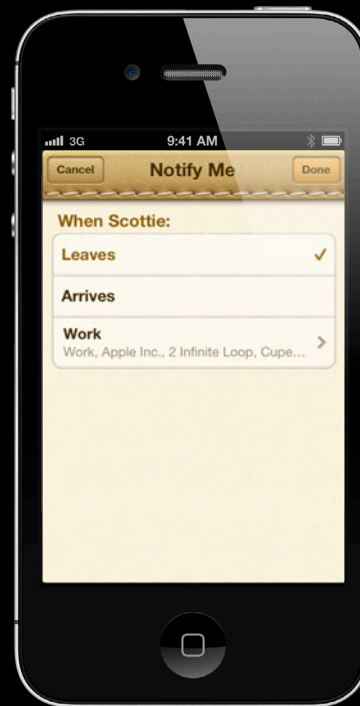
Overview

Find My Friends skinned look



Overview

Find My Friends skinned look



Overview

Find My Friends skinned look

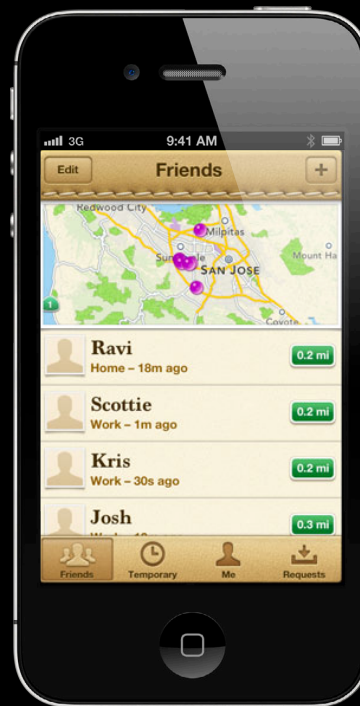
Overview

Find My Friends skinned look



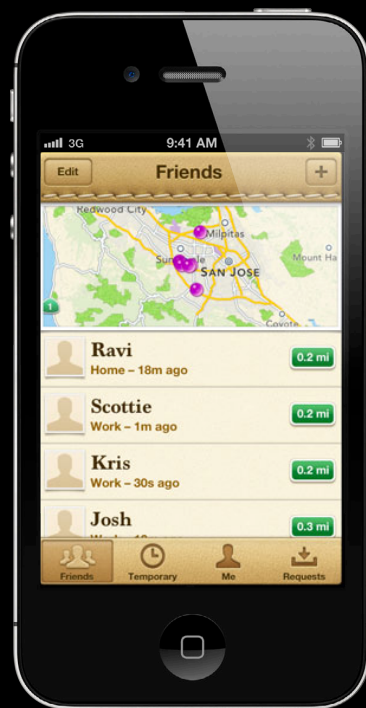
Overview

Find My Friends skinned look



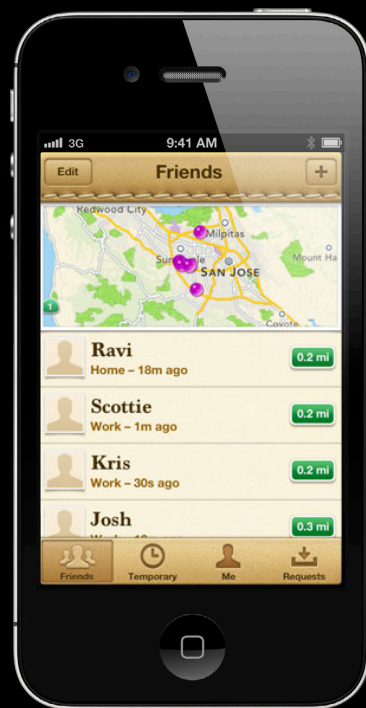
Overview

Find My Friends skinned look



Overview

Find My Friends skinned look



Overview

Find My Friends skinned look



Overview

Find My Friends skinned look



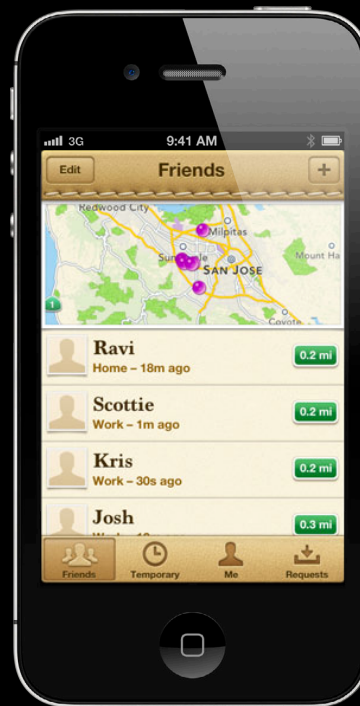
Overview

Find My Friends skinned look



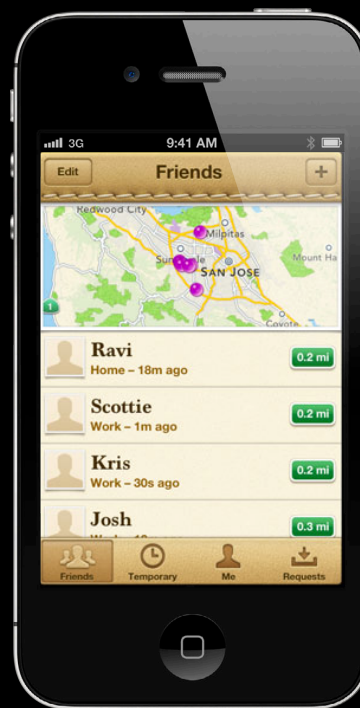
Overview

Find My Friends skinned look



Overview

Find My Friends skinned look



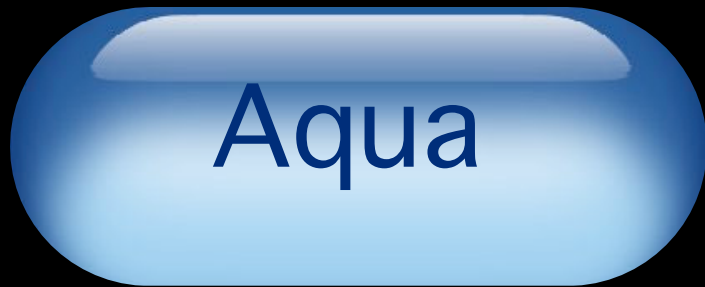
Overview

Find My Friends skinned look



Overview

Find My Friends skinned look



2001



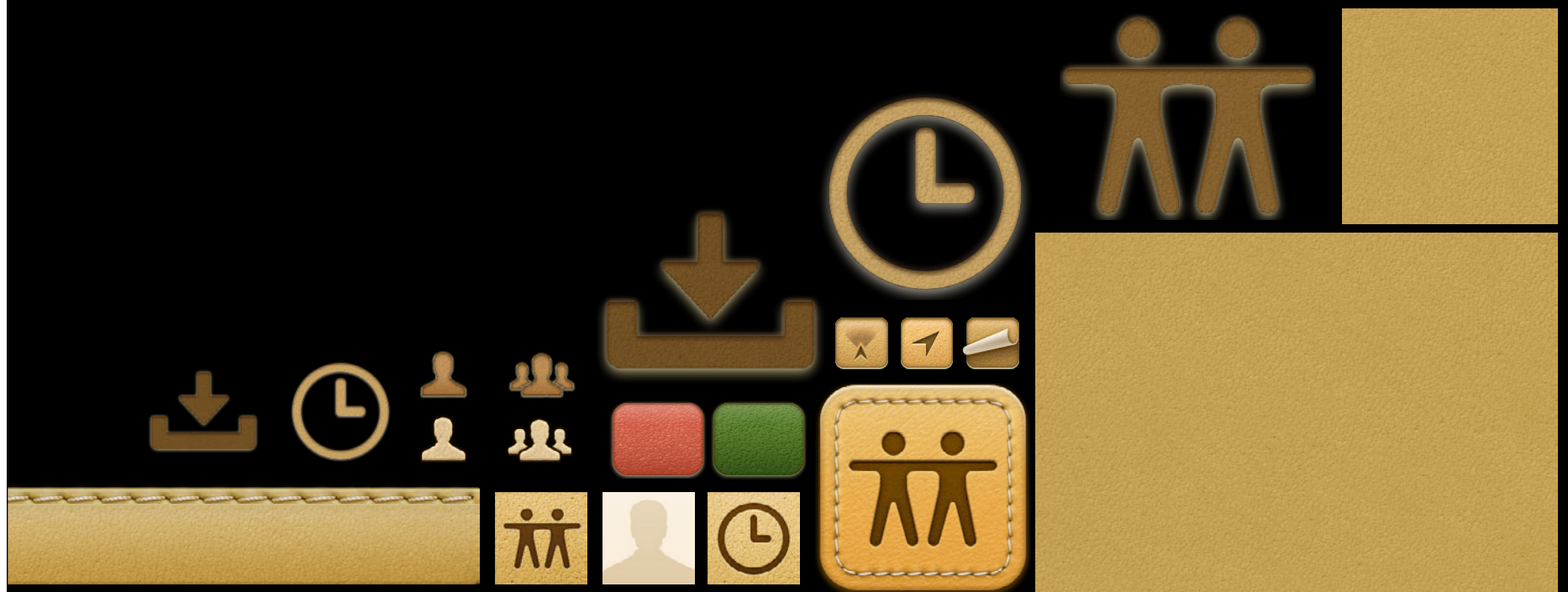
2012

Overview

Find My Friends skinned look

Overview

Find My Friends skinned look



Overview

Overview

Theme

Overview

?

Code Organization Tips

