

NEO LEARNING SYSTEMS

DESIGN DOCUMENT
ADMIN APP

JUNE 2017

VERSION 1.2

CONFIDENTIAL

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1 OVERVIEW

The Admin App is intended to house all high level administration processes; these processes will include (for now):

- The annual database rollover process
- Location and user maintenance
- Class enrolment maintenance

The above list will also serve as the development order for the project. This app will be expanded in future as required, however phase 1 will only be concerned with the objective listed below.

As a stretch goal, it would be nice if we could also port over the Library and Assessment tabs from the Teacher App (expanded to include all grades and courses by default).

1.1 PROJECT OBJECTIVES

The project must meet the following general objectives (specific objectives and project deliverables will be covered in other sections of this document).

- Create an annual database rollover process that will archive the prior 12 months of data into a unique historical database collection. This new collection will be accessed by specific user apps as needed.
- Port over the class and user enrolment process that was created for the Principal App.
- Expand the above process (Enrolment) to include all possible locations.
- Expand the Enrolment process to include the ability to create higher level locations such as ministries, boards and locations.

2 ANNUAL ROLLOVER PROCESS

The Annual Rollover process is essentially a database collection archiving tool. The rollover process will affect the following database collections: Class, ClassUser, Course, Group, GroupUser, Question, Result, Strands, Test, TestQuestion, Transaction, and User.

This process will likely be run at the end of every August, just prior to the next school year.

2.1 ROLLOVER STEPS

The Rollover process will follow the steps below:

1. Make copies of these database collections: Class, ClassUser, Course, Group, GroupUser, Question, Result, Strands, Test, TestQuestion, Transaction, and User.
2. Ensure that the collection copies are prefixed with a four digit year.
3. Clear all documents from the following tables: Class, ClassUser, Group, GroupUser, Result, Test, TestQuestion, and Transaction. **Please Note: this is a subset of the tables that were archived.**
4. Calculate final results for the ministry, boards, schools, courses, grades and classes. Store these calculated results in a new database collection.

2.1.1 ROLLOVER STEPS 1 AND 2

All collection copies should be prefixed with a four digit year. Since the annual rollover is run every August, the four digit year should represent the start of the prior school year. For example, running the **rollover in August 2017** would require the copied collections to be **prefixed with the digits 2016**.

This prefixing rule will apply to all copied collections every time the annual process is run.

2.1.2 ROLLOVER STEP 3

Only a subset of the copied collections will need to be cleared of all documents. **The collections to be cleared are: Class, ClassUser, Group, GroupUser, Result, Test, TestQuestion, and Transaction.** The clearing of all data from the above collections will allow every school year to start in a “clean” state. It should also provide for a performance increase when the number of users eventually increases with system usage.

Collections that are **NOT** cleared in the annual process are: Course, Question and Strands. These collections are unlikely to change from year to year, but will be subject to change whenever the

standardize course curriculum is updated by the Ministry of Education. As such, a point in time archive may be required in future, which is why they are being included in the annual rollover process.

2.1.3 ROLLOVER STEP 4

A new database collection will need to be created to hold archive final calculations for the prior year (for example, if rolling over in August 2017, then prior year refers to 2016/17 school year). This new collection should be named: **AnnualResults**. Please refer to the Database section of this document for specifics about the structure of this new collection.

Annual results calculations should start at the lowest level (classes) and progress to the highest level (ministry). Each calculation should be tagged with a type; so calculations for class, course, grade, location, board and ministry should be labeled as such. Also, each calculation should maintain its source reference; so a Class calculation should still have document fields that refer to location, class ID, location ID, board ID, etc.

Refer to the chart below for calculation details. **All calculations are filtered by the four digit school year** (prior year prefix).

class	Query the Class collection for a list of unique classes	Cycle through the result list and query Result collection for a list of all related Total Scores	Average all total test scores for each class and write the result to the Annual Results collection		
courseLocation	Query the Class collection for a list of unique locationIDs	Cycle through the result list of locationIDs for a unique list of grades	Cycle through the result list of grades for a unique list of courses	Cycle through the result list of courses for a list of all related Total Scores	Average all total test scores for each location/grade/course and write the result to the Annual Results collection
gradeLocation	Query the Class collection for a list of unique locationIDs	Cycle through the result list of locationIDs for a unique list of courses	Cycle through the result list of courses for a unique list of grades	Cycle through the result list of grades for a list of all related Total Scores	Average all total test scores for each location/course/grade and write the result to the Annual Results collection

courseBoard	Query the Annual Results collection for a unique list of boardIDs	Cycle through the result list of boardIDs for a unique list of grades	Cycle through the result list of grades for a unique list of courses	Cycle through the result list of courses for a list of all related Scores	Average all scores for each board/grade/course and write the result to the Annual Results collection
gradeBoard	Query the Annual Results collection for a unique list of boardIDs	Cycle through the result list of boardIDs for a unique list of courses	Cycle through the result list of grades for a unique list of grades	Cycle through the result list of grades for a list of all related Scores	Average all scores for each board/course/grade and write the result to the Annual Results collection
courseMinistry	Query the Annual Results collection for a unique list of ministryIDs	Cycle through the result list of ministryIDs for a unique list of grades	Cycle through the result list of grades for a unique list of courses	Cycle through the result list of courses for a list of all related Scores	Average all scores for each board/grade/course and write the result to the Annual Results collection
gradeMinistry	Query the Annual Results collection for a unique list of ministryIDs	Cycle through the result list of ministryIDs for a unique list of courses	Cycle through the result list of grades for a unique list of grades	Cycle through the result list of grades for a list of all related Scores	Average all scores for each board/course/grade and write the result to the Annual Results collection

2.2 ROLLBACK

This item is for further discussion. Should there be a process through which we can “rollback” the rollover process? That is, a process that restores the database back to its state before the annual rollover process was run.

3 DATABASE

This section will only show any new collections created for the app or changes made to existing collections.

