

# JSONStore Code Examples

## **Cordova**

Initialize and open connections, get an Accessor, and add data

```

var collectionName = 'people';

// Object that defines all the collections.
var collections = {

    // Object that defines the 'people' collection.
    people : {

        // Object that defines the Search Fields for the 'people' collection.
        searchFields : {name: 'string', age: 'integer'}
    }
};

// Optional options object.
var options = {

    // Optional username, default 'jsonstore'.
    username : 'carlos',

    // Optional password, default no password.
    password : '123',

    // Optional local key generation flag, default false.
    localKeyGen : false
};

WL.JSONStore.init(collections, options)

.then(function () {

    // Data to add, you probably want to get
    // this data from a network call (e.g. MobileFirst Adapter).
    var data = [{name: 'carlos', age: 10}];

    // Optional options for add.
    var addOptions = {

        // Mark data as dirty (true = yes, false = no), default true.
        markDirty: true
    };

    // Get an accessor to the people collection and add data.
    return WL.JSONStore.get(collectionName).add(data, addOptions);
})

.then(function (numberOfDocumentsAdded) {
    // Add was successful.
})

.fail(function (errorObject) {
    // Handle failure for any of the previous JSONStore operations (init, add).
});

```

Find - locate documents inside the Store

```

var collectionName = 'people';

// Find all documents that match the queries.
var queryPart1 = WL.JSONStore.QueryPart()
    .equal('name', 'carlos')
    .lessOrEqualThan('age', 10)

var options = {
    // Returns a maximum of 10 documents, default no limit.
    limit: 10,

    // Skip 0 documents, default no offset.
    offset: 0,

    // Search fields to return, default: ['_id', 'json'].
    filter: ['_id', 'json'],

    // How to sort the returned values, default no sort.
    sort: [{name: WL.constant.ASCENDING}, {age: WL.constant.DESENDING}]
};

WL.JSONStore.get(collectionName)

// Alternatives:
// - findById(1, options) which locates documents by their _id field
// - findAll(options) which returns all documents
// - find({'name': 'carlos', age: 10}, options) which finds all documents
// that match the query.
.advancedFind([queryPart1], options)

.then(function (arrayResults) {
    // arrayResults = [{_id: 1, json: {name: 'carlos', age: 99}}]
})

.fail(function (errorObject) {
    // Handle failure.
});

```

Replace - change the documents that are already stored inside a Collection

```

var collectionName = 'people';

// Documents will be located with their '_id' field
// and replaced with the data in the 'json' field.
var docs = [{_id: 1, json: {name: 'carlitos', age: 99}}];

var options = {

    // Mark data as dirty (true = yes, false = no), default true.
    markDirty: true
};

WL.JSONStore.get(collectionName)

.replace(docs, options)

.then(function (numberOfDocumentsReplaced) {
    // Handle success.
})

.fail(function (errorObject) {
    // Handle failure.
});

```

Remove - delete all documents that match the query

```

var collectionName = 'people';

// Remove all documents that match the queries.
var queries = [{_id: 1}];

var options = {

    // Exact match (true) or fuzzy search (false), default fuzzy search.
    exact: true,

    // Mark data as dirty (true = yes, false = no), default true.
    markDirty: true
};

WL.JSONStore.get(collectionName)

.remove(queries, options)

.then(function (numberOfDocumentsRemoved) {
    // Handle success.
})

.fail(function (errorObject) {
    // Handle failure.
});

```

Count - gets the total number of documents that match a query

```

var collectionName = 'people';

// Count all documents that match the query.
// The default query is '{}' which will
// count every document in the collection.
var query = {name: 'carlos'};
var options = {

    // Exact match (true) or fuzzy search (false), default fuzzy search.
    exact: true
};

WL.JSONStore.get(collectionName)

    .count(query, options)

    .then(function (numberOfDocumentsThatMatchedTheQuery) {
        // Handle success.
    })

    .fail(function (errorObject) {
        // Handle failure.
    });

```

Destroy - wipes data for all users, destroys the internal storage, and clears security artifacts

```

WL.JSONStore.destroy()

    .then(function () {
        // Handle success.
    })

    .fail(function (errorObject) {
        // Handle failure.
    });

```

Security - close access to all opened Collections for the current user

```

WL.JSONStore.closeAll()

    .then(function () {
        // Handle success.
    })

    .fail(function (errorObject) {
        // Handle failure.
    });

