
UIButton Class Reference

User Experience: Controls



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Contents

UIButton Class Reference 5

Overview	5
Tasks	5
Creating Buttons	5
Configuring Button Title	5
Configuring Button Images	6
Configuring Edge Insets	7
Getting the Current State	7
Getting Dimensions	7
Properties	7
adjustsImageWhenDisabled	7
adjustsImageWhenHighlighted	8
buttonType	8
contentEdgeInsets	8
currentBackgroundImage	9
currentImage	9
currentTitle	10
currentTitleColor	10
currentTitleShadowColor	10
imageEdgeInsets	11
imageView	11
reversesTitleShadowWhenHighlighted	12
showsTouchWhenHighlighted	12
titleEdgeInsets	12
titleLabel	13
Class Methods	13
buttonWithType:	13
Instance Methods	14
backgroundImageForState:	14
backgroundRectForBounds:	14
contentRectForBounds:	15
imageForState:	15
imageRectForContentRect:	15
setBackgroundImage:forState:	16
setImage:forState:	16
setTitle:forState:	17
setTitleColor:forState:	17
setTitleShadowColor:forState:	18
titleColorForState:	18
titleForState:	19
titleRectForContentRect:	19

titleShadowColorForState: 20
Constants 20
UIButtonType 20

Appendix A **Deprecated UIButton Methods 23**

Deprecated in iOS 3.0 23
font 23
lineBreakMode 23
titleShadowOffset 24

Document Revision History 25

UIButton Class Reference

Inherits from	UIControl : UIView : UIResponder : NSObject
Conforms to	NSCoding NSCoding (UIView) NSObject (NSObject)
Framework	/System/Library/Frameworks/UIKit.framework
Availability	Available in iOS 2.0 and later.
Declared in	UIButton.h
Related sample code	AddMusic CryptoExercise

Overview

An instance of the `UIButton` class implements a button on the touch screen. A button intercepts touch events and sends an action message to a target object when tapped. Methods for setting the target and action are inherited from `UIControl`. This class provides methods for setting the title, image, and other appearance properties of a button. By using these accessors, you can specify a different appearance for each button state.

Tasks

Creating Buttons

- + [buttonWithType:](#) (page 13)
Creates and returns a new button of the specified type.

Configuring Button Title

- [buttonType](#) (page 8) *property*
The button type. (read-only)
- [titleLabel](#) (page 13) *property*
A view that displays the value of the `currentTitle` property for a button. (read-only)

- `reversesTitleShadowWhenHighlighted` (page 12) *property*
A Boolean value that determines whether the title shadow changes when the button is highlighted.
- `setTitle:forState:` (page 17)
Sets the title to use for the specified state.
- `setTitleColor:forState:` (page 17)
Sets the color of the title to use for the specified state.
- `setTitleShadowColor:forState:` (page 18)
Sets the color of the title shadow to use for the specified state.
- `titleColorForState:` (page 18)
Returns the title color used for a state.
- `titleForState:` (page 19)
Returns the title used for a state.
- `titleShadowColorForState:` (page 20)
Returns the shadow color of the title used for a state.
- `font` (page 23) *property* **Deprecated in iOS 3.0**
The font used to display text on the button. (**Deprecated.** Use the `font` property of the `titleLabel` (page 13) instead.)
- `lineBreakMode` (page 23) *property* **Deprecated in iOS 3.0**
The line break mode to use when drawing text. (**Deprecated.** Use the `lineBreakMode` property of the `titleLabel` (page 13) instead.)
- `titleShadowOffset` (page 24) *property* **Deprecated in iOS 3.0**
The offset of the shadow used to display the receiver's title. (**Deprecated.** Use the `shadowOffset` property of the `titleLabel` (page 13) instead.)

