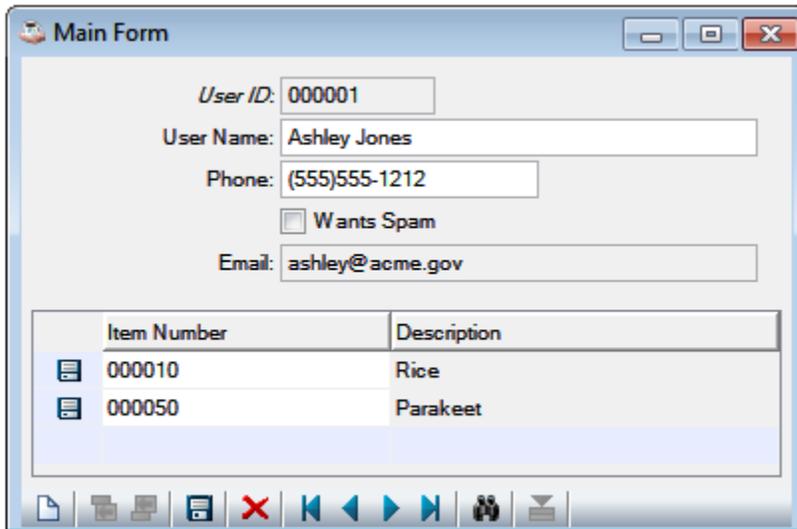


Barista Tutorial 4: Build a Header/Detail Form

This tutorial builds on [Barista Tutorial 1 - Build a Simple Form](#).

What We Are Going To Build

We extend the form we created in the first tutorial to keep track of what each user currently has rented. We will create a number of tables which utilize foreign key constraints for ease, application functionality and constraint.



The screenshot shows a 'Main Form' window with the following fields and a table:

- User ID: 000001
- User Name: Ashley Jones
- Phone: (555)555-1212
- Wants Spam:
- Email: ashley@acme.gov

Item Number	Description
000010	Rice
000050	Parakeet

In the beginner's tutorial we created a very simple user master file. Now we'll add two more small tables – an item master file and a user+item detail file, listing items currently rented for each user.

We need two more tables, one to map item numbers to their description, and one to track which items a user has rented. We'll start by defining the necessary data elements.

Define Element Types

Open Element Types Maintenance and define the following Element Types:

Add Element Type: TUT_ITEM_NUM

Location	Field	Value
Header	Data Element Name	TUT_ITEM_NUM
	Description	Item Number
Definition Tab	Data Field Length	6
	Input Mask	000000
	Output Mask	000000
	Alignment	Right
	Pad Character	Zero

Element Types

Element Type ID: Creation Date:

Description: Revision Date:

Definition **Validation**

Data Type: App Company ID:

Data Subtype: App Product ID:

Data Field Length: Exempt from localization

Control Type:

List Display Format:

Mask Type:

Window Label: Input Mask:

Column Header: Output Mask:

Alignment and Values

Alignment: Preset Value:

Pad Character: Default Value:

Allow blanks as valid entry

User Prompt:

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

Add Element Type: TUT_ITEM_DESC

Location	Field	Value
Header	Data Element Name	TUT_ITEM_DESC
	Description	Item Description
Definition Tab	Data Field Length	50
	Column Header	Description

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

Add Element Type: TUT_RENTAL_ID

This is the same as TUT_USER_ID from TUT_MAIN_FORM, with the addition of table-based validation that will restrict input to values that already exist in TUT_MAIN_FORM.TUT_USER_ID.

Location	Field	Value	Notes
Header	Data Element Name	TUT_RENTAL_ID	
	Description	Rental User ID	
Definition Tab	Data Field Length	6	
	Input Mask	0000000	
	Output Mask	0000000	
	Alignment	Right	
	Pad Character	Zero	
Validation Tab	Validate Data Table	TUT_MAIN_FORM	This enforces the rule that TUT_RENTAL_ID must exist as a key to the TUT_MAIN_FORM table.
	Data Column	TUT_USER_NAME	TUT_USER_NAME is the field of TUT_MAIN_FORM that will be displayed next to TUT_RENTAL_ID.

Element Types

Element Type ID: Creation Date:
 Description: Revision Date:

Definition **Validation**

Data Type: App Company ID:
 Data Subtype: App Product ID:
 Data Field Length: Exempt from localization

Control Type: Mask Type:
 List Display Format: Input Mask:
 Window Label: Output Mask:

Column Header:

Alignment and Values

Alignment: Preset Value:
 Pad Character: Default Value:
 Allow blanks as valid entry

User Prompt:

Element Types

Element Type ID: Creation Date:
 Description: Revision Date:

Definition **Validation**

Check Box Data:

Table Based

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

Additional

Minimum Length: Data Expand Code:
 Maximum Length: Data Compress Code:
 Minimum Value: Precision:
 Maximum Value: System Dialog:

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

We can close Element Types Maintenance now. The next step is to define the tables that will use these data elements.

Define Tables

Open Table Maintenance and define the following tables:

Add Item Inventory Table: TUT_ITEM_INV

Location	Field	Value
Header	Table Alias	TUT_ITEM_INV
	Description	Item Inventory
Detail	Element Type	Data Element
	TUT_ITEM_NUM	TUT_ITEM_NUM
	TUT_ITEM_DESC	TUT_ITEM_DESC

Table Alias: TUT_ITEM_INV

Description: Item Inventory

Window Title: Item Inventory

Date Created: 01/12/2009

Date Revised: 01/12/2009

Alias Definition

Alias Type: XKeyed File

Parent Alias:

Primary Table:

Disk File Name: tut_item_inv.dat

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 auto create

Restrict table record auto add Restrict table rebuild

Table Column Definitions (2)

Element Type	Description	Data Element	Delim?	Delim Char
TUT_ITEM_NUM	Item Number	TUT_ITEM_NUM	Yes	0A - (010) - (LF)
TUT_ITEM_DESC	Item Description	TUT_ITEM_DESC	Yes	0A - (010) - (LF)

Press F7 to return to the header, then click  or press [Ctrl]+S to save the table definition.

