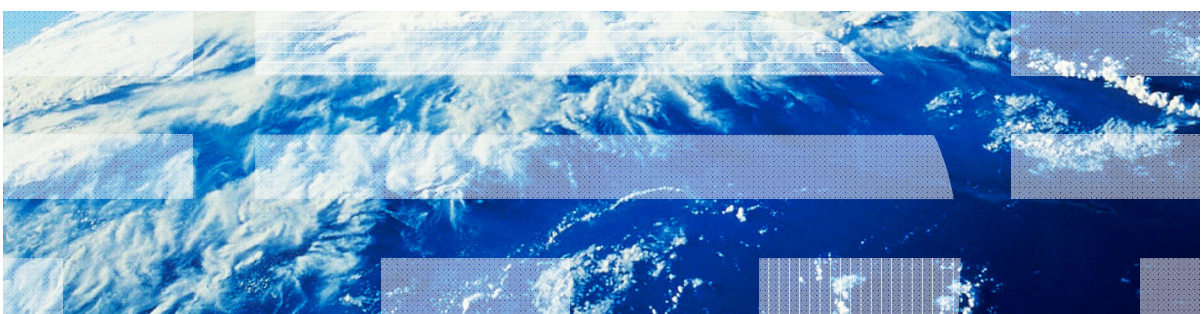
IBM Worklight V5.0.5
Getting Started

Module 7.12 – JSONStore with Security



18 January 2013

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- Advanced JSONStore Usage
  - Encryption
    - Initialization
    - Changing a Password
    - Clearing a Password
  - Enhance
  - Documentify & Replace
  - Collection Removal
- Sample

Advanced JSONStore Usage

- This module covers advanced tasks that you can perform on a local JSONStore collection, including encryption.

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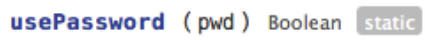
Encryption



- You can use the JSONStore API to encrypt your entire local data store.
- To encrypt a data store, specify a password in the usePassword method.
- This sets the password that is used to generate keys to encrypt data that is stored locally on the device.
- Note: the store is encrypted at all times.

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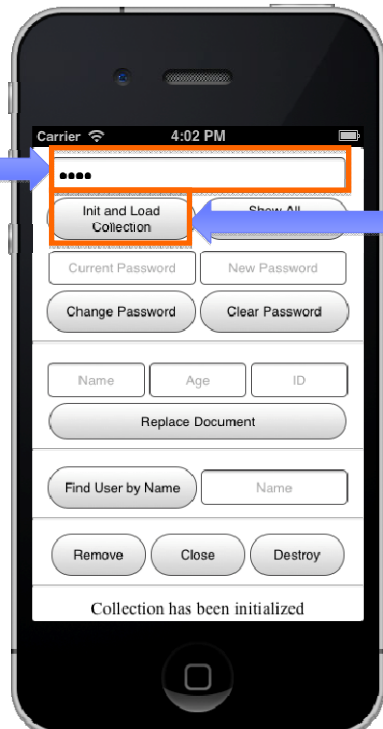
Encryption – Initialization

To enable encryption in the sample, specify a password.



Next, initialize and load the collection.

Encryption – Initialization

```
var pwd = passwordTag.val(),
pwdLength = pwd.length;

if (pwdLength > 0) {

    WL.JSONStore.usePassword(pwd);
    passwordTag.val('');
    pwd = null;

} else {

    WL.Logger.debug('Using NO Password, length: ' + pwdLength);
}

var initCollectionSuccessCallback = function () {
    logMessage('Collection has been initialized');
};

usersCollection = WL.JSONStore.initCollection(
    "users",
    usersSearchFields,
    {adapter: usersAdapterOptions,
    onSuccess: initCollectionSuccessCallback,
    onFailure: genericFailureCallback,
    load:true}),
```

Assigning a password

If a password value was given, pass it into the usePassword() method. This method encrypts the store by using the given key.

