**Expressions**

**Cognos Training - Report Writing**

1. Expressions - general information

* Values will always be in ALL CAPS and have single quotes (e.g. ‘ABC’)
* Numbers do not need single quotes (e.g. 2010)

**Equal (=) [DATA\_ITEM] = ‘VALUE’**

* If you don’t know the value for a data item, in the Expression pane, use the **Select Value**  button
* Double-click a value to add it to the expression definition
* The value will be formatted correctly for the expression with single quotes

**Like –** use with **%** (wildcard) to select partial value found *anywhere* within a field

**–** use with **\_** to designate *exact* location of partial value within a field

**[DATA\_ITEM] like ‘% (partial)VALUE%’**

Example: **[PURPOSE] like ‘%17%’**

This expression includes Purpose codes such as CHEM322217 and CHEM17S000.

**[DATA\_ITEM] like ‘\_\_\_\_(partial)VALUE\_\_\_\_’**

Example: **[PURPOSE] like ‘\_\_\_\_17\_\_\_\_’** (this is 4 \_’s before and after the 17)

This expression includes Purpose codes such as CHEM175132 and CHEM17S000.

**In list (in) [DATA\_ITEM] in (‘VALUE’ , ‘VALUE’)**

**Not in list (not in) [DATA\_ITEM] not in (‘VALUE’ , ‘VALUE’)**

* If you don’t know the values for a data item, use the **Select Multiple Values** selectmultiplevalues button
* Double-click a value to add it to the expression definition
* The values will be formatted correctly for the expression with single quotes and parentheses

**Not Equal (<>) [DATA\_ITEM] <> (‘VALUE’ , ‘VALUE’)**

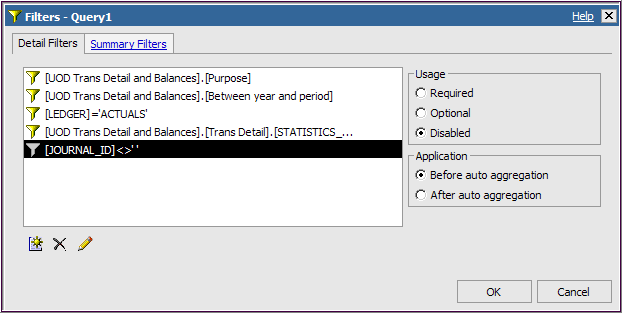
**[DATA\_ITEM] <> 0**

**[DATA\_ITEM] <> ‘ ‘**

(not equal to blank; there is a space between singe quotes)

1. Always **Validate**  your **Expression Definitions** and look for “No errors.” This will save you frustration later if your report has problems; you will know the issue is NOT your filters.
2. **Disable a Filter rather than deleting it.**

* This gives you the option of re-using it at a later date



1. **Re-use expressions from existing reports or other places**

* You must use Copy [Ctrl-C] and Paste [Ctrl-V]
* You could keep a Word document with your frequently-used expressions to save time and avoid keying errors.
* Note that every Cognos package will need to have its own set of expressions.
  + For example the ones for the UOD Trans Detail and Balances package must be separate from the Contract and Grants Data Mart

1. **Expressions – Dates**

* Use the format **yyyy-mm-dd**

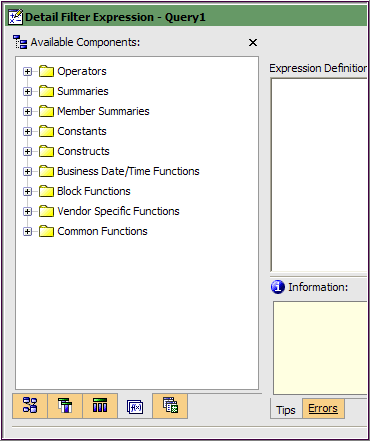
1. **Add Text to an expression with this syntax**

(**text** stands for whatever verbiage you want to include):

[space] **+** [space] **’text’** [space] **+** [space]

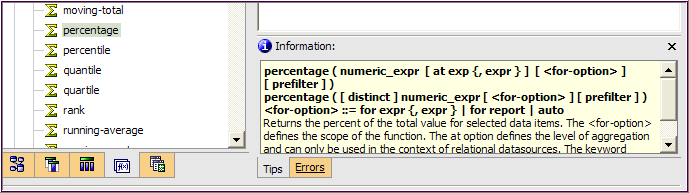
1. **Help within Cognos for building expressions**

* Click the **Filter** button
* In **Available Components**, click the **Functions** tab



**Functions tab**

* Open one of the yellow content folder to see the list of functions
* Click on one of the functions
* The Information panel will display the syntax and other useful information about using that function
* For example this is the information for the **Summaries** function **percentage:**



1. **IF THEN ELSE vs. CASE WHEN expressions**

A good rule of thumb for deciding which of these similar functions to use:

Use **If Then Else** with simple expressions and **Case When** with more complex ones. The use of parenthes with **If Then Else** can get very confusing with complex expressions.