Set the primary key to TUT_ITEM_NUM using Options > Key Definitions.

Create the file using Options > Create/Update Table.

Add Item Inventory Table: TUT_RENT_FORM

Location	Field	Value	Notes
Header	Table Alias	TUT_RENT_FORM	
	Description	Rented Items	
Detail	Element Type	Data Element	Notes
	TUT_RENTAL_ID	TUT_USER_ID	The Data Element name TUT_USER_ID enables Barista to link

			it to the TUT_MAIN_FORM key.
	TUT_ITEM_NUM	TUT_ITEM_NUM	

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

Alias Definition
Alias Type: XKeyed File
Parent Alias:
Primary Table:
Disk File Name: tut_rent_form.dat
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 auto create
 Restrict table record auto add
 Restrict table rebuild

Table Column Definitions (2)

Element Type	Description	Data Element	Delim?	Delim Char
TUT_RENTAL_ID	Rental User ID	TUT_USER_ID	Yes	0A - (010) - (LF)
TUT_ITEM_NUM	Item Number	TUT_ITEM_NUM	Yes	0A - (010) - (LF)

Press F7 to return to the header, then click  or press [Ctrl]+S to save the table definition.

Set the primary key to TUT_USER_ID+TUT_ITEM_NUM using Options > Key Definitions.

Create the file using Options > Create/Update Table.

We can close Tables Maintenance now.

Define foreign key dependency for TUT_ITEM_NUM.

Open Element Types Maintenance, load the TUT_ITEM_NUM record, and add the following two fields:

Location	Field	Value
Validation Tab	Validate Data Table	TUT_ITEM_INV
	Data Column	TUT_ITEM_DESC

Element Types

Element Type ID: Creation Date:
 Description: Revision Date:

Definition **Validation**

Check Box Data:

Table Based

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

Additional

Minimum Length: Data Expand Code:
 Maximum Length: Data Compress Code:
 Minimum Value: Precision:
 Maximum Value: System Dialog:

Click  or press [Ctrl]+S to save these changes, then close Element Types Maintenance. You can click "No" to the question that comes up asking if you want to rebuild forms; we'll be doing that in the next step.

Build the forms for TUT_ITEM_INV & TUT_RENT_FORM.

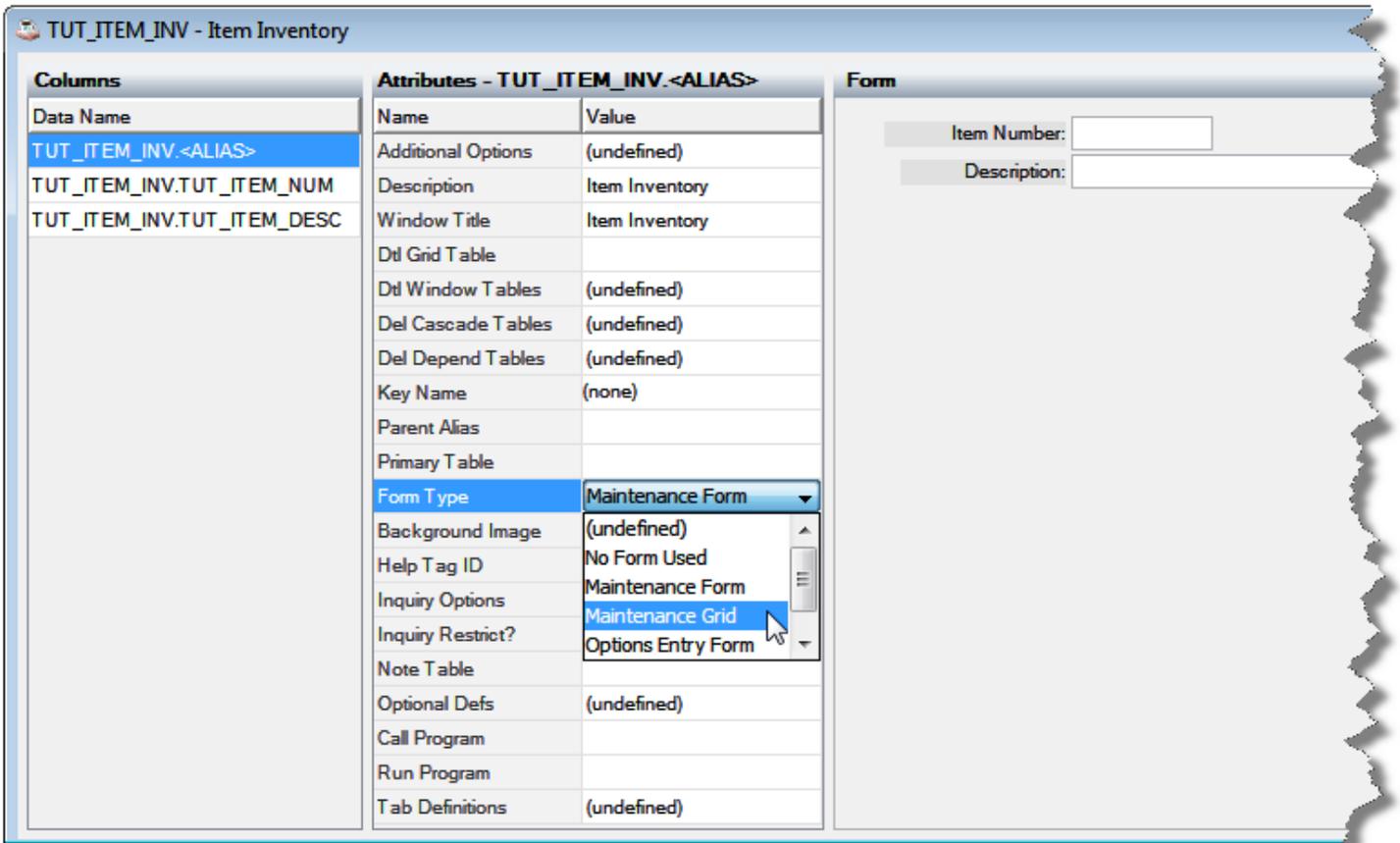
Open the Form Manager and double-click on TUT_ITEM_INV.