```

Security - change the password that is used to access a Store

```

// The password should be user input.
// It is hard-coded in the example for brevity.
var oldPassword = '123';
var newPassword = '456';

var clearPasswords = function () {
    oldPassword = null;
    newPassword = null;
};

// Default username if none is passed is: 'jsonstore'.
var username = 'carlos';

WL.JSONStore.changePassword(oldPassword, newPassword, username)

.then(function () {

    // Make sure you do not leave the password(s) in memory.
    clearPasswords();

    // Handle success.
})

.fail(function (errorObject) {

    // Make sure you do not leave the password(s) in memory.
    clearPasswords();

    // Handle failure.
});

```

Push - get all documents that are marked as dirty, send them to a MobileFirst adapter, and mark them clean

```

var collectionName = 'people';
var dirtyDocs;

WL.JSONStore.get(collectionName)

.getAllDirty()

.then(function (arrayOfDirtyDocuments) {
    // Handle getAllDirty success.

    dirtyDocs = arrayOfDirtyDocuments;

    var procedure = 'procedure-name-1';
    var adapter = 'adapter-name';

    var resource = new WLResourceRequest("adapters/" + adapter + "/" + procedure, WLResourceRequest.GET);
    resource.setQueryParameter('params', [dirtyDocs]);
    return resource.send();
})

.then(function (responseFromAdapter) {
    // Handle invokeProcedure success.

    // You may want to check the response from the adapter
    // and decide whether or not to mark documents as clean.
    return WL.JSONStore.get(collectionName).markClean(dirtyDocs);
})

.then(function () {
    // Handle markClean success.
})

.fail(function (errorObject) {
    // Handle failure.
});

```

Pull - get new data from a MobileFirst adapter

```

var collectionName = 'people';

var adapter = 'adapter-name';
var procedure = 'procedure-name-2';

var resource = new WLResourceRequest("adapters/" + adapter + "/" + procedure, WLResourceRequest.GET);

resource.send()

.then(function (responseFromAdapter) {
    // Handle invokeProcedure success.

    // The following example assumes that the adapter returns an arrayOfData,
    // (which is not returned by default),
    // as part of the invocationResult object,
    // with the data that you want to add to the collection.
    var data = responseFromAdapter.responseJSON

    // Example:
    // data = [{id: 1, ssn: '111-22-3333', name: 'carlos'}];

    var changeOptions = {

        // The following example assumes that 'id' and 'ssn' are search fields,
        // default will use all search fields
        // and are part of the data that is received.
        replaceCriteria : ['id', 'ssn'],

        // Data that does not exist in the Collection will be added, default false.
        addNew : true,

        // Mark data as dirty (true = yes, false = no), default false.
        markDirty : false
    };

    return WL.JSONStore.get(collectionName).change(data, changeOptions);
})

.then(function () {
    // Handle change success.
})

.fail(function (errorObject) {
    // Handle failure.
});

```

Check whether a document is dirty



```
var collectionName = 'people';
var doc = {_id: 1, json: {name: 'carlitos', age: 99}};

WL.JSONStore.get(collectionName)

.isDirty(doc)

.then(function (isDocumentDirty) {
  // Handle success.

  // isDocumentDirty - true if dirty, false otherwise.
})

.fail(function (errorObject) {
  // Handle failure.
});
```

## Check the number of dirty documents

```
var collectionName = 'people';

WL.JSONStore.get(collectionName)

.countAllDirty()

.then(function (numberOfDirtyDocuments) {
  // Handle success.
})

.fail(function (errorObject) {
  // Handle failure.
});
```

## Remove a Collection

```
var collectionName = 'people';

WL.JSONStore.get(collectionName)

.removeCollection()

.then(function () {
  // Handle success.

  // Note: You must call the 'init' API to re-use the empty collection.
  // See the 'clear' API if you just want to remove all data that is inside.
})

.fail(function (errorObject) {
  // Handle failure.
});
```

## Clear all data that is inside a Collection

```
var collectionName = 'people';

WL.JSONStore.get(collectionName)

    .clear()

    .then(function () {
        // Handle success.

        // Note: You might want to use the 'removeCollection' API
        // instead if you want to change the search fields.
    })

    .fail(function (errorObject) {
        // Handle failure.
    });
```

