

# CAPPASITY iOS FRAMEWORK

v0.3

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## Overview

CappasityFramework contains functionality necessary for working with models on the Cappasity platform, i.e.:

- obtaining the models,
- obtaining the properties of a given model, editing the model, deleting the model,
- displaying the model.

Logging into your user account is done by providing the CappasityService class with the generated token, by sending it to the loginWith: method. The login is effective until the application is closed.

The entire set of user models may be obtained by placing consecutive requests for the subsequent  $n$  models, where  $n$  should be no greater than 100. Functionality for obtaining a list of models is contained in the CappasityModelsList class.

A specific model may be obtained via its id or sku. To do this, you need to make an instance of the CappasityModel class, using the corresponding initializers initWithId:delegate or initWithSku:delegate and calling the receiveInfo: method.

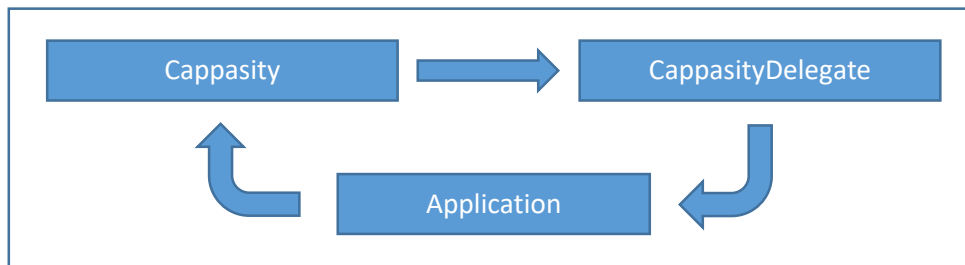
CappasityModel allows access to the following model information:

- sku,
- model title,
- model access type,
- model embed code.

The model's sku, title, and access type may be modified via the updateWithTitle:sku:access method or one of other overloaded methods. The remove: method deletes the model.

To display the model, you may use the embed code and incorporate it into your application yourself. Alternatively, you can use the CappasityModelView class. The CappasityModelView class inherits the UIView class, so it can be added into the application either through the storyboard or directly in the program.

Interaction with the classes is implemented through delegates.



## Importing framework

```
#import "Cappasity/Cappasity-Swift.h"
```

## The CappasityDelegate Protocol

### @protocol CappasityDelegate

A protocol of shared methods.

All delegates for the main classes are inherited from the CappasityDelegate protocol.

#### Methods

- (void)cappasityErrorWithCode:(NSInteger)code description:(NSString \* \_Nonnull)description  
Tells the delegate of an error during program execution.  
Parameters:
  - code – error number
  - description – error description
- (void)cappasityMessage:(NSString \* \_Nonnull)message  
Tells the delegate certain information regarding CappasityService state

## User Account Login

### @protocol CappasityServiceDelegate

A collection of methods that may be called by the CappasityService class object.

#### Overview

The loginCompleted: method is called in the case of a successful account login. Inherits the CappasityDelegate protocol.

#### Methods

- (void)loginCompleted  
Tells the delegate of the successful account login.

### @interface CappasityService

Performs a token-based login to the Cappasity system.

#### Overview

The loginWith: method is used to log into the user account. In the case of a successful login, the loginCompleted: method of the CappasityServiceDelegate delegate is called, which instance is given during the initialization of the object.

#### Methods

- (nonnull instancetype)initWithDelegate:(id <CappasityServiceDelegate> \_Nullable)delegate  
Returns an instance of the CappasityService class.  
Parameters:
  - delegate – the delegate object.
- (void)loginWith:(NSString \* \_Nonnull)token  
Sends a request for a token-based login to the user account.  
Parameters:
  - token – the user token.

## Obtaining a List of User Models

### @protocol CappasityModelsListDelegate

A collection of methods that may be called by the CappasityModelsList class object.

#### Overview

The method receivedWithModels: is called in the case of a successful request. Inherits the CappasityDelegate protocol.

## Methods

- (void)receivedWithModels:(NSArray<CappasityModel \*> \* \_Nonnull)models  
Returns the models obtained.  
Parameters:
  - models – the array of models

## @interface CappasityModelsList

Obtaining of the user models.

## Overview

The registered user may obtain a list of all their models sorted by the order in which the models were created.