3.1 ANNUAL RESULTS COLLECTION

Field Name	Notes
Year	Four digit school year (prior year prefix)
Type	Types include: class, courseLocation, gradeLocation, courseBoard, gradeBoard, courseMinistry, and gradeMinistry
classID	Only used for calculations of type: class
className	Only used for calculations of type: class
course	
grade	
locationID	
locationName	
locationType	
boardID	
boardName	

boardType	Same as the new field to be created in the Board collection, and includes types: Public, Catholic and Private
ministryID	
ministryName	
Score	Calculation result

3.2 BOARD COLLECTION

Field Name	Notes
boardType	Types include: Public, Catholic and Private

4 USER INTERFACE

Access to the Admin App should be through a new subdomain: admin.neols.com. And only the “Admin” role should have the right to login to this app. The Admin users should have the ability to change their passwords.

The Admin UI will consist of two tabs: Administration and Database. The stretch goal for this phase of the app would add two more tabs for: Library and Assessments (see figure 1 below).

4.1 ADMINISTRATION TAB

When the Admin user first logs in, they will land on the Administration screen. This is essentially the same functionality as in the Principal app, except that it has been expanded to include tabs for Ministry, Board and Location.

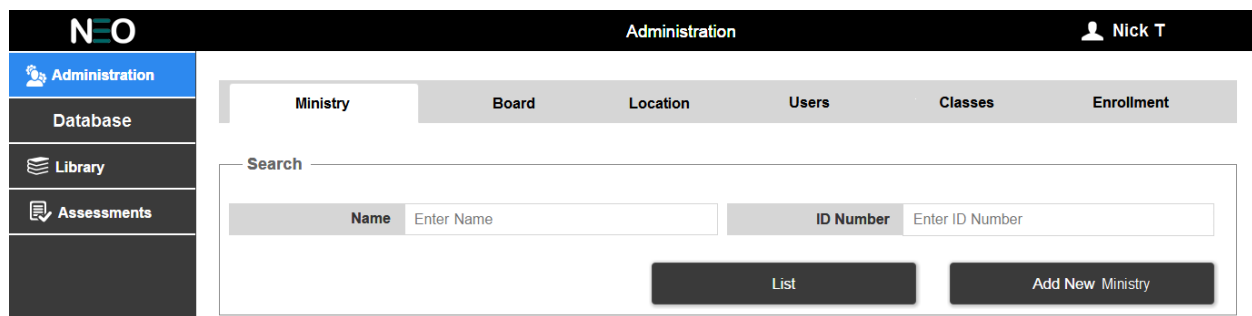


Figure 1: Initial Login Screen

This screen will also initially default to the “Ministry” tab. Only the Search field set will be visible. Users should be able to search on a partial name or full ID number. Clicking on the List button will return a list of matches that fit the entered criteria.

After querying the database Ministry collection, the result list should be displayed in a second, now visible, field set (see figure 2 below).

Each result listed in this second field set will be preceded by a check box for selection purposes. Only one result can be selected at any given time.

Ministry	Board	Location	Users	Classes	Enrollment
----------	-------	----------	-------	---------	------------

Search

Name	Enter Name	ID Number	Enter ID Number
-------------	------------	------------------	-----------------

List

Add New Ministry

Select to Modify

<input checked="" type="checkbox"/>	Ontario Ministry of Education - MNS00002
-------------------------------------	--

Modify

Figure 2: Search Results Field Set Visible

Clicking on the “Modify” button within the second field set will query the Ministry collection for the document related to the selected Ministry, and reveal a third field set (pictured in figure 3 below).

Ministry	Board	Location	Users	Classes	Enrollment
----------	-------	----------	-------	---------	------------

Search

Name	Enter Name	ID Number	Enter ID Number
-------------	------------	------------------	-----------------

List

Add New Ministry

Select to Modify

<input checked="" type="checkbox"/>	Ontario Ministry of Education - MNS00002
-------------------------------------	--

Modify

Ontario Ministry of Education

Name	Ontario Ministry of Education	Address1	Mowat Block
ID Number	MNS00002	Address2	900 Bay Street
First Name	Lester	City	Toronto
Last Name	Davidson	Province	ON
Email	Lester.Davidson@email.com	Country	Canada
		Postal Code	M7A 1L2
		Telephone	(416) 325-2929

Cancel

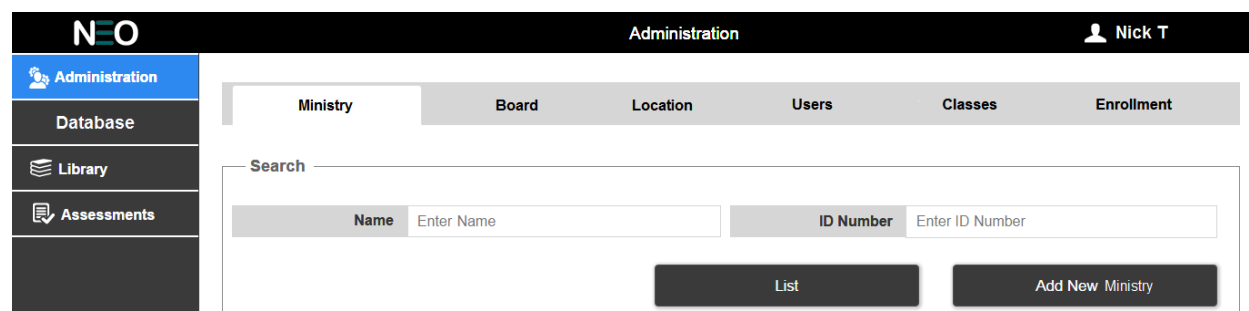
Save

Figure 3: Ministry Detail Field Set Visible

Clicking on the “Cancel” button will discard any changes the user made within the Detail field set. Cancelling will also hide the Detail field set and leave the user with their list of Ministries to modify (as pictured above in Figure 2).

Clicking on the “Save” button will save all changes back to the associated document in the Ministry collection.

