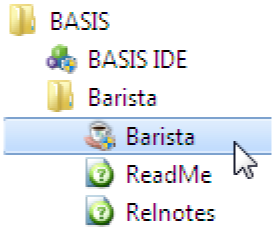
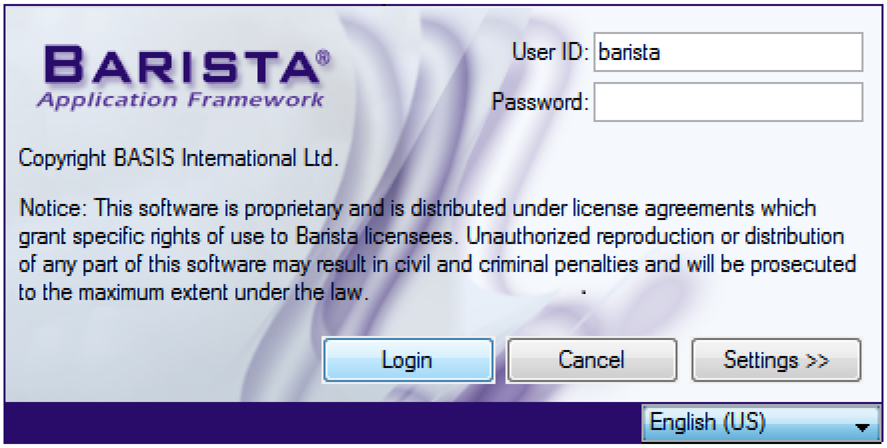
Barista Tutorial 1: Build a Simple Form

In this tutorial, you will build a simple data driven form using Barista. We'll build on this form in the followup tutorials. For complete Barista documentation go to Barista Resources. See also the Getting Started guide.

Select Barista from the BASIS Menu…



…and click the [Login] button:



BARISTA®
Application Framework

User ID: barista

Password:

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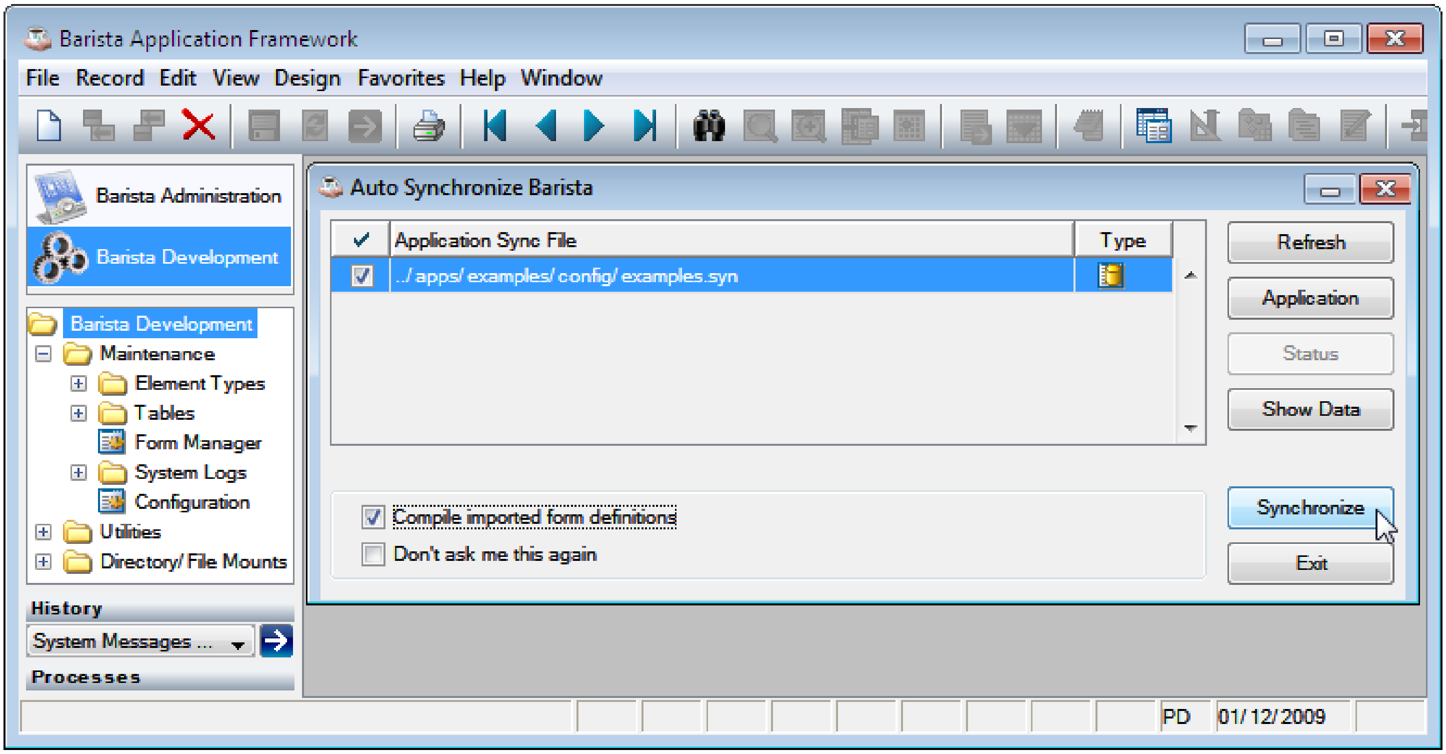
The first time you run Barista, it will run through some quick configuration steps. Just click [OK] through the initial messages, then click "Synchronize" when it gets to the "Auto Synchronize Barista" form. This process will just take a minute.



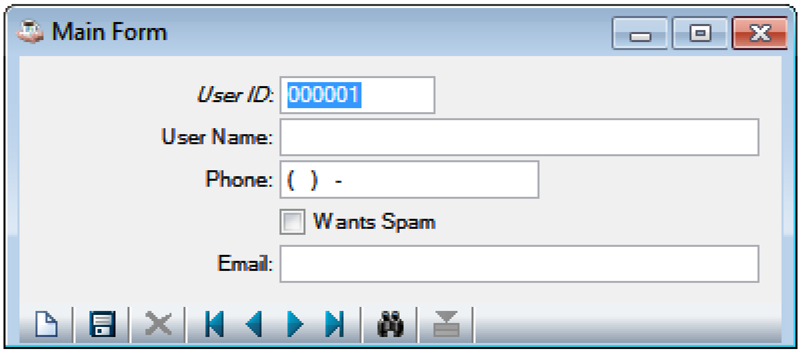
✓	Application Sync File	Type
☑	../apps/examples/config/examples.syn	

☑ Compile imported form definitions

□ Don't ask me this again

PD 01/12/2009

Our goal is to build this simple file maintenance form:



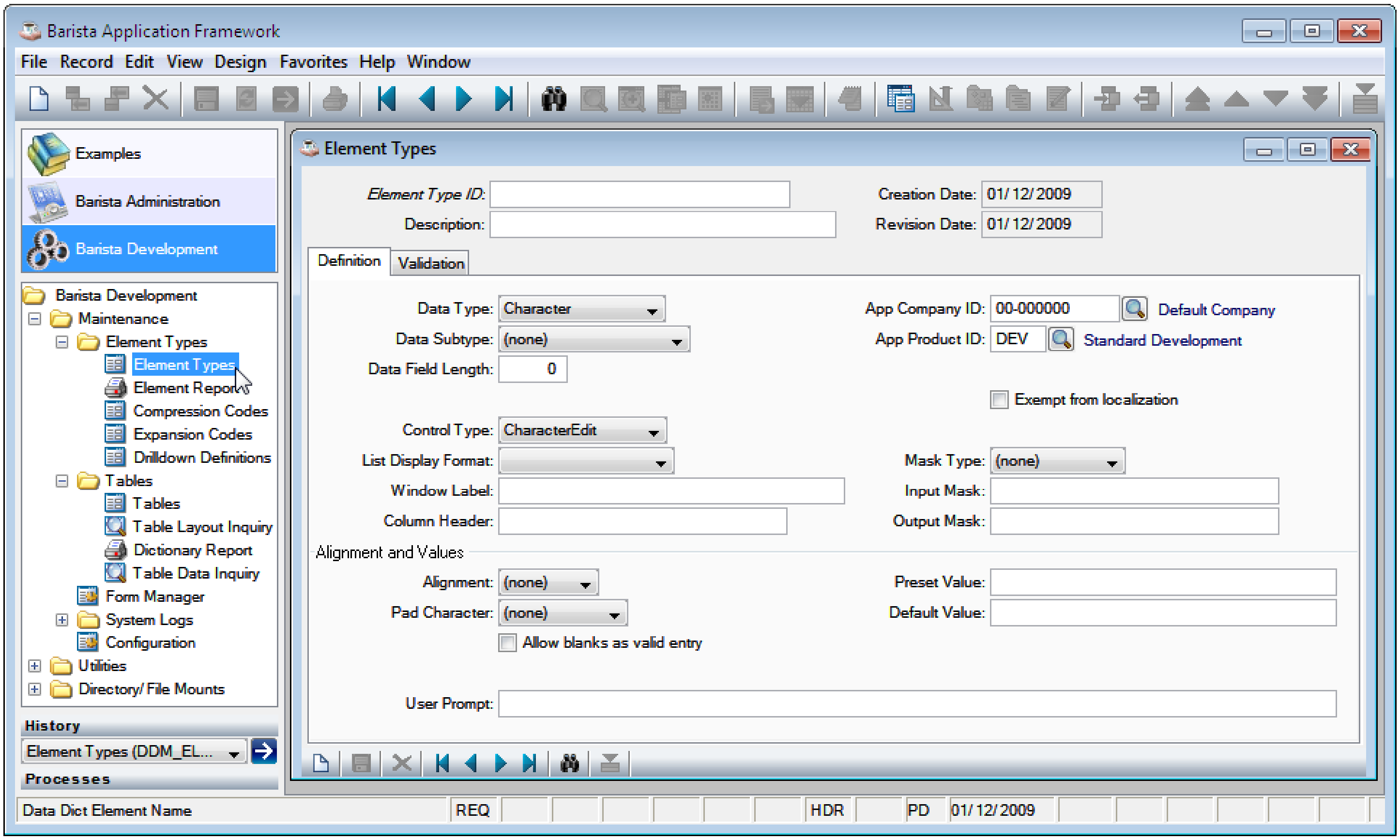
User ID:	000001
User Name:	
Phone:	( ) -
	□ Wants Spam
Email:	

