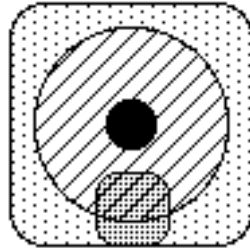


NewtDb



Relational Database

NewtDb™ - The Relational Database for Newton

by

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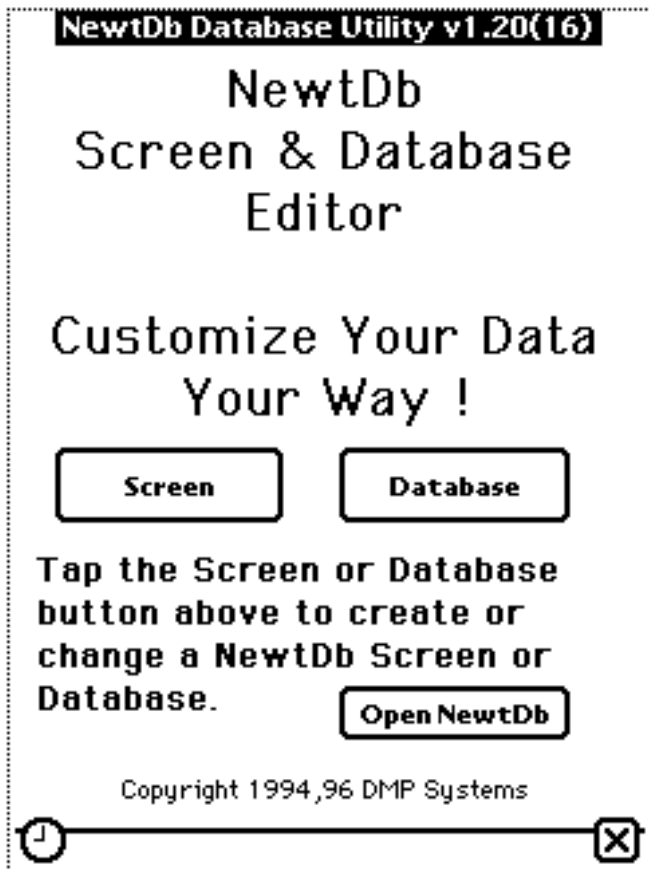
NewtDb™ Relational Database for Newton

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Using UtilityDb

Initial Screen

UtilityDb lets you define Screens and Databases for NewtDb. It need not be present to run NewtDb. UtilityDb requires at least 40k of free heap memory to use. If you have less, a message will alert you. You cannot run UtilityDb at the same time as NewtDb. After launching UtilityDb, the following screen will be displayed. If NewtDb is installed (not archived) a button to launch it will be shown. UtilityDb has two main sections: Screen and Database.

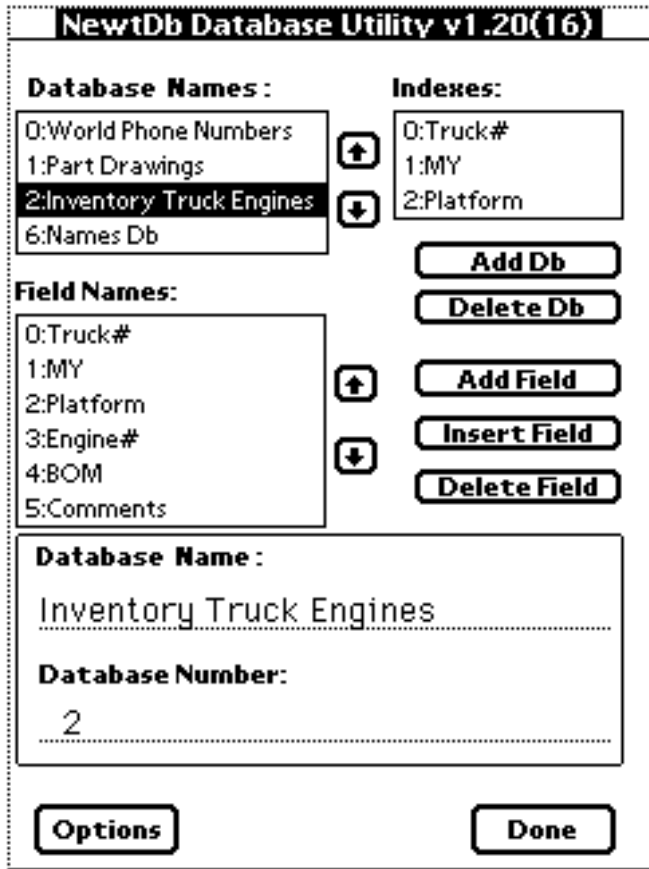


Opening Screen of UtilityDb

After launching UtilityDb select if you are going to work with screens or databases. When you are done with UtilityDb, you can go directly to NewtDb with the "Open NewtDb" button. You cannot have both applications open at once.

Using UtilityDb to create or change Databases

Press the "Database" button on the main screen.
You will be presented with a list of databases that are defined.



Cans and cant's of Databases:

You can:

- Add and Delete databases at anytime.
- Add, Delete and Insert Fields at any time.
- Change Index fields.
- Change Field, Database and Index Names.
- Change New / Duplicate field fill options.

You Can't:

- Undo a Field Delete, Insert or Add.
- UnDo a Database Delete.
- Reorder Fields.