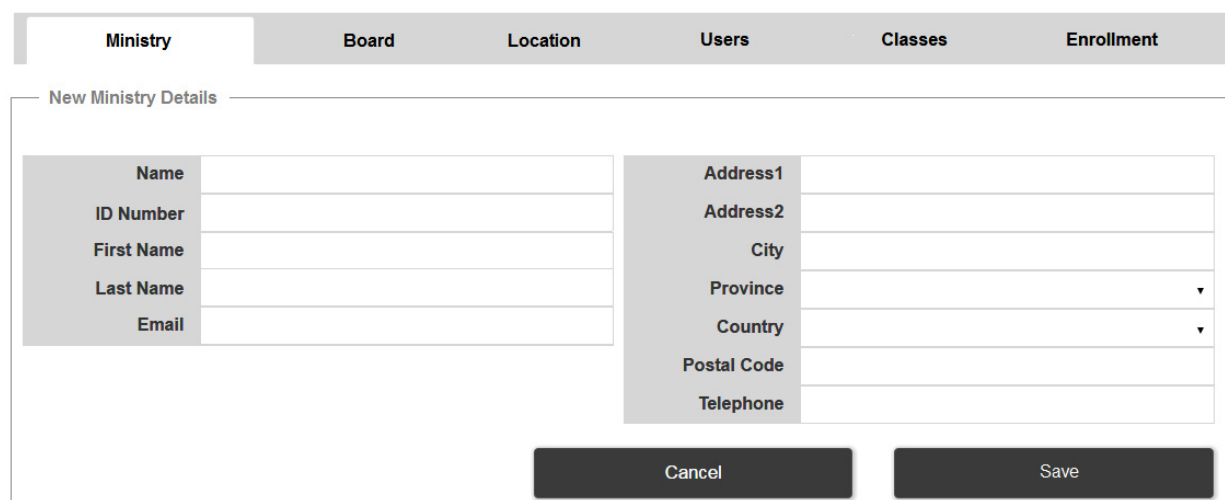
4.1.1 ADDING A NEW MINISTRY



The screenshot shows the NEO Administration interface. The top navigation bar includes the NEO logo, the word 'Administration', and a user profile icon labeled 'Nick T'. A left sidebar contains links for 'Administration', 'Database', 'Library', and 'Assessments'. The main content area has a tabbed interface with 'Ministry' selected. Below the tabs is a search section with two input fields: 'Name' (with placeholder 'Enter Name') and 'ID Number' (with placeholder 'Enter ID Number'). Below these fields are two buttons: 'List' and 'Add New Ministry'.

Figure 4: Adding a New Ministry

Clicking on the “Add New Ministry” button will reveal the Ministry detail field set and hide the Search field set (as pictured below in Figure 5).



The screenshot shows the 'New Ministry Details' form. The 'Ministry' tab is selected. The form is divided into two main sections. The left section contains input fields for 'Name', 'ID Number', 'First Name', 'Last Name', and 'Email'. The right section contains input fields for 'Address1', 'Address2', 'City', 'Province' (a dropdown menu), 'Country' (a dropdown menu), 'Postal Code', and 'Telephone'. At the bottom of the form are two buttons: 'Cancel' and 'Save'.

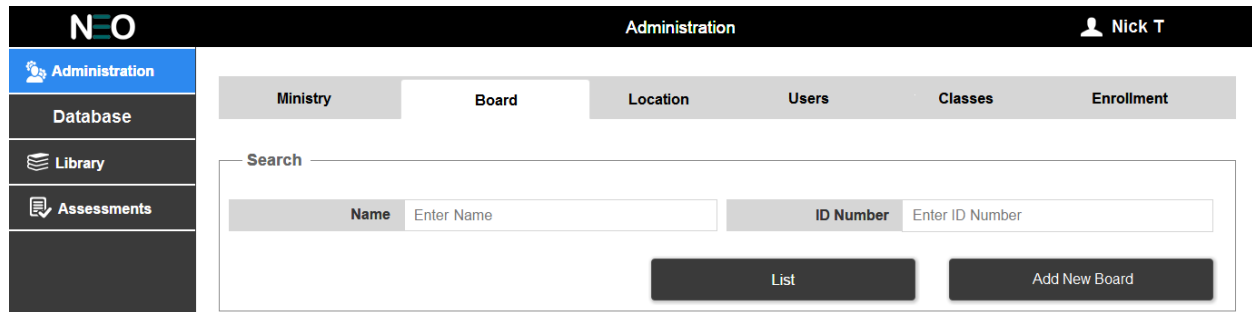
Figure 5: New Ministry Details Field Set

The Province and Country fields should be drop lists; where there will be a list of Canadian provinces in the former, and “Canada” as the only option in the latter.

The “Save” and “Cancel” buttons will save the new ministry information back to the database or return the user to the prior screen respectively. Using the Save button should also provide the user a success or fail message before returning to the prior screen.

4.1.2 EDIT AN EXISTING BOARD

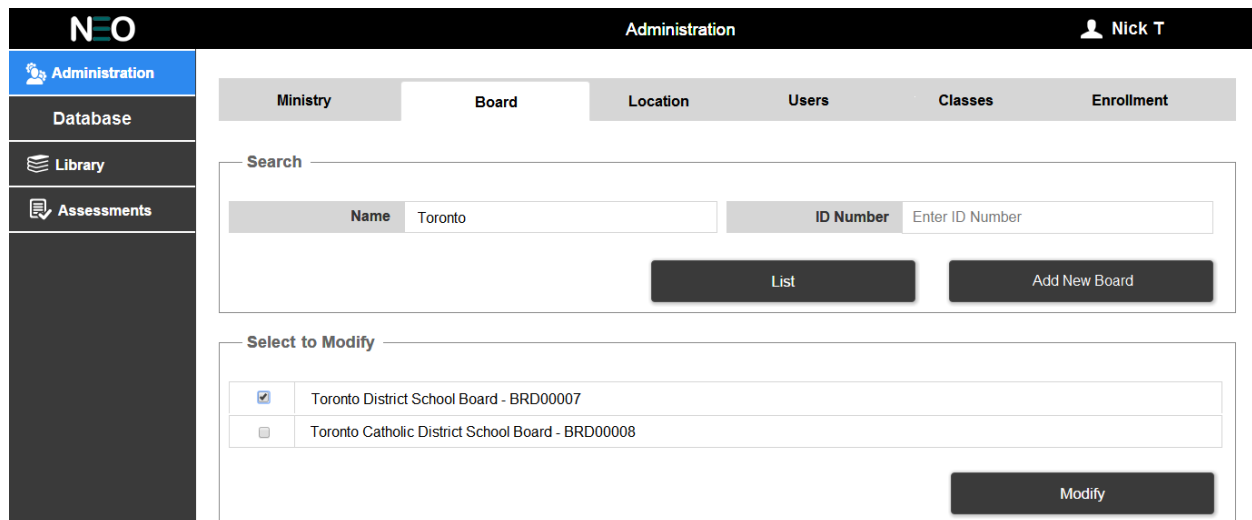
Clicking on the “Board” tab will reveal similar functionality as detailed above for working with Ministries. Initially, only the “Search” field set will be visible (Figure 6).