Code Organization Tips

Theme

@protocol

Code Organization Tips

Theme

@protocol

Code Organization Tips

Theme

@protocol

Code Organization Tips

Theme

@protocol

```
@protocol FMUITheme <NSObject>

- (UIColor *)mainTitleColor;
- (UIColor *)secondaryTitleColor;
- (UIImage *)navBarPortraitImage;
- (UIFont *)titleTextFont;

...
@end
```


Code Organization Tips

Theme

```
@protocol FMUITheme <NSObject>

- (UIColor *)mainTitleColor;
- (UIColor *)secondaryTitleColor;
- (UIImage *)navBarPortraitImage;
- (UIFont *)titleTextFont;
...
@end
```

Code Organization Tips

Theme

@protocol

Theme



Code Organization Tips

Theme

@protocol

Theme

Leather<Theme>



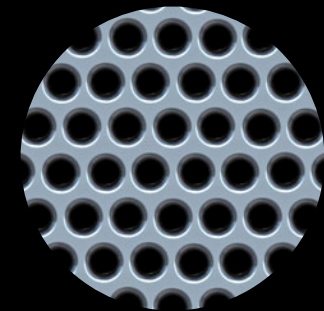
Code Organization Tips

Theme

@protocol

Theme

Metal<Theme>



Code Organization Tips

Theme

@protocol

Theme

CandyLand<Theme>



Code Organization Tips

Theme

Theme

+ (id <Theme>)currentTheme;



Code Organization Tips

Theme

Theme

+ (id <Theme>)currentTheme;



[Theme currentTheme]

Code Organization Tips

Theme

Theme



Code Organization Tips

Theme

Theme



Code Organization Tips

Theme

Theme



```
typedef enum {  
    FMFButtonTypeNormal,  
    FMFButtonTypeDefault,  
    FMFButtonTypeAddFriend,  
    FMFButtonTypeRefresh,  
    FMFButtonTypeLeather  
} FMFButtonType;
```

Code Organization Tips

Theme

Theme



Code Organization Tips

Theme

```
UIButton *button = nil;  
button = [UIButton buttonWithType:UIButtonTypeCustom];
```

Theme

```
[[Theme currentTheme] themeButton:button  
withType:FMFButtonTypeLeather];
```



Code Organization Tips

Theme

Theme



Code Organization Tips

Theme

Theme



```
@interface Theme
```

```
- (void)themeButton:(UIButton)button  
    withType:(FMFButtonType)type;
```

```
@end
```

Code Organization Tips

Theme

Theme



Code Organization Tips

Theme

Theme



```
@implementation Theme
- (void)themeButton:(UIButton)button
    withType:(FMFButtonType)type
{
    if (type == FMFButtonTypeLeather) {
        UIImage *image =
            [[Theme currentTheme] textureBackground];
        [button setBackgroundImage:image
            forState:UIControlStateNormal];
    }
}
@end
```