To get to that form, we'll work through these three steps:

1. Define **data elements**.
2. Define **table**.
3. Build **form**.

Define Data Elements

Select the "Barista Development" Menu option, then select the "Element Types" node in the menu tree to bring up the Element Types maintenance form.



Element Type ID:

Description:

Creation Date: 01/12/2009

Revision Date: 01/12/2009

Data Type: Character

Data Subtype: (none)

Data Field Length: 0

App Company ID: 00-000000 Default Company

App Product ID: DEV Standard Development

□ Exempt from localization

Control Type: CharacterEdit

List Display Format:

Mask Type: (none)

Window Label:

Input Mask:

Column Header:

Output Mask:

Alignment: (none)

Preset Value:

Pad Character: (none)

Default Value:

□ Allow blanks as valid entry

User Prompt:

Data Dict Element Name | REQ | HDR | PD | 01/12/2009

A complete rundown of the fields in Data Elements is available in Getting Started, but we'll cover some of the more important fields here briefly.

In the Header:

Element Type ID: A unique 16 character identifier used throughout to reference this element.

In the Definition Tab:

Data Type: Determines how the data will be stored in a file.

Data SubType: Can be used to impose a *semantic meaning* on a field, for example as a YYYYMMDD date string.

Data Field Length: The length of the field on disk.

Control Type: Specifies what type of user interface control will be generated to handle data entry.

Window Label: Specifies label for field on form.

Input Mask: Data entry mask. See the **Mask Reference** section in Getting Started.

In the Validation Tab:

Check Box Data: Values corresponding to Checked and Unchecked, formatted as Y;N.

Validate Data Table/Data Column: Data is validated against another table.

Min/Max Length: Imposes minimum and maximum input length.

Pad Character/Justification: Specifies how the user's input will be padded before being saved to the file.

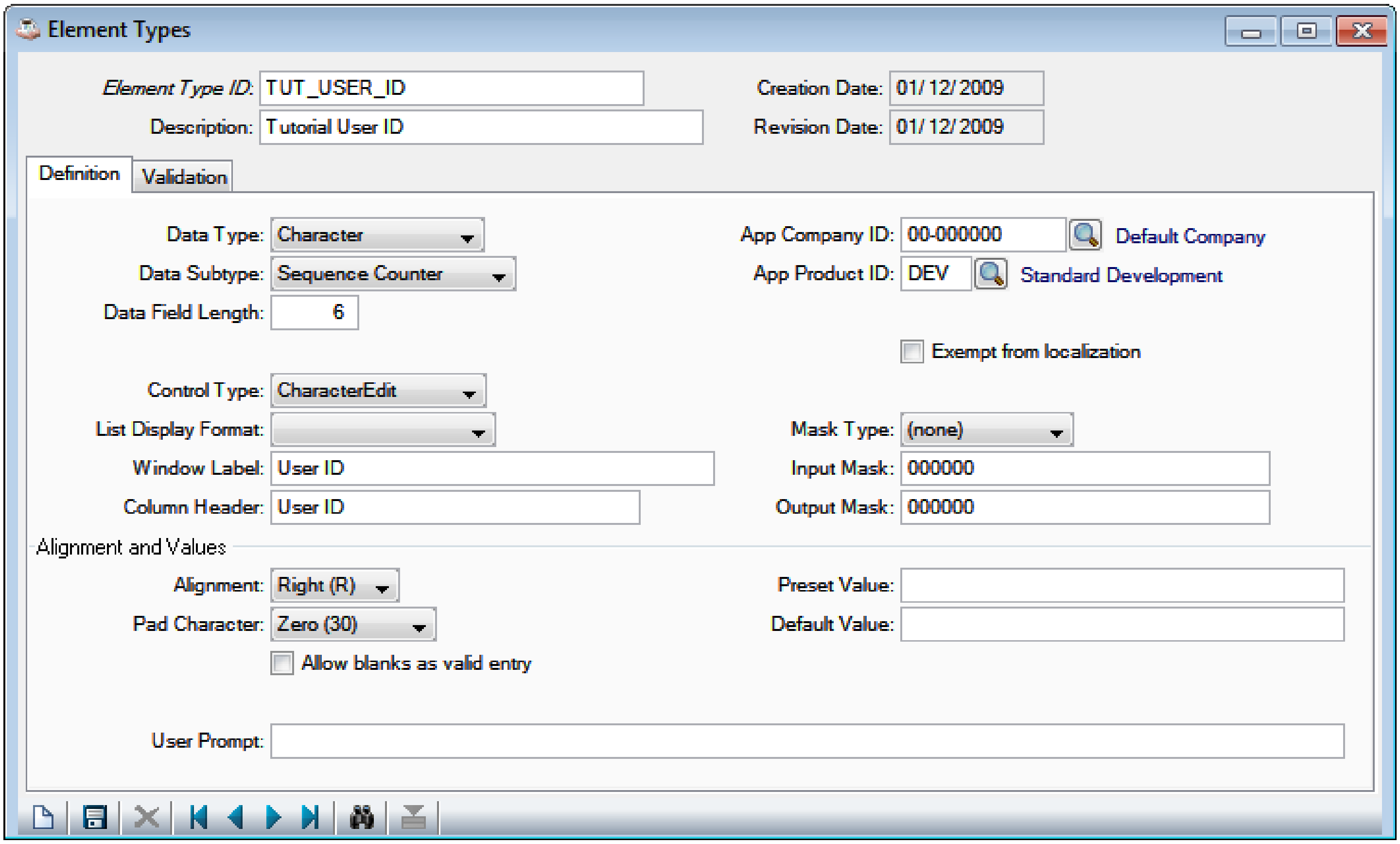
We'll define 5 elements, then add them to a table.

Our first element, and the key to the file, is User ID. We will define it as a **Sequence Counter**. This is useful to automatically generate a unique ID for a record entry.

Add Element Type: TUT_USER_ID

Fill in the following fields of the Element Types form with the following data. All other fields can be left as their default values.

Location	Field	Value
Header	Data Element Name	TUT_USER_ID
	Description	Tutorial User ID
Definition Tab	Data SubType	Sequence Counter
	Data Field Length	6
	Window Label	User ID
	Input Mask	000000
	Output Mask	000000
	Alignment	Right (R)
	Pad Character	Zero (0)



Element Type ID: TUT_USER_ID
Description: Tutorial User ID
Creation Date: 01/12/2009
Revision Date: 01/12/2009

Data Type: Character
Data Subtype: Sequence Counter
Data Field Length: 6
App Company ID: 00-000000 Default Company
App Product ID: DEV Standard Development
□ Exempt from localization
Control Type: CharacterEdit
List Display Format:
Mask Type: (none)
Window Label: User ID
Input Mask: 000000
Column Header: User ID
Output Mask: 000000