The screenshot shows the NEO Learning Systems interface. The top navigation bar includes the NEO logo, the word "Administration", and a user profile icon labeled "Nick T". A left sidebar contains menu items: "Administration" (highlighted), "Database", "Library", and "Assessments". The main content area has a tabbed interface with tabs for "Ministry", "Board" (selected), "Location", "Users", "Classes", and "Enrollment". Below the tabs is a "Search" section with two input fields: "Name" (containing "Enter Name") and "ID Number" (containing "Enter ID Number"). At the bottom of the search section are two buttons: "List" and "Add New Board".

Figure 6: Board Admin Initial View

Users should be able to search on a partial name or full ID number. Clicking on the List button will return a list of matches that fit the entered criteria. After querying the database Board collection, the result list should be displayed in a second, now visible, field set (see Figure 7 below).



The screenshot shows the same NEO Learning Systems interface as Figure 6, but with search results displayed. The "Name" input field now contains "Toronto". Below the "List" button, a new section titled "Select to Modify" is visible. It contains a table with two rows of search results:

<input checked="" type="checkbox"/>	Toronto District School Board - BRD00007
<input type="checkbox"/>	Toronto Catholic District School Board - BRD00008

At the bottom right of this section is a "Modify" button.

Figure 7: Search Result Field Set Visible

Each result listed in this second field set will be preceded by a check box for selection purposes. Only one result can be selected at any given time.

Clicking on the “Modify” button within the second field set will query the Board collection for the document related to the selected board, and reveal a third field set (pictured in Figure 8 below).

Ministry	Board	Location	Users	Classes	Enrollment
----------	-------	----------	-------	---------	------------

Search

Name	Enter Name	ID Number	Enter ID Number
-------------	------------	------------------	-----------------

List
Add New Board

Select to Modify

<input checked="" type="checkbox"/>	Toronto District School Board - BRD00007
<input type="checkbox"/>	Toronto Catholic District School Board - BRD00008

Modify

Toronto District School Board

Name	Toronto District School Board	Address1	Mowat Block
ID Number	BRD00007	Address2	900 Bay Street
First Name	Lester	City	Toronto
Last Name	Davidson	Province	ON
Email	Lester.Davidson@email.com	Country	Canada
		Postal Code	M7A 1L2
		Telephone	(416) 325-2929

Cancel
Save

Figure 8: Board Detail Field Set Visible

Clicking on the “Cancel” button will discard any changes the user made within the Detail field set. Cancelling will also hide the Detail field set and leave the user with their list of Boards to modify (as pictured above in Figure 7).

Clicking on the “Save” button will save all changes back to the associated document in the Board collection.

4.1.3 ADDING A NEW BOARD

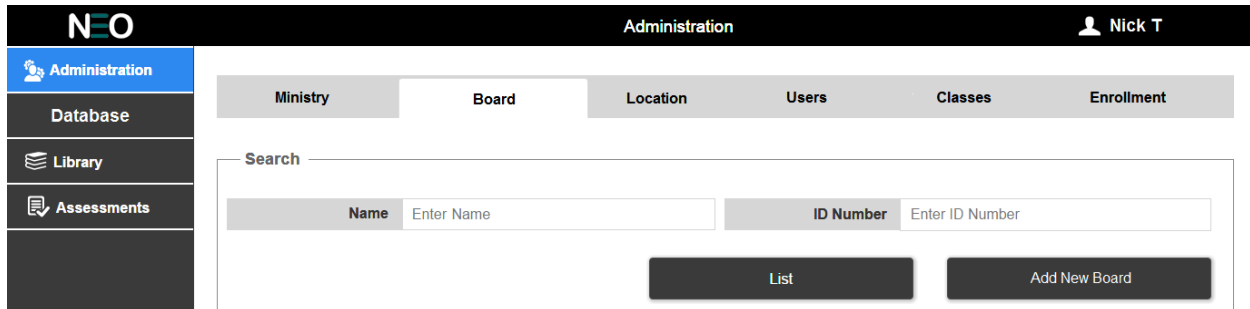


Figure 9: Adding a New Board

Clicking on the “Add New Board” button will reveal the Board detail field set and hide the Search field set (as pictured below in Figure 10).