Start a transaction, add some data, remove a document, commit the transaction and roll back the transaction if there is a failure

```

WL.JSONStore.startTransaction()

.then(function () {
  // Handle startTransaction success.
  // You can call every JSONStore API method except:
  // init, destroy, removeCollection, and closeAll.

  var data = [{name: 'carlos'}];

  return WL.JSONStore.get(collectionName).add(data);
})

.then(function () {

  var docs = [{_id: 1, json: {name: 'carlos'}}];

  return WL.JSONStore.get(collectionName).remove(docs);
})

.then(function () {

  return WL.JSONStore.commitTransaction();
})

.fail(function (errorObject) {
  // Handle failure for any of the previous JSONStore operation.
  //(startTransaction, add, remove).

  WL.JSONStore.rollbackTransaction()

  .then(function () {
    // Handle rollback success.
  })

  .fail(function () {
    // Handle rollback failure.
  })
});

```

## Get file information

```

WL.JSONStore.fileInfo()
.then(function (res) {
  //res => [{isEncrypted : true, name : carlos, size : 3072}]
})

.fail(function () {
  // Handle failure.
});

```

Search with like, rightLike, and leftLike

```

// Match all records that contain the search string on both sides.
// %searchString%
var arr1 = WL.JSONStore.QueryPart().like('name', 'ca'); // returns {name: 'carlos', age: 10}
var arr2 = WL.JSONStore.QueryPart().like('name', 'los'); // returns {name: 'carlos', age: 10}

// Match all records that contain the search string on the left side and anything on the right side.
// searchString%
var arr1 = WL.JSONStore.QueryPart().rightLike('name', 'ca'); // returns {name: 'carlos', age: 10}
var arr2 = WL.JSONStore.QueryPart().rightLike('name', 'los'); // returns nothing

// Match all records that contain the search string on the right side and anything on the left side.
// %searchString
var arr = WL.JSONStore.QueryPart().leftLike('name', 'ca'); // returns nothing
var arr2 = WL.JSONStore.QueryPart().leftLike('name', 'los'); // returns {name: 'carlos', age: 10}

```

## iOS

Initialize and open connections, get an Accessor, and add data

```

// Create the collections object that will be initialized.
JSONStoreCollection* people = [[JSONStoreCollection alloc] initWithName:@"people"];
[people setSearchField:@"name" withType:JSONStore_String];
[people setSearchField:@"age" withType:JSONStore_Integer];

// Optional options object.
JSONStoreOpenOptions* options = [JSONStoreOpenOptions new];
[options setUsername:@"carlos"]; //Optional username, default 'jsonstore'
[options setPassword:@"123"]; //Optional password, default no password

// This object will point to an error if one occurs.
NSError* error = nil;

// Open the collections.
[[JSONStore sharedInstance] openCollections:[people] withOptions:options error:&error];

// Add data to the collection
NSArray* data = @[ @{@"name" : @"carlos", @"age": @10} ];
int newDocsAdded = [[people addData:data andMarkDirty:YES withOptions:nil error:&error] intValue];
Initialize with a secure random token from the server
[WLSecurityUtils getRandomStringFromServerWithBytes:32
                    timeout:1000
                    completionHandler:^(NSURLResponse *response,
                                        NSData *data,
                                        NSError *connectionError) {

// You might want to see the response and the connection error
// before moving forward

```

```

// Before moving forward.

// Get the secure random string by using the data that is
// returned from the generator on the server.
NSString* secureRandom = [[NSString alloc] initWithData:data encoding:NSUTF8Str
ingEncoding];

JSONStoreCollection* ppl = [[JSONStoreCollection alloc] initWithName:@"people"]
;
[ppl setSearchField:@"name" withType:JSONStore_String];
[ppl setSearchField:@"age" withType:JSONStore_Integer];

// Optional options object.
JSONStoreOptions* options = [JSONStoreOptions new];
[options setUsername:@"carlos"]; //Optional username, default 'jsonstore'
[options setPassword:@"123"]; //Optional password, default no password
[options setSecureRandom:secureRandom]; //Optional, default one will be generat
ed locally

// This points to an error if one occurs.
NSError* error = nil;

[[JSONStore sharedInstance] openCollections:[ppl] withOptions:options error:&e
rror];

// Other JSONStore operations (e.g. add, remove, replace, etc.) go here.
}];