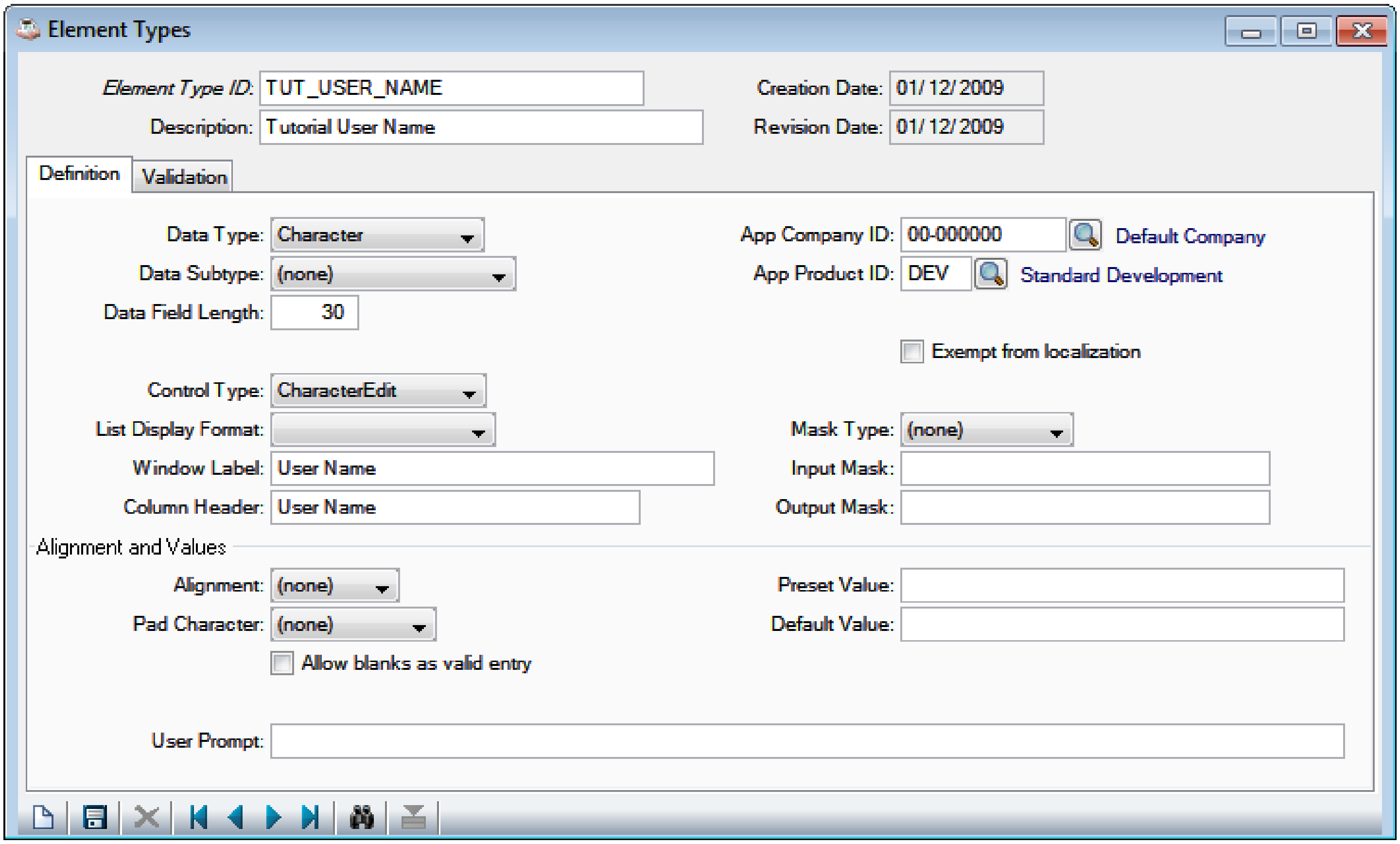
Alignment and Values
Alignment: Right (R)
Preset Value:
Pad Character: Zero (30)
Default Value:
□ Allow blanks as valid entry
User Prompt:

Click 💾 or press [Ctrl]+S to save this data element.

Add Element Type: TUT_USER_NAME

Click 🗋 or press [Ctrl]+N to begin entering a new data element.

Location	Field	Value
Header	Data Element Name	TUT_USER_NAME
	Description	Tutorial User Name
Definition Tab	Data Field Length	30
	Window Label	User Name
	Column Header	User Name



Element Type ID: TUT_USER_NAME

Description: Tutorial User Name

Creation Date: 01/12/2009

Revision Date: 01/12/2009

Data Type: Character

Data Subtype: (none)

Data Field Length: 30

App Company ID: 00-000000 Default Company

App Product ID: DEV Standard Development

□ Exempt from localization

Control Type: CharacterEdit

List Display Format:

Mask Type: (none)

Window Label: User Name

Input Mask:

Column Header: User Name

Output Mask:

Alignment and Values

Alignment: (none)

Preset Value:

Pad Character: (none)

Default Value:

□ Allow blanks as valid entry

User Prompt:

Click 💾 or press [Ctrl]+S to save this data element.

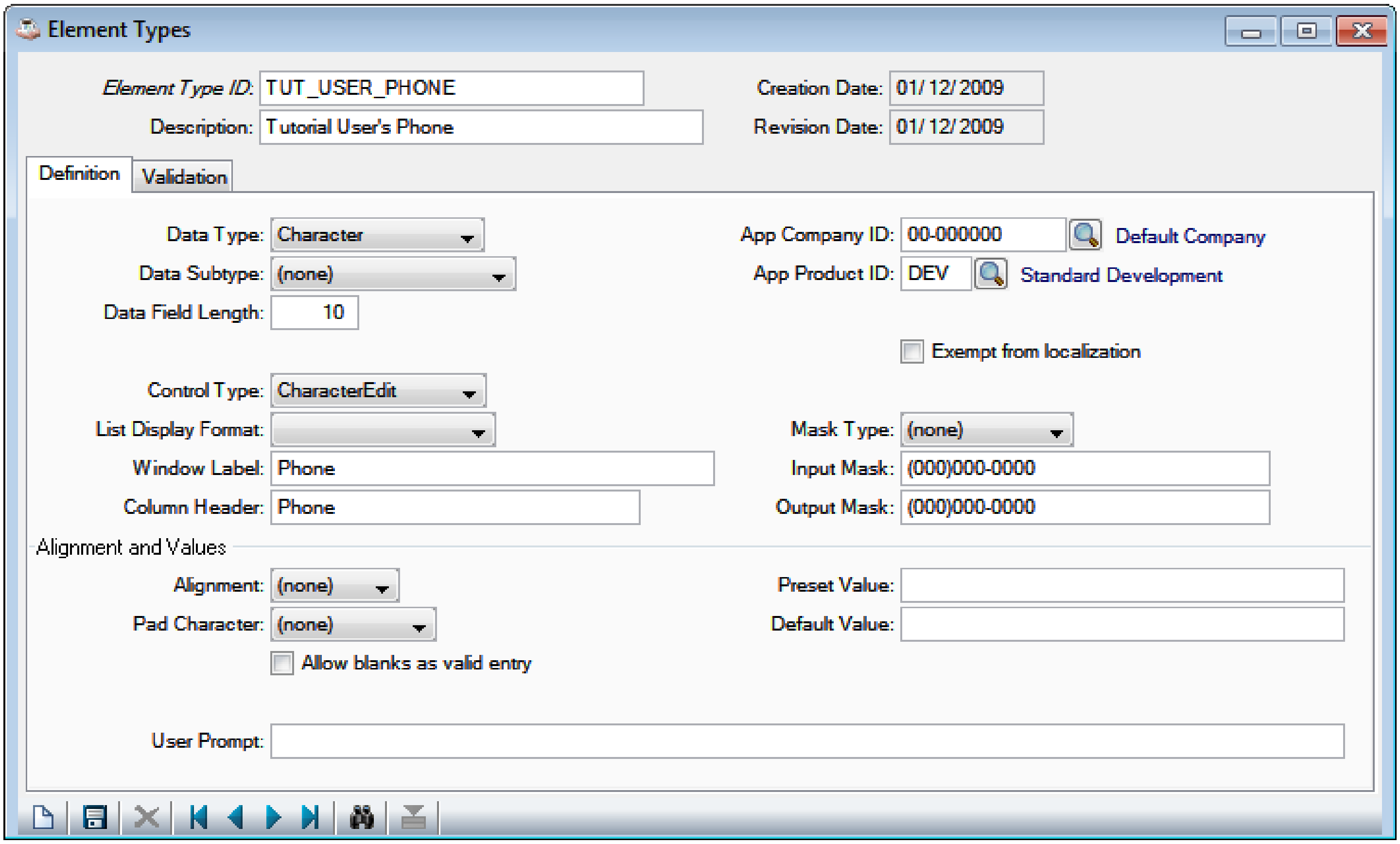
Add Element Type: TUT_USER_PHONE

Click 🗋 or press [Ctrl]+N to begin entering a new data element.