**IF-THEN-ELSE expression**

This is a conditional expression that uses the logic: **IF** a condition is true, **THEN** a statement is executed, or **ELSE** if the condition is false a different statement is executed.

Syntax:

**IF (<condition>) THEN (<statement>) ELSE (<statement>)**

Syntax for complex situation:

**IF (<condition1>) THEN (<statement>)**

**ELSE IF (<condition2>) THEN (<statement>)**

**ELSE IF (<condition3>) THEN (<statement>)**

**ELSE (<statement>)**

Example:

**IF ([UOD Trans Detail and Balances].[Trans Detail].[FISCAL\_YEAR]= 2008) THEN ([UOD Trans Detail and Balances].[Trans Detail].[TRANS\_AMOUNT]) ELSE ( 0 )**

**CASE-WHEN expression**

This is a conditional expression that uses the logic: **CASE WHEN** a condition is true, **THEN** a statement is executed, or **else** if the condition is false a different (statement) is executed. Additional conditions are introduced with the word **WHEN**. The expression always ends with the word **END**.

Syntax:

**CASE WHEN (<condition>) THEN (<statement>) ELSE (<statement>) END**

Syntax for complex situation:

**CASE WHEN (<condition1>) THEN (<statement>)**

**WHEN (<condition2>) THEN (<statement>)**

**WHEN (<condition3>) THEN (<statement>)**

**ELSE (<statement>)**

**END**

Complex example for elapsed percentage of a fiscal period:

**CASE WHEN ([ACCOUNTING\_PERIOD] = 1)**

**THEN (1/12\*100)**

**WHEN ([ACCOUNTING\_PERIOD] = 2)**

**THEN (2/12\*100)**

**WHEN ([ACCOUNTING\_PERIOD] = 3)**

**THEN (3/12\*100)**

**WHEN ([ACCOUNTING\_PERIOD] = 4)**

**THEN (4/12\*100)**

**WHEN ([ACCOUNTING\_PERIOD] = 5)**

**THEN (5/12\*100)**

**WHEN ([ACCOUNTING\_PERIOD] = 6)**

**THEN (6/12\*100)**

**WHEN ([ACCOUNTING\_PERIOD] = 7)**

**THEN (7/12\*100)**

**WHEN ([ACCOUNTING\_PERIOD] = 8)**

**THEN (8/12\*100)**

**WHEN ([ACCOUNTING\_PERIOD] = 9)**

**THEN (9/12\*100)**

**WHEN ([ACCOUNTING\_PERIOD] = 10)**

**THEN (10/12\*100)**

**WHEN ([ACCOUNTING\_PERIOD] = 11)**

**THEN (11/12\*100)**

**ELSE**

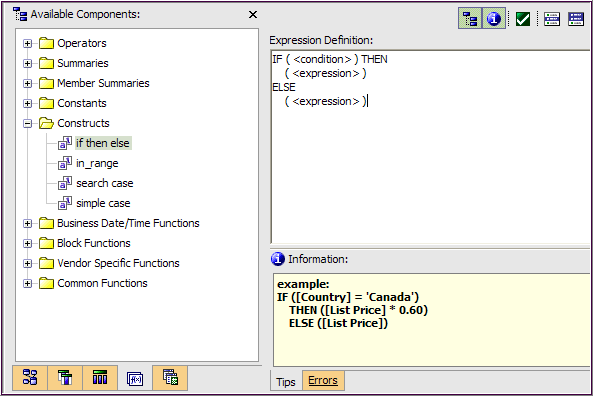
**(100)**

**END**

1. **Use the *Function tab* in the Expression window to help you write your expressions.**

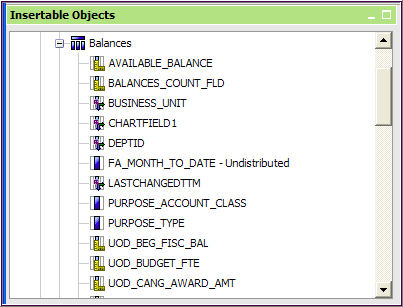


* Click the **Functions** tab
* Open the **Constructs** folder
* Double-click **if then else** to add it to the **Expression Definition**
* A template will appear; you will replace the phrases **<condition>** and **<expression>** with your own fields and expressions
* The **Information** box gives an example to follow.



1. **Any field with this icon  (builder's square) is a number and is auto-aggregated in Cognos.**

You may need to click the **After auto-aggregation** radio button.



* 1. When using the field in a Filter , change the Application setting to "after auto aggregation" to get valid results