Configuring Button Images

- `adjustsImageWhenHighlighted` (page 8) *property*
A Boolean value that determines whether the image changes when the button is highlighted.
- `adjustsImageWhenDisabled` (page 7) *property*
A Boolean value that determines whether the image changes when the button is disabled.
- `showsTouchWhenHighlighted` (page 12) *property*
A Boolean value that determines whether tapping the button causes it to glow.
- `backgroundImageForState:` (page 14)
Returns the background image used for a button state.
- `imageForState:` (page 15)
Returns the image used for a button state.
- `setBackgroundImage:forState:` (page 16)
Sets the background image to use for the specified button state.
- `setImage:forState:` (page 16)
Sets the image to use for the specified state.

Configuring Edge Insets

[contentEdgeInsets](#) (page 8) *property*

The inset or outset margins for the edges of the button content drawing rectangle.

[titleLabelEdgeInsets](#) (page 12) *property*

The inset or outset margins for the edges of the button title drawing rectangle.

[imageEdgeInsets](#) (page 11) *property*

The inset or outset margins for the edges of the button image drawing rectangle.

Getting the Current State

[currentTitle](#) (page 10) *property*

The current title that is displayed on the button. (read-only)

[currentTitleColor](#) (page 10) *property*

The color used to display the title. (read-only)

[currentTitleShadowColor](#) (page 10) *property*

The color of the title's shadow. (read-only)

[currentImage](#) (page 9) *property*

The current image displayed on the button. (read-only)

[currentBackgroundImage](#) (page 9) *property*

The current background image displayed on the button. (read-only)

[imageView](#) (page 11) *property*

The button's image view. (read-only)

Getting Dimensions

- [backgroundRectForBounds](#): (page 14)
Returns the rectangle in which the receiver draws its background.
- [contentRectForBounds](#): (page 15)
Returns the rectangle in which the receiver draws its entire content.
- [titleLabelRectForContentRect](#): (page 19)
Returns the rectangle in which the receiver draws its title.
- [imageRectForContentRect](#): (page 15)
Returns the rectangle in which the receiver draws its image.

Properties

For more about Objective-C properties, see “Properties” in *The Objective-C Programming Language*.

adjustsImageWhenDisabled

A Boolean value that determines whether the image changes when the button is disabled.

```
@property(nonatomic) BOOL adjustsImageWhenDisabled
```

Discussion

If YES, the image is drawn darker when the button is disabled. The default value is YES.

Availability

Available in iOS 2.0 and later.

See Also

[@property adjustsImageWhenHighlighted](#) (page 8)

Declared In

UIButton.h

adjustsImageWhenHighlighted

A Boolean value that determines whether the image changes when the button is highlighted.

```
@property(nonatomic) BOOL adjustsImageWhenHighlighted
```

Discussion

If YES, the image is drawn lighter when the button is highlighted. The default value is YES.

Availability

Available in iOS 2.0 and later.

See Also

[@property adjustsImageWhenDisabled](#) (page 7)

Declared In

UIButton.h

buttonType

The button type. (read-only)

```
@property(nonatomic, readonly) UIButtonType buttonType
```

Discussion

See [UIButtonType](#) (page 20) for the possible values.

Availability

Available in iOS 2.0 and later.

Declared In

UIButton.h

contentEdgeInsets

The inset or outset margins for the edges of the button content drawing rectangle.


```
@property(nonatomic) UIEdgeInsets contentEdgeInsets
```

Discussion

Use this property to resize and reposition the effective drawing rectangle for the button content. The content comprises the button image and button title. You can specify a different value for each of the four insets (top, left, bottom, right). A positive value shrinks, or insets, that edge—moving it closer to the center of the button. A negative value expands, or outsets, that edge. Use the `UIEdgeInsetsMake` function to construct a value for this property. The default value is `UIEdgeInsetsZero`.

Availability

Available in iOS 2.0 and later.

See Also

[@property imageEdgeInsets](#) (page 11)

[@property titleEdgeInsets](#) (page 12)

Declared In

UIButton.h

currentBackgroundImage

The current background image displayed on the button. (read-only)

```
@property(nonatomic, readonly, retain) UIImage *currentBackgroundImage
```

Discussion

This value can be `nil`.

Availability

Available in iOS 2.0 and later.

See Also

[@property currentImage](#) (page 9)

Declared In

UIButton.h

currentImage

The current image displayed on the button. (read-only)

```
@property(nonatomic, readonly, retain) UIImage *currentImage
```

Discussion

This value can be `nil`.