Location	Field	Value
Header	Data Element Name	TUT_USER_PHONE
	Description	Tutorial User’s Phone
Definition Tab	Data Field Length	10
	Window Label	Phone
	Column Header	Phone
	Input Mask	(000)000-0000
	Output Mask	(000)000-0000

Validation Tab	Minimum Length	10
	Maximum Length	10

- *To demonstrate masking and input length validation, this example assumes North American phone numbers. This would not be appropriate in a real-world application.*



Element Types

Element Type ID: TUT_USER_PHONE

Description: Tutorial User's Phone

Creation Date: 01/12/2009

Revision Date: 01/12/2009

Data Type: Character

Data Subtype: (none)

Data Field Length: 10

App Company ID: 00-000000 Default Company

App Product ID: DEV Standard Development

□ Exempt from localization

Control Type: CharacterEdit

List Display Format:

Window Label: Phone

Column Header: Phone

Mask Type: (none)

Input Mask: (000)000-0000

Output Mask: (000)000-0000

Alignment and Values

Alignment: (none)

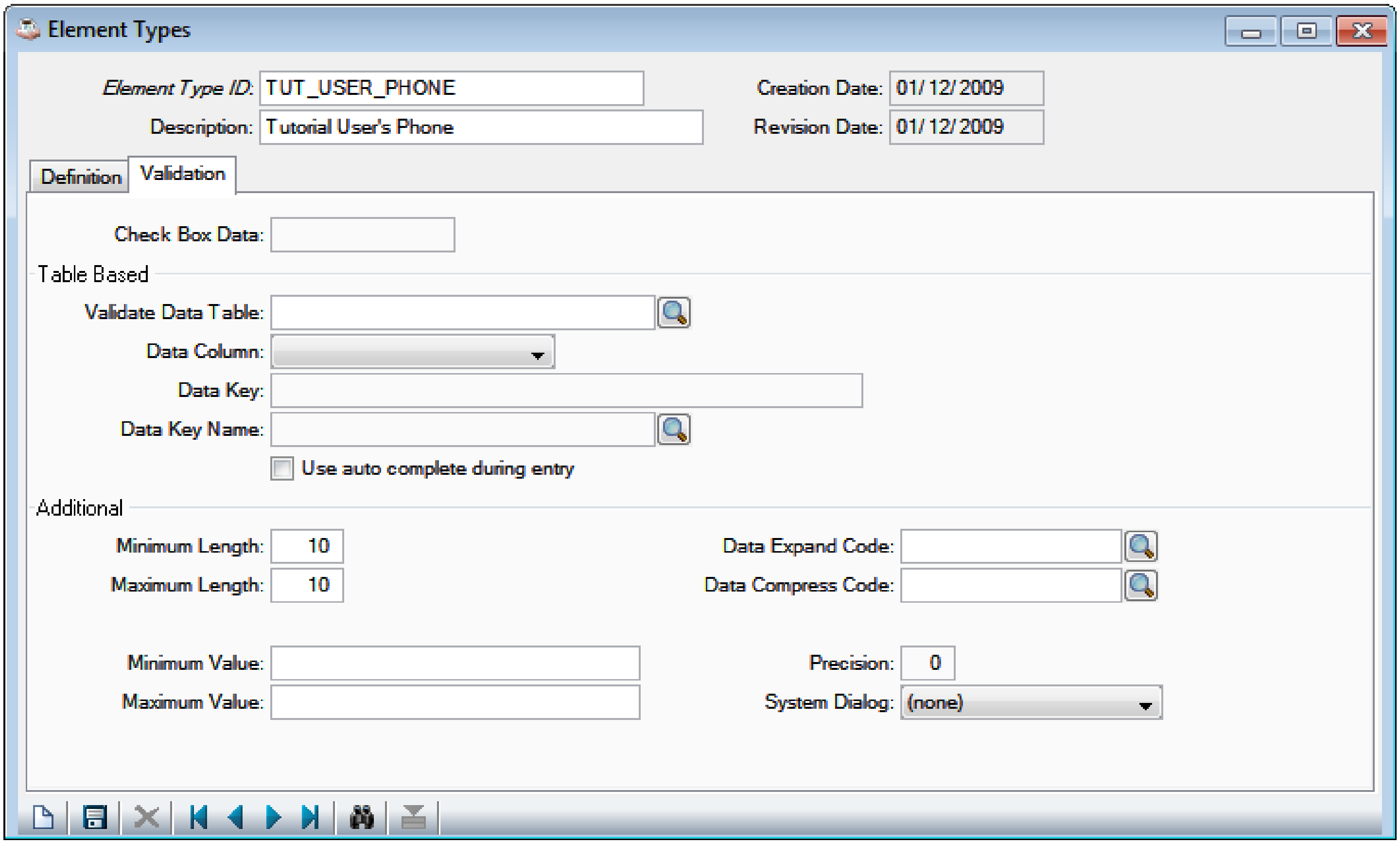
Pad Character: (none)

□ Allow blanks as valid entry

Preset Value:

Default Value:

User Prompt:


Element Types

Element Type ID: TUT_USER_PHONE
Description: Tutorial User's Phone
Creation Date: 01/12/2009
Revision Date: 01/12/2009

Check Box Data:

Table Based

Validate Data Table:
Data Column:
Data Key:
Data Key Name:
□ Use auto complete during entry

Additional

Minimum Length: 10
Maximum Length: 10
Data Expand Code:
Data Compress Code:
Minimum Value:
Maximum Value:
Precision: 0
System Dialog: (none)

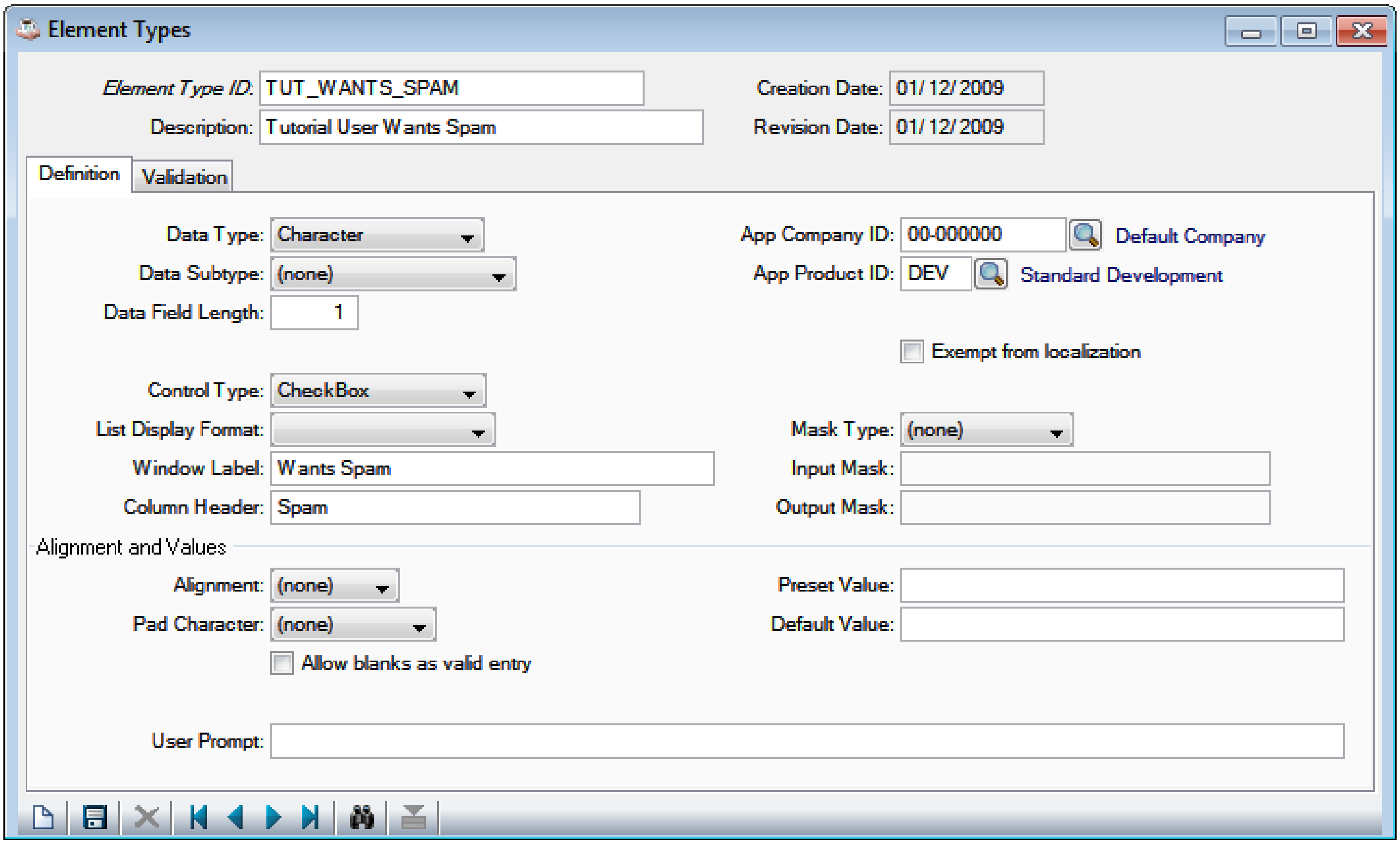
Click 💾 or press [Ctrl]+S to save this data element.

Next, we'll add a CheckBox.

Add Element Type: TUT_WANTS_SPAM

Click 🗋 or press [Ctrl]+N to begin entering a new data element.

