## Struggling with those DB2 Web Query functions? Help is available using Function Assist!

## Learn about this handy little feature available in the DB2 Web Query Developer Workbench tool

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DB2 Web Query is loaded with built-in functions to help you transform your raw DB2 for i data into something more meaningful and useful for use in your reports, graphs, dashboards, and compound documents. Some of these functions have multiple parameters and a limited number of acceptable values, so unless you have been working with the product for some time, it may not be obvious how to implement the correct format, syntax, and values to make them work. Wouldn't it be nice if there was an interface complete with help text and examples to guide you through the process of defining these functions? Well, hot diggity, there actually is! If you have the DB2 Web Query Developer Workbench tool installed on your PC, help is right at your fingertips in the Synonym Editor tool! The Synonym Editor has many nice help-related features - perhaps the most useful of which is a little gem called Function Assist.

To use Function Assist, open DB2 Web Query Developer Workbench, find your synonym and open it in the Synonym Editor. An example is shown below.



In order to use DB2 Web Query built-in functions, you must create either a Define or Computed field in your synonym. These are virtual columns that are not actual fields in your database file, but can be based on a field from the file (or even another virtual column). While they are similar, there is a difference between a Define and a Computed column: the expression in a define column is executed for every row in the result set returned by the DB2 Web Query report, while a computed column's expression is executed for only each row from the grouped/aggregated result set AFTER the aggregation has been performed. For more information on this, see Tyler Even's tech tip: Exploit DB2 Web Query's Defined and Computed Fields

For this article we are going to create a Define column that uses the DATEADD function to calculate the date two weeks before the value of the ORDERDATE field in our database. To do this, click on the Add Define smart icon. As shown in the example below it looks like a lower case f with a thick blue underscore.

Developer Studio - [Synony	m /WF/lp13ut8 (IA)
指 File Edit View Insert Tools	Window Help
i 🚰 📝 🕨 🕆 📱	
🗐 🖻 🕌 😣 🤶 🥐 😻	-(1)
Name	For Add Define ressio
😑 📩 baseapp/cen_orders	
🚊 😝 CEN_ORDERS	
	A5
: PRODUCTNUMBER	A4
🗤 ORDERDATE	YYMD
: STORECODE	A6
PLANTCODE	A3
:- SALESREP	A50
i QUANTITY	I11
LINETOTAL	P22.2
:- COSTOFGOODSSOLD	P22.2
:- OrderRETURNS	I11
: WARRANTYEXP	P22.2
SHIPPINGCOST	P22.2

In the name text box, type the name of your new define field (call it TwoWeeksBeforeOrder), and click on the Functions tab:

<sup>f</sup> Define C	alculator			
Name:	TwoWeeksBeforeOrder Form	nat: A20 Title:		😒 🖄 🛤
Expression	Relational Expression		Fields/Variables Functio	ns
1	I LT GT II NOT GE IF LE NE THEN EQ OR ELSE AND	***       /       *       -       a->A         7       8       9       +       A->a         4       5       6       0       Date         1       2       3       ''       Datetime         0       .       .	Name Name Source Stores Source Stores Sourc	Image: Second state     Table       Jders     S       IUMBER     (CEN_ORDER       ITNUMBER     (CEN_ORDER       ODE     (CEN_ORDER       ODE     (CEN_ORDER       ODE     (CEN_ORDER       SP     (CEN_ORDER       TY     (CEN_ORDER       GOODSSOLD     (CEN_ORDER       GGOODSSOLD     (CEN_ORDER       ITYNYXP     (CEN_ORDER       GGOST     (CEN_ORDER       ekseforeOr     (CEN_ORDER       OK     Cancel

You can either try to locate the desired function by expanding the function categories (provided you know which category it falls under), or an easier way is to use the Find icon as shown below.