```

Find - locate documents inside the Store

```

// Get the accessor to an already initialized collection.
JSONStoreCollection* people = [[JSONStore sharedInstance] getCollectionWithName:@"people"];

// This object will point to an error if one occurs.
NSError* error = nil;

// Add additional find options (optional).
JSONStoreQueryOptions* options = [JSONStoreQueryOptions new];
[options setLimit:@10]; // Returns a maximum of 10 documents, default no limit.
[options setOffset:@0]; // Skip 0 documents, default no offset.

// Search fields to return, default: ['_id', 'json'].
[options filterSearchField:@"_id"];
[options filterSearchField:@"json"];

// How to sort the returned values , default no sort.
[options sortBySearchFieldAscending:@"name"];
[options sortBySearchFieldDescending:@"age"];

// Find all documents that match the query part.
JSONStoreQueryPart* queryPart1 = [[JSONStoreQueryPart alloc] init];
[queryPart1 searchField:@"name" equal:@"carlos"];
[queryPart1 searchField:@"age" lessOrEqualThan:@10];

NSArray* results = [people findWithQueryParts:@[queryPart1] andOptions:options error:&error];

// results = @[ @{@"_id" : @1, @"json" : @{ @"name": @"carlos", @"age" : @10}} ];

for (NSDictionary* result in results) {

    NSString* name = [result valueForKeyPath:@"json.name"]; // carlos.
    int age = [[result valueForKeyPath:@"json.age"] intValue]; // 10
    NSLog(@"Name: %@, Age: %d", name, age);
}

```

## Replace - change the documents that are already stored inside a Collection

```

// Get the accessor to an already initialized collection.
JSONStoreCollection* people = [[JSONStore sharedInstance] getCollectionWithName:@"people"];

// Find all documents that match the queries.
NSArray* docs = @[ @{@"_id" : @1, @"json" : @{ @"name": @"carlitos", @"age" : @99 }} ];

// This object will point to an error if one occurs.
NSError* error = nil;

// Perform the replacement.
int docsReplaced = [[people replaceDocuments:docs andMarkDirty:NO error:&error] intValue];

```

## Remove - delete all documents that match the query

```
// Get the accessor to an already initialized collection.
JSONStoreCollection* people = [[JSONStore sharedInstance] getCollectionWithName:@"people"];

// This object will point to an error if one occurs.
NSError* error = nil;

// Find document with _id equal to 1 and remove it.
int docsRemoved = [[people removeWithIds:@[1] andMarkDirty:NO error:&error] intValue];
```

## Count - gets the total number of documents that match a query

```
// Get the accessor to an already initialized collection.
JSONStoreCollection* people = [[JSONStore sharedInstance] getCollectionWithName:@"people"];

// Count all documents that match the query.
// The default query is @{} which will
// count every document in the collection.
JSONStoreQueryPart *queryPart = [[JSONStoreQueryPart alloc] init];
[queryPart searchField:@"name" equal:@"carlos"];

// This object will point to an error if one occurs.
NSError* error = nil;

// Perform the count.
int countResult = [[people countWithQueryParts:@[queryPart] error:&error] intValue];
```

## Destroy - wipes data for all users, destroys the internal storage, and clears security artifacts

```
// This object will point to an error if one occurs.
NSError* error = nil;

// Perform the destroy.
[[JSONStore sharedInstance] destroyDataAndReturnError:&error];
```

## Security - close access to all opened Collections for the current user

```
// This object will point to an error if one occurs.
NSError* error = nil;

// Close access to all collections in the store.
[[JSONStore sharedInstance] closeAllCollectionsAndReturnError:&error];
```

## Security - change the password that is used to access a Store

```

// The password should be user input.
// It is hardcoded in the example for brevity.
NSString* oldPassword = @"123";
NSString* newPassword = @"456";
NSString* username = @"carlos";

// This object will point to an error if one occurs.
NSError* error = nil;

// Perform the change password operation.
[[JSONStore sharedInstance] changeCurrentPassword:oldPassword withNewPassword:new
Password forUsername:username error:&error];

// Remove the passwords from memory.
oldPassword = nil;
newPassword = nil;

```

Push - get all documents that are marked as dirty, send them to a MobileFirst adapter, and mark them clean

```

// Get the accessor to an already initialized collection.
JSONStoreCollection* people = [[JSONStore sharedInstance] getCollectionWithNam
e:@"people"];

// This object will point to an error if one occurs
NSError* error = nil;

// Return all documents marked dirty
NSArray* dirtyDocs = [people allDirtyAndReturnError:&error];

// ACTION REQUIRED: Handle the dirty documents here
// (e.g. send them to a MobileFirst Adapter).

// Mark dirty documents as clean
int numCleaned = [[people markDocumentsClean:dirtyDocs error:&error] intValue];