NewtDb uses the "Field Number" that you see to the left of the "Field Name" for internally tracking of the data in each record. Looking up "Field Names" at run time would be too slow. Don't worry, when you define your screens, you'll see the actual "Field Name". When you add or delete fields, the field number for data in the Screens and the database records are automatically adjusted.

A typical Database definition

Navigating the Database Screen is easy.

Use the up / down icon buttons   next to the windows to scroll them.

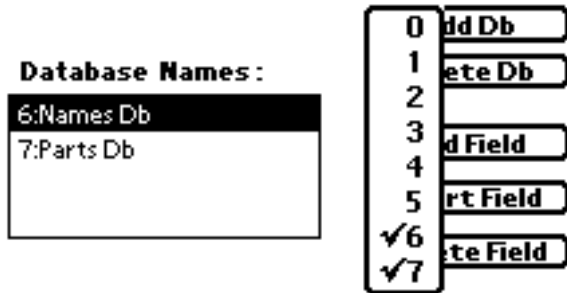
Select an item to change by tapping on it. It will be displayed in the Edit window at the bottom. You may now change it there.

When you change something, it will update in the list box when you tap on a new item. There is no need for a "Save" button".

Adding Databases

NewtDb supports multiple databases. For every database, there are fields and indexes. The fields hold the data. The indexes are for quick searches of the data.

Up to sixteen databases may be defined. Each database has a minimum of three fields and a maximum of 126 fields. For each database, there are three indexes.



Add a database by pressing the 'Add Db' button at any time. A popup will allow you to select the number for the database. This number will be used internally for the screens and for the NCK. A new database will have three fields. If a database is already in use, it will be checked and you can't select it.

You can also delete a database by pressing the 'Delete Db' button at any time and then confirming it. This will delete the selected database definition and **ALL OF THE DATA** in the database. The delete operation cannot be un-done.

Fields

Field Names:



Every database consists of fields. Every field holds a piece of data. NewtDb does not care about the type of data. You can put anything into it. Decide on what data you want to store in NewtDb and make a field for each item.

You can either Add or Insert a field. Adding a field is faster than an Insert. Inserting a field causes UtilityDb to check every screen and see if it has to shuffle the field definitions numbers. Then it inserts a new, blank field in the database for every record at the insert position. Adding a field just appends it to the database and the screens don't need to be checked.

You can also Delete a field. This will remove that piece of data from all records in the database and check all the screens. If it was used on a screen, that screen object will now reference field #0.

Summary:

When you "Add" a field, it goes to the end of the field list.
When you "Insert" a field, it goes before the selected field.
When you "Delete" a field, it is removed.

All the records in the database will be adjusted for this change.
All the Screens will be analyzed to see if any (internal) changes need to be made.
A window will inform you of the progress.
All indexes will be updates.

Indexes:

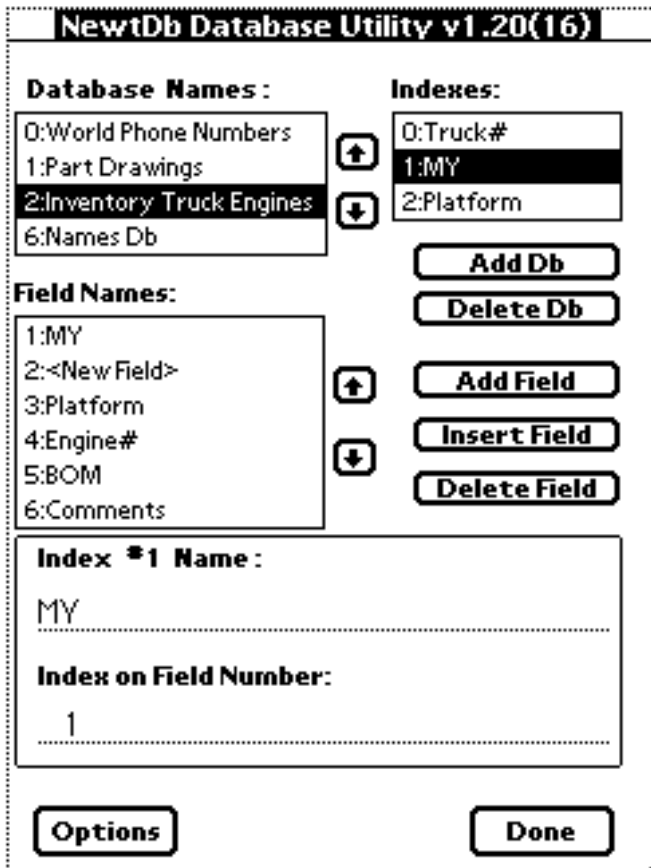
Indexes:

0:Truck#
1:MY
2:Platform

NewtDb uses three indexes for rapidly finding data and maintaining a sort order of the records. You define the three fields to use for the indexes. If you are using multiple databases with links from one to another (relational) then the indexes should be on the fields in each database that you are going to match from another database. This is NOT mandatory. It just speeds up the lookup of fields in other databases by a factor of at least 50.

There for, you should have a good idea as to what you links are going to be. For a database the has peoples names, you might want to use "Last Name". For a database the is used for parts inventory, you might want to use a "Part Number" field.

To define / change an index, select it and then enter the field number in the Edit Window. If you enter a field number that is too big (or negative) it will be ignored.