Encryption – Initialization

```
var pwd = passwordTag.val(),
pwdLength = pwd.length;

if (pwdLength > 0) {

    WL.JSONStore.usePassword(pwd);
    passwordTag.val('');
    pwd = null;

} else {

    WL.Logger.debug('Using NO Password, length: ' + pwdLength);
}

var initCollectionSuccessCallback = function () {
    logMessage('Collection has been initialized');
};

usersCollection = WL.JSONStore.initCollection(
    "users",
    usersSearchFields,
    {adapter: usersAdapterOptions,
    onSuccess: initCollectionSuccessCallback,
    onFailure: genericFailureCallback,
    load:true}),
```

onSuccess Callback

Define the OnSuccess callback. On success, display a meaningful message.

Encryption – Initialization

```
var pwd = passwordTag.val(),
pwdLength = pwd.length;

if (pwdLength > 0) {

    WL.JSONStore.usePassword(pwd);
    passwordTag.val('');
    pwd = null;

} else {

    WL.Logger.debug('Using NO Password, length:
}

var initCollectionSuccessCallback = function () {
    logMessage('Collection has been initialized');
};

usersCollection = WL.JSONStore.initCollection(
    "users",
    usersSearchFields,
    {adapter: usersAdapterOptions,
    onSuccess: initCollectionSuccessCallback,
    onFailure: genericFailureCallback,
    load:true}),
```

Init and Load

Finally, call the init function with the **load** parameter set to `true`. On success, the collection is created and encrypted using the specified key and the data that is retrieved from our adapter is loaded.

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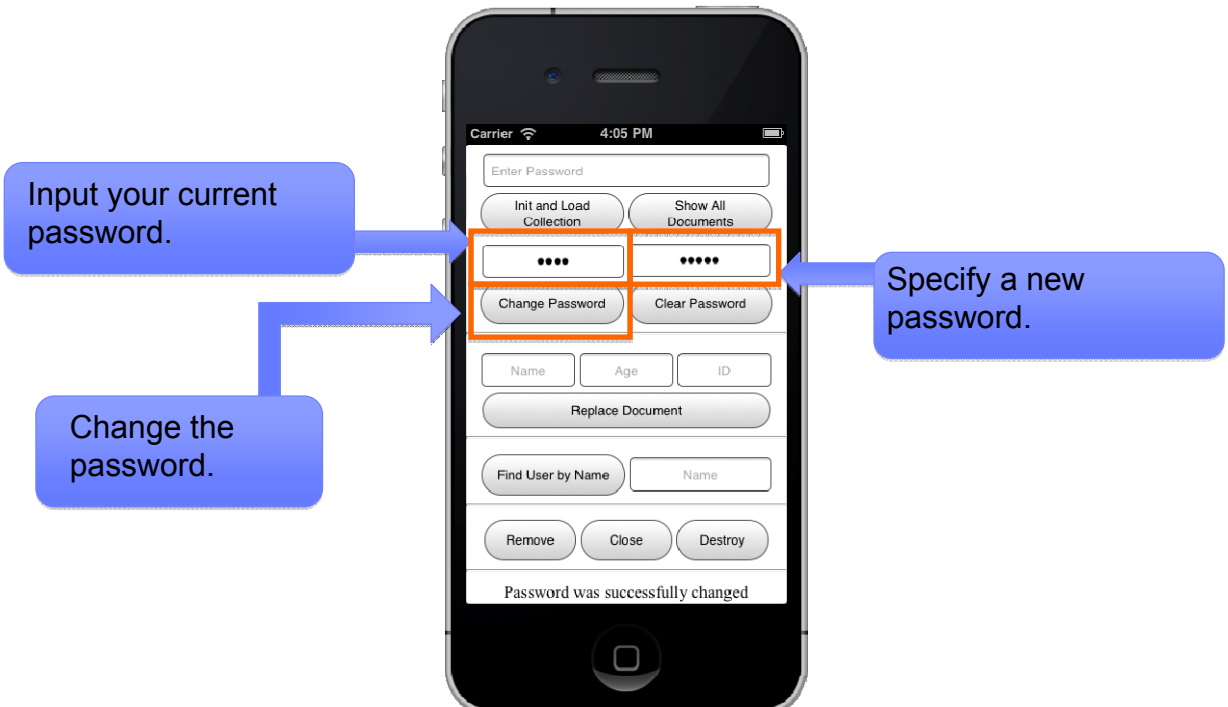
Encryption – Changing a Password



