Whitemarsh
Information Systems Corporation

November 2005
www.wiscorp.com
Website Announcement

Whitemarsh Information Systems Corporation
2008 Althea Lane
Bowie, Maryland 20716
Tele: 301-249-1142
Email: mmgorman@wiscorp.com
Web: www.wiscorp.com

Table of Contents

Announcement Topics

October has been an activity filled month. We have completed the conversion of the Data Interoperability Course and Workshop that was so successful with the U.S. Army. We also attended an ANSI Database Standards meeting. For sure ANSI is closing in on the next version of SQL and on the SQL-XML part. Whitemarsh released the latest version of the Whitemarsh Metabase Software System (v6.08) and is hard at work on the next version. Also done was a tune-up of the Whitemarsh Methodology. Finally, we have published a new paper on TDAN.

SQL 200n

The most recent meeting of the ANSI INCITS H2 Technical Committee was held in Monterey, California. It was a great meeting with a full agenda. We reviewed and finalized the ballot comments on SQL-MM Spatial, and on SQL-XML. A key member of the Oracle delegation has embarked on a complete re-description of Cursors. Great work and we all look forward to its completion.

WisWeb Members Section

We have reviewed and updated the Whitemarsh Metabase Methodology. We tuned-up the section regarding data models adding work steps for specified, implemented, and operational data models, and revised the work steps for database objects. The updated methodology has been published on the website for all members.

Data Interoperability Course and Workshop

In the Fall of 2003 the Office of the CIO for the U.S. Army asked Whitemarsh to develop a four day course. This course entailed taking a collection of legacy database schemas, figuring out the interoperable data, and then developing a shared-data specification.

The problem domain was the topology of IT systems across the U.S. Army. Currently the Army's budget was $120 Billion per year. There are likely about 150,000 IT systems. Failed interoperability on the battlefield, in the supply line to the battlefield, or in access to IT systems in related services may result in fratricide. Not a desirable outcome. Fratricide puts a realistic edge on the problem to be solved.

The goal of this effort was to enable the managers and developers of Army IT systems to know of each other, and know whether their different IT systems have sharable data. If so, then analyze whether the potentially shared data really is both the *definitive source* for that data and if the data's semantics really means that it's the *right* data. The Whitemarsh Data Interoperability Workshop was a combination of methodology and supporting Metabase CASE/Repository system that enabled the IT developers to inventory, cross reference, and posit shared IT system artifacts and shared data.

During the week long workshop, the methodology was presented and then proven via a series of student driven workshops that involved the direct use of the Metabase CASE/Repository system in a shared network multi-user environment.

According to their home organizations, students created missions, organizations and functions. Using the Metabase, the students intersected these items such that a clear picture arose of the required shared data functions existing within their organizations, in support of assigned missions. Students then created expressions of this information needed to fulfill their shared-data functions.

Database schemas from various database applications were then loaded into the Metabase Software System and examined to determine their overlapping areas with respect to the shared data needs. During this analysis, business facts determined to be commonly used across different database table columns were cast into an ISO 11179 data element form and entered into the Metabase. This enabled ISO 11179 data element cross-referencing across the operational database schemas. Students then determined their shared data schemas and built them through the data modeling facilities contained in the Metabase CASE/Repository.

Once the shared database designs were created, an operational database design of this database was generated. Once generated, the data model artifacts of this database were imported into the Clarion for Windows software generation environment. This last step enabled the shared data access system to be automatically created.

The course and workshop thus completed a full cycle: from the positing of requirements for shared data, the discovery of the shared-database design, the creation of the shared database design, and then final building of the software system that supported the storing and access of the shared data. This entire effort was completed by the students and required only analysis and design skills. No programming skills were required.

We took this course and workshop and completely reviewed and revised it. We have added a whole collection of lessons-learned. Now the course consists of five full days with 18 different student workshops. We also have created a two-day lectures-only version of the course.

We are going to offer this course both publically and "in-house." Please look to your E-mail boxes for announcements.

Metabase Version 6.8

Metabase Software System v6.8 has been released. This is a really first-class version. Released along with this version is a completely revised set of user guides and a full Metabase example that has been modeled after a national movie rentals chain. We believe that you will find this version of the metabase of great value.

New to this version is user management. The metabase administrator can define users, provide them access to specific metabase database instances, and even control access to specific Metabase functional modules. The Metabase administrator can also compose and send individual users messages. Finally, the Metabase administrator can remove all these permissions.