Form Manager

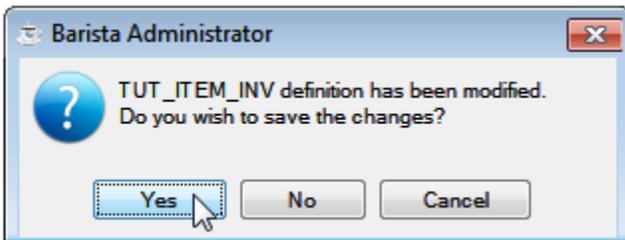
Application: **Standard Development**

Alias	Description	Alias Type	Form Type	Disk File	Comp ID	Prod ID	Rev Date
TUT_DATA_ENTRY	Comments Form	Options (P)	Options Entry Form (S)		00-000000	DEV	01/12/2009
TUT_ITEM_INV	Item Inventory	XKeyed (X)	Maintenance Form (T)	tut_item_inv.dat	00-000000	DEV	01/12/2009
TUT_MAIN_FORM	Main Form	XKeyed (X)	Maintenance Form (T)	tut_main_form.dat	00-000000	DEV	01/12/2009
TUT_RENT_FORM	Rented Items	XKeyed (X)	Maintenance Form (T)	tut_rent_form.dat	00-000000	DEV	01/12/2009

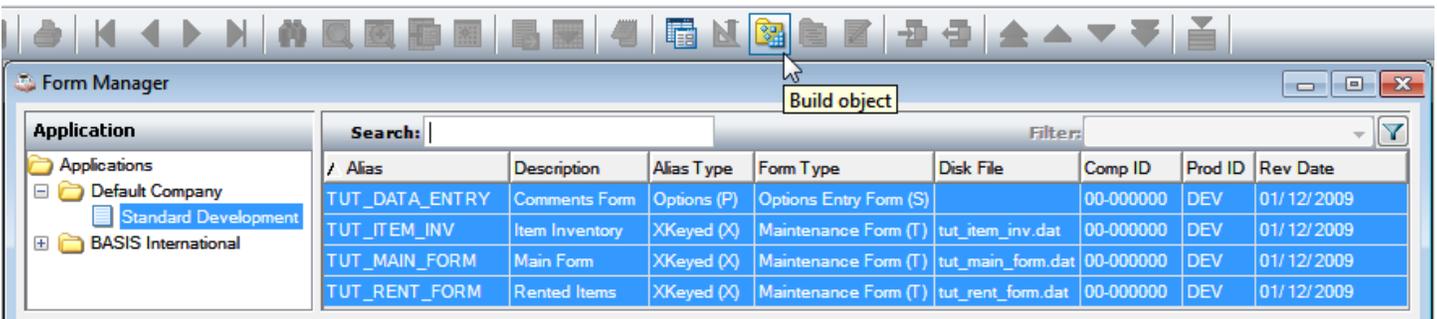
Change the Form Type from Maintenance Form to Maintenance Grid:



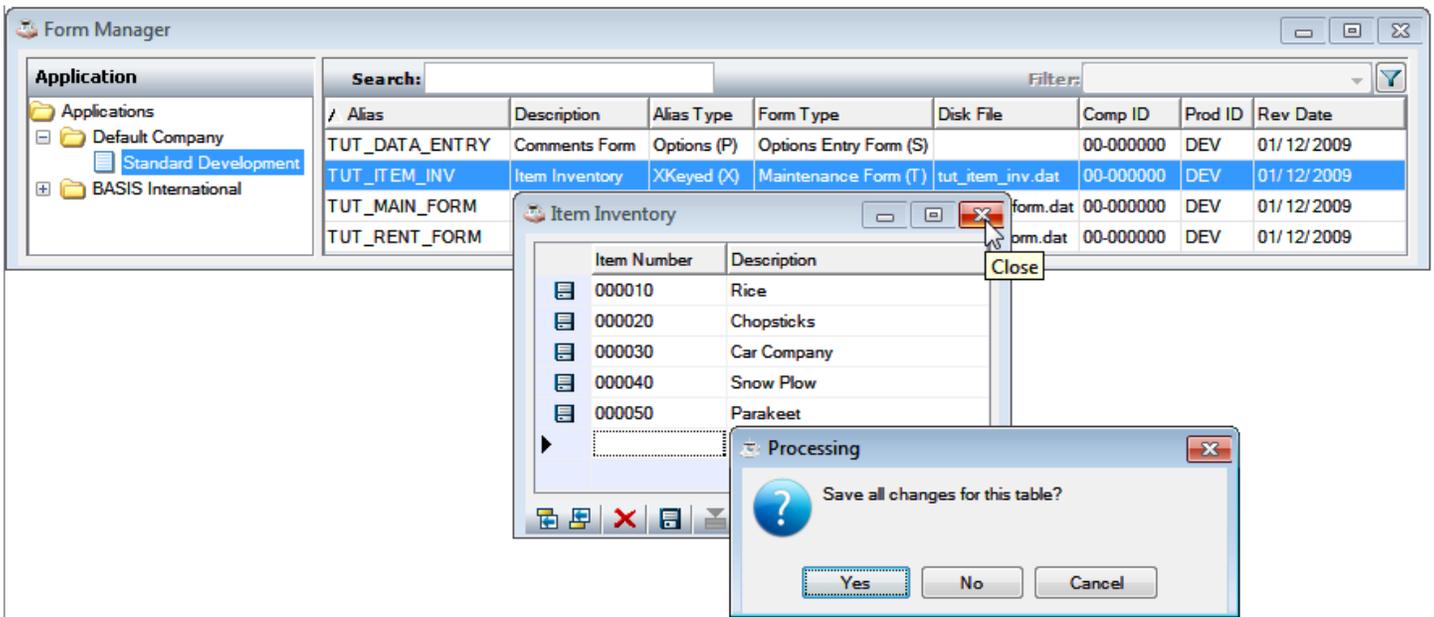
Close the Form Designer, saving that change:



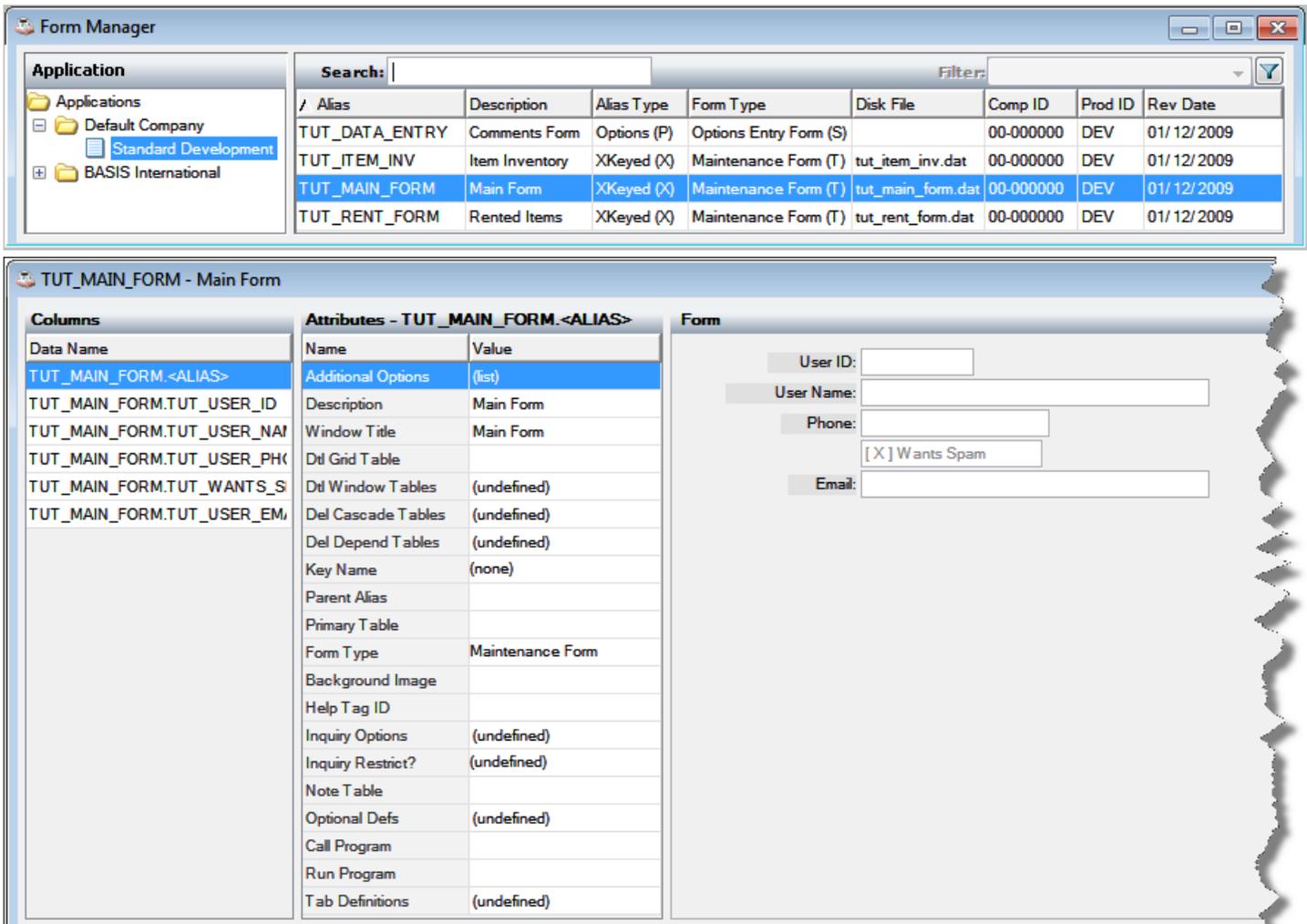
Back in the Form Manager, select all of your forms and click  or press [Ctrl]+B to build them:



You can now run any of those forms by selecting it, then clicking  or pressing F5. First, run TUT_ITEM_INV and create some inventory items:



Next, double-click on TUT_MAIN_FORM to load it in the Form Designer.



Most of the configuration and additions to your forms will be done via this screen. In addition to configuring the form, this is the entry point for editing the call points, which you would use to add custom logic. For more information, see [Barista Tutorial 3: Define Callpoints](#).

