

Using the Filter Builder

The Pearl Navigator's **Filter Builder** automates the process of selecting specific records to show on a form or print on a report. The Filter Builder lets you easily create, copy and share your favorite filters for any forms or reports.

Important Points about the Filter Builder

- The Filter Builder helps you quickly build multiple filters for any form or report.
- The **By** field allows you to view either those filters you've created (<mine>) or any filters created using the Filter Builder (<all>).
- A basic filter consists of a selected **field** on the report or form, an **operator** and a **value** to compare or match. For example, the filter shown below for the Grants Management form returns grant records where the value in the Grant field is greater than zero.
 - Grant (Field)
 - Greater Than (Operator)
 - 0.00 (Value)

The screenshot shows the 'Pearl Filter Builder for form Grants Management' window. The 'By:' dropdown is set to '<all>' and the 'FilterName:' is 'Awarded Applications'. The main table contains one filter rule:

Order1:	Field:	Operator:	Value:	Order2:
	Grant	Greater Than	0.00	

Record: 3 of 3

- A compound filter contains multiple basic filters joined through the **Order1** and **Order2** columns, using parentheses, or AND or OR conditions. Compound Filters. For example, the next Filter shows all grants awarded in 2009

The screenshot shows the 'Pearl Filter Builder for form Grants Management' window. The 'By:' dropdown is set to '<mine>' and the 'FilterName:' is 'Awarded Applications - in FisYear 2009'. The main table contains two filter rules joined by 'AND':

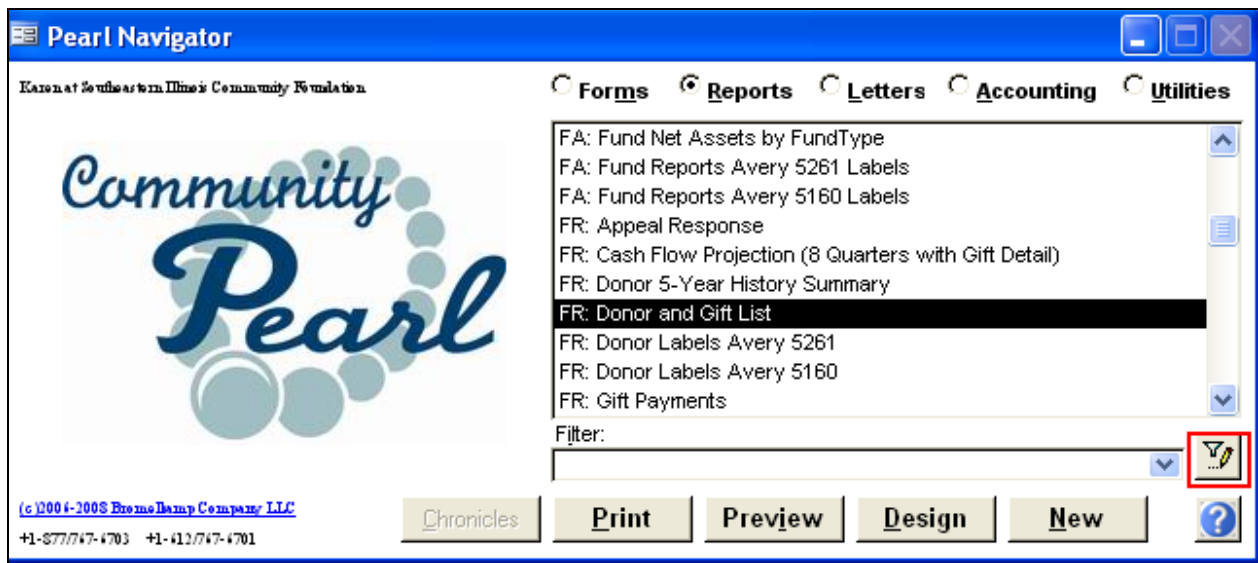
Order1:	Field:	Operator:	Value:	Order2:
	Grant	Greater Than	0.00	AND
	FisYear	Is Equal To	2009	

Record: 2 of 2 (Filtered)

- The Pearl Navigator Filter drop list displays filters that have been used to open a form or preview a report.
- When the Filter Builder is open, the drop down list on the **FilterName** field shows only filters created by the Filter Builder.
- You can **add**, **copy**, and **delete** filters. Copying allows you to duplicate a filter (such as one created by another user) and make changes without affecting the original filter.