Location	**Field**	**Value**
Header	Data Element Name	TUT_WANTS_SPAM
	Description	Tutorial User Wants Spam
Definition Tab	Data Field Length	1
	Control Type	CheckBox
	Window Label	Wants Spam
	Column Header	Spam



Element Type ID: TUT_WANTS_SPAM

Description: Tutorial User Wants Spam

Creation Date: 01/12/2009

Revision Date: 01/12/2009

Data Type: Character

Data Subtype: (none)

Data Field Length: 1

App Company ID: 00-000000 Default Company

App Product ID: DEV Standard Development

□ Exempt from localization

Control Type: CheckBox

List Display Format:

Mask Type: (none)

Window Label: Wants Spam

Input Mask:

Column Header: Spam

Output Mask:

Alignment and Values

Alignment: (none)

Pad Character: (none)

□ Allow blanks as valid entry

Preset Value:

Default Value:

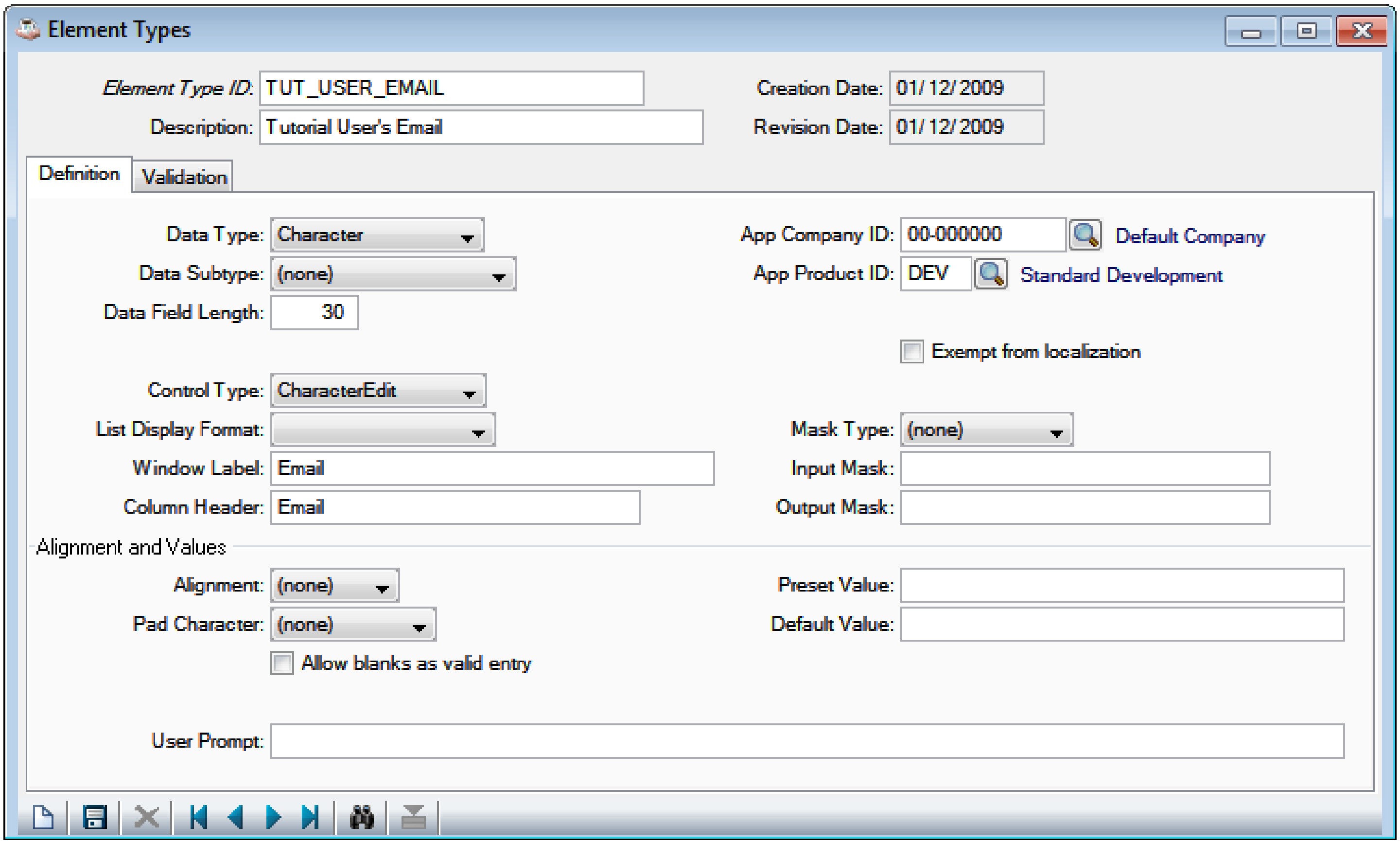
User Prompt:

Click 💾 or press [Ctrl]+S to save this data element.

Add Element Type: TUT_USER_EMAIL

Click 🗋 or press [Ctrl]+N to begin entering a new data element.

Location	Field	Value
Header	Data Element Name	TUT_USER_EMAIL
	Description	Tutorial User’s Email
Definition Tab	Data Field Length	30
	Window Label	Email
	Column Header	Email



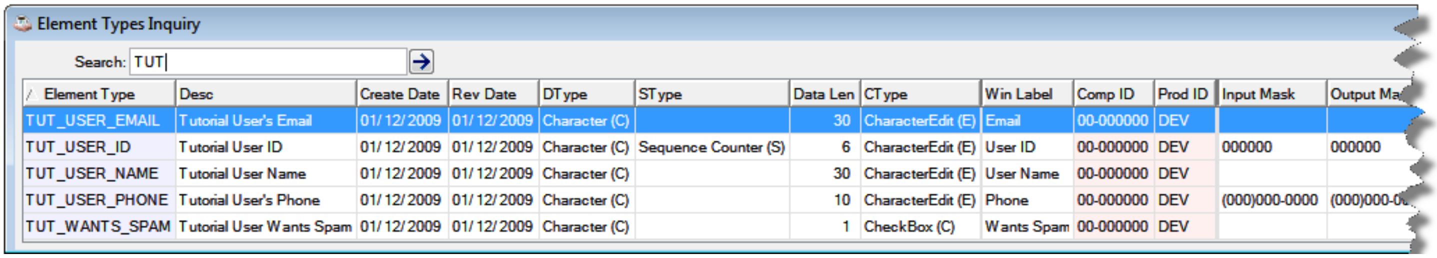
Element Type ID: TUT_USER_EMAIL
Description: Tutorial User's Email
Creation Date: 01/12/2009
Revision Date: 01/12/2009

Data Type: Character
Data Subtype: (none)
Data Field Length: 30
App Company ID: 00-000000 Default Company
App Product ID: DEV Standard Development
□ Exempt from localization
Control Type: CharacterEdit
List Display Format:
Window Label: Email
Column Header: Email
Mask Type: (none)
Input Mask:
Output Mask:

Alignment: (none)
Pad Character: (none)
□ Allow blanks as valid entry
Preset Value:
Default Value:
User Prompt:

Click ▣ or press [Ctrl]+S to save this data element.

Now we've entered 5 elements. Click 🔍 or press [Ctrl]+Q to query the records for the current form. Enter a search string of TUT to only see records that start with TUT.