On the left of the Form Designer is a list which contains the columns and the form itself. Selecting items here displays the attributes of that column in the center. Double click the values of the attributes to edit them. On the right of the Form Designer is a display of what the form will look like. You can select items or re-arrange the form from here. See [Getting Started](#) for more information on the various attributes of the form designer, and [Barista Tutorial 2: Customize a Form](#) for more information about reformatting forms.

First we'll tweak the spam section.

Setting up the spam section

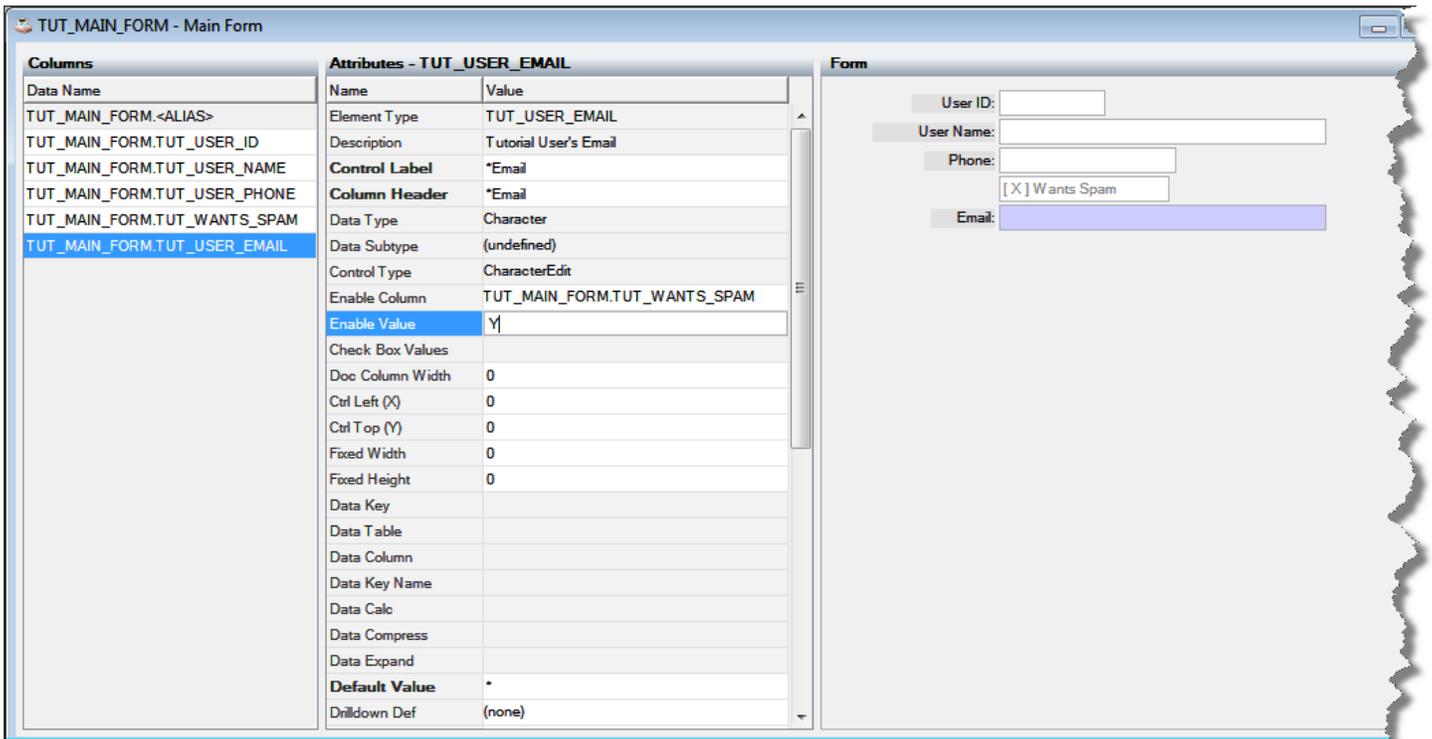
Select the TUT_WANTS_SPAM field, double click the **default value** attribute and change it to Y.

The screenshot shows the Form Designer interface for 'TUT_MAIN_FORM - Main Form'. It is divided into three main sections:

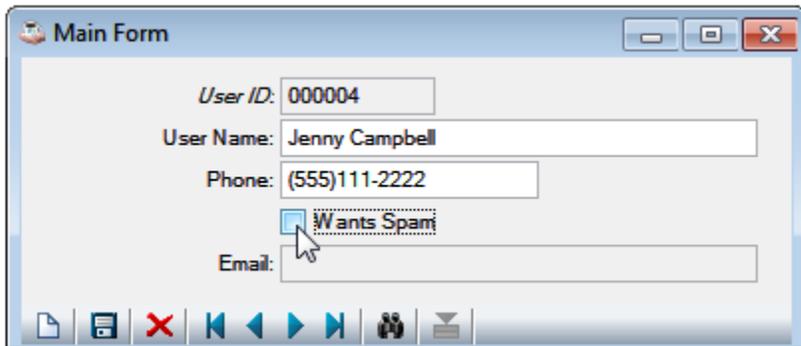
- Columns:** A list of data names including TUT_MAIN_FORM.<ALIAS>, TUT_MAIN_FORM.TUT_USER_ID, TUT_MAIN_FORM.TUT_USER_NAME, TUT_MAIN_FORM.TUT_USER_PHONE, TUT_MAIN_FORM.TUT_WANTS_SPAM (highlighted in blue), and TUT_MAIN_FORM.TUT_USER_EMAIL.
- Attributes - TUT_WANTS_SPAM:** A table of attributes for the selected field. The 'Default Value' attribute is highlighted in blue and set to 'Y'. Other attributes include Name, Element Type, Description, Control Label, Column Header, Data Type, Data Subtype, Control Type, Enable Column, Enable Value, Check Box Values, Doc Column Width, Ctrl Left (X), Ctrl Top (Y), Fixed Width, Fixed Height, Data Key, Data Table, Data Column, Data Key Name, Data Calc, Data Compress, Data Expand, and Drilldown Def.
- Form:** A preview of the form layout showing fields for User ID, User Name, Phone, Email, and a checkbox labeled '[X] Wants Spam'.

