Blaise Editing Rules + Relational Data Storage = Best of Both Worlds?

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Mike Rhoads

Richard Frey

Lew Gaul

Topics

- Blaise Editing System
- Life Becomes Easier
- How Blaise Stores SQL Data
- Tips, and Tricks and Tools
- Summary
  - No Singing

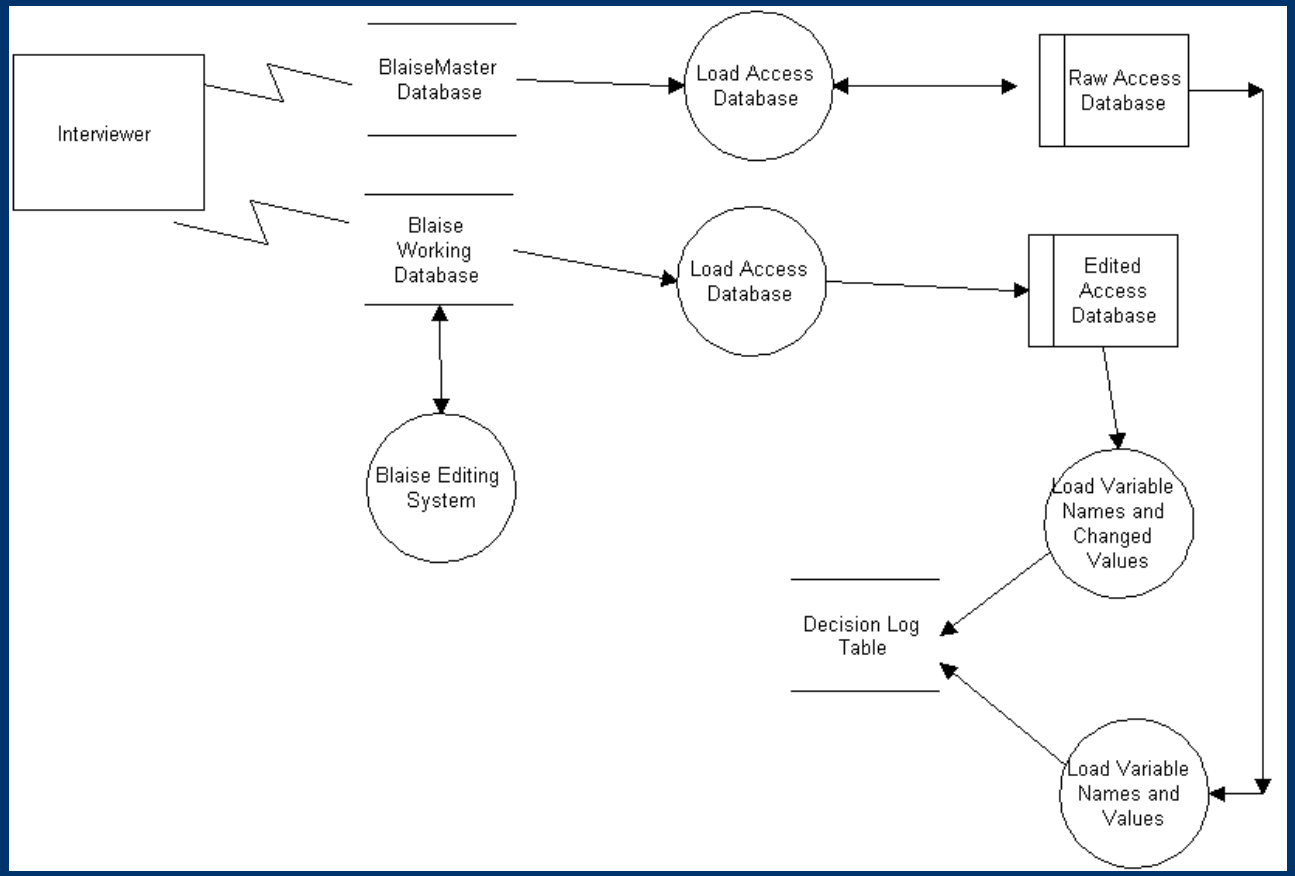
Blaise Editing System (BES)