Encryption – Changing a Password

Process the input

Obtain the original password and the new one as specified in the inputs and assign them to variables.

```
WLJQ('button#change_password').bind('click', function () {

    WL.Logger.debug('Called button#change_password');

    var password_old = passwordOldTag.val(),
        password_new = passwordNewTag.val();

    if (password_old.length < 1 || password_new.length < 1 ||
        checkUndefOrNull(JSONStoreInstance)) {
        logMessage('You must enter your old password as well as the new one.');
    } else {

        var win =   function (data) {
            logMessage('Password was successfully changed : ' + data);
            passwordOldTag.val('');
            passwordNewTag.val('');
        };

        var options = {onSuccess: win, onFailure: genericFailureCallback};

        WL.JSONStore.changePassword(password_old,password_new,options);
    }
});//END Change Password
```

Encryption – Changing a Password

```
WLJQ('button#change_password').bind('click', function () {

    WL.Logger.debug('Called button#change_password');

    var password_old = passwordOldTag.val(),
        password_new = passwordNewTag.val();

    if (password_old.length < 1 || password_new.length < 1 ||
        checkUndefOrNull(JSONStoreInstance)) {
        logMessage('You must enter your old password as well as the new one.');
    } else {

        var win =   function (data) {
            logMessage('Password was successfully changed : ' + data);
            passwordOldTag.val('');
            passwordNewTag.val('');
        };

        var options = {onSuccess: win, onFailure: genericFailureCallback};

        WL.JSONStore.changePassword(password_old,password_new,options);
    }
});//END Change Password
```

Options

Define the OnSuccess callback. The variable **data** will contain a status code (defined in the JSONStore documentation).

Encryption – Changing a Password

```
WLJQ('button#change_password').bind('click', function () {

    WL.Logger.debug('Called button#change_password');

    var password_old = passwordOldTag.val(),
        password_new = passwordNewTag.val();

    if (password_old.length < 1 || password_new.length < 1 ||
        checkUndefOrNull(JSONStoreInstance)) {
        logMessage('You must enter your old password as well as
    } else {

        var win =   function (data) {
            logMessage('Password was successfully changed : ' +
            passwordOldTag.val('');
            passwordNewTag.val('');
        };

        var options = {onSuccess: win, onFailure: genericFailureCallback};

        WL.JSONStore.changePassword(password_old,password_new,options);
    }
});//END Change Password
```

Change the password

Finally, call the changePassword method with the old and new passwords as parameters. On success, the password is changed.

Note

This method is static so call it using the JSONStore instance.

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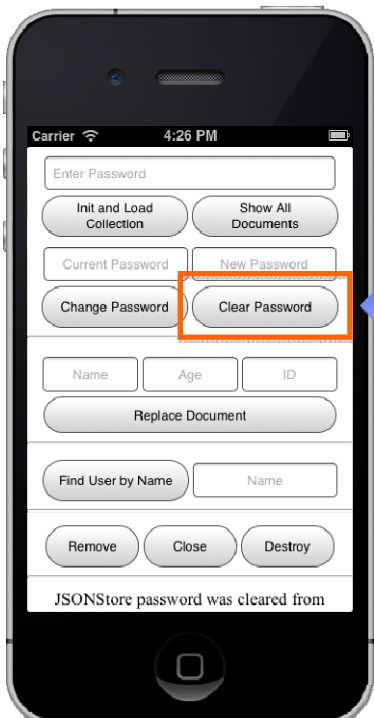
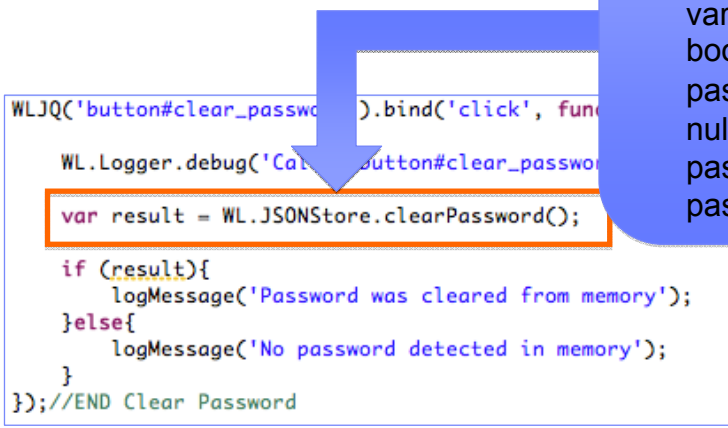
Encryption – Clearing a Password



Remove the password from memory if it exists.