Also new to this latest version of the Metabase is a new version of the Reverse and Forward Engineering guide.

Metabase Introduction

The metabase software is described in the *Metabase Overview* document that's available in the Free Downloads section of Wiscorp.com. Metabase Software System users can gather and print these classes of information through a number of different reports. Also on the website are the current set of Metabase meta model figures. These represent the Metabase's database design.

Additionally, two new documents are well worth downloading and reading. The first is the [Data Modeler's Architecture and Concept of Operations Guide](#). That will updated during October. The next document is a full tutorial on using the metabase for both [Reverse and Forward Engineering](#).

Over the past 30 years database project requirements' analysis has generally been accomplished through an interview process, which has almost always been manual. Once accomplished the data was typically recorded onto word processing files and then printed. If questions were asked, the analyst had to consult notes and attempt answers. Changes and updating this critical information was laborious and time consuming. In addition, any hope for long term updating and for answering the number of different management interrogations has never been considered possible or practical.

The metabase system attempts to solve this problem by allowing the requirements analyst to record the results of the interview process by capturing this information in the Metabase as records. Subsequent dissemination of this information, such as the characteristics of information systems, databases, information needs, persons, functions, and organizations that are involved in the various resource life cycles, occurs through report writers such as Crystal Reports. As time

passes and the various data changes, it merely becomes a process of updating the Metabase's data records, from which to generate updated reports.

Metabase History

Whitemarsh Metabase Software System's first implementation was in 1980, 25 years ago by Hartford Insurance in mainframe Focus. In the interleaving years, Metabase has been implemented in CSC's Manage (1984), Supra (1986), IDMS (1987), and at least four different times in PC/Focus, starting in 1989. This Clarion implementation was started in 1997. Clients who have used Metabase include the States of California and Delaware, the U.S. Army, U.S. Department of Commerce, Freddie Mac, the Hershey Company, and M&M/MARS.

The Whitemarsh Metabase Software System was designed to support answering the following critical questions:

Mission Analysis: What are the essential missions that define the very existence of the enterprise, and that are the ultimate goals and objectives that measure enterprise accomplishment from within different business functions and organizations?

Functional Analysis: What procedures are performed by groups in their achievement the various missions of the enterprise from within different enterprise organizations?

Organizational Analysis: Which organizations are accomplishing what aspects of missions with what databases, information systems and through which functions?

Resource Life Cycles: What are the key Resources (facilities, materiel, staff, etc?) How are they sequenced, interrelated, and how are they supported through databases and information systems?

Information Needs: What information (a.k.a., query results or reports) is needed by various organizations in their functional accomplishment of missions? What databases and information systems provide this information?

Database: What data is needed to support enterprise resource life cycle nodes? How are the databases defined within data architectures? How and where are those databases deployed and then used by business information systems in support of mission accomplishment? Also, what are the data model details of the databases?

Data Modeler: What are the context independent semantic templates of data elements and how are these configured into models of data (the consequence of policy execution) determined as needed by functional experts in support of enterprise missions? How are these specified data model requirements configured into implemented databases that ultimately operate within various organizations as they perform the functions needed by enterprise missions? Also, what are the models of data used by Business Information Systems?

Business Information Systems: Exactly what are the business information systems, where are they, how are they related to mission, organization, function, and databases? How are they interrelated to each other including their calendar and business event execution schedules? What is the impact on these business information systems when policy (a.k.a., data) is required or changed?

Metabase Environment

The Metabase Software System is a CASE/Repository environment that runs on Microsoft Windows operating systems for the presentation layer, and most SQL DBMSs for metabase database storage and access. You can also have any quantity of metabase database instances. A given user can have multiple metabase functional modules and multiple metabase instances open at the same time. Because of the SQL engine, you can report from the metabase through report writers such as Crystal Reports. We include about 100 Crystal Report "rpt" files.

The metabase can read SQL DDL into the SDM, IDM, and ODM data models. It can also write SQL DDL from the same models. If one has a SQL DBMS then one can build a schema and then synchronize with Clarion to then generate the client-side application. The Metabase can also generate Clarion's native DDL (called a TXD file) so that a client side application can be created without a SQL DBMS. Thus the Metabase functions as UpperCASE, with Clarion as LowerCASE. Together they will be represent integrated CASE.

The Metabase exists in these versions:

Metabase Demo Version: This version of the Metabase is fully functional. The demo version includes the Movies example database which is automatically installed, and also a single metabase dataset named Metabase. This version times-out after 90 days. The back end for the metabase is SQL, with reporting being accomplished through an ODBC based report writer such as Crystal Reports.