- Ongoing development and improvements over time
- Major Capabilities
  - Data replay and updating
  - Ability to use with non-Blaise data sources
  - Metadata interface
  - Decision log
  - Reports

Data Storage Issues

- Native Blaise data storage not ideally suited for reports or SQL queries
- Native Blaise data storage only keeps the most current version of the data

Data Flow – Old Way



Life Becomes Easier

- Blaise Datalink allows storage of instrument data in relational databases
- Added functionalitiy in 4.8.1
  - Implementation of Generic Tables, Data Versioning
- Now only need one data source
  - Editing
  - Queries and reports
  - Monitoring
- Versioning of data
  - Date/Time
  - Changes

How Datalink Stores Data

- A number of “data partition types” and other options
- We decided on:
  - FlatBlocks data partition type – most natural for queries outside of Blaise
  - Generic option – needed to support storing all versions of the data
- Other data partition types – FlatNoBlocks, InDepth, InDepthText, Stream

Storage Using FlatBlocks With The Generic Option

- Uses two different sets of tables in the database
- One set of tables are instrument-specific
  - One table for each block in the data model
  - Columns for Blaise fields, plus Generic related columns
- Other tables are “generic”
  - Shared by all “generic” data models within the same database
  - Begin with Blaise_

An Instrument-Specific Table

- Generic related columns, plus columns corresponding to fields in the block

	JOINKEY	DMKEY	BEGINSTAMP	BLOCKID	INSTANCE	EMPNAME	DISTANCE
1	1	1	2009-04-25 16:46:49.803	4	1	Westat	2
2	1	1	2009-04-25 16:46:49.803	6	2	McDonalds	7
3	1	1	2009-04-25 16:46:49.803	15	1	CDC	12
4	1	1	2009-04-26 13:59:43.520	4	1	Westat	2
5	1	1	2009-04-26 13:59:43.520	6	2	McDonalds	7
6	1	1	2009-04-26 13:59:43.520	15	1	NCHS	12
7	2	1	2009-04-26 13:50:26.370	4	1	Universal Studios	4
8	2	1	2009-04-26 13:50:26.370	6	2	Disney	27
9	2	1	2009-04-26 13:50:26.370	26	1	Waiter on the ...	17

Keeping Track of Versions

- BLAISE_FORM table
- Special ENDSTAMP value for current data

JOINKEY	DMKEY	BEGINSTAMP	ENDSTAMP	STATUS	COLLECTMODE	DATAENTRYBEHAVIOUR	STREAMDATA
1	1	4/25/2009 4:46:49 PM	4/26/2009 1:59:43 PM	1	-1	3	<Binary data>
1	1	4/26/2009 1:59:43 PM	12/31/9999 12:00:00 AM	1	-1	3	<Binary data>
2	1	4/26/2009 1:50:26 PM	12/31/9999 12:00:00 AM	1	-1	3	<Binary data>
3	1	4/26/2009 2:17:29 PM	12/31/9999 12:00:00 AM	1	-1	3	<Binary data>
NULL	NULL	NULL	NULL	NULL	NULL	NULL	NULL

Storage of Common Data

- Remarks (Blaise_Remark)
- Open (Blaise_Open)
- Attributes DK/RF (Blaise_Data)
- Common table structure
  - Join Key
  - Datamodel Key
  - Begin Date/Time Stamp
  - Field ID
  - Value

Storing Remarks

Column Name	Data Type	Allow Nulls
JOINKEY	bigint	☐
DMKEY	bigint	☐
BEGINSTAMP	datetime	☐
FIELDID	bigint	☐
REMARKTEXT	text	☑
		☐