Index #1 defined as Field #2: Inventory Truck Engines

To change an index, write the "Field Number" to use in the edit window. You may change the Index Name displayed. The Index Name is for reference only and will show in the Index popup of NewtDb and other places.

Edit Info Box:

NewtDb Database Utility v1.20(16)

Database Names :

- 0:World Phone Numbers
- 1:Part Drawings
- 2:Inventory Truck Engines
- 6:Names Db

Indexes:

- 0:Truck#
- 1:MY
- 2:Platform

Field Names:

- 1:MY
- 2:<New Field>
- 3:Platform
- 4:Engine#
- 5:BOM
- 6:Comments

Field #3 Name :

Platform

Default New Record Data: **New / Dup Inits**

Options **Done**

In the edit / info box, at the bottom of the screen, for a Field, you may enter and change the Field Name and specify what data you want to be entered into the record field when the NewtDb user selects "New Record". There are also five options that may be used for a New or Duplicate record.

Field #3 Name :

Platform

New / Dup Field Fill Options:

- Short Date (ex: 1/14/96)
- Long Date (ex: , January 14, 1996)
- Time (ex: 4:34 pm)
- Duplicate on New
- Clear on Duplicate

New, Duplicate Field Fill Options:

When, in NewtDb, the user elects to create or duplicate (if allowed) a record, you can, for any field automatically:

Put any text you want in for "Default New Record Data". It will be put in the record when the use makes a New record.

Fill in the current Date (short format) for a New record operation (&DS).

Fill in the current Date (long format) for a New record operation (&DL).

Fill in the current Time for a New record operation (&TT).

Duplicate a fields content from the current record for a New record operation (&FD).

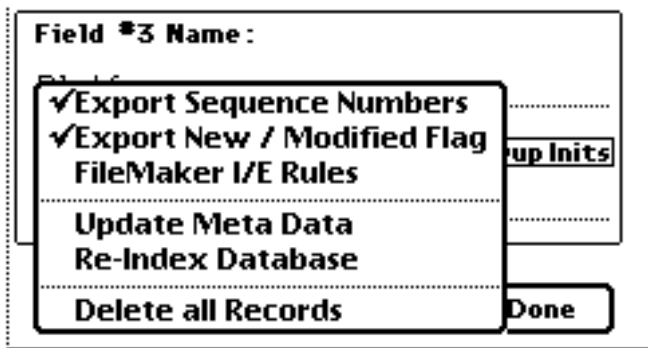
Clear a field contents when it would be duplicated for a Duplicate record operation (&FC).

The formats for the Time and Date (both formats) are shown when you pop up the "New / Dup Field Fill Options" list and depend on the Country your Newton is set to.

You may also place a '-1' after a Date Fill (&DS or &DL) option to fill in yesterdays date.

Tidbit: the Date and Time shown in the popup is when this application was last compiled.

Options Button



When you press the **Options** button, you will be able to select three options for NCK sync and three actions to be done for the selected database.

NCK Sync Options:

Export Sequence Numbers:

When you select "Export Sequence Numbers", NCK will place the internal record number NewtDb keeps, after all the data field. You can use this to maintain sync with a Mac / PC database.

Export New/Modified Flags:

When you select "Export New/Modified Flags", NCK will place the flag field NewtDb keeps, after all the data fields. The flag will be either "new" or "old" or "modified". You can use this to maintain sync with a Mac / PC database.

"New" - The record was created in Newton or NCK.

"Old" - The record was imported from an external database and not changed.

"Modified" - The record has been changed in Newton or the NCK.

A "New" flag will not be changed to "modified" if the record is changed as that would not be a true indicator of it's status.

FileMaker I/E Rules:

This lets you have FM database fields that use Vertical Tabs (VT) characters in place of Line Feeds (LF) for a new line separator, when checked. If unchecked, the normal Import / Export rule is to translate imported linefeeds to CR's and vice versa for Export.

Actions:

NewtDb™ Relational Database for Newton

Update Meta Data:

Meta Data is the code that NCK executes to show you entries on the screen for editing. The Meta Data is kept in Newton's Directory soup and would need updating if you added / deleted a database or changed its name. Normally, UtilityDb will prompt you to

update the Meta Data when you leave the Database screen if an update is needed. This action will force an update if you think it's needed.

Re-Index Database:

Use this action to force a rebuild of the indexes for a database. Use this if you think an index rebuild is necessary only as this action will read and write all records in the database and can take some time.

Delete all Records:

Use this action if you truly want to delete all the records in the database and leave the database definition intact. This would be useful to clean out a database before importing a fresh copy. Since this action is destructive, you are double warned for this operation.

When you're done:

After you have made all your changes, press the **Done** button. The screen will change back to the initial screen and all changes of the database definitions will be saved.