```

Pull - get new data from a MobileFirst adapter

```

// Get the accessor to an already initialized collection.
JSONStoreCollection* people = [[JSONStore sharedInstance] getCollectionWithNam
e:@"people"];

// This object will point to an error if one occurs.
NSError* error = nil;

// ACTION REQUIRED: Get data (e.g. MobileFirst Adapter).
// For this example, it is hardcoded.
NSArray* data = @[ @{@"id" : @1, @"ssn": @"111-22-3333", @"name": @"carlos"} ];

int numChanged = [[people changeData:data withReplaceCriteria:[@"id", @"ssn"] ad
dNew:YES markDirty:NO error:&error] intValue];

```

Check whether a document is dirty



```
// Get the accessor to an already initialized collection.
JSONStoreCollection* people = [[JSONStore sharedInstance] getCollectionWithName:@"people"];

// This object will point to an error if one occurs.
NSError* error = nil;

// Check if document with _id '1' is dirty.
BOOL isDirtyResult = [people isDirtyWithDocumentId:1 error:&error];
```

## Check the number of dirty documents

```
// Get the accessor to an already initialized collection.
JSONStoreCollection* people = [[JSONStore sharedInstance] getCollectionWithName:@"people"];

// This object will point to an error if one occurs.
NSError* error = nil;

// Check if document with _id '1' is dirty.
int dirtyDocsCount = [[people countAllDirtyDocumentsWithError:&error] intValue];
```

## Remove a Collection

```
// Get the accessor to an already initialized collection.
JSONStoreCollection* people = [[JSONStore sharedInstance] getCollectionWithName:@"people"];

// This object will point to an error if one occurs.
NSError* error = nil;

// Remove the collection.
[people removeCollectionWithError:&error];
```

## Clear all data that is inside a Collection

```
// Get the accessor to an already initialized collection.
JSONStoreCollection* people = [[JSONStore sharedInstance] getCollectionWithName:@"people"];

// This object will point to an error if one occurs.
NSError* error = nil;

// Remove the collection.
[people clearCollectionWithError:&error];
```

Start a transaction, add some data, remove a document, commit the transaction and roll back the transaction if there is a failure

```

// Get the accessor to an already initialized collection.
JSONStoreCollection* people = [[JSONStore sharedInstance] getCollectionWithName:@"people"];

// These objects will point to errors if they occur.
NSError* error = nil;
NSError* addError = nil;
NSError* removeError = nil;

// You can call every JSONStore API method inside a transaction except:
// open, destroy, removeCollection and closeAll.
[[JSONStore sharedInstance] startTransactionAndReturnError:&error];

[people addData:@[ @{@"name" : @"carlos"} ] andMarkDirty:NO withOptions:nil error:&addError];

[people removeWithIds:@[@1] andMarkDirty:NO error:&removeError];

if (addError != nil || removeError != nil) {

    // Return the store to the state before start transaction was called.
    [[JSONStore sharedInstance] rollbackTransactionAndReturnError:&error];
} else {
    // Commit the transaction thus ensuring atomicity.
    [[JSONStore sharedInstance] commitTransactionAndReturnError:&error];
}

```

## Get file information

```

// This object will point to an error if one occurs
NSError* error = nil;

// Returns information about files JSONStore uses to persist data.
NSArray* results = [[JSONStore sharedInstance] fileInfoAndReturnError:&error];
// => [{"isEncrypted" : @(true), "name" : @"carlos", "size" : @3072}]

```

## Android

Initialize and open connections, get an Accessor, and add data

```

// Fill in the blank to get the Android application context.
Context ctx = getContext();

try {
    List<JSONStoreCollection> collections = new LinkedList<JSONStoreCollection>();
    // Create the collections object that will be initialized.
    JSONStoreCollection peopleCollection = new JSONStoreCollection("people");
    peopleCollection.setSearchField("name", SearchFieldType.STRING);
    peopleCollection.setSearchField("age", SearchFieldType.INTEGER);
    collections.add(peopleCollection);

    // Optional options object.
    JSONStoreInitOptions initOptions = new JSONStoreInitOptions();
    // Optional username, default 'jsonstore'.
    initOptions.setUsername("carlos");
    // Optional password, default no password.
    initOptions.setPassword("123");

    // Open the collection.

    WLJSONStore.getInstance(ctx).openCollections(collections, initOptions);

    // Add data to the collection.
    JSONObject newDocument = new JSONObject("{\"name: 'carlos', age: 10}");
    JSONStoreAddOptions addOptions = new JSONStoreAddOptions();
    addOptions.setMarkDirty(true);
    peopleCollection.addData(newDocument, addOptions);
}
catch (JSONStoreException ex) {
    // Handle failure for any of the previous JSONStore operations (init, add).
    throw ex;
} catch (JSONException ex) {
    // Handle failure for any JSON parsing issues.
    throw ex;
}