Creating a Filter

1. Open the Filter Builder in the Pearl Navigator, by selecting a report or form and clicking the Filter Builder icon next to the Filter field.



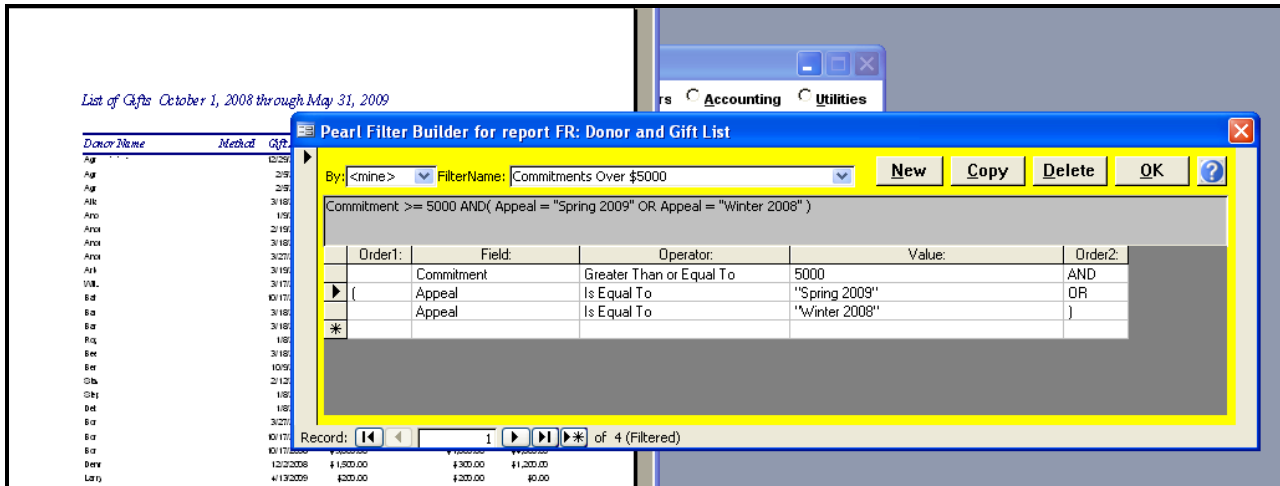
The Pearl Filter Builder screen is displayed.

2. In the **By** field of the Filter Builder screen, select **<mine>** to view all filters you have already created for this report, or **<all>** to view filters created by all users.
3. Click on the **NEW** button and type the name of the filter into the **FilterName** field
4. In the **Field** column, type the name of the field you are querying, or use the drop down list to pick the field name. Note: if you drop the list down and then start typing the field name, Pearl will attempt and 'auto-fill' of the field name. Select the correct field by clicking on it.
5. Using the associated drop down list, pick the **Operator**.
6. Enter the **Value** you are searching for. Note: where appropriate, Pearl will pre-populate the drop down list for **Value** so you can pick from the list.

Be Aware: When using the **Filter Builder** on reports, the report will preview before the **Filter Builder** screen appears. If the report has user prompts, these too will appear. Pearl runs the report to produce the Field drop down list.

Include a row for each condition in your filter. For example, you will create a filter with three lines to view Gift records where Commitment is \$5,000 or more and is the direct result of either the Winter 2008 or the Spring 2009 Appeal.