## Properties and methods

- (nullable instancetype)initWithDelegate:(id <CappasityModelsListDelegate> \_Nonnull)delegate  
Returns an instance of the CappasityModelsList class in case of a successful account login. Returns “null” otherwise.  
Parameters:
  - delegate – the delegate object.
- (BOOL)nextModelsWithLimit:(NSInteger)limit offset:(NSInteger)offset  
Request to obtain the set of models.  
Parameters:
  - limit – the number of models requested. Range of values: [1, 100].
  - offset – the sequential rank of the model from which the next set commences. Range of values: [0,...)
- (BOOL)nextModelsWithLimit:(NSInteger)limit  
Request to obtain the next set of models.  
Parameters:
  - limit – the number of models requested. Range of values: [1, 100].
- (BOOL)isValid  
Verification of class validity. The method returns “false” in the case of an error during the request, and returns “true” otherwise.
- (void)clearStatus  
A reset of all object properties to their original state. Following this operation, the nextModelsWithLimit: method will return the models from the very beginning of the list.

## Working with the Model

## @interface CappasityEmbedCodeParams

Collection of embed-code parameters.

## Overview

Used for customizing the embed code.

## Properties

- `@property (nonatomic, copy) NSString * _Nonnull width`  
Window width, given in pixels or percentages. For example, “600px” or “100%”.
- `@property (nonatomic, copy) NSString * _Nonnull height`  
Window height, given in pixels or percentages.
- `@property (nonatomic) BOOL autoRotate`  
Switch the automatic rotation of the object on/off.
- `@property (nonatomic) BOOL autoRun`  
Switch autorun on/off.
- `@property (nonatomic) BOOL closeButton`  
Show/hide the Close button.
- `@property (nonatomic) BOOL showLogo`  
Show/hide the logo.
- `@property (nonatomic) float autoRotateTime`  
Time for a single rotation of the object during automatic rotation. Value specified in seconds. Available when autoRotate is enabled.
- `@property (nonatomic) float autoRotateDelay`  
Time delay prior to the start of the automatic rotation. Value specified in seconds. Available when autoRotate is enabled.
- `@property (nonatomic) NSInteger autoRotateDir`  
Direction of the automatic rotation. 1 – clockwise, -1 – counterclockwise. Available when autoRotate is enabled.
- `@property (nonatomic) BOOL hideFullScreen`  
Show/hide the Full Screen button.
- `@property (nonatomic) BOOL hideAutoRotateOptions`  
Show/hide the Automatic Rotation button. Available when autoRotate is enabled.
- `@property (nonatomic) BOOL hideSettingsButton`  
Show/hide the Settings button.
- `@property (nonatomic) BOOL enableImageZoom`  
Switch zoom mode on/off.
- `@property (nonatomic) NSInteger zoomQuality`  
Zoom quality. Possible values:  
1 – SD quality,  
2 – HD quality.
- `@property (nonatomic) BOOL hideZoomOption`  
Show/hide zoom options.

## @protocol CappasityModelDelegate

A collection of methods that may be called by the CappasityModel class object.

### Overview

Inherits the CappasityDelegate protocol.

### Methods

- (void)modelInfoReceived  
Tells the delegate of having successfully obtained the requested model information.
- (void)modelUpdated  
Tells the delegate of having successfully updated the model properties.
- (void)modelRemoved  
Tells the delegate of having successfully deleted the model.
- (void)previewReceivedWithPreview:(UIImage \* \_Nonnull)preview userInfo:(id \_Nullable)userInfo  
Returns the requested model preview.  
Parameters:
  - preview – model preview image
  - userInfo – user information entered during the preview request.

## @interface CappasityModel

Working with the model.

### Overview

The object may be initialized with the help of the model's id or sku. The receiveInfo: method should then be called to obtain the model information.

```
CappasityModel *model = [[CappasityModel alloc] initWithSku: @"123456789" delegate:self];  
[model receiveInfo];  
...  
//the object is ready for use if the request has been successfull (the delegate received the  
//modelInfoReceived: method).  
printf("%s", [model.sku UTF8String]);
```

There is no need to call the receiveInfo() method if the model has been obtained via a request for a list of user models.

```
- (void)receivedWithModels:(NSArray<CappasityModel *> * _Nonnull)models {  
    if ([models count] > 0) {  
        printf("%s", [models[0].sku UTF8String]);  
    }  
}
```

Since the delegate has not been set during the initialization of the object in this case, this should be done directly if needed.

```
CappasityModel *model = models[0]
model.delegate = self
```

## Properties and methods

@property (nonatomic, weak) id <CappasityModelDelegate> \_Nullable delegate  
The delegate object.

@property (nonatomic, readonly, copy) NSString \* \_Nullable id  
Model id.

@property (nonatomic, readonly, copy) NSString \* \_Nullable title  
Model title.

@property (nonatomic, readonly, copy) NSString \* \_Nullable sku  
Model sku.