Encryption – Clearing a Password



Clear the password

Call the clearPassword static method and assign the result to a variable. This method returns a boolean value. If `true`, the password in memory was set to null. Otherwise, there was no password in memory or the password could not be set to null.

Encryption – Clearing a Password

Check the result

Check the result variable and display a meaningful message.

```
WLJQ('button#clear_password').bind('click', function () {

    WL.Logger.debug('Called button#clear_password');

    var result = WL.JSONStore.clearPassword();

    if (result){
        logMessage('Password was cleared from memory');
    }else{
        logMessage('No password detected in memory');
    }
});//END Clear Password
```

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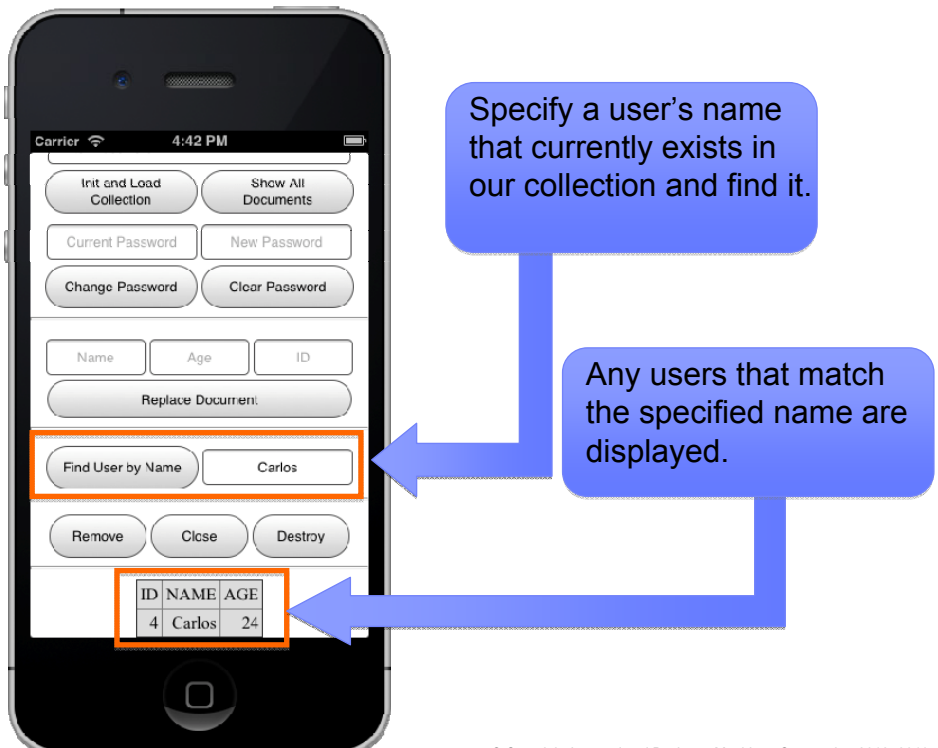
Enhance - Intro

- With the enhance method, you can add a function to a collection's prototype.
- You can create custom functions for tasks that might be performed frequently. To access these functions, use your collection instance to call them.
- For example, in the sample app a custom function for finding documents by a user’s name is created.

Enhance – UI



Enhance – The Code

```
WLJQ('button#enhance').bind('click', function () {

    WL.Logger.debug('Called button#enhance');

    var name = enhanceTag.val();

    if ( name.length < 1 ) {
        logMessage('You must provide a valid search value');
        return;
    }

    //Create a custom function
    var custFunction = function (user_name,onSuccess) {

        var query = {name: user_name};

        var win =  function (data) {
            onSuccess(data);
        };

        var fail =  function (data) {
            genericFailureCallback(data);
        };

        var options = {onSuccess: win, onFailure: fail};
        usersCollection.find(query, options);
    };

    usersCollection.enhance('getUserByName', custFunction);

    var onSuccess = function (data) {
        reloadTable(data);
        enhanceTag.val('');
    };

    usersCollection.getUserByName(name, onSuccess);
});//END Enhance
```

Create a custom function

Define a custom function that creates a query and searches the `users` collection by user name. This function accepts a user name and an onSuccess callback as parameters.