- In the **Field** column, select a field from those listed for the selected form or report. A description of each field also appears.
- In the **Operator** column, select a condition from those listed for the selected field type. (For example, different operators appear for alphanumeric fields like Appeal versus numeric fields like Commitment.) See Using Operators.
- In the **Value** column, select or enter a value to match. Pearl includes any required punctuation around the value (such as quotation marks around text field values and pound signs around date values).
- If including multiple expressions, select an option in the **Order2** column to join them.



4. Click OK to save the Filter.

The Pearl Navigator now displays the new filter.

5. Click Preview if you are filtering a report or Open if you are filtering a form.

Pearl runs the filter and displays the resulting form or report. Note that the filter remains in the Navigator's **Filter** field until you remove it.

Using Operators

The table below lists operators you can use in filter expressions, the field types to which the operator applies, and examples of use.

- You can use an * (asterisk) as a wildcard character, to match one or more characters. For example, in the following expression, a wildcard will match any zip extension, if provided: **Zip Begins With "55428***

Operator	Applicable Field Types	Matches If ...	Examples
Is Equal To Is Not Equal To	Alphanumeric, Numeric, Date	Field value is equal to or not equal to specified value	State Is Equal to "WI" Program Is Not Equal to "Operating Support"
Begins With Ends With	Alphanumeric	Field value begins with or ends with specified characters	Zip Begins With "55428*" Name Ends With "*", MD"
Contains	Alphanumeric	Field value contains the same sequential characters	Applicant.Name Contains "*Community*"
Precedes Alphabetically Follows Alphabetically	Alphanumeric	Field value comes before or comes after the specified field value	Contact Precedes Alphabetically "b" Contact Follows Alphabetically "m"
Is Empty Is Not Empty	Alphanumeric, Numeric, Date	Field value is empty (null) or is not empty	Finished Is Empty Grant Is Not Empty
Greater Than Less Than Greater Than or Equal To Less Than or Equal To	Numeric, Date	Field value is greater than, less than, greater than or equal to, or less than or equal to the specified value	Request Greater Than 1000 Dec Less Than #1/1/2009# Commitment Greater Than or Equal to 250 Dno Less Than or Equal To #12/31/2008#
In the Year of	Date	Date field value contains the same year as the specified date	Dec In the Year of 2007
In the Month of	Date	Date field value contains the same month as the specified date	Due In the Month of February

Compound Filters

- Use the **Order1** and/or **Order2** columns to create compound filters. Compound filters stipulate multiple conditions that must be true before a record is selected to be shown on a form or report.
- When you mix **AND** and **OR** statements in a compound filter, you'll need to use the **Order1** and/or **Order2** columns to insert parenthesis around (usually) the **OR** part of the statement. The pieces enclosed by the parenthesis are evaluated as a single statement. (*See the end of this document for more information on the use of AND and OR operators, and the use of parenthesis in a filter statement.*)

For example, the compound filter below returns records where grant is greater than zero AND the program is EITHER 'Project Support' OR 'Scholarship' AND the fiscal year is 2009.

Order1:	Field:	Operator:	Value:	Order2:
	Grant	Greater Than	0	AND
(Program	Is Equal To	"Project Support"	OR
	Program	Is Equal To	"Scholarship")AND
	FisYear	Is Equal To	2009	

Duplicating Filters

Follow these steps to make a copy of a filter for modifications.

1. Open the Filter Builder on the Pearl Navigator.

In the Pearl Navigator, select a report or form and click the **Filter Builder** icon next to the Filter field.

2. In the FilterName field use the drop down list to select the filter you want to copy, and click the Copy button.

The duplicate filter is created and Pearl adds the word 'Copy' to the end of the original name. You can modify the name and then make changes to the criteria. When finished, click OK. The original filter is unchanged.

Deleting Filters

Follow these steps to delete a filter. Deleting a filter removes it from the Filter Builder, and removes it from the Filter field on the Pearl Navigator. You can delete filters you created but not those created by other users.

1. Open the Filter Builder on the Pearl Navigator.

In the Pearl Navigator, select a report or form and click the **Filter Builder** icon next to the Filter field.