@property (nonatomic, readonly) enum FileAccessType access  
Model visibility setting.  
FileAccessType values:

publicAccess	model is visible to everyone
unlistedAccess	model is accessible only through a direct link
privateAccess	model is visible only to owner

- (nonnull instancetype)initWithId:(NSString \* \_Nonnull)id delegate:(id <CappasityModelDelegate> \_Nullable)delegate  
Returns an instance of the CappasityModel class  
Parameters:  
- id – model id.  
- delegate – the delegate object.

- (nonnull instancetype)initWithSku:(NSString \* \_Nonnull)sku delegate:(id <CappasityModelDelegate> \_Nullable)delegate  
Returns an instance of the CappasityModel class  
Parameters:  
- sku – model sku.  
- delegate – the delegate object.

- (void)receiveInfo  
Sends a request to obtain the model information. Calls the delegate method modelInfoReceived: in the case of a successful execution.

- (void)remove  
Sends a request to delete the model. Calls the delegate method modelRemoved: in the case of a successful execution.

- (void)getPreviewWithWidthPx:(NSUInteger)widthPx heightPx:(NSUInteger)heightPx userInfo:(id \_Nullable)userInfo  
Sends a request to obtain the model preview. Calls the delegate method previewReceivedWithPreview:userInfo: in the case of a successful execution.  
Parameters:  
- widthPx – width of requested preview in pixels.  
- heightPx – height of requested preview in pixels.  
- userInfo – user information, returned together with the obtained model preview.

- (void)getPreviewWithWidthPt:(NSUInteger)widthPt heightPt:(NSUInteger)heightPt userInfo:(id \_Nullable)userInfo  
Sends a request to obtain the model preview. Calls the delegate method `previewReceivedWithPreview:userInfo:` in the case of a successful execution.  
Parameters:
  - widthPt – width of requested preview in points.
  - heightPt – height of requested preview in points.
  - userInfo – user information, returned together with the obtained model preview.
- (void)updateWithTitle:(NSString \* \_Nonnull)title sku:(NSString \* \_Nonnull)sku access:(NSInteger)access  
Sends a request to update the model information. Calls the delegate method `modelUpdated:` in the case of a successful execution.  
Parameters:
  - title – new model title
  - sku – new model sku
  - access – new model access type
- (void)updateWithTitle:(NSString \* \_Nonnull)title access:(NSInteger)access
- (void)updateWithTitle:(NSString \* \_Nonnull)title sku:(NSString \* \_Nonnull)sku access:(NSInteger)access
- (void)updateWithSku:(NSString \* \_Nonnull)sku access:(NSInteger)access
- (void)updateWithTitle:(NSString \* \_Nonnull)title sku:(NSString \* \_Nonnull)sku access:(NSInteger)access
- (void)updateWithTitle:(NSString \* \_Nonnull)title sku:(NSString \* \_Nonnull)sku
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- (void)updateWithAccess:(NSInteger)access
- (void)updateWithTitle:(NSString \* \_Nonnull)title sku:(NSString \* \_Nonnull)sku access:(NSInteger)access
- (NSString \* \_Nullable)embedCodeWith:(CappasityEmbedCodeParams \* \_Nonnull)params  
Returns the embed code of the model with the specified parameters.  
Parameters:
  - params – collection of embed-code parameters.

## Displaying the Model

### @interface CappasityModelViewParams

Collection of model display parameters.

#### Overview

Used for customizing the model display.



## Properties

@property (nonatomic) BOOL autoRotate  
Switch the automatic rotation of the object on/off.

@property (nonatomic) BOOL autoRun  
Switch autorun on/off.

@property (nonatomic) BOOL showLogo  
Show/hide the logo.

@property (nonatomic) float autoRotateTime  
Time for a single rotation of the object during automatic rotation. Value specified in seconds. Available when autoRotate is enabled.

@property (nonatomic) float autoRotateDelay  
Time delay prior to the start of the automatic rotation. Value specified in seconds. Available when autoRotate is enabled.

@property (nonatomic) NSInteger autoRotateDir  
Direction of the automatic rotation. 1 – clockwise, -1 – counterclockwise. Available when autoRotate is enabled.

@property (nonatomic) BOOL hideAutoRotateOptions  
Show/hide the Automatic Rotation button. Available when autoRotate is enabled.

@property (nonatomic) BOOL hideSettingsButton  
Show/hide the Settings button.

@property (nonatomic) BOOL enableImageZoom  
Switch zoom mode on/off.

@property (nonatomic) NSInteger zoomQuality  
Zoom quality. Possible values:  
1 – SD quality,  
2 – HD quality.