JOINKEY	DMKEY	BEGINSTAMP	FIELDID	REMARKTEXT
1260	1	4/28/2009 5:26:37 PM	61	Cambodian
NULL	NULL	NULL	NULL	NULL

Link Field ID

- Blaise_Id Table

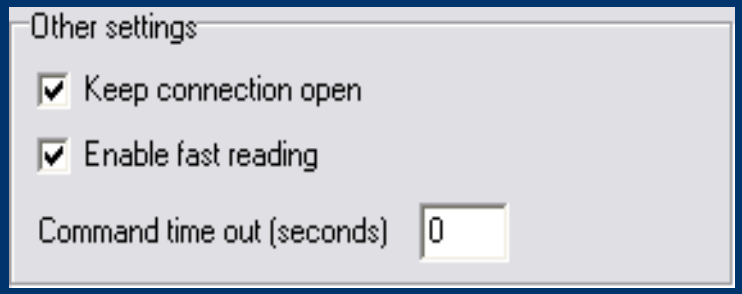
DMKEY	ID	TYPE	NAME
1	1	B	Wes_EN
1	1	F	AssignmentID
1	2	B	Preload
1	2	F	DUID
1	3	B	BreakOff
1	3	F	DataCollectorID
1	4	B	EnumTable
1	4	F	SUID
1	5	B	EnumTable.Enum[1]
1	5	F	Preload.StreetNo
1	6	B	EnumTable.Enum[2]
1	6	F	Preload.PreDir
1	7	B	EnumTable.Enum[3]
1	7	F	Preload.Street
1	8	B	EnumTable.Enum[4]
1	8	F	Preload.StTypeID
1	9	B	EnumTable.Enum[5]
1	9	F	Preload.PostDir
1	10	B	EnumTable.Enum[6]
1	10	F	Preload.UnitTypeID
1	11	B	EnumTable.Enum[7]

Tips, Tricks and Tools

- Manage Record Access
- Make sure Datamodel Field Names are not the same as the Generic SQL column names generated by Blaise.
- A field with type block can not have the same name as the Datamodel

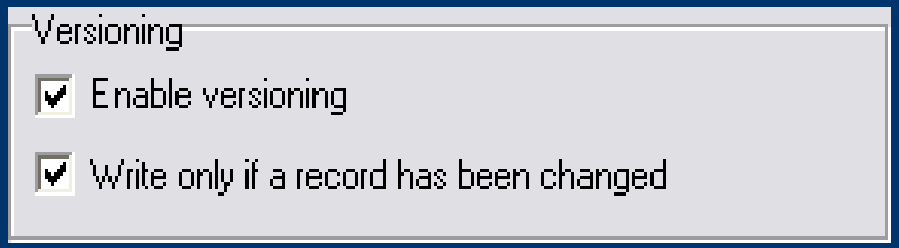
Tips, Tricks and Tools

- Enable Fast Reading
  - If changing values on SQL tables, uncheck Enable fast reading on Runtime Settings tab



Tips, Tricks and Tools

- Versioning
  - Remember to check Enable versioning and Write only if a record has been changed



Tips, Tricks and Tools

- Add Meta information to the Blaise_ID Table
  - Table Name
  - Question text
  - Other
- Version 4.8.2 will expand this table with meta information