Select the TUT_USER_EMAIL field, then:

- Double click the **Enable Column** and select TUT_MAIN_FORM.TUT_WANTS_SPAM.
- Double click the **Enable Value** and enter Y.



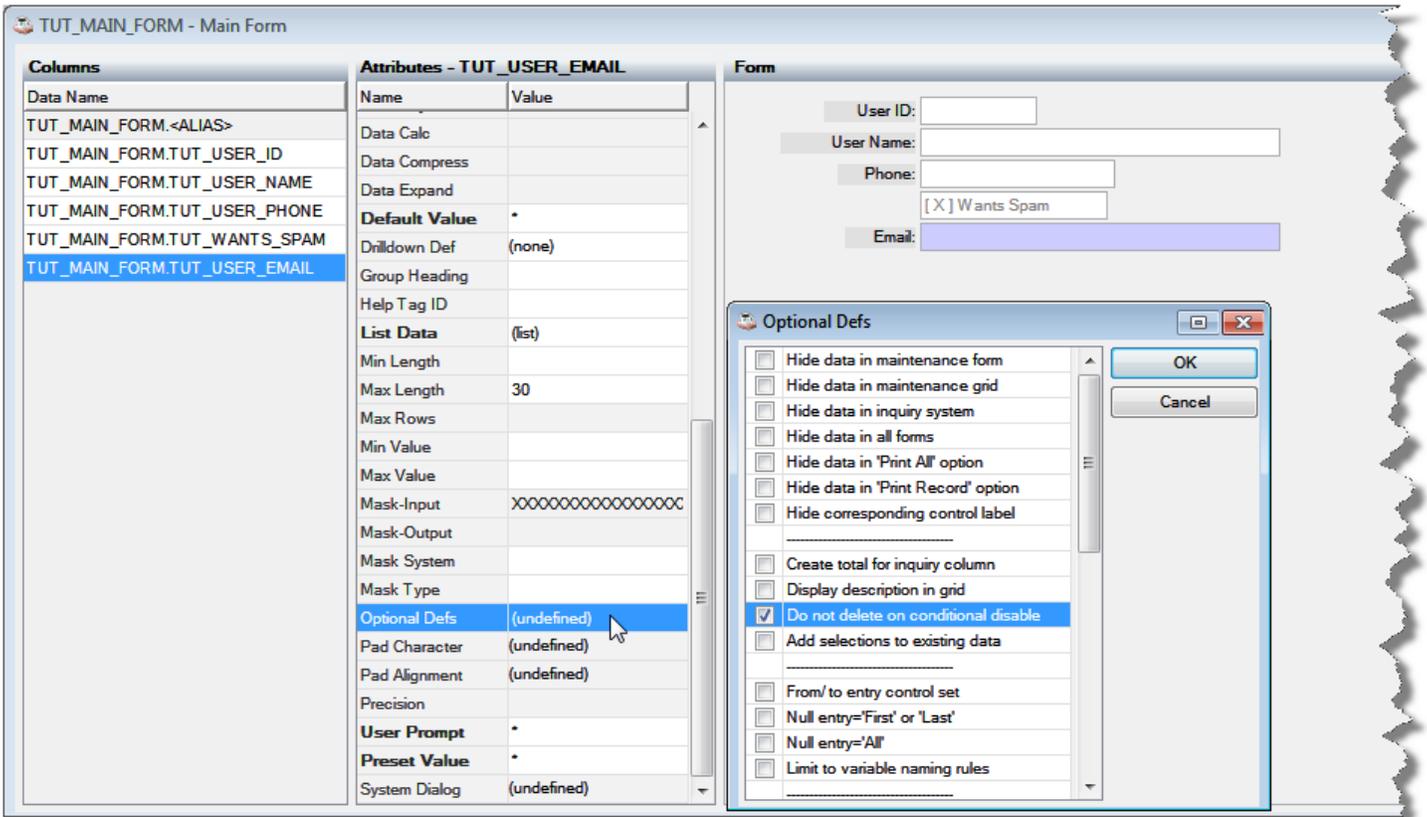
Click  or press F5 to test these changes.



Unchecking the "Wants Spam" checkbox now disables and clears the email field. You might choose to keep the value, even if the checkbox is cleared. We'll do this via the **Optional Defs** attributes.