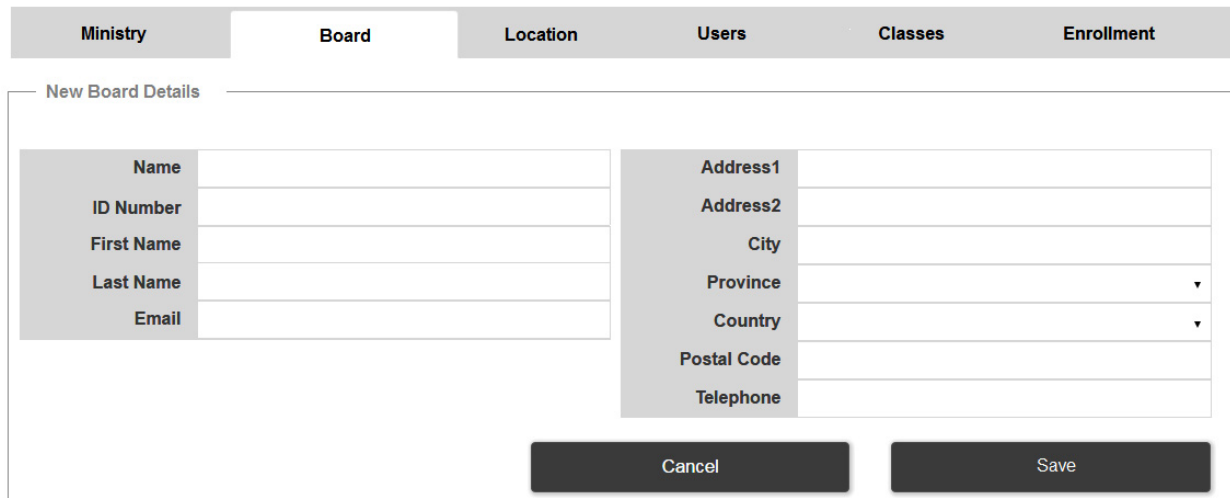


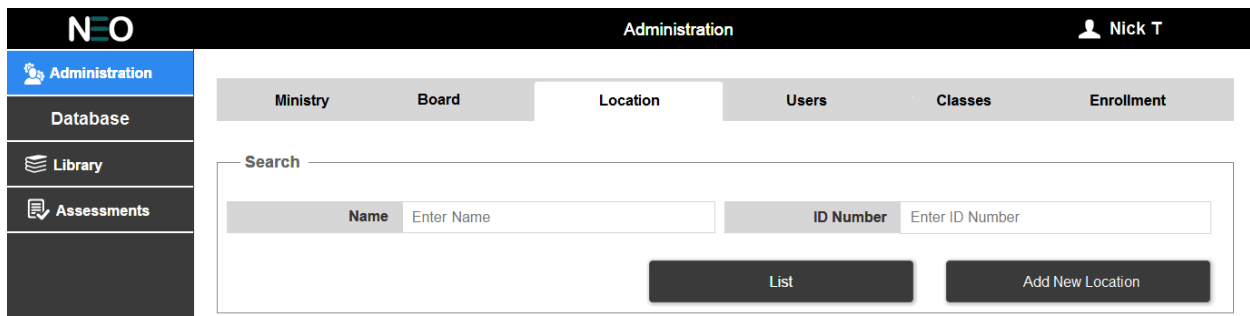
Figure 10: New Board Details Field Set

The Province and Country fields should be drop lists; where there will be a list of Canadian provinces in the former, and “Canada” as the only option in the latter.

The “Save” and “Cancel” buttons will save the new board information back to the database or return the user to the prior screen respectively. Using the Save button should also provide the user a success or fail message before returning to the prior screen.

4.1.4 EDIT AN EXISTING LOCATION

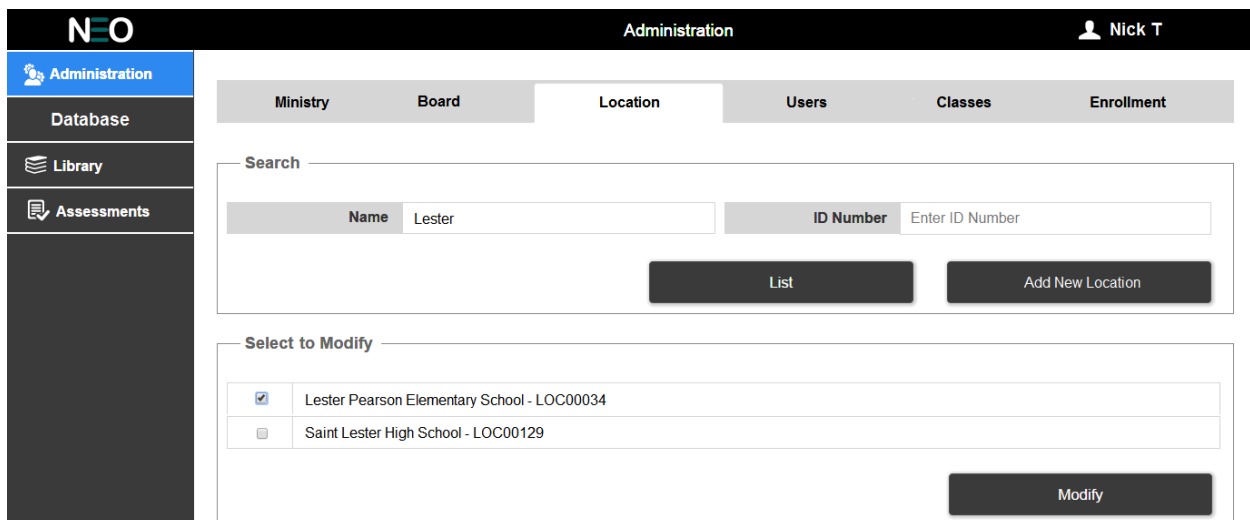
Clicking on the “Location” tab will reveal similar functionality as detailed above for working with Ministries and Boards. Initially, only the “Search” field set will be visible (Figure 11).



The screenshot shows the NEO Learning Systems Administration interface. The top navigation bar includes the NEO logo, the word "Administration", and a user profile icon labeled "Nick T". A left sidebar contains links for "Administration", "Database", "Library", and "Assessments". The main content area features a tabbed interface with tabs for "Ministry", "Board", "Location", "Users", "Classes", and "Enrollment". The "Location" tab is active. Below the tabs is a search section with a "Search" label and two input fields: "Name" (containing "Enter Name") and "ID Number" (containing "Enter ID Number"). Below these fields are two buttons: "List" and "Add New Location".

Figure 11: Location Admin Initial View

Users should be able to search on a partial name or full ID number. Clicking on the List button will return a list of matches that fit the entered criteria. After querying the database Location collection, the result list should be displayed in a second, now visible, field set (see Figure 12 below).



The screenshot shows the same NEO Learning Systems Administration interface as Figure 11, but with search results displayed. The "Name" input field now contains the text "Lester". Below the search fields, the "List" button has been clicked, and a new field set titled "Select to Modify" is visible. This field set contains a table with two rows of search results:

<input checked="" type="checkbox"/>	Lester Pearson Elementary School - LOC00034
<input type="checkbox"/>	Saint Lester High School - LOC00129

Below the table is a "Modify" button.