```

## Initialize with a secure random token from the server

```

// Fill in the blank to get the Android application context.
Context ctx = getContext();

// Do an AsyncTask because networking cannot occur inside the activity.
AsyncTask<Context, Void, Void> aTask = new AsyncTask<Context, Void, Void>() {
    protected Void doInBackground(Context... params) {
        final Context context = params[0];

        // Create the request listener that will have the
        // onSuccess and onFailure callbacks:
        WLRequestListener listener = new WLRequestListener() {
            public void onFailure(WLFailResponse failureResponse) {
                // Handle Failure.
            }

            public void onSuccess(WLResponse response) {
                String secureRandom = response.getResponseText();
            }
        };
    }
}

```

```

    try {
        List<JSONStoreCollection> collections = new LinkedList<JSONStoreCollect
ion>();
        // Create the collections object that will be initialized.
        JSONStoreCollection peopleCollection = new JSONStoreCollection("people"
);
        peopleCollection.setSearchField("name", SearchFieldType.STRING);
        peopleCollection.setSearchField("age", SearchFieldType.INTEGER);
        collections.add(peopleCollection);

        // Optional options object.
        JSONStoreInitOptions initOptions = new JSONStoreInitOptions();

        // Optional username, default 'jsonstore'.
        initOptions.setUsername("carlos");

        // Optional password, default no password.
        initOptions.setPassword("123");

        initOptions.setSecureRandom(secureRandom);

        // Open the collection.
        WLJSONStore.getInstance(context).openCollections(collections, initOptio
ns);

        // Other JSONStore operations (e.g. add, remove, replace, etc.) go here
        .
    }
    catch (JSONStoreException ex) {
        // Handle failure for any of the previous JSONStore operations (init, a
dd).
        ex.printStackTrace();    }
    }
};

// Get the secure random from the server:
// The length of the random string, in bytes (maximum is 64 bytes).
int byteLength = 32;
SecurityUtils.getRandomStringFromServer(byteLength, context, listener);
return null;
}
};
aTask.execute(ctx);

```

Find - locate documents inside the Store

```

// Fill in the blank to get the Android application context.
Context ctx = getContext();

try {
    // Get the already initialized collection.
    JSONStoreCollection peopleCollection = WLJSONStore.getInstance(ctx).getCollectionByName("people");

    JSONStoreQueryParts findQuery = new JSONStoreQueryParts();
    JSONStoreQueryPart part = new JSONStoreQueryPart();
    part.addLike("name", "carlos");
    part.addLessThan("age", 99);
    findQuery.addQueryPart(part);

    // Add additional find options (optional).
    JSONStoreFindOptions findOptions = new JSONStoreFindOptions();

    // Returns a maximum of 10 documents, default no limit.
    findOptions.setLimit(10);
    // Skip 0 documents, default no offset.
    findOptions.setOffset(0);

    // Search fields to return, default: ['_id', 'json'].
    findOptions.addSearchFilter("_id");
    findOptions.addSearchFilter("json");

    // How to sort the returned values, default no sort.
    findOptions.sortBySearchFieldAscending("name");
    findOptions.sortBySeachFieldDescending("age");

    // Find documents that match the query.
    List<JSONObject> results = peopleCollection.findDocuments(findQuery, findOptions);
}
catch (JSONStoreException ex) {
    // Handle failure for any of the previous JSONStore operations
    throw ex;
}

```

Replace - change the documents that are already stored inside a Collection

```

// Fill in the blank to get the Android application context.
Context ctx = getContext();

try {
    // Get the already initialized collection.
    JSONStoreCollection peopleCollection = WLJSONStore.getInstance(ctx).getCollectionByName("people");

    // Documents will be located with their '_id' field
    //and replaced with the data in the 'json' field.
    JSONObject replaceDoc = new JSONObject("{\"_id: 1, json: {name: 'carlitos', age: 99}}");

    // Mark data as dirty (true = yes, false = no), default true.
    JSONStoreReplaceOptions replaceOptions = new JSONStoreReplaceOptions();
    replaceOptions.setMarkDirty(true);

    // Replace the document.
    peopleCollection.replaceDocument(replaceDoc, replaceOptions);
}
catch (JSONStoreException ex) {
    // Handle failure for any of the previous JSONStore operations.
    throw ex;
}