2. In the FilterName field use the drop down list to select the filter you want to delete, and click the Delete button.

After you confirm the deletion, the duplicate filter is removed.

Another Note: can't delete other peoples filters

NOTE: IF you are comfortable creating filters without using the Filter Builder, you may still create them by typing the filter directly onto the Pearl Navigator.

Use of AND, OR, and Parenthesis in a filter statement

A compound filter is created when two or more basic filters are joined together using **AND** and/or **OR** operators.

Compound filter examples:

GRANT>0 and Program="Scholarship"

Program="Capital" OR Program="Project Support"

When the **AND** operator is used, records must 'fit through' both sides of the filter in order to be included on the report or form. An **AND** statement is more exclusive; the more AND operators used in the filter, fewer records from your database are included.

Example: **Grant>0 AND Program="Scholarship"** The two simple filter statements are joined with **AND**; both sides of the compound filter must be true for the record to be included in the filtered results. The Grant field **MUST** be greater than zero **AND** the program **MUST** be Scholarship. The record must qualify for **BOTH**.

Conversely, the **OR** operator requires that records qualify for only one side of the filter. An **OR** statement is more inclusive; more records from your database are included.

Example: **Appeal="Spring 2009" OR Appeal="Winter 2008"** The two simple filter statements are joined with **OR**; only one OR the other side of the filter must be true for the record to be included in the filtered results. The Appeal can be **EITHER** "Spring 2009" **OR** "Winter 2008". The record only has to qualify for **EITHER**

Using Parenthesis

When you mix **AND** and **OR** statements in a compound filter, you will likely need to use parenthesis around some parts of the statement (usually around the OR section). Parentheses allow you to group basic filters and placement of parenthesis in a filter determines the number of records returned.

Example: **Grant>0 AND (Program="Scholarship" OR Program="Project Support")** Anything enclosed by the parenthesis is evaluated as a single item.

Grant>0 must be true **AND** either (**Program="Scholarship" OR Program="Project Support"**) must be true

APP	Grant	Program	Record meets filter criteria?
234	\$0	Scholarship	No
827	\$10,000	Capital	No
195	\$2,000	Scholarship	Yes
345	\$5,000	Project Support	Yes
933	\$0	Project Support	No

Immediately applications 234 and 933 are excluded because the grant amount is not greater than zero. When the other 3 records are evaluated for the second part of the filter, application 827 is eliminated because it is not a Scholarship or Project Support program.

What would happen if you did not include the parenthesis? How would the above results change?

Example: **Grant>0 AND Program="Scholarship" OR Program="Project Support"**

Grant>0 AND Program="Scholarship" must be true **OR Program="Project Support"** must be true

APP	Grant	Program	Record meets filter criteria?
234	\$0	Scholarship	No
827	\$10,000	Capital	No
195	\$2,000	Scholarship	Yes
345	\$5,000	Project Support	Yes
933	\$0	Project Support	Yes

Application 195 is included based on the first part of the filter – it's the only one where the grant amount is greater than zero **AND** the Program = "Scholarship". All records are then against the OR part of the filter – Program="Project Support". Both applications 345 and 933 are added to the record set.

When you use the Pearl Filter Builder to create a compound filter, you'll need to use the **Order1** and/or **Order2** columns to insert AND and OR operators and, where appropriate, parenthesis. The example below finds all awarded applications (Grant>0) in either the Scholarship OR the Project Support Program.

Pearl Filter Builder for form Grants Management

By: <mine> FilterName: GM: Awards to Scholarships and Project Support **New** **Copy** **Delete** **OK** ?

Grant > 0 AND(Program = "Scholarship" OR Program = "Project Support")

	Order1:	Field:	Operator:	Value:	Order2:
		Grant	Greater Than	0	AND
(Program	Is Equal To	"Scholarship"	OR
		Program	Is Equal To	"Project Support")
*					

Record: [Navigation icons] 2 of 2 (Filtered)