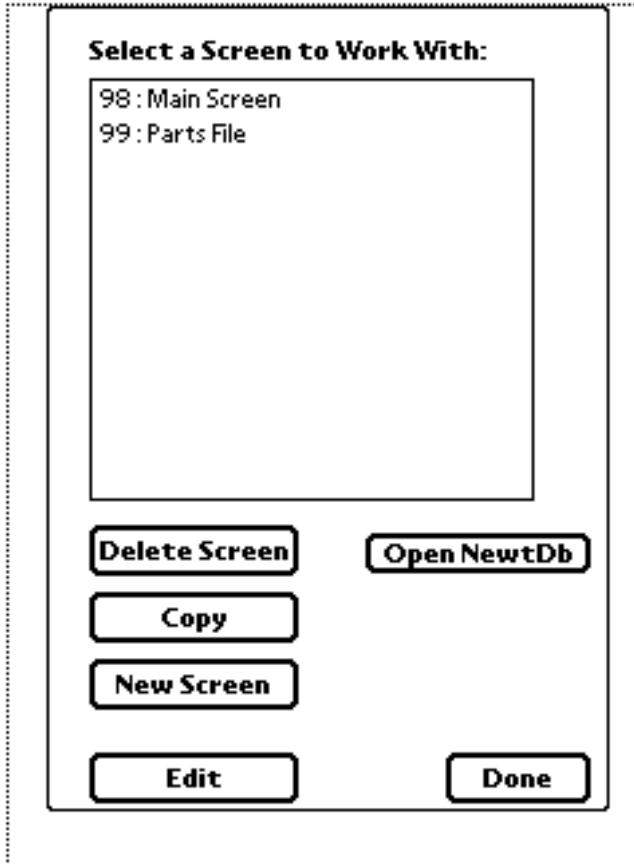
If you have added or deleted or changed the name of a database, you will be prompted to update the Meta Data. Select "OK" to do so. This only needs to be done if you are using the NCK for information exchange.

Upon exiting this screen, Newton will save any changes to the database definitions.

Using UtilityDb for defining Screens

Screen Selection

When you select "Screens" from the main screen, you'll be transferred to a display that shows all the screens that you have.



Modifying a Screen:

Tap on the Screen Name in the List Box to select it for editing. Then press the 'Edit' button.

Deleting a Screen:

To delete a screen, you first have to select it. Then, while it's still highlighted, press the "Delete Screen" button and confirm that you want it deleted. Or not.

Copying a Screen:

You can make a copy of the current selected screen by pressing the 'Copy' button. After the copy is made, you will be shown the Screen Setup" window of the new screen.

Creating a New Screen:

When you press the "New Screen" button, you'll be presented with a new, blank layout screen. Then the "Screen Setup" window will open. In this window you'll want to initially set two items. The first is "Screen Number". The second is the "Screen Db". This is the main database that will be used on this screen for data. All other items in this window can be filled in later. See "Setting Screen Info" for a complete definitions of them.

When you close this screen, by pressing the "Done" button, you'll have a blank form to layout. For information in the buttons at the bottom, see "Screen Layout Tools Info".

Screen Layout Tools

Field Name	Expression
Name	<f: Name>
Address 1	<f: Address 1>
Address 2	<f: Address 2>
City	<f: City>
State	<f: State>
Country	<f: Country>
Zip	<f: Zip>
Phone	<f: Phone>
Fax	<f: Fax>
Standard Notes	<f: Notes>
Active?	
Parts Screen	
Last Purchase	<f: Last Purchase>

Buttons: R, E, N, D, S, fb, +, SN, X

At the bottom of the Screen Layout are buttons to use. They are:

- R** - Redraw the screen.
- E** - Edit the selected item.
- N** - Make a New object.
- D** - Delete an object.
- S** - Edit the Screen Settings data.
- fb** - Move object to front or sent it to back.
- +** - Show or hide the Bump/Resize tool.
- SN** - Set object grid Snap increment.
- X** - All done. Exit the screen.

Tools:

- R** Redraw the screen. Use this button if you think something is missing.
- E** Edit the selected item. You can also double tap an item to edit it.



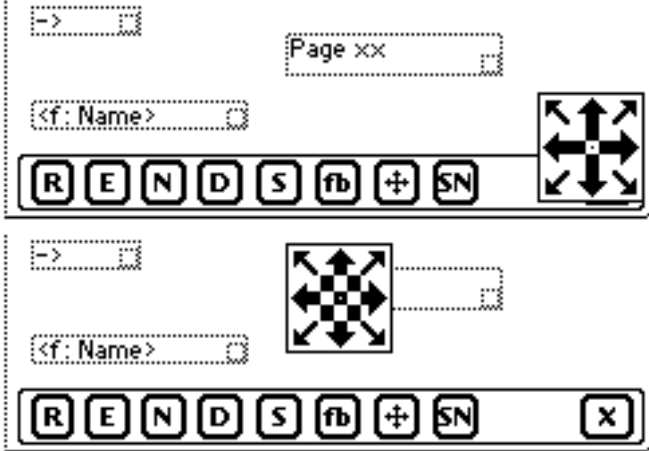
N New. Presents a pop up list of field type to put on the screen. When you select one, the editing screen for that item type will be shown. Selecting 'Duplicate' will duplicate the selected object.

D Delete. Select an item and press the D button. This can be undone.

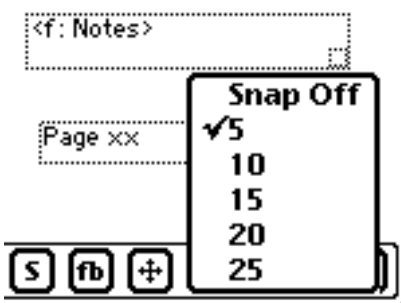
S Screen Settings. This will show the window for setting the screen name, database and other items. This is the window that is shown for a New Screen.



fb Front / Back . Use this button when an item is selected to move it position if the internal display array to the top or bottom. Not much need for it, but it's there if needed. Also, if you have indirect data on the screen from more than one indirect database, use it to group and order all the items from each indirect database together. When looking up indirect data, NewtDb does caches the latest found record so there is no speed penalty if the next indirect item in the list is from the same database.