ゴ Define Calculator	
Name: TwoWeeksBeforeOrder Format: A20 Title:	
Expression Relational Expression	Fields/Variables Functions Find
1 ( ) 1 1 1 1 1 1 1 1 1 1 1 1 1	Name     Format     Desc <ul> <li>Character</li> <li>Character - DBCS Code Pages</li> <li>Character - Variable Length</li> <li>Data Source and Decoding</li> <li>Date - Legacy</li> <li>Date - Standard</li> <li>Date - Standard</li> <li>Format Conversion</li> <li>Legacy</li> <li>Numeric</li> <li>System</li> <li>User Defined</li> </ul> <li>System</li>
THEN EQ OR 1 2 3 <sup>11</sup> Datetime ELSE AND 0 .	<u>&lt;</u>
Function Assist	OK Cancel

Simply type the name of the function (or even the first few letters of it) and click **Find Next**. If a match is found, that function will be highlighted under the expanded category it is under. This is shown in figure xxx below.



If you want help on the selected function, select it and click Help from the right-mouse click context menu. As example is shown below.



As you can see in Figure xxx, this action opens up a new window titled **Function References** with information about the specific function you selected.



From here, a wealth of information is available about that function, including details about the syntax, valid parameter values, useful tips, and some examples to help guide you. Other functions can be researched by utilizing the Search and Index features in the left pane of this window. You can even build and save a list of Favorite searches!

Once you close the Function References window, you will return to the Define Calculator window. Simply double click on the function to present it in the Function Assist window.

Function Assist is an extremely useful interface that will help you decide what values to specify for each of the function's parameters. If the parameter value is limited to a set of values, a drop down list interface is presented for that parameter. In our example, the first parameter for DATEADD is the date field that you want to increment. If you click on the dropdown list twisty icon as shown in figure xxx, it will display all of the date columns from the synonym. Simply select the one that you want.

Function Assist		? 🗙
Attribute	Value	
DATEADD		
date		N
'component_code'		<u> </u>
increment		
data		
Full Standard Date		
Is any full components	standard date, for example, YYMD, MDY, or JUL.	
1		
Example	ОКОС	ancel

The next parameter for DATEADD is the 'component\_code'. Again, click on the drop down twisty to see the valid parameter values. In the bottom pane, more information is displayed about the parameter.

E	Function Assist	? 🗙
	Astribusta	No. Los
		value
	date	
	'component_code'	m start st
	increment	'Y' - Indicates a year unit
		'M' - Indicates a month unit
		'D' - Indicates a day unit
		'WD' - Indicates a weekday unit
		'BD' - Indicates a business day unit
	component_code	9°
	Alphanumeric	
	Is one of the following component. D indicate component. BD indica	: Y indicates a year component. M indicates a month es a day component. WD indicates a weekday tes a business day component.
	Example	OK Cancel

In our example we want to add 14 days (two weeks) to ORDERDATE so select 'D' for day units.

Finally, specify the number of days you want to increment ORDERDATE by. In our example, we specified 14 as shown below.

Function Assist	? 🔀
Attribute	Value
date	ORDERDATE 💌
'component_code'	'D'
increment	14
incroment	
Numeric	
Is the number of date	components to be added to or subtracted from the
date. If this number is	not a whole unit, it is rounded down to the next largest
, megeri	
Example	OK Cancel

If you wanted to see some examples that use the function, simply click on the Example button as shown in figure XXX.

	Function Assist	? 🔀
	Attribute	Value
	DATEADD	
	date	ORDERDATE 💌
	'component_code'	'D'
	increment	14
	ncrement	
	Numeric	company to be added to as a bitmated from the
	date. If this number is integer.	not a whole unit, it is rounded down to the next largest
¢	Example	OK Cancel

The Example dialog is displayed. This gives you one or two examples often with some other useful information specific to this function.

Example	_ 🗆 🔀
This example finds a delivery date that is 12 business days after today: DELIV_DATE/YMD = DATEADD('&DATEMDYY', 'BD', 12); It returns 20040408, which will be Thursday if today is March 23 2004, Tuesday. To make sure it is Thursday, assign it as DELIV_DAY/W = DATEADD('&DATEMDYY', 'BD', 12); which returns 4, representing Thursday.	
	ОК

Click **OK** to close it and return to the Function Assist Window. Once you are satisfied with the parameter values click **OK** to return to the Define Calculator window.

