FormulaBuilder 1.0

YGB Software, Inc.

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Welcome to the evaluation version of FormulaBuilder, an advanced calculation engine for Borland's Delphi, Visual Basic, C/C++ or any Window's ™ tool capable of calling a DLL. The demoware edition will display a reminder message for each task that uses the engine, but is otherwise fully-featured and without limitations. Please take a few moment to peruse the online help file, in addtion to this document, to see how FormulaBuilder would best be suited for your development needs.

Contents

Installation

Please refer to the file INSTALL.TXT for instructions on loading FormulaBuilder onto your machine. Additional information is also available in the help file FBUILDER.HLP, under the section "Using FormulaBuilder" . This contains instructions related to using FormulaBuilder in specific development environments.

Feature Overview

DLL based expression parser/evaluation engine. Data-Aware and RTTI-Aware Delphi Class Wrappers are included for tight and seamless integration into the Delphi environment, though any Windows tool capable of calling a DLL have full access to its capabilities.

Number of expressions limited by memory

Handles mixed type expressions of type string, longint, boolean and float(double)

Supports the usual arithmetic and logic operators including XOR, as well as the LIKE operator which performs wildcard matching on strings.

Multi-parameter functions (currently up to 16 params). Parameters may be string, longint, boolean, date, float (double) or Any (any of the preceding types).

Functions with optional parameters.

Mid('hello',3,2) returns 'll',
MID('Hello'1) returns 'H',
Min(1,2,3,6) and Min(1,10) both return 1

Over 100 built-in functions (Math/Trig/Hyperbolic, Date/time, string, Financial)

Easily extended to handle additional functions via callbacks. An interesting side-effect of this is that the DLL (with programmer-defined extensions) can be used as a cheap command processor.

Variable support. Variables may be handled internally by the engine (default), or implemented by callbacks. This allows variables to be fields in database tables, for example. There can be approximately 16,000 variables per expression, subject to memory constraints. Though there may be a slowdown in parsing an expression with a large number of variables, there is no performance penalty when the expression is evaluated.

Constant support. Constants of any of the supported types may be added

Expressions (theoretically) can be up to 32k. The only caveat is that the engine maintains a copy of the string

Pre-parses expression to an intermediate form. Results are derived from the tokenized representation. This yeilds faster execution and eliminates the overhead of continually re-parsing the expression.

A 32-bit version of FormulaBuilder is planned for a late April release.

Alphabetical Function Reference

The following is a complete alphabetical reference for the FormulaBuilder functions.

ABS	FACT	PV
ACOS	FIND	PVAL
ACOSH	FIRST	RADIANS
ACOT	FLOOR	RAND
ACOTH	FRAC	RATE

ACSC	FV	REPLACE
ACSCH	FVAL	REPLICATE
ASC	HOUR	ROUND
ASEC	IIF	RTRIM
ASECH	INSERT	SEC
ASIN	INT	SECH
ASINH	IPAYMT	SECOND
ATAN	IRATE	SGN
ATAN2	IRR	SIN
ATANH	ISEVEN	SINH
AVG	ISODD	SLN
CEILING	LAST	SOUNDEX
CHAR	LENGTH	SOUNDALIKE
CHOOSE	LN	SQR
	LOG	SQRT
CLEAN	LOWER	STR
COS	LTRIM	STRMAX
COSH	MAX	STRMIN
COT	MID	SUM
COTH	MIN	SYD
CSC	MINUTE	TAN
CSCH	MONTH	TANH
CTERM	MONTHNAME	TERM
DATE	NOW	TIME
DATEDIFF	NPER	TIMENOW
DATETOSTR	NPV	TIMETOSTR
DATEVALUE	PADCENTER	TIMEVALUE
DAY	PADLEFT	TODAY
DAYNAME	PADRIGHT	TRIM
DB	PAYMT UPPER	
DDB	PMT	VAL
DEGREES	PPAYMT	WEEKDAY
EXP	PRODUCT	WORDCOUNT
EXTRACT	PROPER	YEAR

C/C++ Support

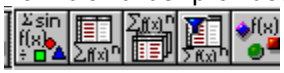
A C header file is supplied in the FormulaBuilder package. Although we are certain that FormulaBuilder can be used successfully with C/C++ compilers, we have not concluded that phase of evaluation. We will announce official support when testing is complete.

VISUAL BASIC SUPPORT

A Visual Basic header file is included to allow FormulaBuilder to be used in that environment. A demonstration project is included to give you a quick start on using FormulaBuilder in Visual Basic.

Borland Delphi Support

FormulaBuilder provides 5 components which integrate into Delphi's design time environment and function like any other VCL.



"Standard" Components

TExpression

TExpression is the basic component wrapper around the FormulaBuilder DLL. It provides convenient OOP access to the functionality of FB. It also serves as the ancestor class for TDSExpression and TDBExpression, which are Data-Aware.

TRTTIExpression

The TRTTIExpression component allows access to the published properties (recursively) of a given Delphi object using Delphi's Runtime Type Information (RTTI). Properties are handled as "dot-notated" FormulaBuilder field identifiers, and reading and setting them has the expected Delphi runtime behaviour.

Data-Aware Components

TDSExpression

The TDSExpression subclass enhances the TExpression class by adding access to fields of the BDE (Borland Database Engine) dataset assigned to its Dataset property. These fields can then be treated in the same manner as variables in expressions. When the expression is recalculated, the value of the variables are read directly from the fields of the dataset.

TDBExpression

This subclass enhances the TExpression class by adding access to fields of all BDE (Borland Database Engine) datasets open on its Database property. These fields can then be treated in the same manner as variables in expressions.

The syntax for database fields is '[' tablename'->'fieldname']'. For example :

```
TotalCostExpr := '[Items->Price]*[Items->Quantity]*(1 + Vendor->TaxRate])';
```

TDSFilter

The TDSFilter component implements a high level interface to BDE-level dataset filtering. Using this component, you are able to filter a datasource based on any valid FormulaBuilder boolean expression. This component has a major enhancement over the filtering/sorting methods of VCL for LOCAL databases. This component is based on Uli Zindler's excellent DBFILTUZ unit, Copyright INFOPLAN.

Pricing, Registration & Availability

FormulaBuilder is available for an introductory price of $65 until March 31, $79 afterwards. The most current version may be obtained on Compuserve in the Third Party Library of the Borland Delphi Forum (Go Delphi). It can be registered on Compuserve via the Software Registration system (GO SWREG). Its **SWREG** number is **10343**.

Registration entitles you to free technical support and special upgrade pricing on future versions of FormulaBuilder (including the upcoming 32bit version) and other YGB Software products. Topics from the FormulaBuilder online help relevant to end-users will be included in an .RTF file to ease documentation chores. Delphi users will also receive the source code for all the files in the distribution for which an .INT file is provided. See the next topic for information on the availability of source code for the evaluation engine.

Please view the included help file FBUILDER.HLP for additional information.

We are currently making arrangements for broader distribution, pending the evaluation of alternative payment methods.

Source Code Availability

YGB is evaluating a Delphi source-code option in version 2.0 (the 32Bit edition) for an upcharge from the base registration price. The code for the 16bit version is being reworked to provide a single source 32/16bit solution. Please feel free to e-mail us with any additional questions or concerns.

Contact Information

If you have any questions, suggestions, concerns or problems with FormulaBuilder, please contact us via e-mail at

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We would appreciate any feedback, whether or not you decide to register the product.

Thank you for evaluating/purchasing our product !

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