+ Bump / Resize icon window. This will show / hide the window that lets you move and resize an item with arrows instead of tapping and dragging. You can move this window anywhere on the screen by pressing and dragging from the center of it. Use the arrows to move or nudge the selected item. Tap on the center of it and the center will change to a checkerboard and it will now resize a selected item when you tap on the arrows. Tap again, in the center, and it goes back to a move / nudge mode.



SN Snap. You can select the amount of alignment to an invisible grid using the Snap popup list. Any item will be aligned / resized to a grid of the selected size when you move or resize it.

X All done. Press it to return to the Screen Selection window. The screen and any changes will now be saved.

Selecting, Moving, Resizing and Editing

This works just like many drawing program on a Mac. Just use your pen instead of a mouse.

Tap an item to select it.

Tap and drag an item to move it.

Double tap an item to open the Edit Window for it.

There is a "Resize" box in the lower right of each item. Just tap it and drag to resize. When you are doing a resize, you'll hear a "Squeak" sound for confirmation.

If the item is a "Static Text" item, you'll see the actual text. For a "Db Text Field", you'll see the field name and an "F" before it. If it's an indirect Db Text Field an "I" will be placed in front of it.

Editing an Item

When you double tap or select an item and press the "E" button, up comes an Edit Window for that item. This is where you define that parameters for that item. When you're all through with the Edit Window, press the "Done" button in the lower right to return to the Screen Layout.

Screen Objects

NewtDb gives you several different Object types for displaying and entering data on a screen. They are:

Static Text - As it's name implies, this is text you can use for labels.

Db Text Field - Used to display and edit text of a database field.

Go To Button - Lets you change to a different screen. Many options.

Checkbox field - Displays a check box. The data from a field determines if it is checked or not.

Pop Up List - Like a Newton Popup. This lets you select from a list of items and the data to be put in a field.

Pop Up List / List - Just like a Pop Up List, but the selected list item is for show only. The data to be put in a field is from a hidden list.

Calc - Perform more than 20 types of math operations on fields.

Common things in most every Object Edit Window

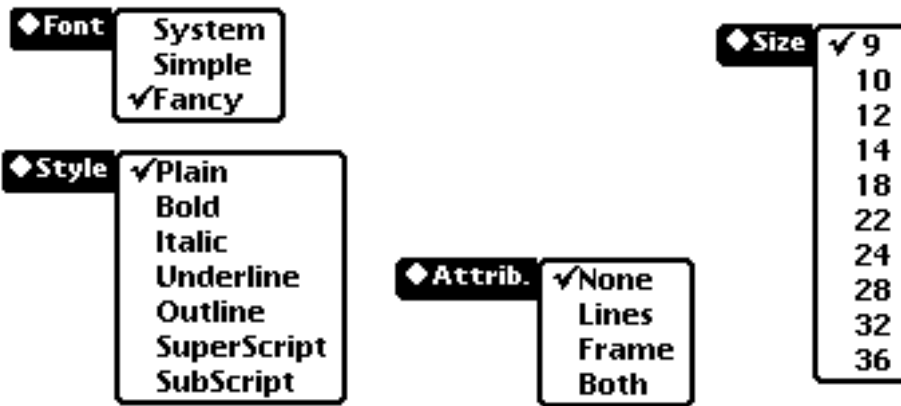
When you make an object on the screen, a window will open showing all the attributes of that object. Many objects have the same common attributes that you can alter. Below is the window for a Static Text Object.

The image shows a window titled "Edit Object Attributes" with a dotted border. At the top, a box contains the text "Object Type: Static Text". Below this, there are four attributes listed in two columns: "Font Fancy", "Style Plain", "Size 9", and "Attrib. None". Each attribute is preceded by a diamond symbol. In the center, there is a large rectangular area labeled "Static Text:" containing three horizontal dashed lines, with the word "Name" written on the top line. At the bottom right corner of the window, there is a button labeled "Done".

For all Screen Objects the Font, Style, Size and Attrib. for it's display on the screen can be changed to the way you want.

At the top is the Object Type of the item begin edited. The Object Type is named the same as in the popup list for making a new object.

Press the Done button after entering / changing attributes in the form.



You can select the Font, Size, Style and Attributes of how the item is to be displayed. They are all popup lists. Select how you want the item to look.

Fonts:	Style:	Attrib:	Size:
System	Plain	None	9
Simple	Bold	Lines	10
Fancy	Italic	Frame	12
	Underline	Both	14
	Outline		18
	SuperScript		22
	SubScript		24
			28
			32
			36

For a "Pop Up List" object, use only the "System" font as it's the only one that will show the little, black, diamond in front of the popup.

The Attributes pop up will let you define two things:

1. Do you want a line drawn under the text ? For Data items, perhaps you should select Lines so the user can see where that data is on the screen. For Static Text selecting None or Frame is nice.
2. Do you want a rectangle drawn around the item ? For Single Line data, probably not. For multiple lines, yes. A Go To button already displays a round cornered rectangle so there is no need to add a frame.

Direct Data:

Direct Data comes from the database associated with the screen. In "Screen Setup" you selected the database for this screen. Use the list to select which fields will be used on the screen.