Code Organization Tips

Theme

Theme



Code Organization Tips

Theme

Theme



```
@protocol LeatherTheme <NSObject>
```

```
- (UIImage *)buttonImageForState:(UIControlState)state;
```

```
@end
```

```
- (void)themeButton:(UIButton)button
```

```
withType:(FMFButtonType)type
```

```
{
```

```
UIImage *image =
```

```
[theme buttonImageForState:UIControlStateSelected];
```

```
[self setBackgroundImage:image
```

```
forState:UIControlStateSelected];
```

```
...
```

```
}
```


Code Organization Tips

Theme

Theme



Code Organization Tips

Theme

- Common style attributes will apply to many styles

Theme



Code Organization Tips

Theme

- Common style attributes will apply to many styles
- Set these first

Theme



Code Organization Tips

Theme

- Common style attributes will apply to many styles
- Set these first
- Override as needed per style

Theme



Code Organization Tips

Theme

Theme



Code Organization Tips

Theme

- Name image files based on state

Theme



- "btn_normal.png"
- "btn_highlighted.png"
- "btn_disabled.png"
- "btn_selected.png"

Code Organization Tips

Theme

Theme



- Image / Font / Color Protocol
- Enumerations of Styles
- Theming methods on UI Elements using Styles

LeatherTheme



- Returns Image / Font / Color data

Code Organization Tips

Theme

Theme



Code Organization Tips

Theme

```
UIButton *button = nil;  
button = [UIButton buttonWithType:UIButtonTypeCustom];
```

Theme

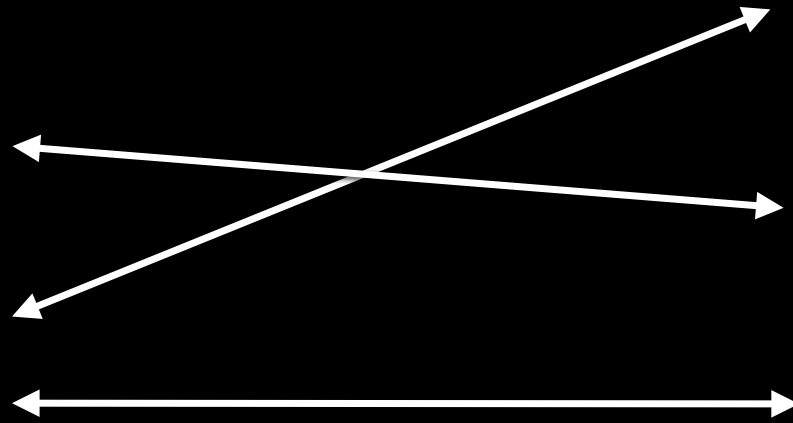
```
[[Theme currentTheme] themeButton:button  
withType:FMFButtonTypeLeather];
```