Availability

Available in iOS 2.0 and later.

See Also

[@property currentBackgroundImage](#) (page 9)

Declared In
UIButton.h

currentTitle

The current title that is displayed on the button. (read-only)

```
@property(nonatomic, readonly, retain) NSString *currentTitle
```

Discussion

The value for this property is set automatically whenever the button state changes. The value may be `nil`.

Availability

Available in iOS 2.0 and later.

See Also

- [setTitle:forState:](#) (page 17)
- [@property currentTitleColor](#) (page 10)
- [@property currentTitleShadowColor](#) (page 10)
- [@property titleLabel](#) (page 13)

Declared In
UIButton.h

currentTitleColor

The color used to display the title. (read-only)

```
@property(nonatomic, readonly, retain) UIColor *currentTitleColor
```

Discussion

This value is guaranteed not to be `nil`. The default value is white.

Availability

Available in iOS 2.0 and later.

See Also

- [@property currentTitle](#) (page 10)
- [@property currentTitleShadowColor](#) (page 10)

Declared In
UIButton.h

currentTitleShadowColor

The color of the title's shadow. (read-only)

```
@property(nonatomic, readonly, retain) UIColor *currentTitleShadowColor
```

Discussion

The default value is white.

Availability

Available in iOS 2.0 and later.

See Also

[@property currentTitle](#) (page 10)

[@property currentTitleColor](#) (page 10)

Declared In

UIButton.h

imageEdgeInsets

The inset or outset margins for the edges of the button image drawing rectangle.

```
@property(nonatomic) UIEdgeInsets imageEdgeInsets
```

Discussion

Use this property to resize and reposition the effective drawing rectangle for the button image. You can specify a different value for each of the four insets (top, left, bottom, right). A positive value shrinks, or insets, that edge—moving it closer to the center of the button. A negative value expands, or outset, that edge. Use the `UIEdgeInsetsMake` function to construct a value for this property. The default value is `UIEdgeInsetsZero`.

Availability

Available in iOS 2.0 and later.

See Also

[@property contentEdgeInsets](#) (page 8)

[@property titleEdgeInsets](#) (page 12)

Declared In

UIButton.h

imageView

The button's image view. (read-only)

```
@property(nonatomic,readonly,retain) UIImageView *imageView
```

Discussion

Although this property is read-only, its own properties are read/write. Use these properties to configure the appearance and behavior of the button's view. For example:

```
UIButton *button = [UIButton buttonWithType:
UIButtonTypeRoundedRect];
button.imageView.exclusiveTouch = YES;
```

The `imageView` property returns a value even if the button has not been displayed yet. The value of the property is `nil` for system buttons.

Availability

Available in iOS 3.0 and later.

Declared In

UIButton.h

reversesTitleShadowWhenHighlighted

A Boolean value that determines whether the title shadow changes when the button is highlighted.

```
@property(nonatomic) BOOL reversesTitleShadowWhenHighlighted
```

Discussion

If YES, the shadow changes from engrave to emboss appearance when highlighted. The default value is NO.

Availability

Available in iOS 2.0 and later.

Declared In

UIButton.h

showsTouchWhenHighlighted

A Boolean value that determines whether tapping the button causes it to glow.

```
@property(nonatomic) BOOL showsTouchWhenHighlighted
```

Discussion

If YES, the button glows when tapped; otherwise, it does not. The image and button behavior is not changed by the glow. The default value is NO.

Availability

Available in iOS 2.0 and later.

See Also

[@property adjustsImageWhenHighlighted](#) (page 8)

Declared In

UIButton.h

titleEdgeInsets

The inset or outset margins for the edges of the button title drawing rectangle.

```
@property(nonatomic) UIEdgeInsets titleEdgeInsets
```

Discussion

Use this property to resize and reposition the effective drawing rectangle for the button title. You can specify a different value for each of the four insets (top, left, bottom, right). A positive value shrinks, or insets, that edge—moving it closer to the center of the button. A negative value expands, or outset, that edge. Use the `UIEdgeInsetsMake` function to construct a value for this property. The default value is `UIEdgeInsetsZero`.