◆ **Type:** Direct **Source:**

◆ **Type:** Direct **Source:**

◆ **Type:** Direct
 Indirect

Name
 Address 1
 Address 2
 City
 State
 Country
 Zip
 Phone
 Fax
 Notes
 Woop

All items except Static Text and Go To Button will show a "Type" and "Source" window. This is where you specify what data you want displayed. "Type" is either "Direct" or "Indirect" . In either case, press the "Source" button for a list of database fields and select the field you want.

Indirect Relational Data:

Indirect Relational Data is data that comes from a database different than the database defined in the "Screen Setup". This data has to be related to some field in the main database. To retrieve the data, you must specify which field in the main database will match another field in the related database. Then you can retrieve the field of interest in the other database.

So, to retrieve data from an other database, you define four things:

1. Source - Which field in the main database will have the same value as the related data.
2. Database - The other database that the Match and Return field reside in.
3. Match - The field in the other database that will match the main database Source field.
4. Return - The field in the other database will be retrieved.

Setting up an Indirect field:

When you select **Indirect**, up pops three more buttons.

◆Type: Indir	Source:	Name
	Look up Database:	Not Found
	Match Data Field:	Db Not Defined
	Return Data Field:	Db Not Defined

Source: Select which data field will be used to look up data in the other Database.

◆Type: Indir	Source:	Name
	Look up Database:	Main Db
	Match Data Field:	✓Aux Db
	Return Data Field:	Phone

Look up Database: Select the Database that will provide the data.

◆Type: Indir	Source:	Name
	Look up Database:	Aux Db
	Match Data Field:	✓Name
	Return Data Field:	Phone
		<spare>

Match Data Field: Select the field in the Look Up Database that the Source data will match. Did you remember to specify this field as an **Indexed** one? If so, then the lookup / match will be fast !

Type: Indir	Source:	Name
	Look up Database:	Aux Db
	Match Data Field:	Name
	Return Data Field:	Name <input checked="" type="checkbox"/> Phone <spare>

Return Data Field:

Select which field in the Look Up Database is to be used on this screen.

That's all there is to making a relational link to another database. Of course, it's up to you to define the databases in a way to be able to use relations from one database to another.

Specific Object Item Types

Detailed below are the Objects that you may place on the screen to make your layout.

Static Text

The image shows a dialog box titled "Edit Object Attributes" for a "Static Text" object. The dialog has a title bar "Object Type: Static Text". Below the title bar, there are four attributes listed in two columns: "Font Fancy", "Size 9", "Style Plain", and "Attrib. None". Each attribute is preceded by a diamond symbol. Below the attributes is a large rectangular text area with the label "Static Text:" and the text "Name" on the first line, followed by two dashed lines indicating multiple lines of text. At the bottom right of the dialog is a "Done" button.

Static Text

The only thing here is the actual text you want to appear on the screen. You can make multiple lines of text here (they will show as one in UtilityDb but be OK in NewtDb).

You can also leave the TEXT blank and use this object for rectangles around other objects.

All other items for this object have been detailed in "Common things in most every Edit Window".

Db Text Field

Edit Object Attributes

Object Type: Db Text Field

◆ **Font:** Simple ◆ **Size:** 9

◆ **Style:** Plain ◆ **Attrib. Frame:**

◆ **Edit Window:** Small

◆ **Type:** Direct **Source:**

Allow Field List Box for Edit

Field List Box for Edit

Database:

◆ **Sort Field:** Area Code

List Field 1:

List Field 2:

Barcode / Serial Input

Done

Db Text Field:

This will be the most common of the objects you'll put on the screen. It displays the data from a record a database.

You can choose display a field from the Screen database or , by setting **Type: Indirect** , a field from another database as described previously.

Other options for this object are:

Allow Field List Box for Edit

Barcode / Serial Input

When displaying the data, you have a choice of what size a window the user will have to edit in:



An "Edit Window" popup is for selecting what size to initially show text when editing it in NewtDb. The user can alter the Edit Window size. You can also select if you want this item to be read only. Read Only objects will show that data on the screen, but can't be edited.

Edit List Box:

When you check the "Allow Field List Box for Edit" box, a window will be shown that has the parameters for displaying two fields of a database. A List Box of records showing the fields will be able to be shown when the user is editing this data field in NewtDb.

Select:

- Database - The database to use for the list.
- Sort Field - The index to use for sorting the data for display
- List Field 1 - The first of 2 fields in the Database to be shown in the List Box.
- List Field 2 - The first of 2 fields in the Database to be shown in the List Box.

Barcode:

Check this box if you want to allow Serial Input to this field. For more information on Barcode and Serial Input, see the NewtDb manual.

All other items for this object have been detailed in "Common things in most every Edit Window".

Go To Button

Edit Object Attributes

Object Type: Go To Button

◆ Font Fancy	◆ Size 9
◆ Style Plain	◆ Attrib. None

Type: Simple Indirect

Go To Screen:

Go to Label:

- >

Simple Go To:

To change screens, you can use the drop down Screen Name list in NewtDb or you can have a **Go To** button, with your text inside it, to change to a different screen.

Go To Screen:

Select the Screen that you want to transfer to from the popup Screen List.

Go To Label:

Enter the Text to be displayed on the screen, inside the Button.

All other items for this object have been detailed in "Common things in most every Edit Window".

There is no need to select an Attrib. of "Frame" as a button is normally drawn with a rounded rectangle.