Code Organization Tips

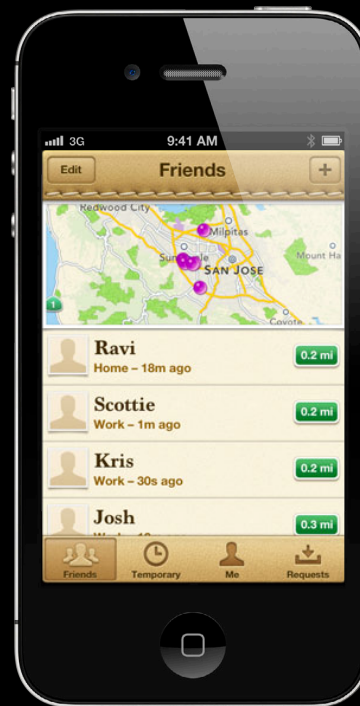
Theme

Theme

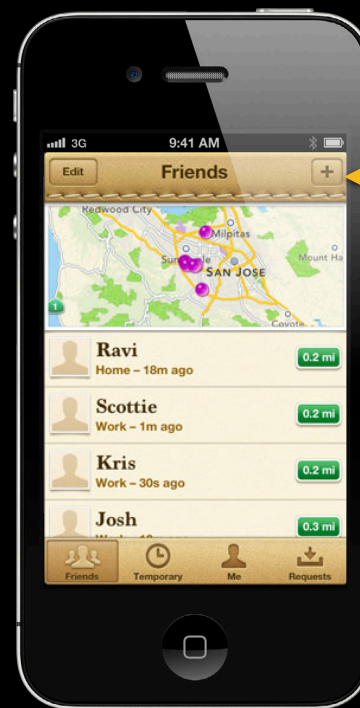


Specific UI Elements

Specific UI Elements

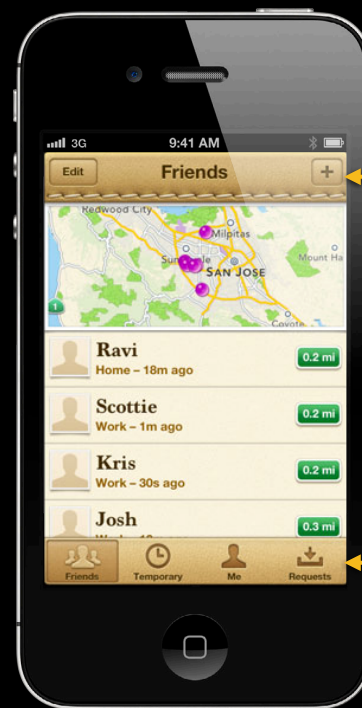


Specific UI Elements



Navigation Bar

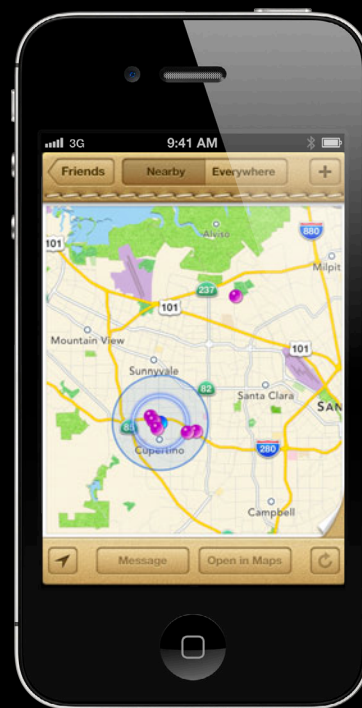
Specific UI Elements



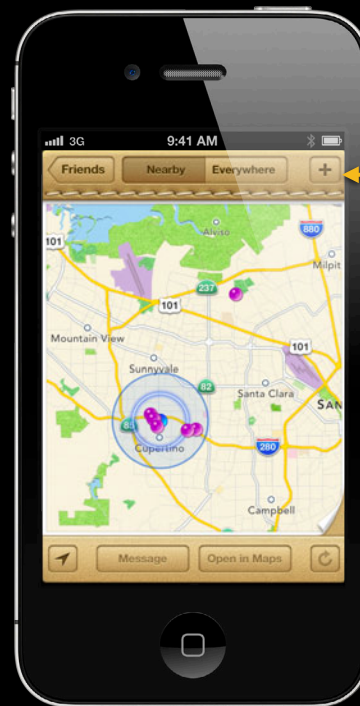
Navigation Bar

Tab Bar

Specific UI Elements



Specific UI Elements

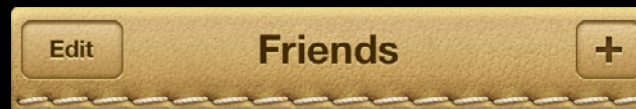


Segmented Control

Navigation Bar



Navigation Bar

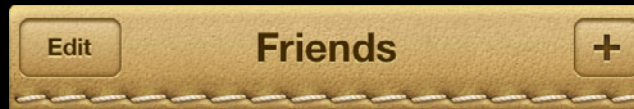


```
UINavigationController *navBar = navigationController.navigationController;  
[[Theme currentTheme] themeNavBar:navBar withStyle:FMFNavBarMainStyle];
```

Navigation Bar



Navigation Bar

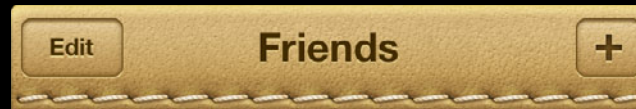


```
UIImage *bgImage = [[Theme currentTheme] navbarPortraitImage];  
[navBar setBackgroundImage:bgImage forBarMetrics:UIBarMetricsDefault];
```