Figure 12: Search Result Field Set Visible

Each result listed in this second field set will be preceded by a check box for selection purposes. Only one result can be selected at any given time.

Clicking on the "Modify" button within the second field set will query the Location collection for the document related to the selected location, and reveal a third field set (pictured in Figure 13 below).

Ministry	Board	Location	Users	Classes	Enrollment
----------	-------	----------	-------	---------	------------

Search

Name	Lester	ID Number	Enter ID Number
-------------	--------	------------------	-----------------

List

Add New Location

Select to Modify

<input checked="" type="checkbox"/>	Lester Pearson Elementary School - LOC00034
<input type="checkbox"/>	Saint Lester High School - LOC00129

Modify

Lester Pearson Elementary School

Name	Lester Pearson Elementary School	Address1	Mowat Block
ID Number	LOC00034	Address2	900 Bay Street
First Name	Lester	City	Toronto
Last Name	Davidson	Province	ON
Email	Lester.Davidson@email.com	Country	Canada
		Postal Code	M7A 1L2
		Telephone	(416) 325-2929

Cancel

Save

Figure 13: Location Detail Field Set Visible

Clicking on the “Cancel” button will discard any changes the user made within the Detail field set. Cancelling will also hide the Detail field set and leave the user with their list of Locations to modify (as pictured above in Figure 12).

Clicking on the “Save” button will save all changes back to the associated document in the Location collection.

4.1.5 ADDING A NEW LOCATION

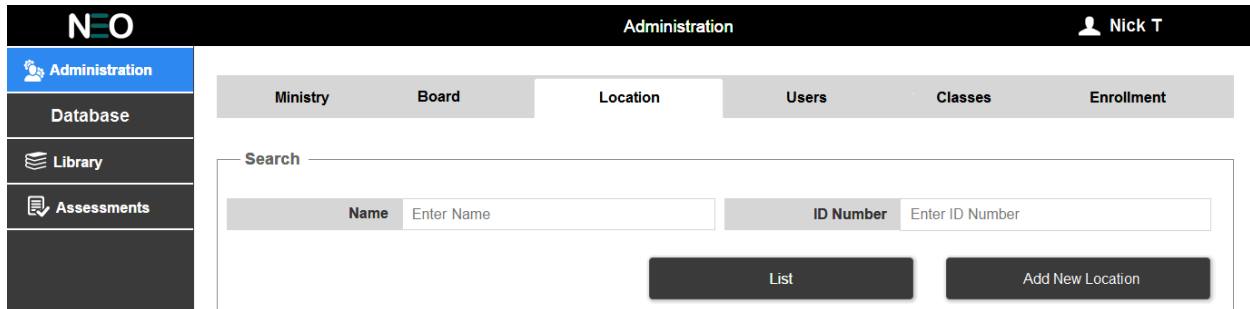


Figure 14: Adding a New Location

Clicking on the “Add New Location” button will reveal the Location detail field set and hide the Search field set (as pictured below in Figure 15).

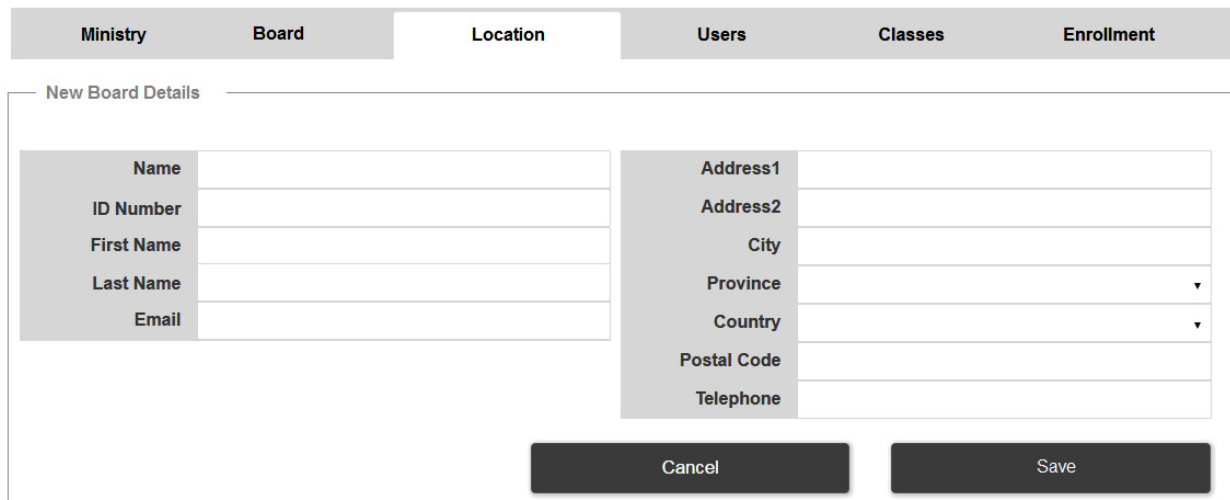


Figure 15: New Location Details Field Set

The Province and Country fields should be drop lists; where there will be a list of Canadian provinces in the former, and “Canada” as the only option in the latter.

The “Save” and “Cancel” buttons will save the new location information back to the database or return the user to the prior screen respectively. Using the Save button should also provide the user a success or fail message before returning to the prior screen (Figure 14 above).

4.1.6 USERS, CLASSES AND ENROLLMENT

The tabs for Users, Classes and Enrollment will have identical functionality as of that in the Principal App, with one exception. Where the users of the Principal App are limited to the location they belong to, users of the Admin App will **by default have access to ALL users, classes and enrollments in the database.**

Search Users

NameLester

ID NumberEnter ID Number

RoleStudent

List

Add New User

Select User to Modify

☒
Lester Davidson - 000000426

Modify

Lester Davidson

RoleStudent

ID Number000000426

First NameLester

Last NameDavidson

EmailLester.Davidson@email.com

Password.....