Indirect Go To Button:

The screenshot shows a dialog box titled "Edit Object Attributes" for an "Object Type: Go To Button". It contains several settings:

- Font: Fancy
- Size: 9
- Style: Plain
- Attrib.: None

Below these are radio buttons for "Type": "Simple" (unselected) and "Indirect" (selected). There are input fields for "Source: Name" and "Match: Name". A checkbox "Set Query to Match" is checked, and the "Query:" field contains "=". The "Go To Screen:" field contains "Screen 99". The "Go to Label:" field contains "Page 14". A "Done" button is at the bottom right.

An Indirect Go To button functions the same as a Simple Go To button but with some additional options. Besides letting you change screens, it executes an indirect lookup to a given record on the new screen and goes to the matching record.

It also lets you automatically set up a Query.

Go To Screen:

Select the Screen that you want to transfer to from the popup Screen List.

Go To Label:

Enter the Text to be displayed on the screen, inside the Button.

An Indirect Go To is much like an Indirect Data field. You specify a Source and Match field.

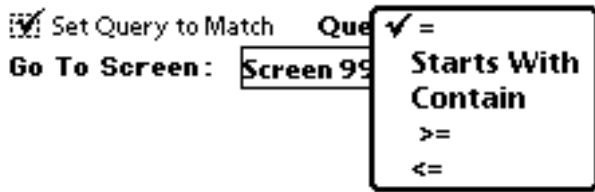
Source: The data field in the Main Screen database to use for a match.

Match: The data field in the Go To Screens database to match against the Source field.

If there is no match of the data when using NewtDb, the user will be informed and the screen will not change.

Set Query to Match:

When an Indirect Go To is done, you can specify that the Query, in NewtDb, be set the Match field data value. This will restrict the display to only records matching the Query. Most useful when you are importing a .dbf file that has a Memo field. You would use a "Go To Indirect" to switch to a screen that displays the Memo data for only the specific Main Record.



Select the Query type to use. If you select "=" then the Source data must be exactly the same as the Match data for the Go To to work. If this option is unchecked (or checked and not an "="), then the Go To will be use a "Starts With" match .

Another use of "Go To Indirect" might be to trace back data. If you have a database with employee ID's and each employee has a field for a supervisor ID, you can make a button that will bring up the supervisor's record by using employee.ID (source field) match supervisor.ID (match field). Think of it as a combinations of switching screens and going to specific record.

Checkbox Field

Edit Object Attributes

Object Type: Checkbox Field

◆ Font Fancy	◆ Size 9
◆ Style Plain	◆ Attrib. None

◆ **Type: Direct Source:**

Checkbox Label:

Womp ?

Check Box Field

The only extra thing here is the actual text you want to appear on the screen next to the checkbox.

Select the data field for the checkbox.

The field data for determining if a check mark shows is a 0 (zero) for unchecked or non-zero value for checked.

NewtDb puts a value of -1 in the field when the user checks it.

Pop Up List

Edit Object Attributes

Object Type: Pop Up List

◆ **Font** System ◆ **Size** 9
◆ **Style** Plain ◆ **Attrib.** None

◆ **Type:** Direct **Source:**

Pop Up List Label:

List Item:

◆ **Data entry:** Replace
Item #: 1/4

<input type="button" value="Show"/>	<input type="button" value="Add"/>	<input type="button" value="Insert"/>	<input type="button" value="Delete"/>
			<input type="button" value="Done"/>

Pop Up List

You can enter any amount of items to form a Pop Up list. But, unless you have "Scrolling Do Popup" installed, only 24 items will be selectable. Popups take a lot of memory, so use them only when needed.

When a user presses a Pop Up button and selects an item in the List, the List item's Text will be placed in the database field.

Please note that the actual field that the data goes into is not displayed on the screen. If you want the field displayed, use a Text Field and make it read only. This is by design as you may be putting data into an indirect database and using that field for an indirect relation to retrieve other fields for display.

You edit one list item at a time. Use the Prev. and Next buttons to move to the different List Items.

Pop Up List Label: Enter the text to be shown as the title of the pick list. This will be the top item in the list and is un-pickable.

List Items: Enter the text you want shown in the Pop Up list for the current List Item.

Prev. / Next Buttons: Used to show the different List Items for entering and editing.

Add / Insert / Delete: Used to alter the List Items. Insert / Delete work on the currently displayed List Item. Add appends a new List Item to the end of the list.

Show: Pops Up the List so you can see it. You can select from the Pop Up to go to that item in place of using the Prev. / Next Buttons. The number next to the Text is for reference only and is not displayed in the actual List.

Item 1/2: Shows which List Item you're editing and how many Items are in the List.



Data Entry: Select if the pick item the user chooses is to be placed Before or After the data that is currently in the field or if it is to Replace the field data.

Pop Up List List

Edit Object Attributes

Object Type: Pop Up List / List

◆ **Font** Fancy ◆ **Size** 9
◆ **Style** Plain ◆ **Attrib.** None

◆ **Type:** Direct **Source:**

Pop Up List Label:

List Item:

Data to put in Field:

◆ **Data entry:** Replace
Item #: 1/4

Pop Up List List

This the same as a regular Pop Up List except that you also specify the "**Data to be put in Field**".

The regular Pop Up List uses the data displayed in the list for the field data.

You can have a readable text list of items to select from and then put, say, a number or code as the "**Data to be put in Field**" into the database. You could then use that code for indirect data in NewtDb or in your main database on a Mac / PC.