Enhance – The Code

```
WLJQ('button#enhance').bind('click', function () {

    WL.Logger.debug('Called button#enhance');

    var name = enhanceTag.val();

    if ( name.length < 1 ) {
        logMessage('You must provide a valid search value');
        return;
    }

    //Create a custom function
    var custFunction = function (user_name,onSuccess) {

        var query = {name: user_name};

        var win =  function (data) {
            onSuccess(data);
        };

        var fail =  function (data) {
            genericFailureCallback(data);
        };

        var options = {onSuccess: win, onFailure: fail};
        usersCollection.find(query, options);
    };

    usersCollection.enhance('getUserByName', custFunction);

    var onSuccess = function (data) {
        reloadTable(data);
        enhanceTag.val('');
    };

    usersCollection.getUserByName(name, onSuccess);
});//END Enhance
```

Add the function to collection prototype

Call the `enhance` method and pass in a name for the custom function, and the custom function itself.

The function is added to the collection prototype and is ready for use.

Enhance – The Code

```
WLJQ('button#enhance').bind('click', function () {

    WL.Logger.debug('Called button#enhance');

    var name = enhanceTag.val();

    if ( name.length < 1 ) {
        logMessage('You must provide a valid search value');
        return;
    }

    //Create a custom function
    var custFunction = function (user_name,onSuccess) {

        var query = {name: user_name};

        var win =  function (data) {
            onSuccess(data);
        };

        var fail =  function (data) {
            genericFailureCallback(data);
        };

        var options = {onSuccess: win, onFailure: fail};
        usersCollection.find(query, options);
    };

    usersCollection.enhance('getUserByName', custFunction);

    var onSuccess = function (data) {
        reloadTable(data);
        enhanceTag.val('');
    };

    usersCollection.getUserByName(name, onSuccess);
});//END Enhance
```

onSucces Callback

Define an onSuccess callback so you can verify that the custom function was executed successfully.

Enhance – The Code

```
WLJQ('button#enhance').bind('click', function () {

    WL.Logger.debug('Called button#enhance');

    var name = enhanceTag.val();

    if ( name.length < 1 ) {
        logMessage('You must provide a valid search value');
        return;
    }

    //Create a custom function
    var custFunction = function (user_name,onSuccess) {

        var query = {name: user_name};

        var win =  function (data) {
            onSuccess(data);
        };

        var fail =  function (data) {
            genericFailureCallback(data);
        };

        var options = {onSuccess: win, onFailure: fail};
        usersCollection.find(query, options);
    };

    usersCollection.enhance('getUserByName', custFunction);

    var onSuccess = function (data) {
        reloadTable(data);
        enhanceTag.val('');
    };

    usersCollection.getUserByName(name, onSuccess);
});//END Enhance
```

Calling the custom function

Finally, call the new function getUserByName by using the JSONSStore instance. Pass in the name to search for and an onSuccess callback as defined in the custom function. On success, you receive an array of matching documents which are then displayed in a table.

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Documentify & Replace – UI

Specify a new name and age, together with the ID of the user in the collection that you want to replace.

Any users that match the specified ID in the local store are replaced.

Documentify & Replace – The Code

```
WLJQ('button#replace').bind('click', function () {

    WL.Logger.debug('Called button#replace');
    if (!checkColInit(usersCollection)) {return;}

    var name = nameTag.val(),
        id = idTag.val(),
        age = ageTag.val();

    if (id.length < 1 ) {
        logMessage('You must provide a valid value for ID');
    } else {
        var doc = WL.JSONStore.documentify(id, {name: name, age: age});

        var win =   function (data) {
            logMessage('Replaced ' + data + ' document.');
            //Clear Text Boxes
            nameTag.val('');
            ageTag.val('');
            idTag.val('');
        };

        var options = {onSuccess: win, onFailure: genericFailureCallback};

        usersCollection.replace(doc,options);
    }
});
```

Documentify

The replace method accepts a document object as a parameter so before you can call it you must construct a document object from the user input.