Navigation Bar

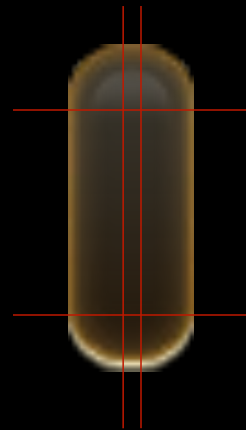


Navigation Bar

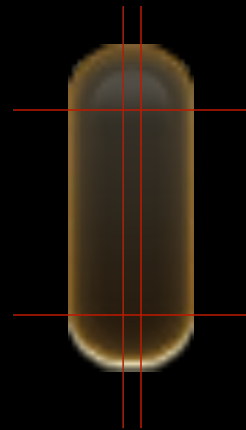


```
[[UIBarButtonItem appearanceWhenContainedIn:[UINavigationController class], nil]
    setBackgroundImage:barImageNormal
    forState:UIControlStateNormal
    barMetrics:UIBarMetricsDefault];
```

Navigation Bar

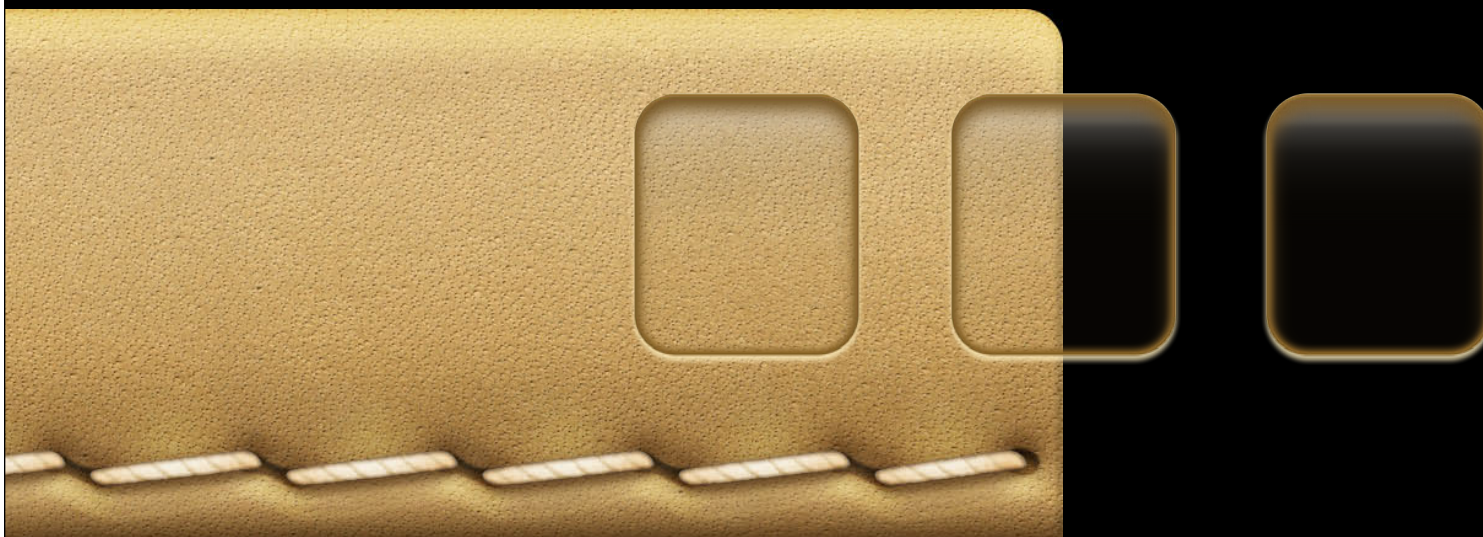


Navigation Bar



```
UIEdgeInsets insets = UIEdgeInsetsMake(10, 8, 10, 8);  
[[UIImage imageNamed:@"navBarImage"] resizableImageWithCapInsets:insets];
```

Navigation Bar



Navigation Bar

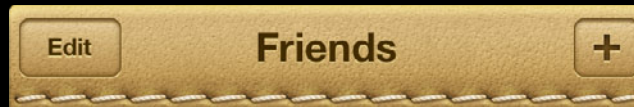


Navigation Bar

```
NSDictionary *attributes =
@{
    UIFontAttributeFont           : [theme navBarFont],
    UIFontAttributeTextColor      : [theme navBarTitleTextColor],
    UIFontAttributeTextShadowColor : [theme navBarTitleShadowColor],
    UIFontAttributeTextShadowOffset : [NSValue valueWithCGSize:CGSizeMake(0, 1)]
};

[[UIBarButtonItem appearanceWhenContainedIn:[UINavigationController class], nil]
    setTitleTextAttributes:attributes
    forState:UIControlStateNormal];
```