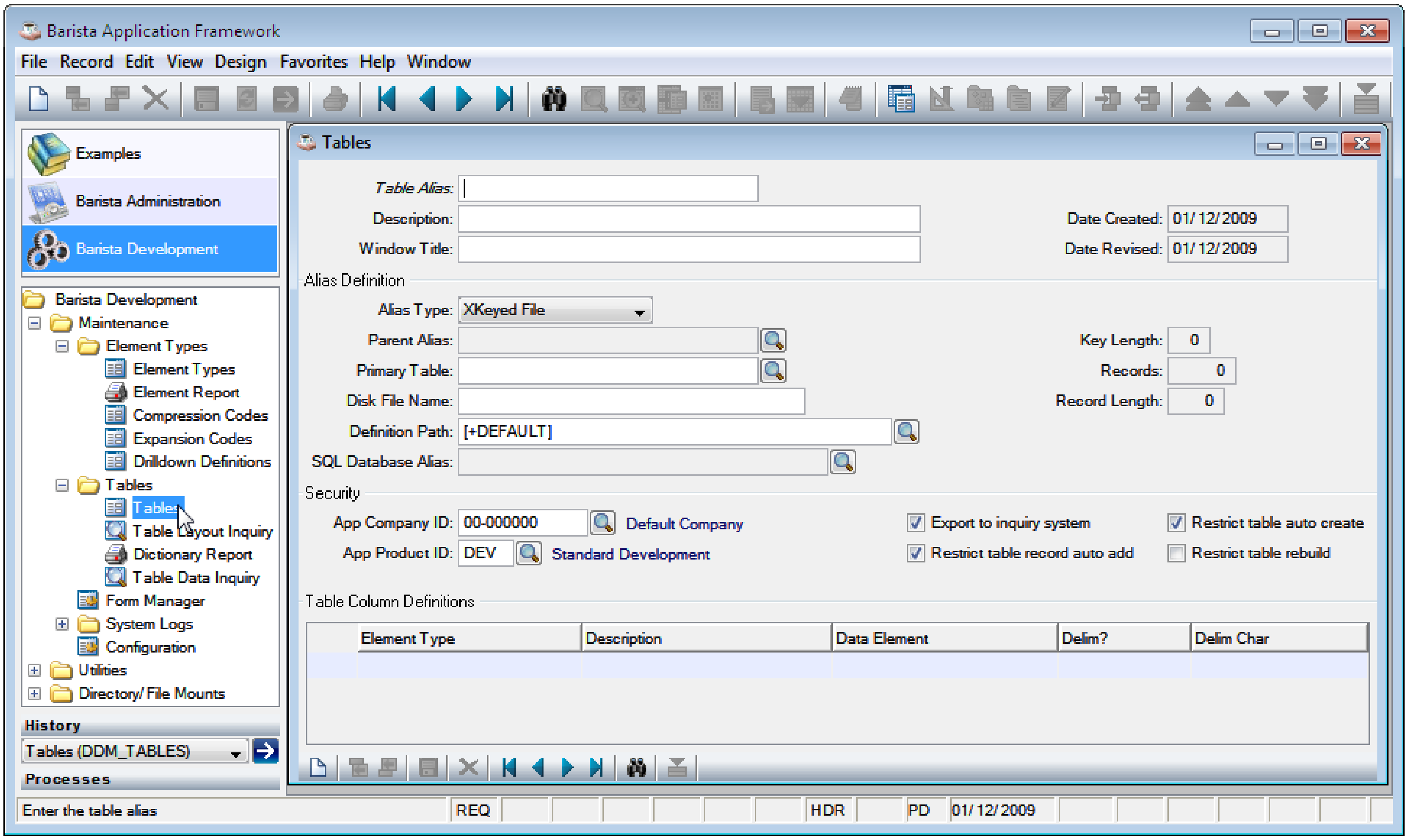
Search: TUT

Element Type	Desc	Create Date	Rev Date	DType	SType	Data Len	CType	Win Label	Comp ID	Prod ID	Input Mask	Output Ma
TUT_USER_EMAIL	Tutorial User's Email	01/12/2009	01/12/2009	Character (C)		30	CharacterEdit (E)	Email	00-000000	DEV		
TUT_USER_ID	Tutorial User ID	01/12/2009	01/12/2009	Character (C)	Sequence Counter (S)	6	CharacterEdit (E)	User ID	00-000000	DEV	000000	000000
TUT_USER_NAME	Tutorial User Name	01/12/2009	01/12/2009	Character (C)		30	CharacterEdit (E)	User Name	00-000000	DEV		
TUT_USER_PHONE	Tutorial User's Phone	01/12/2009	01/12/2009	Character (C)		10	CharacterEdit (E)	Phone	00-000000	DEV	(000)000-0000	(000)000-0
TUT_WANTS_SPAM	Tutorial User Wants Spam	01/12/2009	01/12/2009	Character (C)		1	CheckBox (C)	Wants Spam	00-000000	DEV		

We can close Element Types Maintenance for now. The next step is to define a **Table** containing these data elements.

Define Table

Select the "Development" Menu option and click the "Tables" node in the menu tree to bring up the Tables entry form.



History: Tables (DDM_TABLES)

Table Alias:
Description:
Window Title:
Date Created: 01/12/2009
Date Revised: 01/12/2009

Alias Definition

Alias Type: XKeyed File
Parent Alias:
Primary Table:
Disk File Name:
Definition Path: [+DEFAULT]
SQL Database Alias:
Key Length: 0
Records: 0
Record Length: 0

Security

App Company ID: 00-000000 Default Company
App Product ID: DEV Standard Development
☑ Export to inquiry system
☑ Restrict table record auto add
☑ Restrict table auto create
☐ Restrict table rebuild

Table Column Definitions

Element Type	Description	Data Element	Delim?	Delim Char

Enter the table alias | REQ | HDR | PD | 01/12/2009

Using the Tables Form

A complete rundown of the fields in Tables is available in Getting Started, but we'll cover some of the more important fields here briefly.

In the Header:
Table Alias: A unique 16 character identifier used throughout to reference the table. If the field is disabled, you are editing an existing table.

Window Title: Since each table has a corresponding form, this defines what appears in the title bar of the form.

In the Alias Definition:
Alias Type: Specifies the specific type of file. In some cases, the alias will define *view* of a set of data, as opposed to a disk file. The default file type is BBj XKEYED. For a file that will contain data that varies significantly in size (for example a file that contains BLOBs), the VKEYED data type would be a better choice.

Disk File Name: Defaults to the Table Alias, converted to lowercase, + ".dat".

Table Path: The data directory. It defaults to [+DEFAULT], which resolves to ../apps/default/data/.

The detail grid at the bottom of the screen is the list of data elements in the table.

Add Table: TUT_MAIN_FORM

Locatio	Field	Value

n		
Header	Table Alias	TUT_MAIN_FORM
	Description	Main Form
Detail	Element Type	Data Element
	TUT_USER_ID	TUT_USER_ID
	TUT_USER_NAME	TUT_USER_NAME
	TUT_USER_PHONE	TUT_USER_PHONE
	TUT_WANTS_SPAM	TUT_WANTS_SPAM
	TUT_USER_EMAIL	TUT_USER_EMAIL

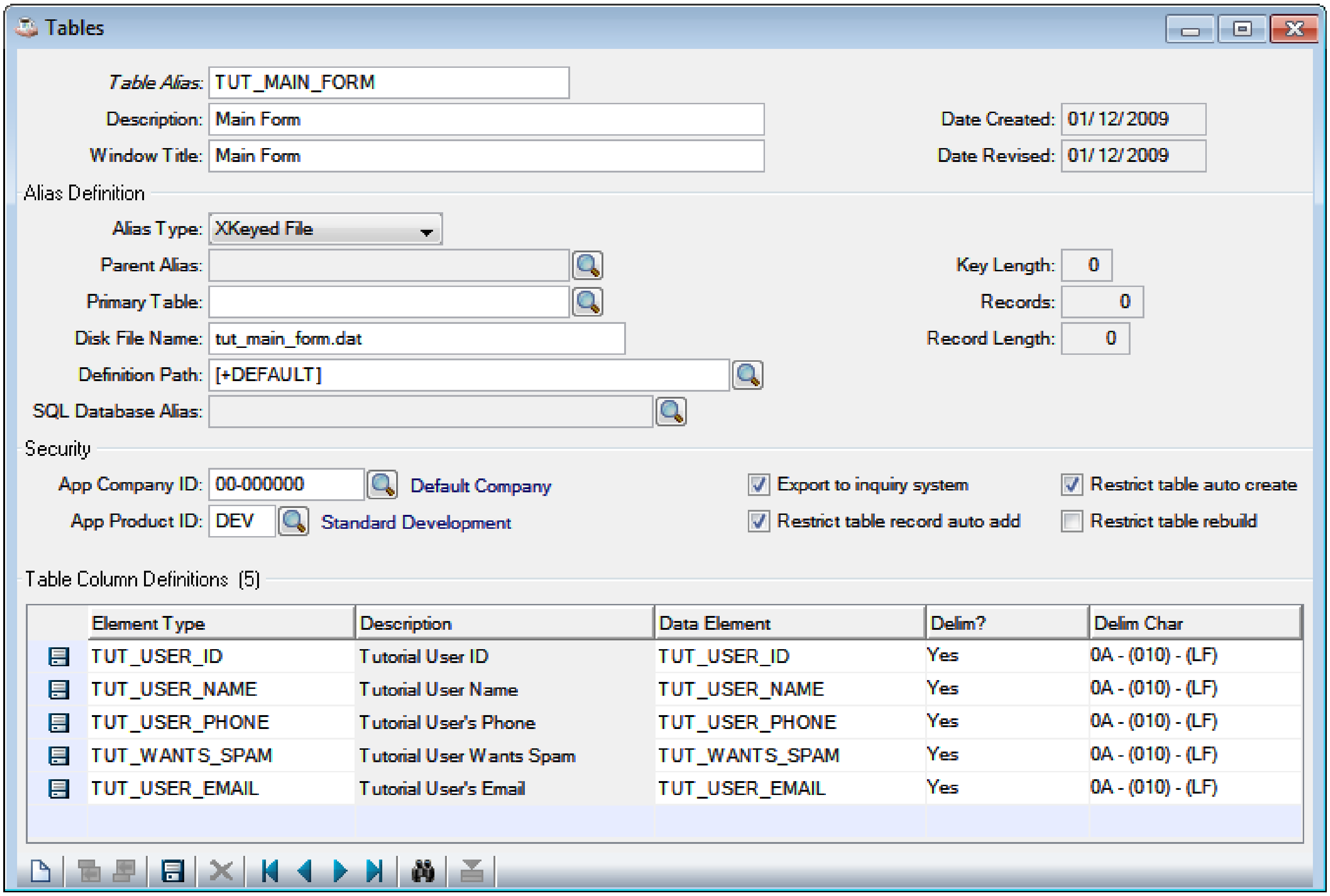


Table Alias:	TUT_MAIN_FORM		
Description:	Main Form	Date Created:	01/12/2009
Window Title:	Main Form	Date Revised:	01/12/2009