Calculate Field

Edit Object Attributes

Object Type: Calc

◆ **Font** Simple ◆ **Size** 9

◆ **Style** Plain ◆ **Attrib.** None

◆ **Type:** Direct **Source:** Cost of goods

+ Add

8

* Multiply

Cost

Qty on hand

Const: 8

Operand

Field

Add

Insert

Delete

Done

The function works like an Hp RPN calculator. All results are kept in a 4 register stack:

Temp1
Temp2
Y
X

When you select a database field or constant, it's number goes into the X register. Before placing it there, the other registers are rolled up.

Temp2->Temp1, Y->Temp1, X->Y.

When you select an simple math operand, it works on the X and Y registers. The result is left in the X register and the other registers are rolled down.

Use the Insert button to insert a term above the current selection in the list. Use the Add button to put a term at the bottom of the list. The Constant button places the number next to at the current selection. There is no set limit on the number of terms (except heap). Use Newton's scroll buttons if needed for the list.

Example Calculation Showing the Stack:

Before:

Temp1 = 0
Temp2 = 10

Y = 2
X = 3

Operand '+', after the calculation:

Temp1 = 0
Temp2 = 0
Y = 10
X = 6

The operand / field / constant list is shown with the bottom / last entry as the first executed. An example is:

*
+
Sales Tax rate (in %)
1
*
Quantity
Part Cost

'Part Cost', 'Quantity' and 'Sales Tax rate (in %)' are fields in the database.

This calculation executes in this order:

Enter the Part Cost
Enter the Quantity
Multiply them
Enter constant 1
Enter Sales Tax % (0.xx)
Add them (1+ Sales tax %)
Multiply (1.xx times (Quantity * Cost)) and leaves the result in the X register which goes into the selected field.

Operands:

+, -, *, / operate on X and Y registers, leaving the result in X.
X<->Y exchanges X and Y register numbers
Roll Up rotates all numbers upwards. Temp1 goes into X.
Roll Down opposite of Roll Up. X goes into Temp1.
*-1 X is made negative
1/X X is divided into 1
Clear X is cleared
X^Y X is raised to the Yth power
X^2 X is squared
Sqrt(X) The square root of X
X->Y The stack is rolled up, with a copy of X placed in Y. X remains the same.
log(x) The natural log of X.
e^X e is raised to the Xth power
Tan, aTan, Sin, aSin - what you would expect.

Use the Insert button to insert a term above the current selection in the list. Use the Add button to put a term at the bottom of the list. The Constant button places the number next to it at the current selection. There is no set limit on the number of terms. Use Newton's scroll buttons if needed for the list.

Currently, only the current screen database will accept the result of the calculation. This may change in the future. The calculation is done when the record is shown or new data is entered on the screen or mailed / faxed / printed. It is not calculated for List View.

Note: Constants with numbers after the decimal point (ex: 1.01) may show in the list window with extra zeros and stray digits (ex: 1.010000000002) many places to the right. This is because of floating point conversion for display. Seems to only effect pre NOS 2.0 Newton's.

Screen Setup Information

Screen Setup

Screen Name: **Number:**

Screen Db: **Index:**

List View Fields:

#1 #2 #3 #4 Direct

Width: pixels Indirect

Field:

Allow: New / Duplicate / Delete

Use Password:

Screen Setup Information

The **Screen Setup** is where general attributes for the screen are defined. You must select a screen database and unique Screen Number before you'll be able to put other objects on the screen for displaying data.

Screen Name: This is what will be displayed in NewtDb and in Go To Button definition. Enter the screen name you want here.

Screen Number: Enter a unique number here. This number is used internally for Go To Buttons and the Screen Select popup. If you enter a screen number already used, you will be warned when you exit this window.

Screen Db: Select the Database for use on this screen for the main, direct fields.

Index: Select the initial Index to use for this screen. The index controls the sort order of records displayed.

List View Fields:

You can have up to four columns of data in NewtDb's List View. It's the screen you get when you tap the "Belly Button". Each column can also display data from another Database (except column #1). You define the width of each column. Current Newton's have 240 pixels of width.

Data Select #1 - #4 radio buttons:

Select which data column you want to define or change.

Width: Select how wide to display the data.

Source: Select the Database Field for the data to be displayed.

Direct or Indirect: Select if you want the data from this screens Database or another.

Allow: New / Duplicate / Delete: Check this option to let the NewtDb user have these functions. If unchecked, the button that shows the New/D/D window will not be shown.

Use Password: Check this box and enter a password to prevent this screen from showing before the password is entered.

Indirect List View Fields:

Screen Setup

Screen Name: **Number:**

Screen Db: **Index:**

List View Fields:

#1 #2 #3 #4 Direct Indirect

Width: **pixels**

Source: **Db:**

Match: **Return:**

Allow: New / Duplicate / Delete

Use Password:

Indirect List View Fields

When you want to display data from another Database, select the Indirect button for a column. This will now show three more list fields to select:

Source: Select the Database Field, on this screen, to use for look up in the Indirect Database.

Db: Select the Database to Match and Return the indirect data from.

Match: Select the field in the indirect database, to which the Source data will match. This field should be an indexed one or retrieval will be slow.

Return: Select a field in the indirect database to be displayed on screen.

Select the Indirect Database and then the Match and Return fields. You will be able to change the Return field in NewtDb as it's just like other columns.