```

Remove - delete all documents that match the query

```

// Fill in the blank to get the Android application context.
Context ctx = getContext();

try {
    // Get the already initialized collection.
    JSONStoreCollection peopleCollection = WLJSONStore.getInstance(ctx).getCollectionByName("people");

    // Documents will be located with their '_id' field.
    int id = 1;

    JSONStoreRemoveOptions removeOptions = new JSONStoreRemoveOptions();

    // Mark data as dirty (true = yes, false = no), default true.
    removeOptions.setMarkDirty(true);

    // Replace the document.
    peopleCollection.removeDocumentById(id, removeOptions);
}
catch (JSONStoreException ex) {
    // Handle failure for any of the previous JSONStore operations
    throw ex;
}
catch (JSONException ex) {
    // Handle failure for any JSON parsing issues.
    throw ex;
}

```

Count - gets the total number of documents that match a query

```
// Fill in the blank to get the Android application context.
Context ctx = getContext();

try {
    // Get the already initialized collection.
    JSONStoreCollection peopleCollection = WLJSONStore.getInstance(ctx).getCollectionByName("people");

    // Count all documents that match the query.
    JSONStoreQueryParts countQuery = new JSONStoreQueryParts();
    JSONStoreQueryPart part = new JSONStoreQueryPart();

    // Exact match.
    part.addEqual("name", "carlos");
    countQuery.addQueryPart(part);

    // Replace the document.
    int resultCount = peopleCollection.countDocuments(countQuery);
    JSONObject doc = peopleCollection.findDocumentById(resultCount);
    peopleCollection.replaceDocument(doc);
}
catch (JSONStoreException ex) {
    throw ex;
}
```

Destroy - wipes data for all users, destroys the internal storage, and clears security artifacts

```
// Fill in the blank to get the Android application context.
Context ctx = getContext();

try {
    // Destroy the Store.
    WLJSONStore.getInstance(ctx).destroy();
}
catch (JSONStoreException ex) {
    // Handle failure for any of the previous JSONStore operations
    throw ex;
}
```

Security - close access to all opened Collections for the current user

```
// Fill in the blank to get the Android application context.
Context ctx = getContext();

try {
    // Close access to all collections.
    WLJSONStore.getInstance(ctx).closeAll();
}
catch (JSONStoreException ex) {
    // Handle failure for any of the previous JSONStore operations.
    throw ex;
}
```

## Security - change the password that is used to access a Store

```
// The password should be user input.
// It is hard-coded in the example for brevity.
String username = "carlos";
String oldPassword = "123";
String newPassword = "456";

// Fill in the blank to get the Android application context.
Context ctx = getContext();

try {
    WLJSONStore.getInstance(ctx).changePassword(oldPassword, newPassword, username)
;
}
catch (JSONStoreException ex) {
    // Handle failure for any of the previous JSONStore operations.
    throw ex;
}
finally {
    // It is good practice to not leave passwords in memory
    oldPassword = null;
    newPassword = null;
}
```

Push - get all documents that are marked as dirty, send them to a MobileFirst adapter, and mark them clean

```
// Fill in the blank to get the Android application context.
Context ctx = getContext();

try {
    // Get the already initialized collection.
    JSONStoreCollection peopleCollection = WLJSONStore.getInstance(ctx).getCollectionByName("people");

    // Check if document with _id 3 is dirty.
    List<JSONObject> allDirtyDocuments = peopleCollection.findAllDirtyDocuments();

    // Handle the dirty documents here (e.g. calling an adapter).

    peopleCollection.markDocumentsClean(allDirtyDocuments);
} catch (JSONStoreException ex) {
    // Handle failure for any of the previous JSONStore operations
    throw ex;
}
```