@property (nonatomic) BOOL hideZoomOption  
Show/hide zoom options.

## @protocol CappasityModelViewDelegate

A set of methods that may be called by the CappasityModelView class object.

### Overview

Inherits the CappasityDelegate protocol.

## @interface CappasityModelView

Displays the model with the specified parameters in a web browser.

## Overview

The CappasityModelView class inherits UIView. It can be appointed to an object directly in the storyboard. The “set” method is used to specify the model to be displayed, as well as the display parameters.

In order to enable transition to Cappasity's official website when clicking on the logo, viewController property must be set.

## Properties and methods

@property (nonatomic, weak) id <CappasityModelViewDelegate> \_Nullable delegate  
The delegate object.

@property (nonatomic, weak) UIViewController \* \_Nullable viewController  
The UIViewController object. Must be set for working logo button.  
Clicking on the Cappasity logo will have no effect if this object is not specified.

- (void)stopLoading  
Stops the loading of the model.

- (void)setWithModel:(CappasityModel \* \_Nonnull)model params:(CappasityModelViewParams \* \_Nonnull)params  
Specifies the model to be displayed and the display parameters.

Parameters:

- model – model to be viewed
- params – collection of model display parameters.

## Error List

Codes of potential errors encountered during program operation.

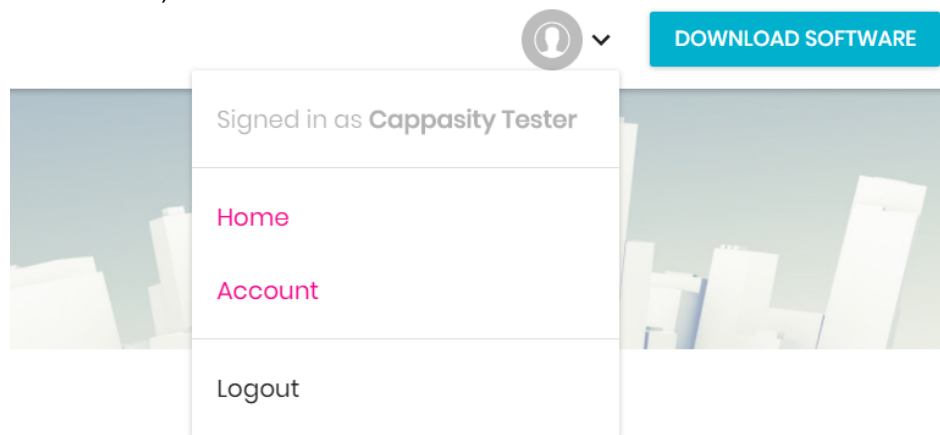
Code	Description
102	The login was unsuccessful.
103	You must log into the account first.
104	The token should not be empty.
105	The model has not been initialized. Call receiveInfo to obtain the model parameters.
106	The sku should not be empty.
107	The account name should not be empty.
108	The account name should only have 0-9, a-z/A-Z, and '.' characters.
109	The sku should only have 0-9, a-z/A-Z, '.', '_', and '-' characters.
110	The account name should contain at least 3 characters.
111	The password should contain at least 6 characters.
112	The title should not be empty or contain more than 75 characters.
113	The sku should contain no more than 50 characters.
150	The request was unsuccessful.
151	The request to obtain the model was unsuccessful.
152	The request to obtain the list of models was unsuccessful.
153	The request to obtain the model preview was unsuccessful.
154	The request to obtain the model parameters was unsuccessful.

155	The deletion of the model was unsuccessful.
156	The model parameter update was unsuccessful.
157	The modification of the model access type was unsuccessful.
158	The request to obtain the model's embed code was unsuccessful.
159	The video could not be processed.
160	Uploading model to the cloud server was unsuccessful.
161	The model's embed code could not be obtained.
162	The user search request was unsuccessful.
163	The file is being processed. Please wait for up to 15 minutes.
164	You can modify the file access settings if your activated paid account is Basic or higher.
300	Not enough memory.
301	Your request cannot be processed.

## Obtaining the Token

To generate the token, you need to perform the following steps:

- 1) sign up for an account on the Cappasity platform at <https://3d.cappasity.com/>, or log into your existing account,
- 2) click on the Account tab in the menu,



- 3) click on the Security tab,

### Change your password

Current password

New password

Repeat new password

Change

### Personal access token

Token Name

Enter a name in the 'Token Name' field. You can use any name that will be easy to remember and associate, for example: capacity.

Generate

- 4) enter the token name and click on the Generate button,
- 5) copy the token obtained.