Blaise_ID Table

DMKEY	ID	TYPE	NAME	TableName
1	55	F	EnStaffIsResident	Wes_EN
1	56	F	EnStaffWomen18To49	Wes_EN
1	57	F	EnStaffLiveHereWithBaby	Wes_EN
1	58	F	EnRespGender	Wes_EN
1	59	F	EnNumAdultsHH	Wes_EN
1	60	F	EnNumAdultMales	Wes_EN
1	61	F	EnNumAdultFemales	Wes_EN
1	62	F	EnNum18To49WomenHH	Wes_EN
1	63	F	EnumTable.AllowInsert	Wes_EN_TEnum
1	64	F	EnumTable.AllowDelete	Wes_EN_TEnum
1	65	F	EnumTable.tmpI	Wes_EN_TEnum
1	66	F	EnumTable.RespID	Wes_EN_TEnum
1	67	F	EnumTable.EnumCnt	Wes_EN_TEnum
1	68	F	EnumTable.PregCnt	Wes_EN_TEnum
1	69	F	EnumTable.SelfCnt	Wes_EN_TEnum
1	70	F	EnumTable.RespPreg	Wes_EN_TEnum
1	71	F	EnumTable.Enum[1].EnRespondent	Wes_EN_TEnum_BEnum
1	72	F	EnumTable.Enum[1].FirstName	Wes_EN_TEnum_BEnum
1	73	F	EnumTable.Enum[1].EnHHWomanFirstName	Wes_EN_TEnum_BEnum
1	74	F	EnumTable.Enum[1].Age	Wes_EN_TEnum_BEnum
1	75	F	EnumTable.Enum[1].EnHHWomanAge	Wes_EN_TEnum_BEnum
1	76	F	EnumTable.Enum[1].Relation	Wes_EN_TEnum_BEnum
1	77	F	EnumTable.Enum[1].EnRelationToHHWoman	Wes_EN_TEnum_BEnum
1	78	F	EnumTable.Enum[1].PregNow	Wes_EN_TEnum_BEnum
1	79	F	EnumTable.Enum[1].EnHHWomanPregNow	Wes_EN_TEnum_BEnum
1	80	F	EnumTable.Enum[1].YoungChild	Wes_EN_TEnum_BEnum

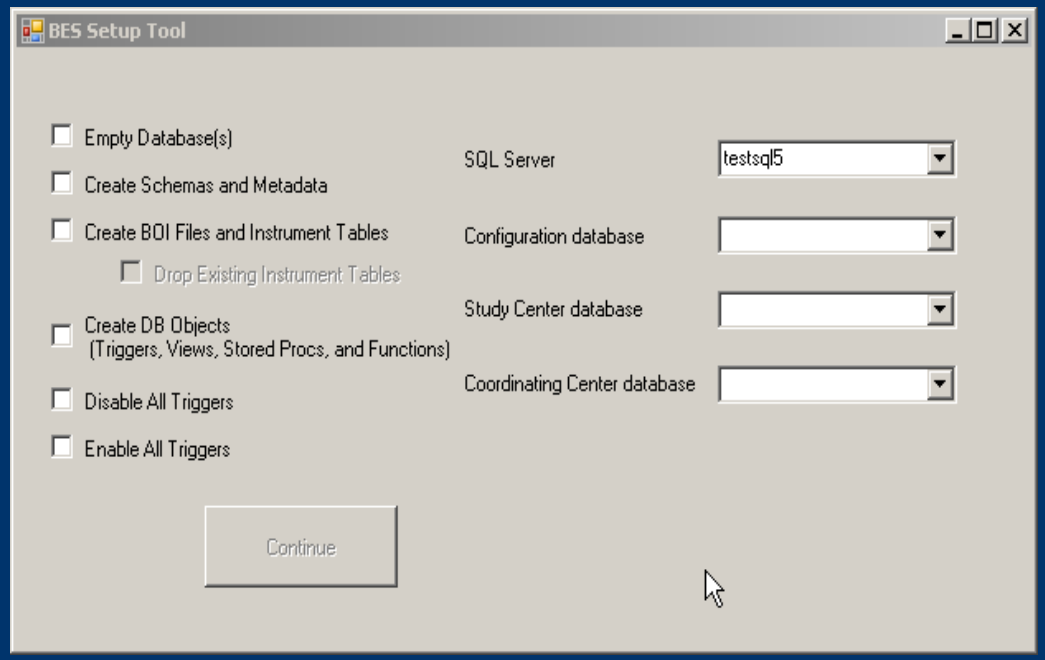
Tips, Tricks and Tools

- Vertical Table of Changed Values
  - Who, When
  - Table Name, Field Name
  - Value or Attribute
  - Other Editing Field Requirements
- SQL Triggers
- Stored Procedures

BES Database Setup Tool

- Database Maintenance
  - Empty Database
  - Create Schemas/Metadata
  - Create Database Objects
- Enable/Disable Triggers
- Establish Configuration Database
  - User Access
  - User Settings
  - Lookup Tables

BES Setup Tool



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- Questions?
  - Positively, absolutely, no singing

Blaise@westat.com

Subject: IBUC Question