Keep a conditionally disabled field's value

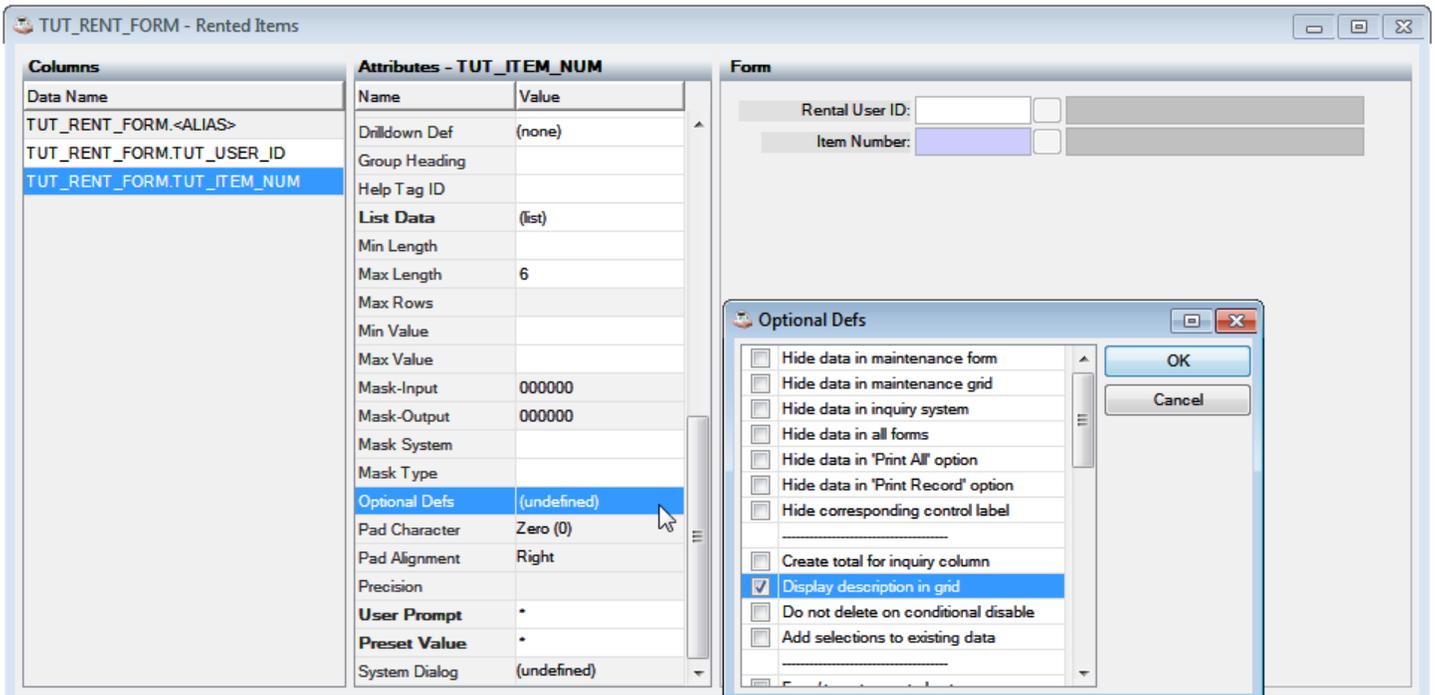
- Select the TUT_USER_EMAIL field.
- Double click next to **Optional Defs**.
- Check the box next to "Do not delete on conditional disable".
- Click [OK] to save this change.



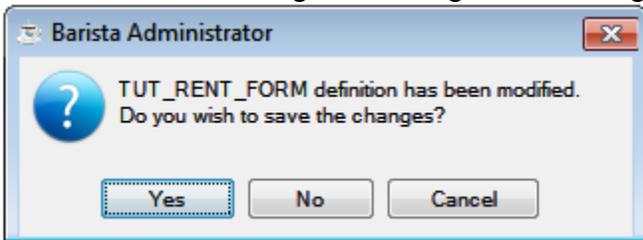
Next we will tie together all the tables to show what each user has rented. This will be done using a **detail grid**. The data in the detail grid is indexed by the primary key of the main (or header) form. So in this case, we will display the TUT_RENT_FORM as our detail grid. The key for the TUT_RENT_FORM is the USER_ID of the TUT_MAIN_FORM. The TUT_ITEM_NUM of TUT_RENT_FORM uses a table validation and can be set to display the Description from TUT_ITEM_INV as a read-only column in the grid.

Adding a Detail Grid

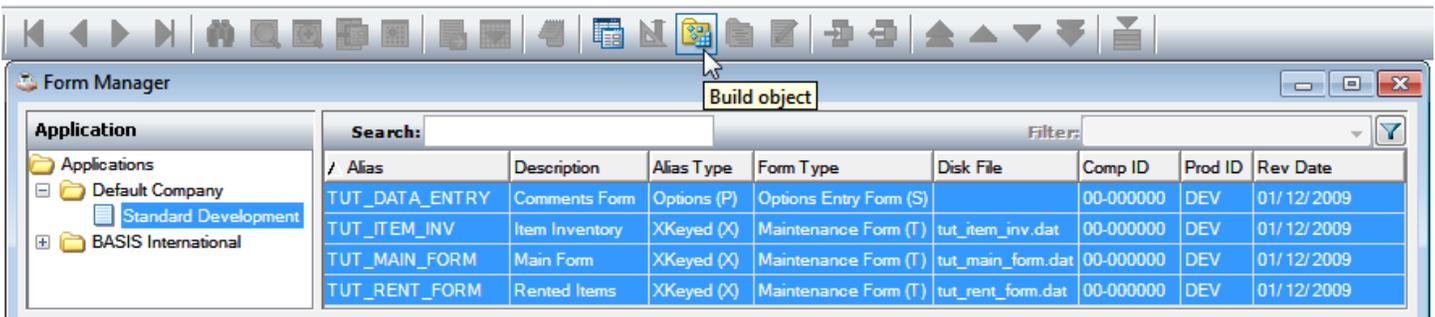
Call up TUT_RENT_FORM in Table maintenance and enter/select TUT_MAIN_FORM as the Primary Table to establish a link between the tables. Then call up TUT_MAIN_FORM in the Form Designer, select TUT_MAIN_FORM.<ALIAS> in Columns, and change Dtl Grid Table to TUT_RENT_FORM.