Alias Definition

Alias Type:	XKeyed File		
Parent Alias:		Key Length:	0
Primary Table:		Records:	0
Disk File Name:	tut_main_form.dat	Record Length:	0
Definition Path:	[+DEFAULT]		
SQL Database Alias:			

Security

App Company ID: 00-000000 Default Company

App Product ID: DEV Standard Development

☑ Export to inquiry system

☑ Restrict table auto create

☑ Restrict table record auto add

☐ Restrict table rebuild

Table Column Definitions (5)

Element Type	Description	Data Element	Delim?	Delim Char
TUT_USER_ID	Tutorial User ID	TUT_USER_ID	Yes	0A - (010) - (LF)
TUT_USER_NAME	Tutorial User Name	TUT_USER_NAME	Yes	0A - (010) - (LF)
TUT_USER_PHONE	Tutorial User's Phone	TUT_USER_PHONE	Yes	0A - (010) - (LF)
TUT_WANTS_SPAM	Tutorial User Wants Spam	TUT_WANTS_SPAM	Yes	0A - (010) - (LF)
TUT_USER_EMAIL	Tutorial User's Email	TUT_USER_EMAIL	Yes	0A - (010) - (LF)

Press **F7** to switch back to the Header from the detail grid. The status bar will display HDR.

Click 💾 or press [Ctrl]+S to save this record.

A table must have at least one key, the *primary* key. We must define a primary key for our new table.

Define Keys for TUT_MAIN_FORM

Click ☰ or press [Ctrl]+O, then select **Key Definitions** from the dropdown Options menu.

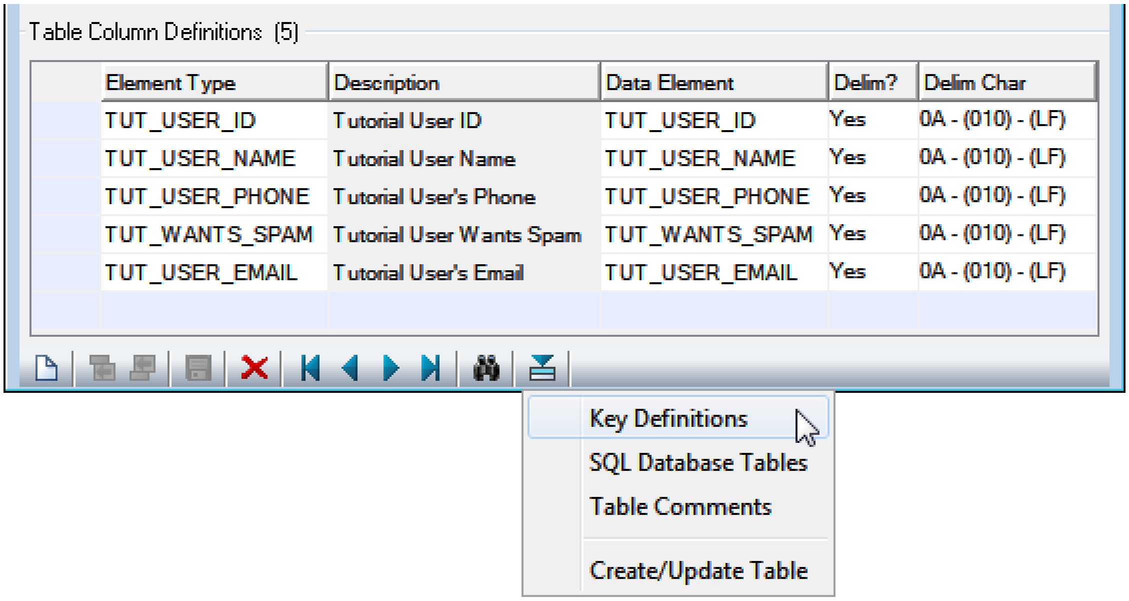
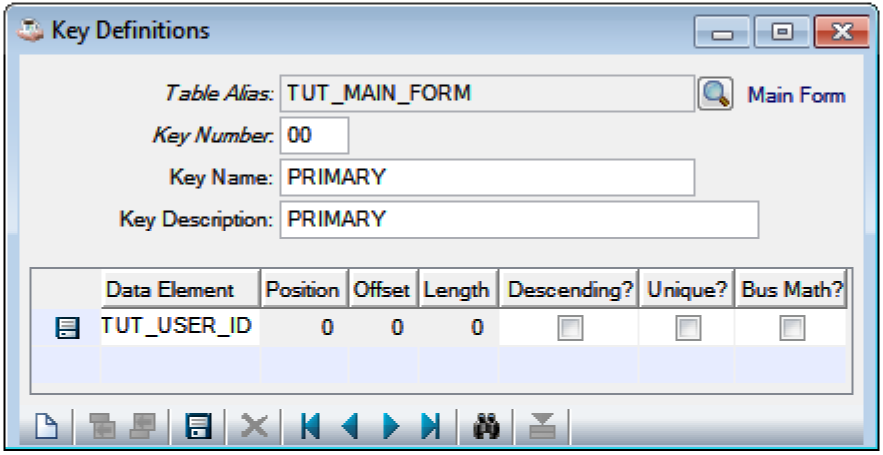


Table Column Definitions (5)

Element Type	Description	Data Element	Delim?	Delim Char
TUT_USER_ID	Tutorial User ID	TUT_USER_ID	Yes	0A - (010) - (LF)
TUT_USER_NAME	Tutorial User Name	TUT_USER_NAME	Yes	0A - (010) - (LF)
TUT_USER_PHONE	Tutorial User's Phone	TUT_USER_PHONE	Yes	0A - (010) - (LF)
TUT_WANTS_SPAM	Tutorial User Wants Spam	TUT_WANTS_SPAM	Yes	0A - (010) - (LF)
TUT_USER_EMAIL	Tutorial User's Email	TUT_USER_EMAIL	Yes	0A - (010) - (LF)

Set the Key Name and Key Description to be **PRIMARY,** and add **TUT_USER_ID** to the Grid.



Key Definitions

Table Alias: TUT_MAIN_FORM Main Form

Key Number: 00

Key Name: PRIMARY

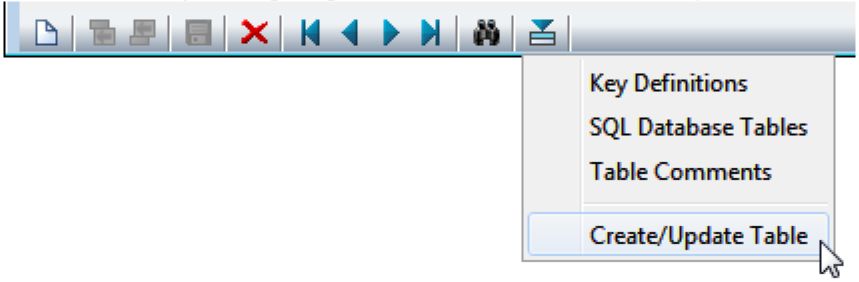
Key Description: PRIMARY

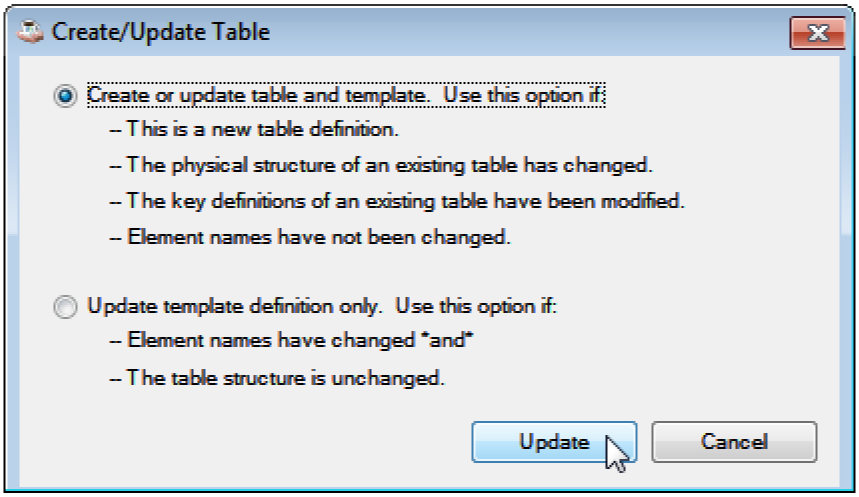
Data Element	Position	Offset	Length	Descending?	Unique?	Bus Math?
TUT_USER_ID	0	0	0	□	□	□

Click or press [Ctrl]+S to save the key definition, then close the Key Definitions dialog by clicking the close box.

Create the Table

Click or press [Ctrl]+O, then select **Create/Update Table** from the dropdown Options menu.





● Create or update table and template. Use this option if:

– This is a new table definition.

– The physical structure of an existing table has changed.