Navigation Bar



```
UINavigationController *navBar = navigationController.navigationController;  
[[Theme currentTheme] themeNavBar:navBar withStyle:FMFNavBarMainStyle];
```

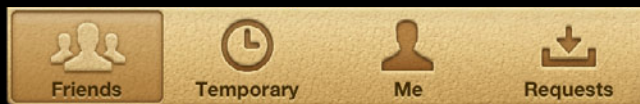
Tab Bar



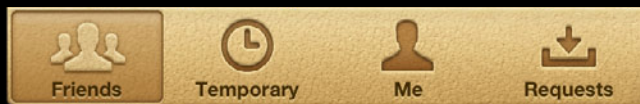
Tab Bar



```
[tabBar setBackgroundImage:[theme tabBarPortraitImage]];
```

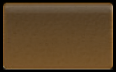


Tab Bar



```
[friendsItem setFinishedSelectedImage:  
                [theme tabbarIconFriendsActive:YES]  
withFinishedUnselectedImage:  
                [theme tabbarIconFriendsActive:NO]];  
  
[tabBar setBackgroundImage:[theme tabbarPortraitImage]];
```

Tab Bar

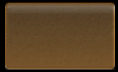


```
[tabBar setSelectedIndicatorImage:  
    [theme tabBarActiveTabImage]];
```

```
[friendsItem setFinishedSelectedImage:  
    [theme tabBarIconFriendsActive:YES]  
withFinishedUnselectedImage:  
    [theme tabBarIconFriendsActive:NO]];
```

```
[tabBar setBackgroundImage:[theme tabBarPortraitImage]];
```

Tab Bar



```
[tabBar setSelectedIndicatorImage:  
    [theme tabBarActiveTabImage]];
```

```
[friendsItem setFinishedSelectedImage:  
    [theme tabBarIconFriendsActive:YES]  
withFinishedUnselectedImage:  
    [theme tabBarIconFriendsActive:NO]];
```

```
[tabBar setBackgroundImage:[theme tabBarPortraitImage]];
```

```
NSString *friendsItemTitle = NSLocalizedString(@"TABBAR_TITLE_FRIENDS", "");
```

```
UITabBarItem *friendsItem = [[UITabBarItem alloc] initWithTitle:friendsItemTitle image:nil tag:0];
```

Tab Bar

```
NSDictionary *attributes =  
@{  
    UIFontAttributeFont           : [theme tabBarItemFont],  
    UIFontAttributeTextColor      : [theme tabBarItemTextColor],  
    UIFontAttributeTextShadowColor : [theme tabBarItemShadowColor],  
    UIFontAttributeTextShadowOffset : [NSValue valueWithCGSize:CGSizeMake(0, 1)]  
};  
  
[[UITabBarItem appearance] setTitleTextAttributes:attributes  
                                     forState:UIControlStateNormal];
```



Segmented Control

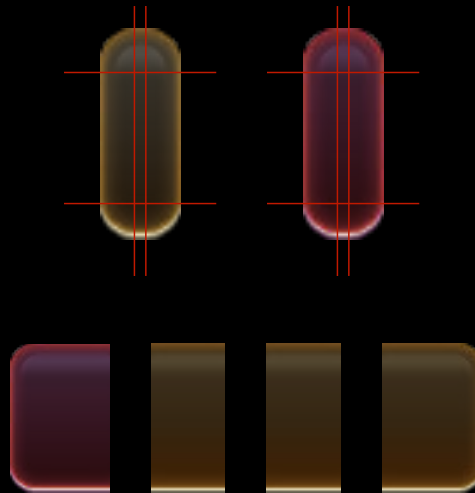


Segmented Control

- setBackgroundImage:
- setDividerImage:
- setTitleTextAttributes:

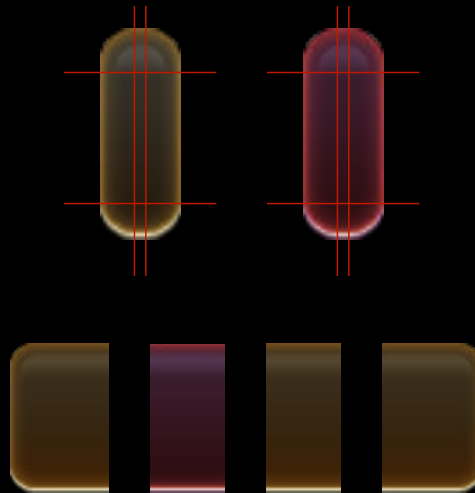
Segmented Control

setBackgroundImage:



Segmented Control

setBackgroundImage:



Segmented Control

setDividerImage:

```
[self setDividerImage:[theme segmentedControlDividerNormal]
    forLeftSegmentState:UIControlStateNormal
    rightSegmentState:UIControlStateNormal
    barMetrics:UIBarMetricsDefault];
```

```
[self setDividerImage:[theme segmentedControlDividerLeftSelected]
    forLeftSegmentState:UIControlStateSelected
    rightSegmentState:UIControlStateNormal
    barMetrics:UIBarMetricsDefault];
```

```
[self setDividerImage:[theme segmentedControlDividerRightSelected]
    forLeftSegmentState:UIControlStateNormal
    rightSegmentState:UIControlStateSelected
    barMetrics:UIBarMetricsDefault];
```

Segmented Control

setDividerImage:



```
[self setDividerImage:[theme segmentedControlDividerNormal]
  forLeftSegmentState:UIControlStateNormal
  rightSegmentState:UIControlStateNormal
  barMetrics:UIBarMetricsDefault];
```

Segmented Control

setTitleTextAttributes:



Segmented Control

setTitleTextAttributes:

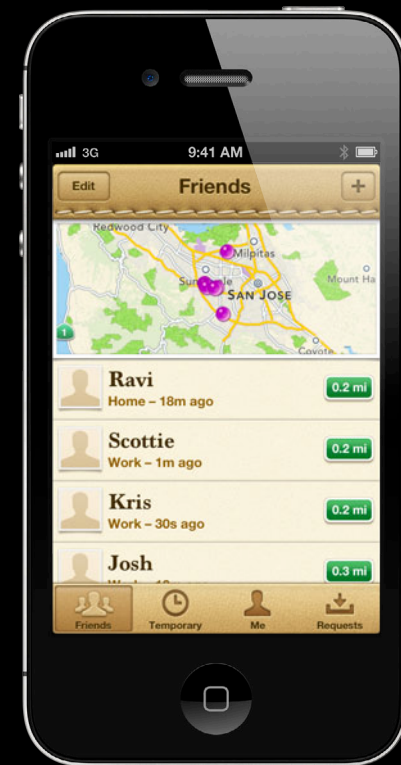


```
NSDictionary *attributes =
@{
    UIFontAttributeFont      : [theme segmentedControlFont],
    UITextAttributeTextColor : [theme segmentedControlTextColor],
    UITextAttributeTextShadowColor : [theme segmentedControlTitleShadowColor],
    UITextAttributeTextShadowOffset : [NSValue valueWithCGSize:CGSizeMake(0, 1)]
};

[segment setTitleTextAttributes:attributes forState:UIControlStateNormal];
```

Summary

- Find My Friends skinned look
 - Consistent color scheme
 - Visually detailed images
- Code organization tips
 - Theming protocol
 - Generic colors
 - One line theming call
- Specific UI elements
 - Use transparency
 - Text attributes



Summary

Jacob Xiao
iOS Frameworks Engineer

Summary

- General tips
 - What's new
 - Resizable images
- Customizing
 - Preparing artwork
 - Separating images
- Find My Friends
 - Skinned look
 - Themes

More Information

Jake Behrens

UI Frameworks Evangelist

behrens@apple.com

Sample Code

WWDC Web Site

<https://developer.apple.com/wwdc/schedule/details.php?id=216>

Documentation

iOS Dev Center

<http://developer.apple.com/devcenter/ios/>

Related Sessions

What's New in Cocoa Touch

Mission
Tuesday 9:00AM

Introduction to Auto Layout for iOS and OS X

Mission
Tuesday 10:15AM

Introduction to Attributed Strings for iOS

Mission
Wednesday 3:15PM

Labs

UIKit Appearance Lab

Essentials Lab A
Wednesday 11:30AM

 WWDC2012

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blank for all
presentations.

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after the logo are
intentionally left
blank for all
presentations.

The last 3 slides
after the logo are
intentionally left
blank for all
presentations.