Availability

Available in iOS 2.0 and later.

See Also[@property contentEdgeInsets](#) (page 8)[@property imageEdgeInsets](#) (page 11)**Declared In**

UIButton.h

titleLabelA view that displays the value of the `currentTitle` property for a button. (read-only)`@property(nonatomic,readonly,retain) UILabel *titleLabel`**Discussion**

Although this property is read-only, its own properties are read/write. Use these properties to configure the appearance of the button label. For example:

```
UIButton *button = [UIButton buttonWithType:
UIButtonTypeRoundedRect];
button.titleLabel.font = [UIFont systemFontOfSize: 12];
button.titleLabel.lineBreakMode = UILineBreakModeTailTruncation;
button.titleLabel.shadowOffset = CGSizeMake (1.0, 0.0);
```

The `titleLabel` property returns a value even if the button has not been displayed yet. The value of the property is `nil` for system buttons.**Availability**

Available in iOS 3.0 and later.

See Also[@property currentTitle](#) (page 10)**Declared In**

UIButton.h

Class Methods

buttonWithType:

Creates and returns a new button of the specified type.

`+ (id)buttonWithType:(UIButtonType)buttonType`**Parameters***buttonType*The button type. See [UIButtonType](#) (page 20) for the possible values.**Return Value**

A newly created button.

Availability

Available in iOS 2.0 and later.

Declared In
UIButton.h

Instance Methods

backgroundImageForState:

Returns the background image used for a button state.

- (UIImage *)backgroundImageForState:(UIControlState) *state*

Parameters

state

The state that uses the background image. Possible values are described in UIControlState.

Return Value

The background image used for the specified state.

Availability

Available in iOS 2.0 and later.

See Also

- [setBackgroundImage:forState:](#) (page 16)

Declared In
UIButton.h

backgroundRectForBounds:

Returns the rectangle in which the receiver draws its background.

- (CGRect)backgroundRectForBounds:(CGRect) *bounds*

Parameters

bounds

The bounding rectangle of the receiver.

Return Value

The rectangle in which the receiver draws its background.

Availability

Available in iOS 2.0 and later.

See Also

- [contentRectForBounds:](#) (page 15)

Declared In
UIButton.h

contentRectForBounds:

Returns the rectangle in which the receiver draws its entire content.

- (CGRect)contentRectForBounds:(CGRect)bounds

Parameters

bounds

The bounding rectangle for the receiver.

Return Value

The rectangle in which the receiver draws its entire content.

Discussion

The content rectangle is the area needed to display the image and title including any padding and adjustments for alignment and other settings.

Availability

Available in iOS 2.0 and later.

See Also

- [titleLabelRectForContentRect:](#) (page 19)
- [imageRectForContentRect:](#) (page 15)
- [backgroundRectForBounds:](#) (page 14)

Declared In

UIButton.h

imageForState:

Returns the image used for a button state.

- (UIImage *)imageForState:(UIControlState)state

Parameters

state

The state that uses the image. Possible values are described in UIControlState.

Return Value

The image used for the specified state.

Availability

Available in iOS 2.0 and later.

See Also

- [setImage:forState:](#) (page 16)

Declared In

UIButton.h

imageRectForContentRect:

Returns the rectangle in which the receiver draws its image.

- (CGRect)imageRectForContentRect:(CGRect)*contentRect*

Parameters

contentRect

The content rectangle for the receiver.

Return Value

The rectangle in which the receiver draws its image.

Availability

Available in iOS 2.0 and later.

See Also

- [contentRectForBounds:](#) (page 15)
- [titleLabelForContentRect:](#) (page 19)

Declared In

UIButton.h

setBackgroundImage:forState:

Sets the background image to use for the specified button state.

- (void)setBackgroundImage:(UIImage *)*image* forState:(UIControlState)*state*

Parameters

image

The background image to use for the specified state.

state

The state that uses the specified image. The values are described in UIControlState.