ゴ Define Calculator	43	
Name: TwoWeeksBeforeOrder Format: YYMD Title:		🗶 😫 🛤
Expression Relational Expression	Fields/Variables Functions	i
1 DATEADD(ORDERDATE 'D' 14)	Name	Table
1 DATEADD(ORDERDATE, 'D', 14)		(CEN_ORDER (CEN_ORDER (CEN_ORDER (CEN_ORDER (CEN_ORDER (CEN_ORDER (CEN_ORDER (CEN_ORDER (CEN_ORDER
LT GT *** / * - a->A		(CEN_ORDER (CEN_ORDER
NOT GE 7 8 9 + A->a		(CEN_ORDER
IFLENE4560DateTHENEQOR123''DatetimeELSEAND0	Variables     DM Variables     System Variables	~
Function Assist	OK	Cancel

As you can see, all of the values specified from Function Assist are plugged into the Define Calculator.

You can bring up the Function Assist window directly from the Define Calculator field as well. This is often more efficient than going through the above Search process (particularly if you already know the name of the function you want to use). Simply type the function in the Expression pane (be sure to include both the left and right parenthesis after the function name) and click on the Function Assist button as shown in the example below using the SUBSTR function.

Name:	LastName	Format:	A20		Title:	-		*	3 44
Expression	Relational Expression						Fields/Variables Functions	Format	Des
1 SU	m	I		Character  Character - DBCS Code Pages  Character - Variable Length  Data Source and Decoding  Date - Legacy  Date - Standard  f DATEADD(date, 'compo  f DATEDIF(from_date, t  f DATETRAN(indate, '(int  f DPART(date, 'compone) }	, Standa Integer Standa Alphan Integer	Ac Fir Mc Fc Re			
	I         LT         GT           II         NOT         GE           IF         LE         NE           THEN         EQ         OR           ELSE         AND	** 7 4 1	/ * 8 9 5 2 3 5	- a + A 0 D Dat	a->A A->a Date tetime		f FIQTR(input_date, low f FIYR(input_date, low f FIYR(input_date, low f FIYYQ(input_date, low Date-Time Format Conversion	Date Date Date	Ex Ex Cc

The (hopefully) now familiar Function Assist dialog window is displayed for the SUBSTR function:

C	Function Assis	t	? 🔀
	Attribute		alua
		Ve	aiue
	SUBSIK		
	length	0	
	source_string		<b>•</b>
	start		
	end		
	sublength		
	output_format		
	source_string		
	Alphanumeric Is the string from w	hich to extract a substring.	
	Example		OK Cancel

Unfortunately, not all of the Function Assist and help features described above are available in the report development tools such as Report Assistant and InfoAssist. However, you can use the Developer Workbench Synonym Editor and the techniques described to help you formulate the correct function syntax and values. Once you have them, simply copy/paste the expression into the Define Fields in Report Assistant and InfoAssist. Easy, peasy, lemon-squeezy! If you currently do not have DB2 Web Query Developer Workbench installed, you can install a free 70-day trial version and take it for a test drive. The trial version can be downloaded here:

## http://www.ibm.com/services/forms/preLogin.do?lang=en\_US&source=swg-idwq

Hopefully this tip has shown you the wide variety of helpful options that are available to lend you a hand while adding DB2 Web Query functions to your synonyms and reports. If you have other questions on the product or are looking for other tips and techniques, we do have an online forum where you can post your questions to the experts. Just use the Forum link on the IBM DB2 Web Query developerWorks website:

## http://www.ibm.com/developerworks/spaces/DB2WebQuery

Once registered, you can post your questions! You can even subscribe to the forum and get email alerts whenever there is a response to your question or if you just can't get enough DB2 Web Query information you can subscribe to *ALL* the threads!