This can be achieved through the documentify method.

Documentify requires an id and JSON data and returns a JSONStore document object.

Documentify & Replace – The Code

```
WLJQ('button#replace').bind('click', function () {

    WL.Logger.debug('Called button#replace');
    if (!checkColInit(usersCollection)) {return;}

    var name = nameTag.val(),
        id = idTag.val(),
        age = ageTag.val();

    if (id.length < 1 ) {
        logMessage('You must provide a valid value for ID')
    } else {

        var doc = WL.JSONStore.documentify(id, {name: name,  age});

        var win =   function (data) {
            logMessage('Replaced ' + data + ' document.');
            //Clear Text Boxes
            nameTag.val('');
            ageTag.val('');
            idTag.val('');
        };

        var options = {onSuccess: win, onFailure: genericFailureCallback};

        usersCollection.replace(doc,options);
    }
});
```

Options

Define the `replace` method's OnSuccess callback. The variable **data** will contain the number of documents replaced.

Documentify & Replace – The Code

```
WLJQ('button#replace').bind('click', function () {

    WL.Logger.debug('Called button#replace');
    if (!checkColInit(usersCollection)) {return;}

    var name = nameTag.val(),
        id = idTag.val(),
        age = ageTag.val();

    if (id.length < 1 ) {
        logMessage('You must provide a valid value for ID');
    } else {

        var doc = WL.JSONStore.documentify(id, {name: name, age: age});

        var win =   function (data) {
            logMessage('Replaced ' + data + ' document.');
            //Clear Text Boxes
            nameTag.val('');
            ageTag.val('');
            idTag.val('');
        };

        var options = {onSuccess: win, on  lure: genericFailureCallback

        usersCollection.replace(doc,options);
    }
});
```

Replace the Document

Finally, call the replace method and pass in the newly created document object and the options. You can verify that the document has been replaced by displaying all the documents in the collection by using the **Show all documents** button.

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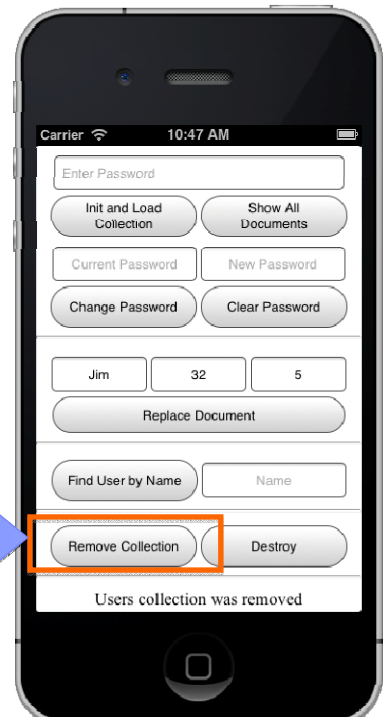
Collection Removal – UI

Remove the entire `users` collection. The local store still exists, either empty or with any other collections that have not been removed.



Collection Removal – The Code

Options

Define the onSuccess callback. The variable **data** contains a boolean value that indicates whether the `users` collection was removed.

```
WLJQ('button#remove_collection').bind('click', nction ()

    WL.Logger.debug('Called button#remove_colle ion');

    var win =  function (data) {
        if (data === 0) {
            logMessage('Users collection was removed');
        }else{
            logMessage('Users Collection was not removed');
        }
    };

    var options = {onSuccess: win, onFailure: genericFailureCallback};

    usersCollection.removeCollection(options);
});
```

Collection Removal – The Code

```
WLJQ('button#remove_collection').bind('click', function

    WL.Logger.debug('Called button#remove_collection');

    var win =  function (data) {
        if (data === 0) {
            logMessage('Users collection was removed');
        }else{
            logMessage('Users Collection was not removed');
        }
    };

    var options = {onSuccess: win, onFailure: genericFailureCallback};

    usersCollection.removeCollection(options);
});
```

Remove the Collection

Finally, we call our removeCollection method and pass in our options.

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Sample

- The sample for this training module can be found in the Getting Started page of the IBM Worklight documentation website at
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