Metabase Single User - Single Metabase: This version is part of the membership to the Whitemarsh website that includes all other website books, methodologies, courses, presentations, software, and papers. In addition to the Metabase's Movies example dataset, added as part of the installation, the single-user metabase version supports a single metabase dataset. The back end for the metabase is SQL.

Metabase Single User - Multiple Metabase:. This version of the metabase allows only one concurrent user, but there is no limit to the quantity of metabase datasets that can be supported. Any number of users can report from the metabase through an ODBC based report writer such as Crystal Reports.

Metabase Multi User - Multi Metabase: This version of the metabase comes in concurrent user quantities of 1, 4, 10, 25, and unlimited (single server) concurrent user versions.

Metabase Developer: This version is an unlimited-user single-server version and is provided with six weeks of training. The training's goal is to fully teach the use of the metabase software, while also detailing the metabase system itself to in-house developers. This is done to aid the developers in evolving and maintaining the metabase's database and presentation layers. This allows the developers to meet the specific needs of their organization. Included with this version is all design documents, source code, development environment, and supporting third party tools necessary for a development staff of four.

All versions of the metabase employ SQL engines for data storage and access. We recommend Mimer SQL Enterprise. A developer version is freely available from the Mimer website. Production versions of Mimer are very reasonably priced. We chose Mimer because of its very high level of ANSI SQL standards compliance, its very small foot-print, and because it allows metabase database instances to operate on a wide variety of operating systems. The metabase client side operates on MS Windows environments.

A fully functional metabase demo is <u>available</u> from the Whitemarsh website. Also available is a full set of documentation along with several other tutorial documents.

A key benefit of having the Metabase operate under an SQL engine is that you can now directly report against the metabase through any number of ODBC compliant report writers such as Crystal Reports. The Metabase's schema is explicit so building reports is very easy.

Clarion for Windows

I have been asked to provide a brief overview of the engineering-construct behind the *Clarion For Windows* (<u>www.softvelocity.com)</u> product. As you can see from the metabase software, the purpose of the product is to create fully functional Windows software applications. In addition to its comprehensive database system development environment, Clarion offers the following layers of abstraction.

Layer	Description/purpose
n-4	Style sheets that affect object classes. E.g., all buttons
n-3	Style sheets that affect certain "object types" that are present in object classes. E.g., all CLOSE buttons changed to now say, Bye-Bye.
n-2	Templates that are employed that generate layer "n-1" There are about 15 basic templates for things like lists, windows, update forms, report shells, etc. You can modify those present and you can completely define you own.
n-1	Complete methods based language that can be used instead of direct language statements. These methods, when "pre-compiled" product the language for layer "n"
n	Programming language statements that compile, link, etc. The language is very intuitive.

In addition to these layers, there are wizards that operate adjacent to layer n-3. You can also buy "Third-Party" templates that operate at layer n-2 and that commonly include their own wizards. The templates are of two classes: Technique, or application. Technique templates include, for example,

- Advanced report writer
- Advanced update-in-place
- Automatic ASCII and/or dBase data export and import
- Automatic file-dictionary upgrade and damage repair
- Backup and restore
- Email and web access
- Process module security management
- Production data directory path manager
- Software registration
- Tagging
- Tree structures for single-file recursion, multi-file hierarchies, and bills-of-materials

All in all there are about 50 different vendors of 3rd party templates. Metabase uses about 10. For applications you can get AP, AR, GL, Payroll, etc. templates. Most of the templates come as a fully-extensible or modifiable Clarion facility.

The software development environment is supported by appropriate screen, report formatters, and editors. The software that results can be distributed without Clarion run-unit licenses or costs. The many data access methods include ASCII, Btreive, ODBC, and Softvelocity's very fast embedded access method.

Finally, you can embed your own code in the following three places: Before, during, and after anything. Clarion maintains the user-created embedded code such that you NEVER lose the ability to code generate. Whitemarsh primarily operates at the n-2 level. Whitemarsh highly recommends Clarion for Windows (www.softvelocity.com).

Good luck with metabase, and don't be shy, email help is available whenever the need arises.

I-Metabase

Because the metabase's engine is SQL, you can use any Internet tool you wish to create an Internet presentation layer. Building such a layer in Clarion's PHP templates is very high on our priority list this next quarter. We will provide a status on our development in a few months. This I-Metabase front end will be a normal upgrade to the metabase.