Discussion

In general, if a property is not specified for a state, the default is to use the UIControlStateNormal value. If the UIControlStateNormal value is not set, then the property defaults to a system value. Therefore, at a minimum, you should set the value for the normal state.

Availability

Available in iOS 2.0 and later.

See Also

- [backgroundImageForState:](#) (page 14)

Related Sample Code

AddMusic

Declared In

UIButton.h

setImage:forState:

Sets the image to use for the specified state.

- (void)setImage:(UIImage *)*image* forState:(UIControlState)*state*

Parameters*image*

The image to use for the specified state.

*state*The state that uses the specified title. The values are described in `UIControlState`.**Discussion**

In general, if a property is not specified for a state, the default is to use the `UIControlStateNormal` value. If the `UIControlStateNormal` value is not set, then the property defaults to a system value. Therefore, at a minimum, you should set the value for the normal state.

Availability

Available in iOS 2.0 and later.

See Also- [imageForState:](#) (page 15)**Declared In**

UIButton.h

setTitle:forState:

Sets the title to use for the specified state.

```
- (void)setTitle:(NSString *)title forState:(UIControlState)state
```

Parameters*title*

The title to use for the specified state.

*state*The state that uses the specified title. The values are described in `UIControlState`.**Discussion**

In general, if a property is not specified for a state, the default is to use the `UIControlStateNormal` value. If the value for `UIControlStateNormal` is not set, then the property defaults to a system value. Therefore, at a minimum, you should set the value for the normal state.

Availability

Available in iOS 2.0 and later.

See Also- [titleForState:](#) (page 19)**Declared In**

UIButton.h

setTitleColor:forState:

Sets the color of the title to use for the specified state.

```
- (void)setTitleColor:(UIColor *)color forState:(UIControlState)state
```

Parameters*color*

The color of the title to use for the specified state.

state

The state that uses the specified color. The values are described in `UIControlState`.

Discussion

In general, if a property is not specified for a state, the default is to use the `UIControlStateNormal` value. If the `UIControlStateNormal` value is not set, then the property defaults to a system value. Therefore, at a minimum, you should set the value for the normal state.

Availability

Available in iOS 2.0 and later.

See Also

- [titleColorForState:](#) (page 18)

Declared In

UIButton.h

setTitleShadowColor:forState:

Sets the color of the title shadow to use for the specified state.

```
- (void)setTitleShadowColor:(UIColor *)color forState:(UIControlState)state
```

Parameters*color*

The color of the title shadow to use for the specified state.

state

The state that uses the specified color. The values are described in `UIControlState`.

Discussion

In general, if a property is not specified for a state, the default is to use the `UIControlStateNormal` value. If the `UIControlStateNormal` value is not set, then the property defaults to a system value. Therefore, at a minimum, you should set the value for the normal state.

Availability

Available in iOS 2.0 and later.

See Also

- [titleShadowColorForState:](#) (page 20)

Declared In

UIButton.h

titleColorForState:

Returns the title color used for a state.

```
- (UIColor *)titleColorForState:(UIControlState)state
```

Parameters

state

The state that uses the title color. Possible values are described in `UIControlState`.

Return Value

The color of the title for the specified state.

Availability

Available in iOS 2.0 and later.

See Also

- [setTitleColor:forState:](#) (page 17)

Declared In

UIButton.h

titleForState:

Returns the title used for a state.

```
- (NSString *)titleForState:(UIControlState)state
```

Parameters

state

The state that uses the title. Possible values are described in `UIControlState`.

Return Value

The title for the specified state.

Availability

Available in iOS 2.0 and later.

See Also

- [setTitle:forState:](#) (page 17)

Declared In

UIButton.h

titleRectForContentRect:

Returns the rectangle in which the receiver draws its title.

```
- (CGRect)titleRectForContentRect:(CGRect)contentRect
```

Parameters

contentRect

The content rectangle for the receiver.

Return Value

The rectangle in which the receiver draws its title.

Availability

Available in iOS 2.0 and later.