SchoolFaversham

Address1

Address2

City

ProvinceON

CountryCanada

Postal Code

Telephone

Cancel

Modify

Figure 16: Sample User Edit Screen

4.2 DATABASE TAB

The Database screen will only have two function initially (one is a stretch goal). However, in future we may add other database related functionality to this screen. Pictured below is the initial view of the Database tab.

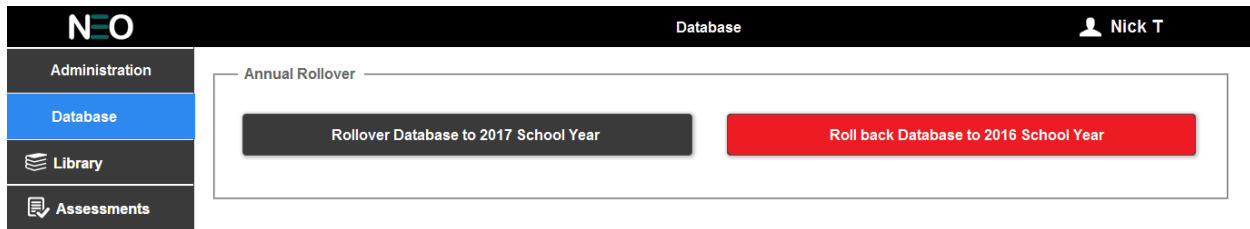


Figure 17: Database Screen

At the top of the screen is a field set with the title: Annual Rollover. Within this field set that will only be two buttons:

- Rollover Database to XXXX School Year
- Roll Back Database to YYYY School Year

The software will need to know what the current school year is so that it can calculate the value of XXXX and YYYY for these buttons (XXXX and YYYY representing the next and prior school years respectively).

Clicking on the “Rollover” button will pop up a warning window (pictured below), giving the user a chance to cancel the process **BEFORE** it begins.

Clicking on the Cancel button will stop the process and return the user to the initial Database screen.

Clicking on the Continue button (picture below) will initiate the annual rollover process as described previously in this document.

If the process completes successfully, there should be a pop up window that informs the user of this; with an OK button for the user to acknowledge the process result and to clear the message.

If the process fails, there should be a pop up window that informs the user of this; with an OK button for the user to acknowledge this negative result and to clear the message.

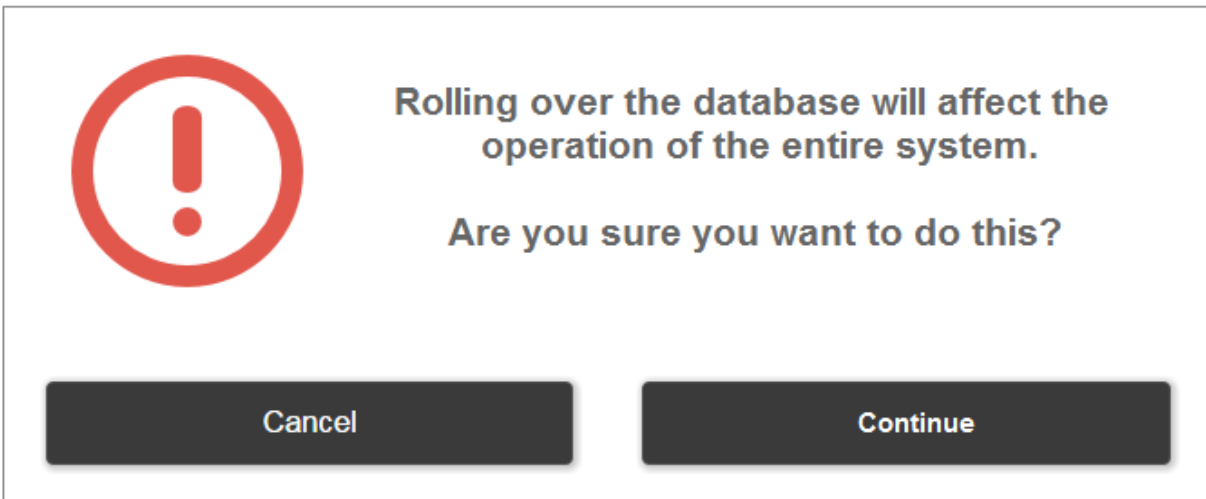


Figure 18: Rollover Warning Before Continuing with the Annual Rollover Process

4.2.1 ROLL BACK PROCESS

Adding this process to the Database screen is a stretch goal. This process requires additional discussion before any development begins.

The Roll Back process allows the user to undo changes to the database as a result of have already run the Annual Rollover process. Clicking on the Roll button on the initial Database screen, will pop up a warning window to the user (pictured below).

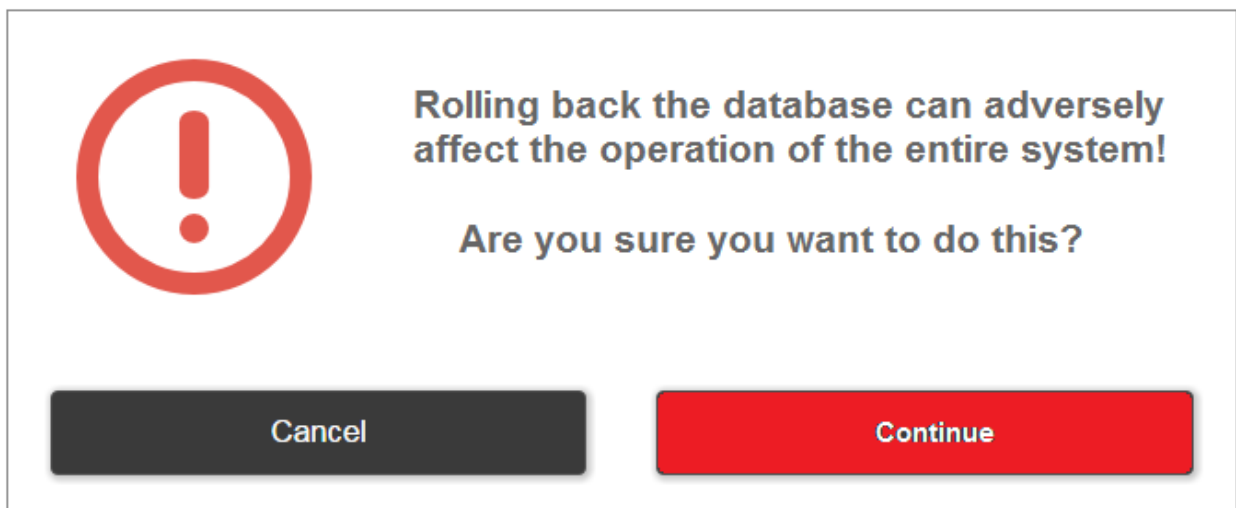


Figure 19: Roll Back Warning #1

Clicking on the Cancel button will stop the process **BEFORE** it begins. Clicking on the Continue button will open a second warning pop up window (picture below).