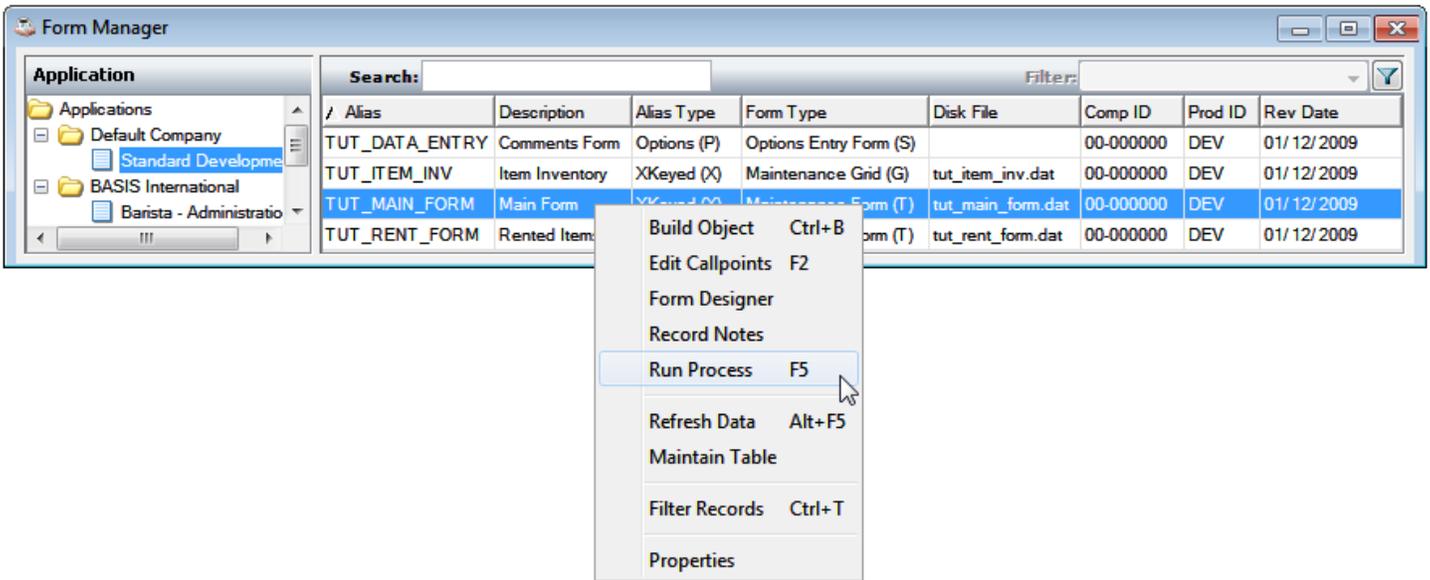
Close the Form Designer, saving those changes.



Back in the Form Manager, select all of your forms and click  or press [Ctrl]+B to build them.

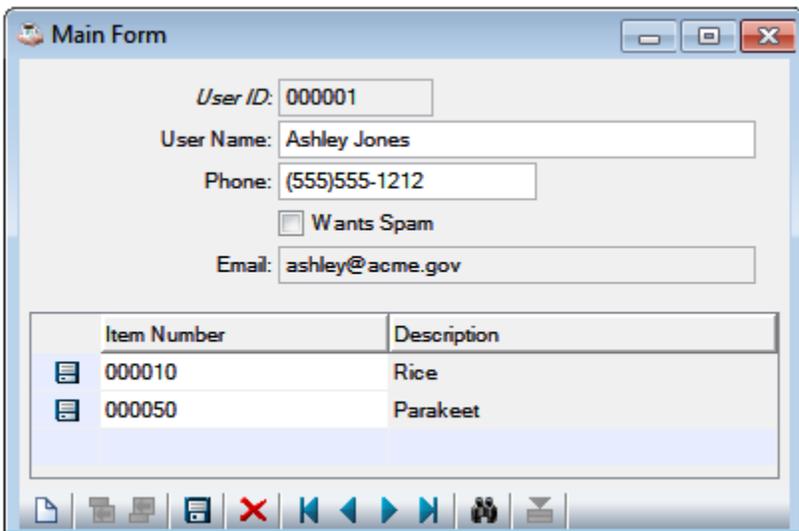


Now select the **TUT_MAIN_FORM** in the Form Manager, and run it by clicking , pressing F5, or right-clicking on it and selecting "Run Process":

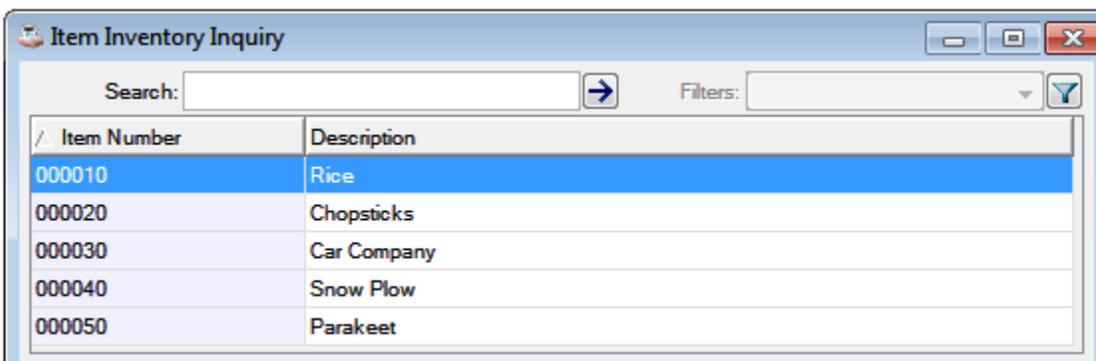


First, resize the form to make the grid visible.

Now we can add rented items user records:



You can lookup item numbers while in the Item Number column by clicking  or pressing [Ctrl]+F:



Want more? Try [Barista Tutorial 3: Define Callpoints](#) for help adding your own custom code, or the Administration Tutorial, which shows how to deal with projects, add menu items, users, internationalization.