See Also

- [contentRectForBounds:](#) (page 15)
- [imageRectForContentRect:](#) (page 15)

Declared In

UIButton.h

titleLabelShadowColorForState:

Returns the shadow color of the title used for a state.

```
- (UIColor *)titleLabelShadowColorForState:(UIControlState)state
```

Parameters*state*

The state that uses the title shadow color. Possible values are described in UIControlState.

Return Value

The color of the title's shadow for the specified state.

Availability

Available in iOS 2.0 and later.

See Also

- [setTitleShadowColor:forState:](#) (page 18)

Declared In

UIButton.h

Constants

UIButtonType

Specifies the style of a button.

```
typedef enum {
    UIButtonTypeCustom = 0,
    UIButtonTypeRoundedRect,
    UIButtonTypeDetailDisclosure,
    UIButtonTypeInfoLight,
    UIButtonTypeInfoDark,
    UIButtonTypeContactAdd,
} UIButtonType;
```

Constants

UIButtonTypeCustom

No button style.

Available in iOS 2.0 and later.

Declared in UIButton.h.

`UIButtonTypeRoundedRect`

A rounded-rectangle style button.

Available in iOS 2.0 and later.

Declared in `UIButton.h`.

`UIButtonTypeDetailDisclosure`

A detail disclosure button.

Available in iOS 2.0 and later.

Declared in `UIButton.h`.

`UIButtonTypeInfoLight`

An information button that has a light background.

Available in iOS 2.0 and later.

Declared in `UIButton.h`.

`UIButtonTypeInfoDark`

An information button that has a dark background.

Available in iOS 2.0 and later.

Declared in `UIButton.h`.

`UIButtonTypeContactAdd`

A contact add button.

Available in iOS 2.0 and later.

Declared in `UIButton.h`.

Availability

Available in iOS 2.0 and later.

Declared In

`UIButton.h`

Deprecated UIButton Methods

A method identified as deprecated has been superseded and may become unsupported in the future.

Deprecated in iOS 3.0

font

The font used to display text on the button. (Deprecated in iOS 3.0. Use the `font` property of the `titleLabel` (page 13) instead.)

```
@property(nonatomic, retain) UIFont *font
```

Discussion

If `nil`, a system font is used. The default value is `nil`.

Availability

Available in iOS 2.0 and later.
Deprecated in iOS 3.0.

See Also

[@property titleLabel](#) (page 13)

Declared In

UIButton.h

lineBreakMode

The line break mode to use when drawing text. (Deprecated in iOS 3.0. Use the `lineBreakMode` property of the `titleLabel` (page 13) instead.)

```
@property(nonatomic) UILineBreakMode lineBreakMode
```

Discussion

This property is one of the constants described in the `UILineBreakMode` enumeration in *NSString UIKit Additions Reference*. The default value is `UILineBreakModeMiddleTruncation`.

Availability

Available in iOS 2.0 and later.
Deprecated in iOS 3.0.

See Also

[@property titleLabel](#) (page 13)

Declared In

UIButton.h

titleLabelShadowOffset

The offset of the shadow used to display the receiver's title. (Deprecated in iOS 3.0. Use the `titleLabelShadowOffset` property of the `titleLabel` (page 13) instead.)

```
@property(nonatomic) CGSize titleLabelShadowOffset
```

Discussion

The horizontal and vertical offset values, specified using the `width` and `height` fields of the `CGSize` data type. Positive values always extend up and to the right from the user's perspective. The default value is `CGSizeZero`.

Availability

Available in iOS 2.0 and later.

Deprecated in iOS 3.0.

See Also

[@property titleLabel](#) (page 13)

Declared In

UIButton.h

Document Revision History

This table describes the changes to *UIButton Class Reference*.

Date	Notes
2009-09-09	Clarified descriptions of the contentEdgeInsets (page 8), titleLabel (page 12), and imageView (page 11) properties.
	Other minor improvements.
2009-04-23	Updated for iOS 3.0.
	Added descriptions for the titleLabel (page 13) and imageView (page 11) properties. Minor corrections.
2008-05-23	New document that describes the class used to implement buttons on the touch screen.

REVISION HISTORY

Document Revision History