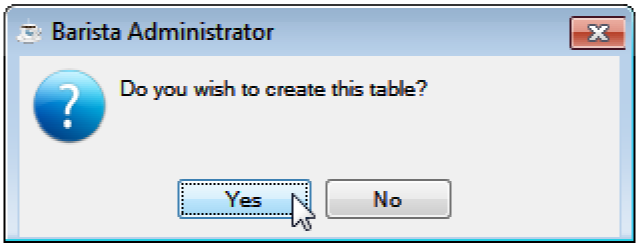
– The key definitions of an existing table have been modified.

– Element names have not been changed.

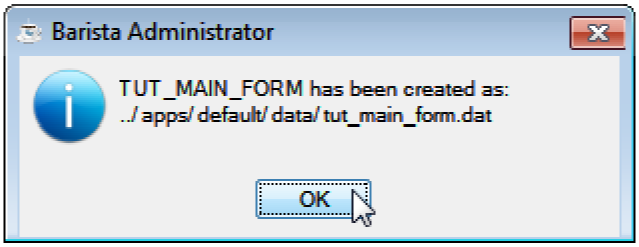
○ Update template definition only. Use this option if:

– Element names have changed *and*

– The table structure is unchanged.



Do you wish to create this table?



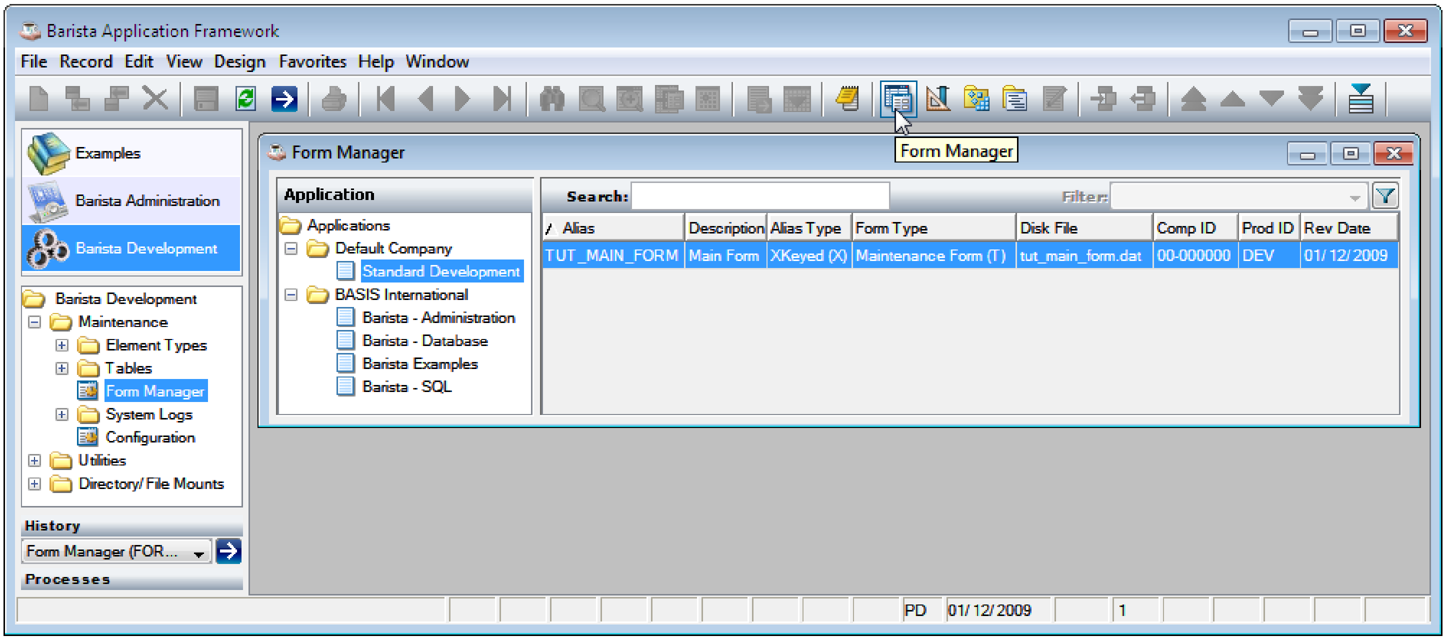
TUT_MAIN_FORM has been created as:
../apps/default/data/tut_main_form.dat

We can close Tables Maintenance for now. The final step is to build a **Form** based on this table.

Using the Form Manager

Load the Form Manager by clicking ▤ or pressing F8.

Click on "Standard Development" in the tree to restrict the display to just the tutorial form.



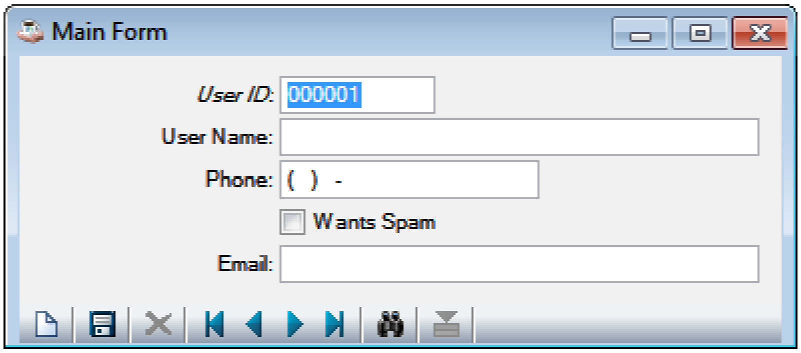
Alias	Description	Alias Type	Form Type	Disk File	Comp ID	Prod ID	Rev Date
TUT_MAIN_FORM	Main Form	XKeyed (X)	Maintenance Form (T)	tut_main_form.dat	00-000000	DEV	01/12/2009

Build the Form

Select **TUT_MAIN_FORM** and click or press [Ctrl]+B to build the form.

Run the Form

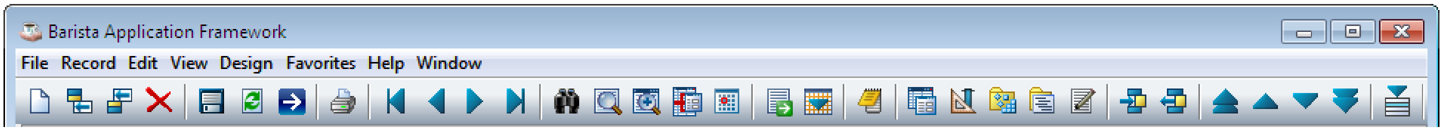
Click or press F5 to run your form.



User ID:	000001
User Name:	
Phone:	( ) -
	□ Wants Spam
Email:	

Experiment with using the form to enter/view data in your table.

In addition to entering data into the fields of the form, the user of a Barista-developed application will use the supplied toolbar to navigate, save, create, and search the records of our table.

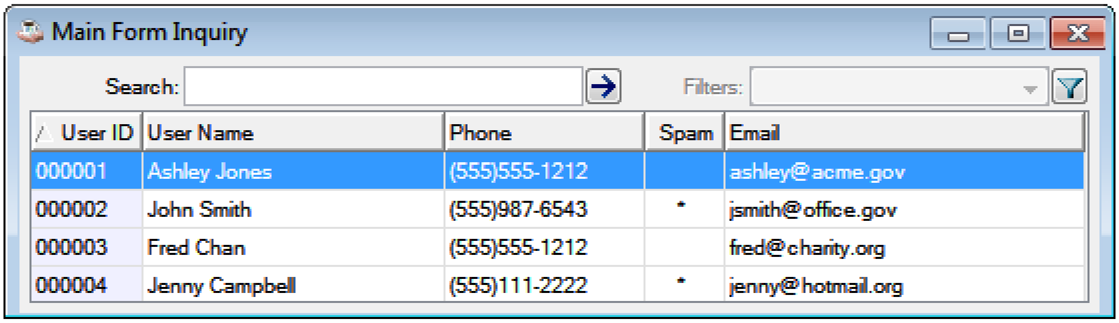

Barista Application Framework
File Record Edit View Design Favorites Help Window

The following tool buttons are used most often:

🗋	New Record ([Ctrl]+N)
✕	Delete Record ([Ctrl]+D)

💾	Save Record ([Ctrl]+S)
🔄	Refresh Data (ALT+F5)
⏮	First Record (ALT+PGUP)
◀	Previous Record (PGUP)
▶	Next Record (PGDN)
⏭	Last Record (ALT+PGDN)
🔍	Record Query ([Ctrl]+Q)

Once you have entered some records, click 🔍 or press [Ctrl]+Q:



User ID	User Name	Phone	Spam	Email
000001	Ashley Jones	(555)555-1212		ashley@acme.gov
000002	John Smith	(555)987-6543	•	jsmith@office.gov
000003	Fred Chan	(555)555-1212		fred@charity.org
000004	Jenny Campbell	(555)111-2222	•	jenny@hotmail.org

That's it! You've built and tested your first Barista form. The remaining tutorials all build on this form.