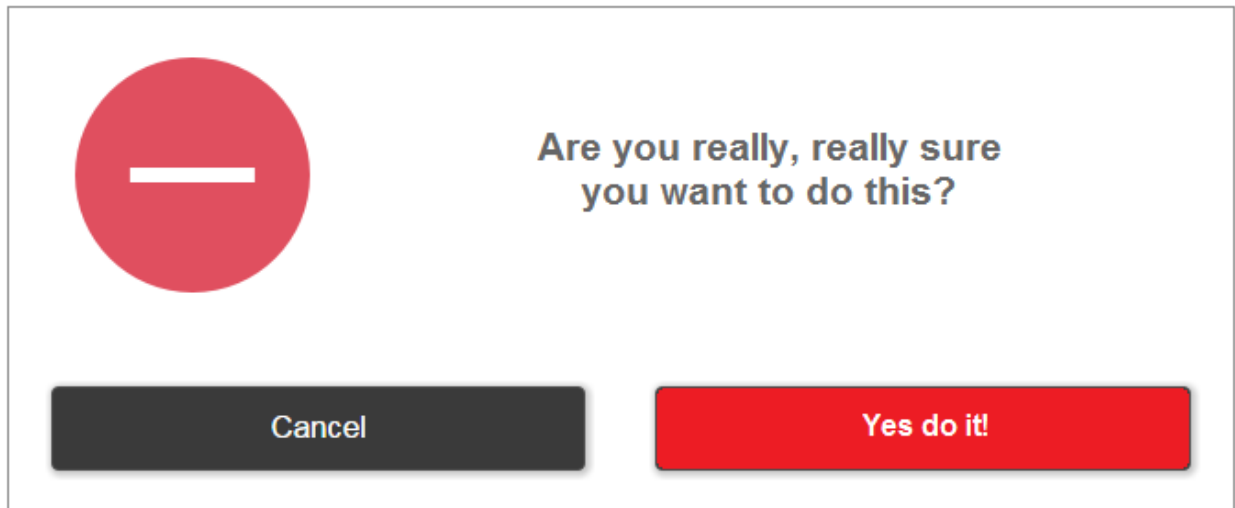


Figure 20: Roll Back Warning #2

This second window is used to given the user an additional chance to cancel the process **BEFORE** it begins. Clicking on the “Yes do it!” button will start the Roll Back process.

If the process completes successfully, there should be a pop up window that informs the user of this; with an OK button for the user to acknowledge the process result and to clear the message.

If the process fails, there should be a pop up window that informs the user of this; with an OK button for the user to acknowledge this negative result and to clear the message.

4.3 LIBRARY TAB

Adding this tab to the Admin app is a stretch goal. The only difference in functionality is that the Admin user will have access to all Course and Grades by default.

Question Tags

Course	Math	▼
Grade	3	▼
Strand	Patterning and Algebra	▼
General Expectation	Patterns and Relationships	▼
Specific Expectation	represent simple geometric patterns using a number sequence, a number line, or a bar graph	▼
Type	Text Input	▼
Question ID		

List

Text and Images

Line 1	
Line 2	
Image 1	Choose File
Line 3	
Image 2	Choose File
Line 4	
Image 3	Choose File
Line 5	
Line 6	
Manipulatives	<input type="checkbox"/>

Answers

Leading Text	
Correct Answer	
Trailing Text	

Question 0 of 0

Previous

Next

Add New

Preview

Save

Figure 21: Library Tab

4.4 ASSESSMENTS TAB

Adding this tab to the Admin app is a stretch goal. The only differences in functionality is that the Admin user will have access to all Course and Grades by default. Also, the Admin user will not be able to save assessments back to the database. For the admin user, this screen is just a way to review, and preview, a larger grouping of questions from the database.

Assessment Details

Course

Math

Grade

3

Filter Selections

Assignment

Selected Questions

Strand

All

Expectations

All

Grade

Select Questions From Grade

Library

Public

Type

All

Manipulative

☒ Yes

List

Question Selections

Page 0 of 0

Previous








Next

Figure 22: Admin Assessment Tab




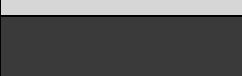
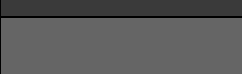
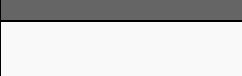


For the Admin user, the Assessment Details field set only contains drop list for Course and Grade. The “Assign Assessment” button has also been removed. All other functionality remains the same as in the Teacher app.

5 COLOUR PALETTE

Use the following chart as a guide to the colour of UI elements. Individual curriculum strand colour should follow the colours listed in the chart below and in the order displayed below.

HEX	R	G	B	Sample
603CBA	96	60	186	
00A300	0	163	0	
FFC40D	255	196	13	
1E7145	30	113	69	
9F00A7	159	0	167	
E3A21A	227	162	26	
2D89EF	45	137	239	

UI colours:

HEX	R	G	B	Sample
E9E9E9	233	233	233	
CCCCCC	204	204	204	
D6D6D6	214	214	214	
3A3A3A	58	58	58	
666666	102	102	102	
F9F9F9	249	249	249	
000000	0	0	0	
80AAFF	128	170	255	

B3DBFF	179	219	255	
0055FF	0	85	255	
E60000	230	0	0	