Pull - get new data from a MobileFirst adapter



```

// Fill in the blank to get the Android application context.
Context ctx = getContext();

try {
    // Get the already initialized collection.
    JSONStoreCollection peopleCollection = WLJSONStore.getInstance(ctx).getCollectionByName("people");

    // Pull data here and place in newDocs. For this example, it is hard-coded.
    List<JSONObject> newDocs = new ArrayList<JSONObject>();
    JSONObject doc = new JSONObject("{\"id: 1, ssn: '111-22-3333', name: 'carlos'\"");
    newDocs.add(doc);

    JSONStoreChangeOptions changeOptions = new JSONStoreChangeOptions();

    // Data that does not exist in the collection will be added, default false.
    changeOptions.setAddNew(true);

    // Mark data as dirty (true = yes, false = no), default false.
    changeOptions.setMarkDirty(true);

    // The following example assumes that 'id' and 'ssn' are search fields,
    // default will use all search fields
    // and are part of the data that is received.
    changeOptions.addSearchFieldToCriteria("id");
    changeOptions.addSearchFieldToCriteria("ssn");

    int changed = peopleCollection.changeData(newDocs, changeOptions);
}
catch (JSONStoreException ex) {
    // Handle failure for any of the previous JSONStore operations.
    throw ex;
}
catch (JSONException ex) {
    // Handle failure for any JSON parsing issues.
    throw ex;
}

```

## Check whether a document is dirty

```

// Fill in the blank to get the Android application context.
Context ctx = getContext();

try {
    // Get the already initialized collection.
    JSONStoreCollection peopleCollection = WLJSONStore.getInstance(ctx).getCollectionByName("people");

    // Check if document with id '3' is dirty.
    boolean isDirty = peopleCollection.isDocumentDirty(3);
}
catch (JSONStoreException ex) {
    // Handle failure for any of the previous JSONStore operations.
    throw ex;
}

```

## Check the number of dirty documents

```
// Fill in the blank to get the Android application context.
Context ctx = getContext();

try {
    // Get the already initialized collection.
    JSONStoreCollection peopleCollection = WLJSONStore.getInstance(ctx).getCollectionByName("people");

    // Get the count of all dirty documents in the people collection.
    int totalDirty = peopleCollection.countAllDirtyDocuments();
}
catch (JSONStoreException ex) {
    // Handle failure for any of the previous JSONStore operations.
    throw ex;
}
```

## Remove a Collection

```
// Fill in the blank to get the Android application context.
Context ctx = getContext();

try {
    // Get the already initialized collection.
    JSONStoreCollection peopleCollection = WLJSONStore.getInstance(ctx).getCollectionByName("people");

    // Remove the collection. The collection object is
    // no longer usable.
    peopleCollection.removeCollection();
}
catch (JSONStoreException ex) {
    // Handle failure for any of the previous JSONStore operations.
    throw ex;
}
```

## Clear all data that is inside a Collection

```
// Fill in the blank to get the Android application context.
Context ctx = getContext();

try {
    // Get the already initialized collection.
    JSONStoreCollection peopleCollection = WLJSONStore.getInstance(ctx).getCollectionByName("people");

    // Clear the collection.
    peopleCollection.clearCollection();
}
catch (JSONStoreException ex) {
    // Handle failure for any of the previous JSONStore operations.
    throw ex;
}
```

Start a transaction, add some data, remove a document, commit the transaction and roll back the transaction if there is a failure

```
// Fill in the blank to get the Android application context.
Context ctx = getContext();

try {
    // Get the already initialized collection.
    JSONStoreCollection peopleCollection = WLJSONStore.getInstance(ctx).getCollectionByName("people");

    WLJSONStore.getInstance(ctx).startTransaction();

    JSONObject docToAdd = new JSONObject("{\"name: 'carlos', age: 99}");
    // Find documents that match query.
    peopleCollection.addData(docToAdd);

    //Remove added doc.
    int id = 1;
    peopleCollection.removeDocumentById(id);

    WLJSONStore.getInstance(ctx).commitTransaction();
}
catch (JSONStoreException ex) {
    // Handle failure for any of the previous JSONStore operations.

    // An exception occurred. Take care of it to prevent further damage.
    WLJSONStore.getInstance(ctx).rollbackTransaction();

    throw ex;
}
catch (JSONException ex) {
    // Handle failure for any JSON parsing issues.

    // An exception occurred. Take care of it to prevent further damage.
    WLJSONStore.getInstance(ctx).rollbackTransaction();

    throw ex;
}
```

## Get file information

```
Context ctx = getContext();
List<JSONStoreFileInfo> allFileInfo = WLJSONStore.getInstance(ctx).getFileInfo();

for(JSONStoreFileInfo fileInfo : allFileInfo) {
    long fileSize = fileInfo.getFileSizeBytes();
    String username = fileInfo.getUsername();
    boolean isEncrypted = fileInfo.isEncrypted();
}
```

